Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\057SMPL.D\057SMPL.D#
Date Acquired: May 10 2018 09:21 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-014
Misc Info:
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.145	1.429	ppb	3.31	100.	
11 B	136.95	27.39	ppb	2.08	1000.	
23 Na	5,350.	1,070.	ppb	2.70	200000.	
25 Mg	79,050.	15,810.	ppb	2.16	200000.	
27 Al	150,250.	30,050.	ppb	1.83	200000.	
28 Si	2,865.5	573.1	ppb	12.63	#VALUE!	
29 Si	2,320.	464.	ppb	2.48	10000.	
39 K	39,650.	7,930.	ppb	0.60	200000.	
43 Ca	501,500.	100,300.	ppb	1.14	#VALUE!	
44 Ca	462,550.	92,510.	ppb	0.78	200000.	
51 V	286.2	57.24	ppb	0.72	1000.	
52 Cr	141.1	28.22	ppb	1.91	2000.	
53 Cr	149.25	29.85	ppb	2.73	#VALUE!	
55 Mn	2,144.5	428.9	ppb	1.28	2000.	
56 Fe	149,050.	29,810.	ppb	0.61	#VALUE!	
57 Fe	145,900.	29,180.	ppb	1.50	100000.	
59 Co	47.835	9.567	ppb	1.18	1000.	
60 Ni	114.05	22.81	ppb	1.38	1000.	
63 Cu	86.95	17.39	ppb	1.59	#VALUE!	
65 Cu	88.4	17.68	ppb	0.88	2000.	
66 Zn	355.15	71.03	ppb	1.41	2000.	
68 Zn	410.25	82.05	ppb	0.82	#VALUE!	
75 As	45.755	9.151	ppb	2.61	1000.	
82 Se	3.655	0.731	ppb	23.48	1000.	
88 Sr	1,349.	269.8	ppb	2.35	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.15	0.63	ppb	2.55	1000.	
107 Ag	0.6715	0.1343	ppb	2.96	100.	
109 Ag	0.5095	0.1019	ppb	7.09	#VALUE!	
111 Cd	2.116	0.4232	ppb	6.31	#VALUE!	
114 Cd	0.4441	0.0888	ppb	22.06	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.85	9.77	ppb	2.37	1000.	
120 Sn	49.71	9.942	ppb	1.49	#VALUE!	
121 Sb	1.5565	0.3113	ppb	4.13	#VALUE!	
123 Sb	1.539	0.3078	ppb	6.23	1000.	
135 Ba	2,098.5	419.7	ppb	1.07	2000.	
137 Ba	2,093.5	418.7	ppb	0.73	#VALUE!	
182 W	0.572	0.1144	ppb	12.96	1000.	
203 Tl	2.777	0.5554	ppb	4.31	1000.	
205 Tl	2.5555	0.5111	ppb	3.86	#VALUE!	
208 Pb	92.	18.4	ppb	0.64	2000.	
232 Th	73.55	14.71	ppb	0.81	1000.	
238 U	11.16	2.232	ppb	0.37	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1755432.50	1.69	1729334.00	101.5	69.5 - 120	
45 Sc	2460287.00	2.30	2274967.30	108.1	69.5 - 120	
72 Ge	618385.38	1.73	590563.19	104.7	69.5 - 120	
159 Tb	6773513.00	0.29	6367688.00	106.4	69.5 - 120	
209 Bi	2851032.30	1.40	2872959.00	99.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000788

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\058SMPL.D\058SMPL.D#
Date Acquired: May 10 2018 09:25 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-015
Misc Info:
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.015	1.403	ppb	1.51	100.	
11 B	126.1	25.22	ppb	2.11	1000.	
23 Na	5,975.	1,195.	ppb	1.95	200000.	
25 Mg	74,700.	14,940.	ppb	4.85	200000.	
27 Al	144,550.	28,910.	ppb	4.10	200000.	
28 Si	2,665.	533.	ppb	7.03	#VALUE!	
29 Si	2,135.5	427.1	ppb	8.77	10000.	
39 K	37,395.	7,479.	ppb	5.67	200000.	
43 Ca	265,400.	53,080.	ppb	3.44	#VALUE!	
44 Ca	248,000.	49,600.	ppb	1.84	200000.	
51 V	282.8	56.56	ppb	2.45	1000.	
52 Cr	134.4	26.88	ppb	1.94	2000.	
53 Cr	148.25	29.65	ppb	1.93	#VALUE!	
55 Mn	1,869.5	373.9	ppb	1.26	2000.	
56 Fe	140,800.	28,160.	ppb	1.18	#VALUE!	
57 Fe	136,800.	27,360.	ppb	0.55	100000.	
59 Co	35.36	7.072	ppb	1.53	1000.	
60 Ni	96.5	19.3	ppb	0.38	1000.	
63 Cu	69.25	13.85	ppb	2.43	#VALUE!	
65 Cu	70.05	14.01	ppb	0.56	2000.	
66 Zn	317.25	63.45	ppb	2.00	2000.	
68 Zn	343.4	68.68	ppb	2.75	#VALUE!	
75 As	65.25	13.05	ppb	0.39	1000.	
82 Se	2.5175	0.5035	ppb	26.87	1000.	
88 Sr	885.	177.	ppb	0.54	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.378	0.6756	ppb	2.03	1000.	
107 Ag	0.5905	0.1181	ppb	9.32	100.	
109 Ag	0.4853	0.0971	ppb	1.72	#VALUE!	
111 Cd	1.481	0.2962	ppb	11.08	#VALUE!	
114 Cd	-0.1618	-0.0324	ppb	50.87	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.9	10.18	ppb	2.58	1000.	
120 Sn	51.95	10.39	ppb	1.87	#VALUE!	
121 Sb	1.393	0.2786	ppb	0.92	#VALUE!	
123 Sb	1.4015	0.2803	ppb	3.20	1000.	
135 Ba	1,443.	288.6	ppb	1.91	2000.	
137 Ba	1,429.	285.8	ppb	2.01	#VALUE!	
182 W	0.4437	0.0887	ppb	1.01	1000.	
203 Tl	2.3045	0.4609	ppb	4.32	1000.	
205 Tl	2.1745	0.4349	ppb	4.36	#VALUE!	
208 Pb	84.05	16.81	ppb	1.42	2000.	
232 Th	67.85	13.57	ppb	1.52	1000.	
238 U	9.165	1.833	ppb	2.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1788955.80	2.59	1729334.00	103.4	69.5 - 120	
45 Sc	2581900.50	1.37	2274967.30	113.5	69.5 - 120	
72 Ge	639586.38	1.46	590563.19	108.3	69.5 - 120	
159 Tb	6806091.50	2.49	6367688.00	106.9	69.5 - 120	
209 Bi	2876680.30	2.53	2872959.00	100.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000789

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\059SMPL.D\059SMPL.D#
Date Acquired: May 10 2018 09:30 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-017
Misc Info:
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	12.87	2.574	ppb	1.82	100.	
11 B	233.	46.6	ppb	8.26	1000.	
23 Na	1,838.	367.6	ppb	4.61	200000.	
25 Mg	96,050.	19,210.	ppb	5.02	200000.	
27 Al	265,150.	53,030.	ppb	1.80	200000.	
28 Si	3,218.5	643.7	ppb	4.82	#VALUE!	
29 Si	2,719.5	543.9	ppb	1.98	10000.	
39 K	80,150.	16,030.	ppb	1.04	200000.	
43 Ca	155,900.	31,180.	ppb	3.39	#VALUE!	
44 Ca	149,150.	29,830.	ppb	3.69	200000.	
51 V	1,041.	208.2	ppb	1.40	1000.	
52 Cr	225.95	45.19	ppb	0.47	2000.	
53 Cr	282.85	56.57	ppb	0.30	#VALUE!	
55 Mn	13,035.	2,607.	ppb	2.59	2000.	>LDR
56 Fe	290,850.	58,170.	ppb	2.27	#VALUE!	
57 Fe	283,400.	56,680.	ppb	2.43	100000.	
59 Co	178.3	35.66	ppb	0.56	1000.	
60 Ni	321.15	64.23	ppb	1.65	1000.	
63 Cu	179.05	35.81	ppb	2.75	#VALUE!	
65 Cu	179.	35.8	ppb	1.36	2000.	
66 Zn	592.	118.4	ppb	0.65	2000.	
68 Zn	732.	146.4	ppb	1.94	#VALUE!	
75 As	445.65	89.13	ppb	0.48	1000.	
82 Se	5.335	1.067	ppb	13.48	1000.	
88 Sr	1,520.	304.	ppb	1.51	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	25.19	5.038	ppb	1.89	1000.	
107 Ag	0.972	0.1944	ppb	0.42	100.	
109 Ag	0.798	0.1596	ppb	10.77	#VALUE!	
111 Cd	4.2545	0.8509	ppb	1.58	#VALUE!	
114 Cd	1.519	0.3038	ppb	6.34	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	57.9	11.58	ppb	3.45	1000.	
120 Sn	58.4	11.68	ppb	3.48	#VALUE!	
121 Sb	4.3185	0.8637	ppb	3.42	#VALUE!	
123 Sb	4.327	0.8654	ppb	1.57	1000.	
135 Ba	5,270.	1,054.	ppb	3.02	2000.	
137 Ba	5,140.	1,028.	ppb	2.02	#VALUE!	
182 W	2.141	0.4282	ppb	3.72	1000.	
203 Tl	6.97	1.394	ppb	0.56	1000.	
205 Tl	7.16	1.432	ppb	2.31	#VALUE!	
208 Pb	258.55	51.71	ppb	2.43	2000.	
232 Th	133.05	26.61	ppb	4.08	1000.	
238 U	11.19	2.238	ppb	1.50	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1852680.80	4.72	1729334.00	107.1	69.5 - 120	
45 Sc	2659895.30	0.75	2274967.30	116.9	69.5 - 120	
72 Ge	655082.25	1.05	590563.19	110.9	69.5 - 120	
159 Tb	6582168.50	1.98	6367688.00	103.4	69.5 - 120	
209 Bi	2690260.00	2.33	2872959.00	93.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000790

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\060SMPL.D\060SMPL.D#
Date Acquired: May 10 2018 09:34 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-017
Misc Info:
Vial Number: 2303
Current Method: C:\ICPCHEM\1\DATA\JLE10C.B\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\DATA\JLE10C.B\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.56	1.356	ppb	3.75	100.	
11 B	258.4	25.84	ppb	5.79	1000.	
23 Na	2,100.	210.	ppb	4.79	200000.	
25 Mg	107,000.	10,700.	ppb	2.88	200000.	
27 Al	287,500.	28,750.	ppb	1.07	200000.	
28 Si	3,449.	344.9	ppb	2.29	#VALUE!	
29 Si	2,445.	244.5	ppb	2.48	10000.	
39 K	89,940.	8,994.	ppb	1.71	200000.	
43 Ca	170,800.	17,080.	ppb	1.48	#VALUE!	
44 Ca	164,600.	16,460.	ppb	1.47	200000.	
51 V	1,144.	114.4	ppb	2.66	1000.	
52 Cr	249.6	24.96	ppb	1.95	2000.	
53 Cr	330.8	33.08	ppb	0.67	#VALUE!	
55 Mn	14,120.	1,412.	ppb	1.40	2000.	
56 Fe	314,700.	31,470.	ppb	0.99	#VALUE!	
57 Fe	306,600.	30,660.	ppb	2.46	100000.	
59 Co	198.	19.8	ppb	1.59	1000.	
60 Ni	355.8	35.58	ppb	0.75	1000.	
63 Cu	194.8	19.48	ppb	1.70	#VALUE!	
65 Cu	201.3	20.13	ppb	2.83	2000.	
66 Zn	672.3	67.23	ppb	1.75	2000.	
68 Zn	814.6	81.46	ppb	1.20	#VALUE!	
75 As	497.1	49.71	ppb	1.25	1000.	
82 Se	4.147	0.4147	ppb	16.62	1000.	
88 Sr	1,654.	165.4	ppb	1.59	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	26.98	2.698	ppb	2.89	1000.	
107 Ag	0.9978	0.0998	ppb	3.66	100.	
109 Ag	0.8211	0.0821	ppb	5.45	#VALUE!	
111 Cd	4.357	0.4357	ppb	2.41	#VALUE!	
114 Cd	1.583	0.1583	ppb	13.71	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	63.44	6.344	ppb	0.19	1000.	
120 Sn	64.37	6.437	ppb	1.68	#VALUE!	
121 Sb	5.001	0.5001	ppb	1.29	#VALUE!	
123 Sb	4.842	0.4842	ppb	4.57	1000.	
135 Ba	5,775.	577.5	ppb	2.34	2000.	
137 Ba	5,704.	570.4	ppb	1.77	#VALUE!	
182 W	2.122	0.2122	ppb	4.97	1000.	
203 Tl	7.202	0.7202	ppb	3.32	1000.	
205 Tl	7.306	0.7306	ppb	4.07	#VALUE!	
208 Pb	269.9	26.99	ppb	0.46	2000.	
232 Th	136.	13.6	ppb	0.87	1000.	
238 U	11.73	1.173	ppb	0.88	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1946711.90	3.84	1729334.00	112.6	69.5 - 120	
45 Sc	2681458.80	1.22	2274967.30	117.9	69.5 - 120	
72 Ge	655090.13	1.57	590563.19	110.9	69.5 - 120	
159 Tb	6418702.50	1.20	6367688.00	100.8	69.5 - 120	
209 Bi	2710657.30	0.15	2872959.00	94.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000791

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\061SMPL.D\061SMPL.D#
Date Acquired: May 10 2018 09:38 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-018
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.245	1.449	ppb	2.04	100.	
11 B	217.55	43.51	ppb	0.67	1000.	
23 Na	6,765.	1,353.	ppb	6.83	200000.	
25 Mg	60,800.	12,160.	ppb	4.54	200000.	
27 Al	160,800.	32,160.	ppb	3.33	200000.	
28 Si	3,317.5	663.5	ppb	2.40	#VALUE!	
29 Si	2,989.5	597.9	ppb	11.01	10000.	
39 K	48,730.	9,746.	ppb	3.60	200000.	
43 Ca	371,200.	74,240.	ppb	4.28	#VALUE!	
44 Ca	336,900.	67,380.	ppb	1.52	200000.	
51 V	384.55	76.91	ppb	1.99	1000.	
52 Cr	142.1	28.42	ppb	2.31	2000.	
53 Cr	154.95	30.99	ppb	3.59	#VALUE!	
55 Mn	2,430.5	486.1	ppb	1.52	2000.	
56 Fe	131,450.	26,290.	ppb	1.91	#VALUE!	
57 Fe	130,250.	26,050.	ppb	2.60	100000.	
59 Co	57.3	11.46	ppb	3.93	1000.	
60 Ni	109.4	21.88	ppb	3.22	1000.	
63 Cu	97.7	19.54	ppb	1.00	#VALUE!	
65 Cu	100.05	20.01	ppb	3.22	2000.	
66 Zn	502.5	100.5	ppb	1.37	2000.	
68 Zn	546.	109.2	ppb	1.54	#VALUE!	
75 As	94.85	18.97	ppb	2.33	1000.	
82 Se	4.4365	0.8873	ppb	7.40	1000.	
88 Sr	1,310.	262.	ppb	0.36	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.475	1.295	ppb	1.37	1000.	
107 Ag	0.751	0.1502	ppb	2.97	100.	
109 Ag	0.619	0.1238	ppb	1.15	#VALUE!	
111 Cd	2.9365	0.5873	ppb	3.95	#VALUE!	
114 Cd	1.3195	0.2639	ppb	8.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.055	9.811	ppb	3.54	1000.	
120 Sn	49.8	9.96	ppb	2.94	#VALUE!	
121 Sb	1.92	0.384	ppb	4.80	#VALUE!	
123 Sb	1.911	0.3822	ppb	4.55	1000.	
135 Ba	2,280.5	456.1	ppb	2.97	2000.	
137 Ba	2,260.	452.	ppb	1.88	#VALUE!	
182 W	0.7615	0.1523	ppb	8.15	1000.	
203 Tl	2.46	0.492	ppb	6.19	1000.	
205 Tl	2.4725	0.4945	ppb	1.18	#VALUE!	
208 Pb	255.4	51.08	ppb	1.74	2000.	
232 Th	75.6	15.12	ppb	1.97	1000.	
238 U	10.055	2.011	ppb	2.71	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1805460.10	2.84	1729334.00	104.4	69.5 - 120	
45 Sc	2516693.30	0.98	2274967.30	110.6	69.5 - 120	
72 Ge	634567.69	1.87	590563.19	107.5	69.5 - 120	
159 Tb	6663819.50	2.52	6367688.00	104.7	69.5 - 120	
209 Bi	2834576.00	2.89	2872959.00	98.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000792

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\062SMPL.D\062SMPL.D#
Date Acquired: May 10 2018 09:42 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-019
Misc Info:
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.61	1.322	ppb	3.26	100.	
11 B	175.15	35.03	ppb	2.39	1000.	
23 Na	2,037.	407.4	ppb	3.88	200000.	
25 Mg	120,800.	24,160.	ppb	5.12	200000.	
27 Al	153,150.	30,630.	ppb	2.71	200000.	
28 Si	2,661.	532.2	ppb	2.96	#VALUE!	
29 Si	2,096.	419.2	ppb	9.01	10000.	
39 K	48,345.	9,669.	ppb	2.77	200000.	
43 Ca	437,300.	87,460.	ppb	3.10	#VALUE!	
44 Ca	408,000.	81,600.	ppb	1.30	200000.	
51 V	401.65	80.33	ppb	0.89	1000.	
52 Cr	125.5	25.1	ppb	1.50	2000.	
53 Cr	130.4	26.08	ppb	2.61	#VALUE!	
55 Mn	2,693.	538.6	ppb	3.62	2000.	
56 Fe	123,950.	24,790.	ppb	1.86	#VALUE!	
57 Fe	120,700.	24,140.	ppb	1.30	100000.	
59 Co	59.5	11.9	ppb	3.02	1000.	
60 Ni	118.7	23.74	ppb	2.19	1000.	
63 Cu	83.7	16.74	ppb	2.36	#VALUE!	
65 Cu	84.7	16.94	ppb	1.12	2000.	
66 Zn	342.15	68.43	ppb	3.01	2000.	
68 Zn	402.7	80.54	ppb	1.24	#VALUE!	
75 As	101.95	20.39	ppb	1.80	1000.	
82 Se	3.5005	0.7001	ppb	16.66	1000.	
88 Sr	2,682.5	536.5	ppb	0.42	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.6955	0.7391	ppb	4.09	1000.	
107 Ag	0.6245	0.1249	ppb	9.85	100.	
109 Ag	0.4675	0.0935	ppb	1.38	#VALUE!	
111 Cd	2.6455	0.5291	ppb	2.42	#VALUE!	
114 Cd	1.077	0.2154	ppb	8.69	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.835	9.567	ppb	3.42	1000.	
120 Sn	48.535	9.707	ppb	3.11	#VALUE!	
121 Sb	1.7245	0.3449	ppb	5.89	#VALUE!	
123 Sb	1.754	0.3508	ppb	1.71	1000.	
135 Ba	2,528.5	505.7	ppb	3.20	2000.	
137 Ba	2,497.5	499.5	ppb	2.65	#VALUE!	
182 W	0.9655	0.1931	ppb	2.80	1000.	
203 Tl	2.442	0.4884	ppb	7.71	1000.	
205 Tl	2.3645	0.4729	ppb	3.10	#VALUE!	
208 Pb	100.2	20.04	ppb	2.40	2000.	
232 Th	61.2	12.24	ppb	4.13	1000.	
238 U	9.445	1.889	ppb	2.63	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1787627.00	2.88	1729334.00	103.4	69.5 - 120	
45 Sc	2529551.80	1.41	2274967.30	111.2	69.5 - 120	
72 Ge	627357.81	0.96	590563.19	106.2	69.5 - 120	
159 Tb	6802475.50	3.30	6367688.00	106.8	69.5 - 120	
209 Bi	2862343.50	3.14	2872959.00	99.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000793

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\063SMPL.D\063SMPL.D#
Date Acquired: May 10 2018 09:47 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	24.17	24.17	ppb	1.49	100.	
11 B	26.92	26.92	ppb	5.61	1000.	
23 Na	5,099.	5,099.	ppb	0.88	200000.	
25 Mg	5,110.	5,110.	ppb	2.44	200000.	
27 Al	504.3	504.3	ppb	3.32	200000.	
28 Si	544.7	544.7	ppb	4.94	#VALUE!	
29 Si	444.1	444.1	ppb	2.21	10000.	
39 K	5,013.	5,013.	ppb	0.47	200000.	
43 Ca	5,107.	5,107.	ppb	0.32	#VALUE!	
44 Ca	5,136.	5,136.	ppb	1.03	200000.	
51 V	25.48	25.48	ppb	2.26	1000.	
52 Cr	25.41	25.41	ppb	0.99	2000.	
53 Cr	23.9	23.9	ppb	0.34	#VALUE!	
55 Mn	25.08	25.08	ppb	0.73	2000.	
56 Fe	5,087.	5,087.	ppb	1.88	#VALUE!	
57 Fe	5,192.	5,192.	ppb	1.25	100000.	
59 Co	25.67	25.67	ppb	0.63	1000.	
60 Ni	25.13	25.13	ppb	2.02	1000.	
63 Cu	25.47	25.47	ppb	1.23	#VALUE!	
65 Cu	25.58	25.58	ppb	0.72	2000.	
66 Zn	25.08	25.08	ppb	0.92	2000.	
68 Zn	24.85	24.85	ppb	1.59	#VALUE!	
75 As	25.1	25.1	ppb	1.35	1000.	
82 Se	25.62	25.62	ppb	1.04	1000.	
88 Sr	24.2	24.2	ppb	0.71	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	24.34	24.34	ppb	0.70	1000.	
107 Ag	24.62	24.62	ppb	1.25	100.	
109 Ag	24.35	24.35	ppb	0.59	#VALUE!	
111 Cd	24.03	24.03	ppb	0.60	#VALUE!	
114 Cd	24.14	24.14	ppb	0.51	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	26.09	26.09	ppb	2.13	1000.	
120 Sn	26.21	26.21	ppb	1.76	#VALUE!	
121 Sb	26.68	26.68	ppb	1.83	#VALUE!	
123 Sb	26.41	26.41	ppb	1.81	1000.	
135 Ba	26.55	26.55	ppb	2.48	2000.	
137 Ba	26.29	26.29	ppb	3.55	#VALUE!	
182 W	24.37	24.37	ppb	2.00	1000.	
203 Tl	25.31	25.31	ppb	2.92	1000.	
205 Tl	25.32	25.32	ppb	1.16	#VALUE!	
208 Pb	25.38	25.38	ppb	1.82	2000.	
232 Th	24.74	24.74	ppb	1.78	1000.	
238 U	24.63	24.63	ppb	1.97	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1886189.40	1.58	1729334.00	109.1	69.5 - 120	
45 Sc	2543293.50	0.90	2274967.30	111.8	69.5 - 120	
72 Ge	641566.25	1.53	590563.19	108.6	69.5 - 120	
159 Tb	6424617.00	2.59	6367688.00	100.9	69.5 - 120	
209 Bi	2760689.30	2.64	2872959.00	96.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000794

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\064_CCV.D\064_CCV.D#
Date Acquired: May 10 2018 09:51 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.33	ppb	2.50	25	101.32	
11 B	27.75	ppb	5.07	25	111	Fail
23 Na	5,167.	ppb	2.17	5,000	103.34	
25 Mg	5,112.	ppb	1.93	5,000	102.24	
27 Al	509.2	ppb	1.25	500	101.84	
28 Si	527.7	ppb	2.91	500	105.54	
29 Si	415.3	ppb	3.98	500	83.06	Fail
39 K	4,916.	ppb	1.89	5,000	98.32	
43 Ca	5,175.	ppb	0.55	5,000	103.5	
44 Ca	5,230.	ppb	1.32	5,000	104.6	
51 V	25.94	ppb	3.23	25	103.76	
52 Cr	25.87	ppb	3.30	25	103.48	
53 Cr	23.45	ppb	1.38	25	93.8	
55 Mn	25.33	ppb	0.70	25	101.32	
56 Fe	5,119.	ppb	0.93	5,000	102.38	
57 Fe	5,266.	ppb	1.04	5,000	105.32	
59 Co	26.02	ppb	2.89	25	104.08	
60 Ni	25.5	ppb	0.28	25	102	
63 Cu	25.89	ppb	0.93	25	103.56	
65 Cu	25.72	ppb	2.11	25	102.88	
66 Zn	25.03	ppb	1.54	25	100.12	
68 Zn	25.34	ppb	0.81	25	101.36	
75 As	25.17	ppb	1.03	25	100.68	
82 Se	25.74	ppb	0.66	25	102.96	
88 Sr	24.38	ppb	1.34	25	97.52	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.24	ppb	2.21	25	96.96	
107 Ag	24.48	ppb	1.47	25	97.92	
109 Ag	24.31	ppb	1.91	25	97.24	
111 Cd	24.1	ppb	1.88	25	96.4	
114 Cd	24.03	ppb	1.82	25	96.12	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	26.44	ppb	2.98	25	105.76	
120 Sn	26.65	ppb	1.50	25	106.6	
121 Sb	26.91	ppb	1.31	25	107.64	
123 Sb	26.82	ppb	1.64	25	107.28	
135 Ba	26.93	ppb	0.91	25	107.72	
137 Ba	26.28	ppb	2.04	25	105.12	
182 W	24.25	ppb	1.88	25	97	
203 Tl	25.32	ppb	1.79	25	101.28	
205 Tl	25.31	ppb	2.24	25	101.24	
208 Pb	25.35	ppb	0.89	25	101.4	
232 Th	24.65	ppb	1.76	25	98.6	
238 U	24.7	ppb	2.83	25	98.8	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1900668.80	2.40	1729334.00	109.9	80 - 120.4	
45 Sc	2646815.30	2.42	2274967.30	116.3	80 - 120.4	
72 Ge	648427.00	2.44	590563.19	109.8	80 - 120.4	
159 Tb	6337645.50	0.20	6367688.00	99.5	80 - 120.4	
209 Bi	2705152.00	0.62	2872959.00	94.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000795

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\065_CCB.D\065_CCB.D#
Date Acquired: May 10 2018 09:55 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0014	ppb	151.97	1.00	
11 B	2.662	ppb	9.87	1.00	
23 Na	-1.464	ppb	12.94	1.00	
25 Mg	-0.0154	ppb	311.19	1.00	
27 Al	-0.0352	ppb	138.77	1.00	
28 Si	13.8	ppb	32.88	1.00	
29 Si	-102.3	ppb	7.91	1.00	
39 K	-10.41	ppb	33.99	1.00	
43 Ca	-0.8234	ppb	607.36	1.00	
44 Ca	-2.739	ppb	16.77	1.00	
51 V	0.0479	ppb	63.52	1.00	
52 Cr	0.0108	ppb	77.89	1.00	
53 Cr	-2.015	ppb	8.49	1.00	
55 Mn	-0.0143	ppb	9.85	1.00	
56 Fe	4.057	ppb	47.20	1.00	
57 Fe	2.13	ppb	79.11	1.00	
59 Co	0.0008	ppb	567.51	1.00	
60 Ni	0.0016	ppb	235.58	1.00	
63 Cu	-0.0226	ppb	26.10	1.00	
65 Cu	-0.0248	ppb	31.70	1.00	
66 Zn	0.0019	ppb	1349.20	1.00	
68 Zn	-0.0713	ppb	74.30	1.00	
75 As	0.0673	ppb	137.58	1.00	
82 Se	-0.0077	ppb	2308.00	1.00	
88 Sr	0.0022	ppb	129.44	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0349	ppb	33.60	1.00	
107 Ag	0.001	ppb	99.93	1.00	
109 Ag	0.0014	ppb	107.89	1.00	
111 Cd	-0.0724	ppb	19.55	1.00	
114 Cd	-0.0006	ppb	185.08	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0447	ppb	4.43	1.00	
120 Sn	0.0387	ppb	15.26	1.00	
121 Sb	0.0067	ppb	30.85	1.00	
123 Sb	0.0079	ppb	80.14	1.00	
135 Ba	-0.0027	ppb	203.28	1.00	
137 Ba	0.0006	ppb	444.71	1.00	
182 W	0.0572	ppb	17.46	1.00	
203 Tl	-0.0101	ppb	32.47	1.00	
205 Tl	-0.0127	ppb	89.56	1.00	
208 Pb	-0.0486	ppb	19.68	1.00	
232 Th	0.0843	ppb	19.23	1.00	
238 U	0.003	ppb	35.63	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1897525.00	4.61	1729334.00	109.7	79.5 - 120	
45 Sc	2606275.50	1.39	2274967.30	114.6	79.5 - 120	
72 Ge	650363.25	0.35	590563.19	110.1	79.5 - 120	
159 Tb	6094003.00	1.23	6367688.00	95.7	79.5 - 120	
209 Bi	2660571.00	1.34	2872959.00	92.6	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\066SMPL.D\066SMPL.D#
Date Acquired: May 10 2018 09:59 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-020
Misc Info:
Vial Number: 2307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.085	2.017	ppb	2.91	100.	
11 B	224.35	44.87	ppb	6.75	1000.	
23 Na	4,876.	975.2	ppb	5.14	200000.	
25 Mg	105,100.	21,020.	ppb	1.70	200000.	
27 Al	216,650.	43,330.	ppb	2.52	200000.	
28 Si	3,194.	638.8	ppb	4.69	#VALUE!	
29 Si	2,772.5	554.5	ppb	3.31	10000.	
39 K	62,250.	12,450.	ppb	3.62	200000.	
43 Ca	1,282,000.	256,400.	ppb	1.78	#VALUE!	
44 Ca	1,218,000.	243,600.	ppb	2.16	200000.	>LDR
51 V	462.65	92.53	ppb	3.12	1000.	
52 Cr	187.2	37.44	ppb	2.68	2000.	
53 Cr	200.1	40.02	ppb	0.89	#VALUE!	
55 Mn	4,980.5	996.1	ppb	0.81	2000.	
56 Fe	179,650.	35,930.	ppb	1.06	#VALUE!	
57 Fe	175,300.	35,060.	ppb	1.51	100000.	
59 Co	103.85	20.77	ppb	0.14	1000.	
60 Ni	170.95	34.19	ppb	1.69	1000.	
63 Cu	117.	23.4	ppb	1.49	#VALUE!	
65 Cu	119.	23.8	ppb	1.10	2000.	
66 Zn	446.4	89.28	ppb	1.88	2000.	
68 Zn	581.5	116.3	ppb	2.28	#VALUE!	
75 As	113.8	22.76	ppb	1.17	1000.	
82 Se	6.03	1.206	ppb	2.40	1000.	
88 Sr	2,965.5	593.1	ppb	1.02	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	9.335	1.867	ppb	1.42	1000.	
107 Ag	0.9165	0.1833	ppb	3.04	100.	
109 Ag	0.7615	0.1523	ppb	5.00	#VALUE!	
111 Cd	4.3145	0.8629	ppb	2.39	#VALUE!	
114 Cd	1.959	0.3918	ppb	1.12	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	53.	10.6	ppb	0.96	1000.	
120 Sn	53.45	10.69	ppb	2.54	#VALUE!	
121 Sb	2.3605	0.4721	ppb	4.49	#VALUE!	
123 Sb	2.415	0.483	ppb	4.59	1000.	
135 Ba	5,355.	1,071.	ppb	1.18	2000.	
137 Ba	5,205.	1,041.	ppb	0.45	#VALUE!	
182 W	1.2565	0.2513	ppb	2.23	1000.	
203 Tl	4.4085	0.8817	ppb	0.41	1000.	
205 Tl	4.268	0.8536	ppb	1.58	#VALUE!	
208 Pb	166.95	33.39	ppb	0.20	2000.	
232 Th	99.55	19.91	ppb	0.37	1000.	
238 U	22.09	4.418	ppb	0.26	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1829171.60	6.21	1729334.00	105.8	69.5 - 120	
45 Sc	2602636.30	3.03	2274967.30	114.4	69.5 - 120	
72 Ge	626763.81	1.14	590563.19	106.1	69.5 - 120	
159 Tb	6573967.00	1.69	6367688.00	103.2	69.5 - 120	
209 Bi	2711461.00	1.35	2872959.00	94.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000797

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\067SMPL.D\067SMPL.D#
Date Acquired: May 10 2018 10:04 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-020
Misc Info:
Vial Number: 2308
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.06	1.006	ppb	3.59	100.	
11 B	236.4	23.64	ppb	1.14	1000.	
23 Na	5,224.	522.4	ppb	2.17	200000.	
25 Mg	111,600.	11,160.	ppb	1.70	200000.	
27 Al	225,700.	22,570.	ppb	3.49	200000.	
28 Si	3,387.	338.7	ppb	7.58	#VALUE!	
29 Si	2,261.	226.1	ppb	13.42	10000.	
39 K	65,010.	6,501.	ppb	0.75	200000.	
43 Ca	1,381,000.	138,100.	ppb	0.38	#VALUE!	
44 Ca	1,269,000.	126,900.	ppb	0.91	200000.	
51 V	461.6	46.16	ppb	2.23	1000.	
52 Cr	196.2	19.62	ppb	1.48	2000.	
53 Cr	190.5	19.05	ppb	0.65	#VALUE!	
55 Mn	5,206.	520.6	ppb	2.67	2000.	
56 Fe	187,900.	18,790.	ppb	1.85	#VALUE!	
57 Fe	182,900.	18,290.	ppb	1.93	100000.	
59 Co	107.5	10.75	ppb	0.17	1000.	
60 Ni	179.7	17.97	ppb	1.54	1000.	
63 Cu	126.	12.6	ppb	2.52	#VALUE!	
65 Cu	127.7	12.77	ppb	0.67	2000.	
66 Zn	480.1	48.01	ppb	2.42	2000.	
68 Zn	619.5	61.95	ppb	1.40	#VALUE!	
75 As	119.3	11.93	ppb	3.28	1000.	
82 Se	8.037	0.8037	ppb	8.43	1000.	
88 Sr	3,075.	307.5	ppb	3.53	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	9.522	0.9522	ppb	2.52	1000.	
107 Ag	0.9398	0.094	ppb	6.83	100.	
109 Ag	0.8004	0.08	ppb	6.21	#VALUE!	
111 Cd	4.284	0.4284	ppb	5.24	#VALUE!	
114 Cd	2.062	0.2062	ppb	12.91	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	55.58	5.558	ppb	1.10	1000.	
120 Sn	55.94	5.594	ppb	1.39	#VALUE!	
121 Sb	2.51	0.251	ppb	8.81	#VALUE!	
123 Sb	2.605	0.2605	ppb	11.12	1000.	
135 Ba	5,556.	555.6	ppb	2.07	2000.	
137 Ba	5,525.	552.5	ppb	1.91	#VALUE!	
182 W	1.292	0.1292	ppb	10.46	1000.	
203 Tl	4.29	0.429	ppb	3.67	1000.	
205 Tl	4.237	0.4237	ppb	1.62	#VALUE!	
208 Pb	169.2	16.92	ppb	1.16	2000.	
232 Th	99.14	9.914	ppb	1.93	1000.	
238 U	21.77	2.177	ppb	0.49	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1909247.30	1.44	1729334.00	110.4	69.5 - 120	
45 Sc	2613016.50	2.70	2274967.30	114.9	69.5 - 120	
72 Ge	638274.44	2.65	590563.19	108.1	69.5 - 120	
159 Tb	6626985.50	0.83	6367688.00	104.1	69.5 - 120	
209 Bi	2801822.50	0.85	2872959.00	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000798

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\068SMPL.D\068SMPL.D#
Date Acquired: May 10 2018 10:08 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-056
Misc Info:
Vial Number: 2309
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	11.53	2.306	ppb	3.10	100.	
11 B	204.5	40.9	ppb	1.82	1000.	
23 Na	3,516.5	703.3	ppb	2.14	200000.	
25 Mg	98,650.	19,730.	ppb	1.59	200000.	
27 Al	249,450.	49,890.	ppb	2.33	200000.	
28 Si	3,645.	729.	ppb	6.53	#VALUE!	
29 Si	3,208.	641.6	ppb	6.29	10000.	
39 K	57,000.	11,400.	ppb	2.52	200000.	
43 Ca	605,000.	121,000.	ppb	1.88	#VALUE!	
44 Ca	562,500.	112,500.	ppb	1.41	200000.	
51 V	470.2	94.04	ppb	1.41	1000.	
52 Cr	229.25	45.85	ppb	2.29	2000.	
53 Cr	241.05	48.21	ppb	4.01	#VALUE!	
55 Mn	6,830.	1,366.	ppb	0.38	2000.	
56 Fe	222,050.	44,410.	ppb	1.82	#VALUE!	
57 Fe	216,200.	43,240.	ppb	1.89	100000.	
59 Co	91.75	18.35	ppb	3.50	1000.	
60 Ni	188.65	37.73	ppb	1.66	1000.	
63 Cu	159.95	31.99	ppb	1.54	#VALUE!	
65 Cu	161.85	32.37	ppb	1.58	2000.	
66 Zn	632.	126.4	ppb	1.20	2000.	
68 Zn	690.5	138.1	ppb	0.90	#VALUE!	
75 As	28.415	5.683	ppb	2.55	1000.	
82 Se	5.385	1.077	ppb	20.30	1000.	
88 Sr	1,544.5	308.9	ppb	0.69	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.725	0.945	ppb	3.38	1000.	
107 Ag	1.1585	0.2317	ppb	1.86	100.	
109 Ag	0.959	0.1918	ppb	1.80	#VALUE!	
111 Cd	4.8175	0.9635	ppb	4.99	#VALUE!	
114 Cd	2.3455	0.4691	ppb	3.88	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.55	10.31	ppb	2.12	1000.	
120 Sn	52.55	10.51	ppb	0.37	#VALUE!	
121 Sb	2.5435	0.5087	ppb	2.33	#VALUE!	
123 Sb	2.446	0.4892	ppb	2.42	1000.	
135 Ba	2,794.5	558.9	ppb	1.67	2000.	
137 Ba	2,811.	562.2	ppb	0.48	#VALUE!	
182 W	0.89	0.178	ppb	3.36	1000.	
203 Tl	3.9905	0.7981	ppb	1.39	1000.	
205 Tl	4.056	0.8112	ppb	3.61	#VALUE!	
208 Pb	180.05	36.01	ppb	1.25	2000.	
232 Th	104.8	20.96	ppb	1.90	1000.	
238 U	14.595	2.919	ppb	0.54	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1768984.40	2.29	1729334.00	102.3	69.5 - 120	
45 Sc	2537414.80	1.24	2274967.30	111.5	69.5 - 120	
72 Ge	622413.31	1.18	590563.19	105.4	69.5 - 120	
159 Tb	6778224.50	0.38	6367688.00	106.4	69.5 - 120	
209 Bi	2810012.80	1.36	2872959.00	97.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000799

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\069SMPL.D\069SMPL.D#
Date Acquired: May 10 2018 10:12 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-057
Misc Info:
Vial Number: 2310
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	12.21	2.442	ppb	3.67	100.	
11 B	292.95	58.59	ppb	1.83	1000.	
23 Na	2,165.	433.	ppb	2.12	200000.	
25 Mg	109,300.	21,860.	ppb	1.16	200000.	
27 Al	283,750.	56,750.	ppb	1.22	200000.	
28 Si	3,197.	639.4	ppb	3.09	#VALUE!	
29 Si	2,753.	550.6	ppb	2.70	10000.	
39 K	91,050.	18,210.	ppb	1.58	200000.	
43 Ca	270,750.	54,150.	ppb	1.74	#VALUE!	
44 Ca	250,700.	50,140.	ppb	1.97	200000.	
51 V	566.5	113.3	ppb	2.10	1000.	
52 Cr	236.05	47.21	ppb	1.10	2000.	
53 Cr	283.25	56.65	ppb	0.79	#VALUE!	
55 Mn	4,272.	854.4	ppb	3.44	2000.	
56 Fe	236,300.	47,260.	ppb	3.72	#VALUE!	
57 Fe	230,800.	46,160.	ppb	2.90	100000.	
59 Co	99.55	19.91	ppb	2.40	1000.	
60 Ni	197.35	39.47	ppb	2.52	1000.	
63 Cu	141.7	28.34	ppb	2.16	#VALUE!	
65 Cu	144.7	28.94	ppb	3.19	2000.	
66 Zn	604.5	120.9	ppb	1.78	2000.	
68 Zn	673.5	134.7	ppb	2.64	#VALUE!	
75 As	86.5	17.3	ppb	1.84	1000.	
82 Se	3.982	0.7964	ppb	11.64	1000.	
88 Sr	1,628.5	325.7	ppb	1.06	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.76	1.552	ppb	2.68	1000.	
107 Ag	0.9125	0.1825	ppb	4.22	100.	
109 Ag	0.749	0.1498	ppb	4.38	#VALUE!	
111 Cd	3.4395	0.6879	ppb	6.75	#VALUE!	
114 Cd	1.0855	0.2171	ppb	3.13	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	55.35	11.07	ppb	2.10	1000.	
120 Sn	56.25	11.25	ppb	1.88	#VALUE!	
121 Sb	3.375	0.675	ppb	1.16	#VALUE!	
123 Sb	3.3875	0.6775	ppb	6.18	1000.	
135 Ba	3,225.	645.	ppb	1.05	2000.	
137 Ba	3,158.	631.6	ppb	1.52	#VALUE!	
182 W	0.923	0.1846	ppb	6.48	1000.	
203 Tl	4.0425	0.8085	ppb	1.56	1000.	
205 Tl	4.0065	0.8013	ppb	0.60	#VALUE!	
208 Pb	169.5	33.9	ppb	1.16	2000.	
232 Th	101.7	20.34	ppb	0.91	1000.	
238 U	12.185	2.437	ppb	0.39	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1802670.10	1.86	1729334.00	104.2	69.5 - 120	
45 Sc	2628042.80	0.40	2274967.30	115.5	69.5 - 120	
72 Ge	645424.63	1.09	590563.19	109.3	69.5 - 120	
159 Tb	6603168.00	1.72	6367688.00	103.7	69.5 - 120	
209 Bi	2721510.80	0.33	2872959.00	94.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000800

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\070SMPL.D\070SMPL.D#
Date Acquired: May 10 2018 10:16 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-058
Misc Info:
Vial Number: 2311
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.345	1.469	ppb	8.27	100.	
11 B	138.15	27.63	ppb	6.21	1000.	
23 Na	4,411.5	882.3	ppb	3.13	200000.	
25 Mg	78,650.	15,730.	ppb	2.69	200000.	
27 Al	147,350.	29,470.	ppb	4.03	200000.	
28 Si	2,912.5	582.5	ppb	5.45	#VALUE!	
29 Si	2,352.	470.4	ppb	6.44	10000.	
39 K	39,955.	7,991.	ppb	0.80	200000.	
43 Ca	864,000.	172,800.	ppb	0.45	#VALUE!	
44 Ca	806,500.	161,300.	ppb	1.39	200000.	
51 V	275.6	55.12	ppb	1.09	1000.	
52 Cr	132.05	26.41	ppb	0.37	2000.	
53 Cr	136.5	27.3	ppb	1.45	#VALUE!	
55 Mn	3,071.	614.2	ppb	0.84	2000.	
56 Fe	159,750.	31,950.	ppb	1.01	#VALUE!	
57 Fe	154,050.	30,810.	ppb	1.13	100000.	
59 Co	64.	12.8	ppb	2.57	1000.	
60 Ni	118.15	23.63	ppb	1.32	1000.	
63 Cu	95.2	19.04	ppb	1.73	#VALUE!	
65 Cu	96.4	19.28	ppb	1.60	2000.	
66 Zn	356.15	71.23	ppb	1.74	2000.	
68 Zn	428.85	85.77	ppb	0.72	#VALUE!	
75 As	24.9	4.98	ppb	1.25	1000.	
82 Se	4.077	0.8154	ppb	7.74	1000.	
88 Sr	1,629.5	325.9	ppb	2.22	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.9185	0.7837	ppb	0.42	1000.	
107 Ag	0.569	0.1138	ppb	1.00	100.	
109 Ag	0.4391	0.0878	ppb	7.15	#VALUE!	
111 Cd	2.9495	0.5899	ppb	1.54	#VALUE!	
114 Cd	1.22	0.244	ppb	1.35	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.8	9.56	ppb	0.79	1000.	
120 Sn	48.575	9.715	ppb	0.77	#VALUE!	
121 Sb	1.7495	0.3499	ppb	0.70	#VALUE!	
123 Sb	1.7365	0.3473	ppb	1.61	1000.	
135 Ba	3,104.5	620.9	ppb	0.93	2000.	
137 Ba	3,034.5	606.9	ppb	1.02	#VALUE!	
182 W	0.7955	0.1591	ppb	6.27	1000.	
203 Tl	2.512	0.5024	ppb	5.01	1000.	
205 Tl	2.4765	0.4953	ppb	4.54	#VALUE!	
208 Pb	102.25	20.45	ppb	1.92	2000.	
232 Th	68.35	13.67	ppb	1.77	1000.	
238 U	14.64	2.928	ppb	0.85	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1789730.00	7.35	1729334.00	103.5	69.5 - 120	
45 Sc	2536473.30	2.96	2274967.30	111.5	69.5 - 120	
72 Ge	630319.56	1.51	590563.19	106.7	69.5 - 120	
159 Tb	6746303.00	1.06	6367688.00	105.9	69.5 - 120	
209 Bi	2820655.80	0.85	2872959.00	98.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000801

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\071SMPL.D\071SMPL.D#
Date Acquired: May 10 2018 10:21 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-059
Misc Info:
Vial Number: 2312
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.05	1.61	ppb	2.14	100.	
11 B	132.6	26.52	ppb	4.51	1000.	
23 Na	926.5	185.3	ppb	5.70	200000.	
25 Mg	45,820.	9,164.	ppb	1.77	200000.	
27 Al	190,600.	38,120.	ppb	1.25	200000.	
28 Si	2,765.5	553.1	ppb	4.37	#VALUE!	
29 Si	2,152.	430.4	ppb	1.88	10000.	
39 K	55,550.	11,110.	ppb	0.78	200000.	
43 Ca	35,305.	7,061.	ppb	1.81	#VALUE!	
44 Ca	34,985.	6,997.	ppb	0.57	200000.	
51 V	292.1	58.42	ppb	1.30	1000.	
52 Cr	154.55	30.91	ppb	1.07	2000.	
53 Cr	207.25	41.45	ppb	2.59	#VALUE!	
55 Mn	3,028.	605.6	ppb	1.86	2000.	
56 Fe	153,150.	30,630.	ppb	1.20	#VALUE!	
57 Fe	150,000.	30,000.	ppb	2.17	100000.	
59 Co	63.9	12.78	ppb	1.12	1000.	
60 Ni	135.15	27.03	ppb	1.57	1000.	
63 Cu	113.1	22.62	ppb	0.42	#VALUE!	
65 Cu	114.3	22.86	ppb	1.81	2000.	
66 Zn	430.55	86.11	ppb	1.75	2000.	
68 Zn	473.2	94.64	ppb	0.70	#VALUE!	
75 As	25.395	5.079	ppb	2.18	1000.	
82 Se	2.7955	0.5591	ppb	11.19	1000.	
88 Sr	453.	90.6	ppb	1.58	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.996	0.7992	ppb	0.74	1000.	
107 Ag	0.781	0.1562	ppb	4.69	100.	
109 Ag	0.6405	0.1281	ppb	8.84	#VALUE!	
111 Cd	1.645	0.329	ppb	4.89	#VALUE!	
114 Cd	0.5325	0.1065	ppb	2.59	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.15	10.23	ppb	0.91	1000.	
120 Sn	51.65	10.33	ppb	0.67	#VALUE!	
121 Sb	1.5255	0.3051	ppb	8.90	#VALUE!	
123 Sb	1.518	0.3036	ppb	9.18	1000.	
135 Ba	1,866.	373.2	ppb	0.32	2000.	
137 Ba	1,864.5	372.9	ppb	0.57	#VALUE!	
182 W	0.64	0.128	ppb	3.59	1000.	
203 Tl	2.7805	0.5561	ppb	3.59	1000.	
205 Tl	2.7205	0.5441	ppb	0.27	#VALUE!	
208 Pb	105.05	21.01	ppb	1.61	2000.	
232 Th	72.85	14.57	ppb	0.44	1000.	
238 U	5.92	1.184	ppb	2.94	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1779458.90	2.21	1729334.00	102.9	69.5 - 120	
45 Sc	2609543.80	1.78	2274967.30	114.7	69.5 - 120	
72 Ge	647905.13	0.93	590563.19	109.7	69.5 - 120	
159 Tb	6580255.50	0.13	6367688.00	103.3	69.5 - 120	
209 Bi	2741842.00	1.24	2872959.00	95.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000802

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\072SMPL.D\072SMPL.D#
Date Acquired: May 10 2018 10:25 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-060
Misc Info:
Vial Number: 2401
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.025	1.405	ppb	3.80	100.	
11 B	136.5	27.3	ppb	2.11	1000.	
23 Na	1,356.	271.2	ppb	2.22	200000.	
25 Mg	45,235.	9,047.	ppb	0.49	200000.	
27 Al	150,600.	30,120.	ppb	2.15	200000.	
28 Si	3,399.5	679.9	ppb	4.09	#VALUE!	
29 Si	2,841.	568.2	ppb	1.28	10000.	
39 K	45,615.	9,123.	ppb	1.40	200000.	
43 Ca	56,300.	11,260.	ppb	0.75	#VALUE!	
44 Ca	54,900.	10,980.	ppb	1.35	200000.	
51 V	251.4	50.28	ppb	0.64	1000.	
52 Cr	141.15	28.23	ppb	1.58	2000.	
53 Cr	209.2	41.84	ppb	2.64	#VALUE!	
55 Mn	2,952.	590.4	ppb	0.90	2000.	
56 Fe	130,350.	26,070.	ppb	0.82	#VALUE!	
57 Fe	127,650.	25,530.	ppb	1.71	100000.	
59 Co	57.85	11.57	ppb	2.18	1000.	
60 Ni	113.2	22.64	ppb	0.82	1000.	
63 Cu	96.2	19.24	ppb	0.64	#VALUE!	
65 Cu	97.9	19.58	ppb	0.89	2000.	
66 Zn	378.85	75.77	ppb	1.32	2000.	
68 Zn	423.95	84.79	ppb	1.61	#VALUE!	
75 As	18.82	3.764	ppb	5.90	1000.	
82 Se	3.9295	0.7859	ppb	16.52	1000.	
88 Sr	543.5	108.7	ppb	1.26	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.9205	0.7841	ppb	1.55	1000.	
107 Ag	0.7915	0.1583	ppb	6.36	100.	
109 Ag	0.6865	0.1373	ppb	2.74	#VALUE!	
111 Cd	2.3075	0.4615	ppb	8.29	#VALUE!	
114 Cd	1.01	0.202	ppb	2.27	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.8	10.36	ppb	2.11	1000.	
120 Sn	52.9	10.58	ppb	2.35	#VALUE!	
121 Sb	1.4005	0.2801	ppb	5.53	#VALUE!	
123 Sb	1.418	0.2836	ppb	11.18	1000.	
135 Ba	1,993.5	398.7	ppb	1.66	2000.	
137 Ba	1,966.5	393.3	ppb	1.48	#VALUE!	
182 W	0.811	0.1622	ppb	6.65	1000.	
203 Tl	2.5075	0.5015	ppb	6.79	1000.	
205 Tl	2.489	0.4978	ppb	3.82	#VALUE!	
208 Pb	108.5	21.7	ppb	0.65	2000.	
232 Th	89.65	17.93	ppb	0.55	1000.	
238 U	8.575	1.715	ppb	2.84	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1857514.10	2.66	1729334.00	107.4	69.5 - 120	
45 Sc	2653619.50	1.48	2274967.30	116.6	69.5 - 120	
72 Ge	658233.56	0.72	590563.19	111.5	69.5 - 120	
159 Tb	6464845.50	1.43	6367688.00	101.5	69.5 - 120	
209 Bi	2732426.50	1.14	2872959.00	95.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000803

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\073SMPL.D\073SMPL.D#
Date Acquired: May 10 2018 10:29 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-061
Misc Info:
Vial Number: 2402
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.	1.6	ppb	0.35	100.	
11 B	194.2	38.84	ppb	4.09	1000.	
23 Na	10,200.	2,040.	ppb	2.46	200000.	
25 Mg	86,000.	17,200.	ppb	1.81	200000.	
27 Al	183,500.	36,700.	ppb	1.28	200000.	
28 Si	3,324.5	664.9	ppb	3.31	#VALUE!	
29 Si	2,774.5	554.9	ppb	3.77	10000.	
39 K	51,350.	10,270.	ppb	0.17	200000.	
43 Ca	389,250.	77,850.	ppb	1.05	#VALUE!	
44 Ca	358,100.	71,620.	ppb	0.85	200000.	
51 V	389.45	77.89	ppb	1.30	1000.	
52 Cr	161.55	32.31	ppb	0.46	2000.	
53 Cr	175.55	35.11	ppb	1.89	#VALUE!	
55 Mn	1,928.	385.6	ppb	1.31	2000.	
56 Fe	149,450.	29,890.	ppb	2.05	#VALUE!	
57 Fe	146,550.	29,310.	ppb	0.55	100000.	
59 Co	50.1	10.02	ppb	1.28	1000.	
60 Ni	125.2	25.04	ppb	1.45	1000.	
63 Cu	103.15	20.63	ppb	1.18	#VALUE!	
65 Cu	105.8	21.16	ppb	0.97	2000.	
66 Zn	409.	81.8	ppb	0.93	2000.	
68 Zn	458.85	91.77	ppb	0.55	#VALUE!	
75 As	59.25	11.85	ppb	0.77	1000.	
82 Se	4.427	0.8854	ppb	21.04	1000.	
88 Sr	1,428.5	285.7	ppb	1.73	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.5235	0.9047	ppb	4.06	1000.	
107 Ag	0.6785	0.1357	ppb	4.69	100.	
109 Ag	0.5435	0.1087	ppb	7.29	#VALUE!	
111 Cd	1.904	0.3808	ppb	4.96	#VALUE!	
114 Cd	0.2246	0.0449	ppb	49.22	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.45	10.09	ppb	2.62	1000.	
120 Sn	51.05	10.21	ppb	3.20	#VALUE!	
121 Sb	1.729	0.3458	ppb	4.25	#VALUE!	
123 Sb	1.7245	0.3449	ppb	2.60	1000.	
135 Ba	2,445.	489.	ppb	1.73	2000.	
137 Ba	2,447.5	489.5	ppb	1.56	#VALUE!	
182 W	0.6235	0.1247	ppb	5.90	1000.	
203 Tl	2.745	0.549	ppb	4.02	1000.	
205 Tl	2.799	0.5598	ppb	4.73	#VALUE!	
208 Pb	106.3	21.26	ppb	1.05	2000.	
232 Th	75.15	15.03	ppb	0.67	1000.	
238 U	11.365	2.273	ppb	0.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1779131.60	3.50	1729334.00	102.9	69.5 - 120	
45 Sc	2554290.50	3.19	2274967.30	112.3	69.5 - 120	
72 Ge	632559.44	1.45	590563.19	107.1	69.5 - 120	
159 Tb	6679887.00	2.18	6367688.00	104.9	69.5 - 120	
209 Bi	2773994.30	1.76	2872959.00	96.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000804

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\074SMPL.D\074SMPL.D#
Date Acquired: May 10 2018 10:34 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-062
Misc Info:
Vial Number: 2403
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.01	1.602	ppb	2.52	100.	
11 B	125.05	25.01	ppb	3.77	1000.	
23 Na	4,068.	813.6	ppb	3.48	200000.	
25 Mg	78,100.	15,620.	ppb	4.06	200000.	
27 Al	162,750.	32,550.	ppb	1.48	200000.	
28 Si	3,047.5	609.5	ppb	7.98	#VALUE!	
29 Si	2,470.5	494.1	ppb	2.18	10000.	
39 K	42,810.	8,562.	ppb	2.66	200000.	
43 Ca	461,050.	92,210.	ppb	2.14	#VALUE!	
44 Ca	428,300.	85,660.	ppb	1.37	200000.	
51 V	392.1	78.42	ppb	1.86	1000.	
52 Cr	148.4	29.68	ppb	0.20	2000.	
53 Cr	154.45	30.89	ppb	0.74	#VALUE!	
55 Mn	4,134.5	826.9	ppb	1.84	2000.	
56 Fe	155,200.	31,040.	ppb	1.01	#VALUE!	
57 Fe	149,850.	29,970.	ppb	1.97	100000.	
59 Co	136.	27.2	ppb	0.69	1000.	
60 Ni	189.6	37.92	ppb	0.87	1000.	
63 Cu	101.8	20.36	ppb	1.76	#VALUE!	
65 Cu	104.25	20.85	ppb	0.92	2000.	
66 Zn	367.	73.4	ppb	0.46	2000.	
68 Zn	451.	90.2	ppb	1.93	#VALUE!	
75 As	92.35	18.47	ppb	1.01	1000.	
82 Se	3.786	0.7572	ppb	19.31	1000.	
88 Sr	1,347.	269.4	ppb	0.98	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.495	1.099	ppb	0.34	1000.	
107 Ag	0.654	0.1308	ppb	3.46	100.	
109 Ag	0.4748	0.095	ppb	7.26	#VALUE!	
111 Cd	2.016	0.4032	ppb	7.81	#VALUE!	
114 Cd	0.4425	0.0885	ppb	1.74	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.755	9.751	ppb	1.68	1000.	
120 Sn	49.085	9.817	ppb	1.51	#VALUE!	
121 Sb	1.779	0.3558	ppb	5.17	#VALUE!	
123 Sb	1.7455	0.3491	ppb	5.52	1000.	
135 Ba	3,321.	664.2	ppb	1.66	2000.	
137 Ba	3,288.5	657.7	ppb	1.24	#VALUE!	
182 W	1.1185	0.2237	ppb	2.98	1000.	
203 Tl	2.71	0.542	ppb	2.94	1000.	
205 Tl	2.6985	0.5397	ppb	2.60	#VALUE!	
208 Pb	117.5	23.5	ppb	1.08	2000.	
232 Th	76.55	15.31	ppb	0.37	1000.	
238 U	10.945	2.189	ppb	0.50	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1798172.30	5.20	1729334.00	104.0	69.5 - 120	
45 Sc	2568080.50	2.66	2274967.30	112.9	69.5 - 120	
72 Ge	635692.19	1.74	590563.19	107.6	69.5 - 120	
159 Tb	6739917.50	0.85	6367688.00	105.8	69.5 - 120	
209 Bi	2827495.50	0.79	2872959.00	98.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000805

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\075SMPL.D\075SMPL.D#
Date Acquired: May 10 2018 10:38 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2404
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0032	-0.0032	ppb	73.61	100.	
11 B	2.443	2.443	ppb	10.19	1000.	
23 Na	-1.141	-1.141	ppb	37.32	200000.	
25 Mg	0.2479	0.2479	ppb	31.69	200000.	
27 Al	0.724	0.724	ppb	21.31	200000.	
28 Si	14.56	14.56	ppb	69.57	#VALUE!	
29 Si	-113.2	-113.2	ppb	7.15	10000.	LOW
39 K	-11.21	-11.21	ppb	4.88	200000.	
43 Ca	-5.99	-5.99	ppb	39.25	#VALUE!	
44 Ca	-2.03	-2.03	ppb	32.49	200000.	
51 V	0.1043	0.1043	ppb	37.57	1000.	
52 Cr	-0.0308	-0.0308	ppb	153.86	2000.	
53 Cr	-2.711	-2.711	ppb	2.15	#VALUE!	
55 Mn	0.0015	0.0015	ppb	480.62	2000.	
56 Fe	8.046	8.046	ppb	32.40	#VALUE!	
57 Fe	4.39	4.39	ppb	45.19	100000.	
59 Co	0.0043	0.0043	ppb	104.47	1000.	
60 Ni	0.009	0.009	ppb	135.82	1000.	
63 Cu	0.0974	0.0974	ppb	13.33	#VALUE!	
65 Cu	0.0873	0.0873	ppb	6.91	2000.	
66 Zn	0.0347	0.0347	ppb	141.90	2000.	
68 Zn	-0.0175	-0.0175	ppb	120.53	#VALUE!	
75 As	-0.1163	-0.1163	ppb	115.05	1000.	
82 Se	-0.0074	-0.0074	ppb	730.11	1000.	
88 Sr	0.0036	0.0036	ppb	112.22	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0013	0.0013	ppb	171.77	1000.	
107 Ag	-0.0002	-0.0002	ppb	637.58	100.	
109 Ag	0.0006	0.0006	ppb	73.21	#VALUE!	
111 Cd	-0.1001	-0.1001	ppb	8.65	#VALUE!	
114 Cd	-0.0005	-0.0005	ppb	295.42	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0239	0.0239	ppb	40.74	1000.	
120 Sn	0.0129	0.0129	ppb	76.76	#VALUE!	
121 Sb	0.0015	0.0015	ppb	85.63	#VALUE!	
123 Sb	0.0019	0.0019	ppb	142.06	1000.	
135 Ba	0.0121	0.0121	ppb	55.19	2000.	
137 Ba	0.0014	0.0014	ppb	186.36	#VALUE!	
182 W	0.0044	0.0044	ppb	130.36	1000.	
203 Tl	-0.0105	-0.0105	ppb	66.80	1000.	
205 Tl	-0.0255	-0.0255	ppb	29.73	#VALUE!	
208 Pb	0.0849	0.0849	ppb	25.59	2000.	
232 Th	0.0102	0.0102	ppb	33.58	1000.	
238 U	0.0003	0.0003	ppb	171.41	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1843730.60	0.41	1729334.00	106.6	69.5 - 120	
45 Sc	2478963.00	1.19	2274967.30	109.0	69.5 - 120	
72 Ge	634228.19	1.00	590563.19	107.4	69.5 - 120	
159 Tb	6142144.50	1.75	6367688.00	96.5	69.5 - 120	
209 Bi	2714387.00	1.01	2872959.00	94.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000806

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\076_CCV.D\076_CCV.D#
Date Acquired: May 10 2018 10:42 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.7	ppb	2.15	25	98.8	
11 B	26.68	ppb	2.83	25	106.72	
23 Na	5,345.	ppb	5.30	5,000	106.9	
25 Mg	5,126.	ppb	3.00	5,000	102.52	
27 Al	503.	ppb	1.92	500	100.6	
28 Si	526.1	ppb	3.95	500	105.22	
29 Si	424.	ppb	9.91	500	84.8	Fail
39 K	5,024.	ppb	3.70	5,000	100.48	
43 Ca	5,192.	ppb	3.17	5,000	103.84	
44 Ca	5,247.	ppb	2.20	5,000	104.94	
51 V	26.23	ppb	0.75	25	104.92	
52 Cr	26.03	ppb	1.96	25	104.12	
53 Cr	23.72	ppb	2.84	25	94.88	
55 Mn	25.49	ppb	1.23	25	101.96	
56 Fe	5,097.	ppb	0.97	5,000	101.94	
57 Fe	5,266.	ppb	1.18	5,000	105.32	
59 Co	25.88	ppb	1.76	25	103.52	
60 Ni	26.24	ppb	1.10	25	104.96	
63 Cu	25.73	ppb	1.38	25	102.92	
65 Cu	25.72	ppb	2.32	25	102.88	
66 Zn	25.45	ppb	1.71	25	101.8	
68 Zn	25.42	ppb	1.67	25	101.68	
75 As	25.05	ppb	0.91	25	100.2	
82 Se	25.32	ppb	1.31	25	101.28	
88 Sr	24.14	ppb	1.33	25	96.56	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.19	ppb	1.48	25	96.76	
107 Ag	24.	ppb	1.84	25	96	
109 Ag	23.92	ppb	1.19	25	95.68	
111 Cd	23.7	ppb	1.87	25	94.8	
114 Cd	23.82	ppb	1.56	25	95.28	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	26.24	ppb	3.11	25	104.96	
120 Sn	26.6	ppb	2.87	25	106.4	
121 Sb	26.95	ppb	2.78	25	107.8	
123 Sb	26.72	ppb	2.56	25	106.88	
135 Ba	26.64	ppb	2.76	25	106.56	
137 Ba	26.48	ppb	1.92	25	105.92	
182 W	24.32	ppb	1.97	25	97.28	
203 Tl	24.92	ppb	1.84	25	99.68	
205 Tl	25.09	ppb	2.26	25	100.36	
208 Pb	25.04	ppb	1.93	25	100.16	
232 Th	24.48	ppb	1.68	25	97.92	
238 U	24.46	ppb	2.33	25	97.84	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1941317.50	0.90	1729334.00	112.3	80 - 120.4	
45 Sc	2650951.30	3.28	2274967.30	116.5	80 - 120.4	
72 Ge	653979.75	2.38	590563.19	110.7	80 - 120.4	
159 Tb	6360057.50	1.70	6367688.00	99.9	80 - 120.4	
209 Bi	2742282.30	1.13	2872959.00	95.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000807

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\077_CCB.D\077_CCB.D#
Date Acquired: May 10 2018 10:46 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0009	ppb	245.56	1.00	
11 B	2.445	ppb	8.86	1.00	
23 Na	-1.962	ppb	17.43	1.00	
25 Mg	0.6914	ppb	180.07	1.00	
27 Al	1.094	ppb	178.61	1.00	
28 Si	12.98	ppb	157.70	1.00	
29 Si	-108.9	ppb	17.24	1.00	
39 K	-10.36	ppb	11.76	1.00	
43 Ca	0.1417	ppb	5520.80	1.00	
44 Ca	-0.2504	ppb	1543.10	1.00	
51 V	0.0942	ppb	58.08	1.00	
52 Cr	0.0075	ppb	137.90	1.00	
53 Cr	-2.064	ppb	12.79	1.00	
55 Mn	0.0137	ppb	352.88	1.00	
56 Fe	8.47	ppb	19.72	1.00	
57 Fe	3.406	ppb	47.06	1.00	
59 Co	0.003	ppb	64.39	1.00	
60 Ni	-0.0018	ppb	440.01	1.00	
63 Cu	-0.0157	ppb	40.83	1.00	
65 Cu	-0.0233	ppb	65.98	1.00	
66 Zn	-0.0133	ppb	391.13	1.00	
68 Zn	0.0075	ppb	1129.20	1.00	
75 As	-0.0639	ppb	70.03	1.00	
82 Se	0.0233	ppb	125.27	1.00	
88 Sr	0.0067	ppb	183.78	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0266	ppb	61.73	1.00	
107 Ag	0.0036	ppb	87.90	1.00	
109 Ag	0.0034	ppb	30.93	1.00	
111 Cd	-0.0874	ppb	15.38	1.00	
114 Cd	0.0025	ppb	95.68	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0336	ppb	0.65	1.00	
120 Sn	0.0416	ppb	13.09	1.00	
121 Sb	0.0071	ppb	43.20	1.00	
123 Sb	0.0098	ppb	25.19	1.00	
135 Ba	0.0155	ppb	205.11	1.00	
137 Ba	0.0142	ppb	223.80	1.00	
182 W	0.0483	ppb	38.28	1.00	
203 Tl	-0.0176	ppb	47.43	1.00	
205 Tl	-0.0159	ppb	80.14	1.00	
208 Pb	-0.0352	ppb	24.40	1.00	
232 Th	0.0707	ppb	23.42	1.00	
238 U	0.005	ppb	25.31	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1880756.90	4.09	1729334.00	108.8	79.5 - 120	
45 Sc	2575648.50	2.70	2274967.30	113.2	79.5 - 120	
72 Ge	638556.69	1.69	590563.19	108.1	79.5 - 120	
159 Tb	5959972.00	0.45	6367688.00	93.6	79.5 - 120	
209 Bi	2587093.00	0.36	2872959.00	90.0	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\078SMPL.D\078SMPL.D#
Date Acquired: May 10 2018 10:51 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-063
Misc Info:
Vial Number: 2405
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.7	1.34	ppb	2.61	100.	
11 B	126.4	25.28	ppb	2.90	1000.	
23 Na	5,315.	1,063.	ppb	4.63	200000.	
25 Mg	73,150.	14,630.	ppb	2.91	200000.	
27 Al	141,850.	28,370.	ppb	0.76	200000.	
28 Si	3,310.	662.	ppb	3.05	#VALUE!	
29 Si	2,780.5	556.1	ppb	3.83	10000.	
39 K	34,810.	6,962.	ppb	2.92	200000.	
43 Ca	448,250.	89,650.	ppb	2.55	#VALUE!	
44 Ca	415,350.	83,070.	ppb	1.60	200000.	
51 V	265.55	53.11	ppb	2.36	1000.	
52 Cr	133.75	26.75	ppb	1.19	2000.	
53 Cr	145.	29.	ppb	0.85	#VALUE!	
55 Mn	8,085.	1,617.	ppb	1.90	2000.	
56 Fe	140,400.	28,080.	ppb	2.49	#VALUE!	
57 Fe	135,150.	27,030.	ppb	0.97	100000.	
59 Co	72.85	14.57	ppb	1.39	1000.	
60 Ni	161.2	32.24	ppb	2.16	1000.	
63 Cu	90.85	18.17	ppb	1.38	#VALUE!	
65 Cu	90.6	18.12	ppb	1.98	2000.	
66 Zn	337.25	67.45	ppb	1.60	2000.	
68 Zn	405.9	81.18	ppb	1.79	#VALUE!	
75 As	20.045	4.009	ppb	1.39	1000.	
82 Se	2.5885	0.5177	ppb	57.60	1000.	
88 Sr	988.5	197.7	ppb	0.73	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	9.995	1.999	ppb	2.54	1000.	
107 Ag	0.705	0.141	ppb	2.10	100.	
109 Ag	0.56	0.112	ppb	4.70	#VALUE!	
111 Cd	2.3155	0.4631	ppb	4.15	#VALUE!	
114 Cd	0.973	0.1946	ppb	9.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.465	9.893	ppb	2.73	1000.	
120 Sn	50.65	10.13	ppb	2.62	#VALUE!	
121 Sb	1.446	0.2892	ppb	7.77	#VALUE!	
123 Sb	1.4645	0.2929	ppb	2.78	1000.	
135 Ba	2,915.5	583.1	ppb	1.97	2000.	
137 Ba	2,900.	580.	ppb	0.93	#VALUE!	
182 W	0.733	0.1466	ppb	2.85	1000.	
203 Tl	2.5055	0.5011	ppb	2.23	1000.	
205 Tl	2.5075	0.5015	ppb	3.64	#VALUE!	
208 Pb	104.95	20.99	ppb	1.16	2000.	
232 Th	69.45	13.89	ppb	1.20	1000.	
238 U	9.465	1.893	ppb	2.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1865359.40	3.54	1729334.00	107.9	69.5 - 120	
45 Sc	2590235.30	1.77	2274967.30	113.9	69.5 - 120	
72 Ge	635203.94	0.72	590563.19	107.6	69.5 - 120	
159 Tb	6586751.50	1.81	6367688.00	103.4	69.5 - 120	
209 Bi	2783500.00	2.54	2872959.00	96.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000809

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\079SMPL.D\079SMPL.D#
Date Acquired: May 10 2018 10:55 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-064
Misc Info:
Vial Number: 2406
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.61	1.722	ppb	3.73	100.	
11 B	143.8	28.76	ppb	6.91	1000.	
23 Na	3,383.5	676.7	ppb	1.78	200000.	
25 Mg	88,250.	17,650.	ppb	3.88	200000.	
27 Al	183,700.	36,740.	ppb	2.90	200000.	
28 Si	3,622.	724.4	ppb	14.74	#VALUE!	
29 Si	2,665.	533.	ppb	6.78	10000.	
39 K	45,745.	9,149.	ppb	1.41	200000.	
43 Ca	565,500.	113,100.	ppb	0.98	#VALUE!	
44 Ca	533,000.	106,600.	ppb	0.82	200000.	
51 V	423.75	84.75	ppb	1.92	1000.	
52 Cr	167.8	33.56	ppb	2.16	2000.	
53 Cr	175.9	35.18	ppb	1.76	#VALUE!	
55 Mn	3,651.	730.2	ppb	0.75	2000.	
56 Fe	188,800.	37,760.	ppb	0.82	#VALUE!	
57 Fe	182,100.	36,420.	ppb	0.72	100000.	
59 Co	68.45	13.69	ppb	2.18	1000.	
60 Ni	142.2	28.44	ppb	2.86	1000.	
63 Cu	110.75	22.15	ppb	1.17	#VALUE!	
65 Cu	110.8	22.16	ppb	1.60	2000.	
66 Zn	419.95	83.99	ppb	2.16	2000.	
68 Zn	468.8	93.76	ppb	1.04	#VALUE!	
75 As	119.3	23.86	ppb	1.74	1000.	
82 Se	4.1945	0.8389	ppb	13.80	1000.	
88 Sr	1,385.5	277.1	ppb	1.94	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.8105	0.9621	ppb	4.70	1000.	
107 Ag	0.768	0.1536	ppb	1.26	100.	
109 Ag	0.5765	0.1153	ppb	7.09	#VALUE!	
111 Cd	2.416	0.4832	ppb	6.47	#VALUE!	
114 Cd	0.6015	0.1203	ppb	6.59	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.295	9.859	ppb	1.41	1000.	
120 Sn	49.98	9.996	ppb	0.90	#VALUE!	
121 Sb	2.093	0.4186	ppb	1.48	#VALUE!	
123 Sb	2.0665	0.4133	ppb	4.47	1000.	
135 Ba	2,444.5	488.9	ppb	0.41	2000.	
137 Ba	2,442.5	488.5	ppb	1.65	#VALUE!	
182 W	0.6255	0.1251	ppb	3.26	1000.	
203 Tl	3.0755	0.6151	ppb	5.17	1000.	
205 Tl	2.9605	0.5921	ppb	4.17	#VALUE!	
208 Pb	127.3	25.46	ppb	1.86	2000.	
232 Th	78.75	15.75	ppb	2.12	1000.	
238 U	12.	2.4	ppb	1.88	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1781911.60	6.38	1729334.00	103.0	69.5 - 120	
45 Sc	2574719.80	2.58	2274967.30	113.2	69.5 - 120	
72 Ge	625977.00	2.13	590563.19	106.0	69.5 - 120	
159 Tb	6636538.00	0.21	6367688.00	104.2	69.5 - 120	
209 Bi	2775918.00	1.41	2872959.00	96.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000810

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\080SMPL.D\080SMPL.D#
Date Acquired: May 10 2018 10:59 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-065
Misc Info:
Vial Number: 2407
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.89	1.378	ppb	0.70	100.	
11 B	122.9	24.58	ppb	4.48	1000.	
23 Na	2,307.	461.4	ppb	3.52	200000.	
25 Mg	61,600.	12,320.	ppb	1.75	200000.	
27 Al	172,750.	34,550.	ppb	0.32	200000.	
28 Si	3,128.	625.6	ppb	3.68	#VALUE!	
29 Si	2,641.5	528.3	ppb	6.13	10000.	
39 K	40,430.	8,086.	ppb	2.61	200000.	
43 Ca	337,200.	67,440.	ppb	2.50	#VALUE!	
44 Ca	305,750.	61,150.	ppb	1.48	200000.	
51 V	305.2	61.04	ppb	1.50	1000.	
52 Cr	139.65	27.93	ppb	1.14	2000.	
53 Cr	149.65	29.93	ppb	3.15	#VALUE!	
55 Mn	1,818.5	363.7	ppb	0.29	2000.	
56 Fe	132,600.	26,520.	ppb	0.03	#VALUE!	
57 Fe	128,650.	25,730.	ppb	0.65	100000.	
59 Co	45.055	9.011	ppb	0.35	1000.	
60 Ni	107.05	21.41	ppb	1.15	1000.	
63 Cu	93.4	18.68	ppb	1.90	#VALUE!	
65 Cu	94.1	18.82	ppb	1.43	2000.	
66 Zn	340.45	68.09	ppb	1.81	2000.	
68 Zn	377.45	75.49	ppb	1.93	#VALUE!	
75 As	50.65	10.13	ppb	4.25	1000.	
82 Se	2.9505	0.5901	ppb	15.47	1000.	
88 Sr	1,038.	207.6	ppb	0.25	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	2.326	0.4652	ppb	6.12	1000.	
107 Ag	0.613	0.1226	ppb	3.46	100.	
109 Ag	0.5245	0.1049	ppb	4.54	#VALUE!	
111 Cd	1.8415	0.3683	ppb	7.89	#VALUE!	
114 Cd	0.2964	0.0593	ppb	11.31	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.71	9.742	ppb	1.60	1000.	
120 Sn	49.015	9.803	ppb	0.90	#VALUE!	
121 Sb	1.4945	0.2989	ppb	1.12	#VALUE!	
123 Sb	1.5095	0.3019	ppb	3.50	1000.	
135 Ba	1,616.	323.2	ppb	0.82	2000.	
137 Ba	1,598.	319.6	ppb	1.82	#VALUE!	
182 W	0.5345	0.1069	ppb	7.06	1000.	
203 Tl	2.334	0.4668	ppb	3.40	1000.	
205 Tl	2.344	0.4688	ppb	3.81	#VALUE!	
208 Pb	193.65	38.73	ppb	0.65	2000.	
232 Th	70.35	14.07	ppb	0.21	1000.	
238 U	9.235	1.847	ppb	0.65	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2077356.30	4.19	1729334.00	120.1	69.5 - 120	
45 Sc	2748142.00	1.84	2274967.30	120.8	69.5 - 120	IS Fai
72 Ge	675172.00	0.38	590563.19	114.3	69.5 - 120	
159 Tb	6846996.50	0.72	6367688.00	107.5	69.5 - 120	
209 Bi	2917011.50	0.38	2872959.00	101.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000811

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\081SMPL.D\081SMPL.D#
Date Acquired: May 10 2018 11:03 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2408
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0033	-0.0033	ppb	16.08	100.	
11 B	2.183	2.183	ppb	8.50	1000.	
23 Na	-1.65	-1.65	ppb	22.76	200000.	
25 Mg	0.2076	0.2076	ppb	56.46	200000.	
27 Al	0.7218	0.7218	ppb	12.51	200000.	
28 Si	-1.044	-1.044	ppb	1379.30	#VALUE!	
29 Si	-132.5	-132.5	ppb	12.15	10000.	LOW
39 K	-14.31	-14.31	ppb	19.66	200000.	
43 Ca	-7.985	-7.985	ppb	29.31	#VALUE!	
44 Ca	-1.01	-1.01	ppb	181.98	200000.	
51 V	0.1009	0.1009	ppb	26.43	1000.	
52 Cr	-0.0383	-0.0383	ppb	41.44	2000.	
53 Cr	-2.736	-2.736	ppb	2.33	#VALUE!	
55 Mn	-0.0078	-0.0078	ppb	32.01	2000.	
56 Fe	4.955	4.955	ppb	6.79	#VALUE!	
57 Fe	2.246	2.246	ppb	77.56	100000.	
59 Co	0.0053	0.0053	ppb	41.92	1000.	
60 Ni	0.0052	0.0052	ppb	268.24	1000.	
63 Cu	0.104	0.104	ppb	7.02	#VALUE!	
65 Cu	0.0966	0.0966	ppb	13.72	2000.	
66 Zn	0.0392	0.0392	ppb	45.89	2000.	
68 Zn	0.0365	0.0365	ppb	36.70	#VALUE!	
75 As	0.0014	0.0014	ppb	3179.20	1000.	
82 Se	-0.0425	-0.0425	ppb	187.37	1000.	
88 Sr	0.0009	0.0009	ppb	124.66	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	-0.0027	-0.0027	ppb	47.29	1000.	
107 Ag	0.0015	0.0015	ppb	64.09	100.	
109 Ag	0.0006	0.0006	ppb	34.86	#VALUE!	
111 Cd	-0.0981	-0.0981	ppb	19.60	#VALUE!	
114 Cd	-0.0018	-0.0018	ppb	182.17	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0199	0.0199	ppb	28.84	1000.	
120 Sn	0.0149	0.0149	ppb	79.97	#VALUE!	
121 Sb	0.0016	0.0016	ppb	185.51	#VALUE!	
123 Sb	0.0018	0.0018	ppb	45.48	1000.	
135 Ba	0.007	0.007	ppb	54.03	2000.	
137 Ba	0.0032	0.0032	ppb	149.07	#VALUE!	
182 W	0.0019	0.0019	ppb	200.37	1000.	
203 Tl	-0.0202	-0.0202	ppb	58.53	1000.	
205 Tl	-0.0227	-0.0227	ppb	18.36	#VALUE!	
208 Pb	0.0965	0.0965	ppb	5.16	2000.	
232 Th	0.0115	0.0115	ppb	27.29	1000.	
238 U	0.0004	0.0004	ppb	201.84	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1877818.90	3.56	1729334.00	108.6	69.5 - 120	
45 Sc	2568061.30	2.13	2274967.30	112.9	69.5 - 120	
72 Ge	646015.19	0.94	590563.19	109.4	69.5 - 120	
159 Tb	6186831.00	0.78	6367688.00	97.2	69.5 - 120	
209 Bi	2708923.80	0.92	2872959.00	94.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000812

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\082SMPL.D\082SMPL.D#
Date Acquired: May 10 2018 11:08 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2409
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0038	-0.0038	ppb	24.77	100.	
11 B	1.267	1.267	ppb	10.73	1000.	
23 Na	-1.776	-1.776	ppb	11.05	200000.	
25 Mg	0.2048	0.2048	ppb	25.53	200000.	
27 Al	0.8017	0.8017	ppb	19.90	200000.	
28 Si	2.296	2.296	ppb	777.00	#VALUE!	
29 Si	-139.1	-139.1	ppb	9.68	10000.	LOW
39 K	-15.31	-15.31	ppb	17.41	200000.	
43 Ca	-8.603	-8.603	ppb	15.13	#VALUE!	
44 Ca	-2.53	-2.53	ppb	20.91	200000.	
51 V	0.0445	0.0445	ppb	69.85	1000.	
52 Cr	0.002	0.002	ppb	487.55	2000.	
53 Cr	-1.655	-1.655	ppb	12.48	#VALUE!	
55 Mn	-0.0051	-0.0051	ppb	77.14	2000.	
56 Fe	5.11	5.11	ppb	39.90	#VALUE!	
57 Fe	3.919	3.919	ppb	18.11	100000.	
59 Co	0.0023	0.0023	ppb	229.48	1000.	
60 Ni	0.0041	0.0041	ppb	245.67	1000.	
63 Cu	0.0854	0.0854	ppb	2.42	#VALUE!	
65 Cu	0.0825	0.0825	ppb	13.29	2000.	
66 Zn	0.0153	0.0153	ppb	265.66	2000.	
68 Zn	-0.0443	-0.0443	ppb	103.12	#VALUE!	
75 As	0.0522	0.0522	ppb	163.88	1000.	
82 Se	0.0083	0.0083	ppb	1043.00	1000.	
88 Sr	0.0026	0.0026	ppb	13.22	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0019	0.0019	ppb	165.74	1000.	
107 Ag	-0.0011	-0.0011	ppb	86.92	100.	
109 Ag	0.0011	0.0011	ppb	58.92	#VALUE!	
111 Cd	-0.1001	-0.1001	ppb	15.55	#VALUE!	
114 Cd	-0.0005	-0.0005	ppb	616.12	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0134	0.0134	ppb	82.36	1000.	
120 Sn	0.0219	0.0219	ppb	56.94	#VALUE!	
121 Sb	0.0005	0.0005	ppb	577.70	#VALUE!	
123 Sb	-0.0011	-0.0011	ppb	104.52	1000.	
135 Ba	-0.0003	-0.0003	ppb	1136.40	2000.	
137 Ba	-0.0009	-0.0009	ppb	164.34	#VALUE!	
182 W	0.0011	0.0011	ppb	230.44	1000.	
203 Tl	-0.0106	-0.0106	ppb	177.43	1000.	
205 Tl	-0.0142	-0.0142	ppb	49.12	#VALUE!	
208 Pb	0.0772	0.0772	ppb	12.67	2000.	
232 Th	0.0063	0.0063	ppb	10.87	1000.	
238 U	0.0004	0.0004	ppb	145.42	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1911041.30	3.90	1729334.00	110.5	69.5 - 120	
45 Sc	2619709.30	1.89	2274967.30	115.2	69.5 - 120	
72 Ge	650285.63	1.82	590563.19	110.1	69.5 - 120	
159 Tb	6121335.50	0.26	6367688.00	96.1	69.5 - 120	
209 Bi	2653405.50	1.33	2872959.00	92.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000813

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\083SMPL.D\083SMPL.D#
Date Acquired: May 10 2018 11:12 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE08IMS1
Misc Info:
Vial Number: 2410
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0138	-0.0028	ppb	9.99	100.	
11 B	6.26	1.252	ppb	14.15	1000.	
23 Na	19.065	3.813	ppb	18.34	200000.	
25 Mg	18.615	3.723	ppb	3.43	200000.	
27 Al	11.09	2.218	ppb	14.02	200000.	
28 Si	-62.7	-12.54	ppb	95.14	#VALUE!	
29 Si	-623.5	-124.7	ppb	13.44	10000.	LOW
39 K	-38.935	-7.787	ppb	31.40	200000.	
43 Ca	27.68	5.536	ppb	95.70	#VALUE!	
44 Ca	44.735	8.947	ppb	16.67	200000.	
51 V	0.705	0.141	ppb	70.18	1000.	
52 Cr	2.895	0.579	ppb	11.59	2000.	
53 Cr	30.185	6.037	ppb	6.07	#VALUE!	
55 Mn	0.2505	0.0501	ppb	8.69	2000.	
56 Fe	77.65	15.53	ppb	17.61	#VALUE!	
57 Fe	25.085	5.017	ppb	30.46	100000.	
59 Co	0.0121	0.0024	ppb	74.82	1000.	
60 Ni	0.4053	0.0811	ppb	10.06	1000.	
63 Cu	0.7895	0.1579	ppb	6.14	#VALUE!	
65 Cu	0.7525	0.1505	ppb	22.83	2000.	
66 Zn	0.664	0.1328	ppb	12.97	2000.	
68 Zn	0.934	0.1868	ppb	23.96	#VALUE!	
75 As	0.614	0.1228	ppb	103.42	1000.	
82 Se	0.4506	0.0901	ppb	116.75	1000.	
88 Sr	0.1982	0.0396	ppb	21.79	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0674	0.0135	ppb	21.10	1000.	
107 Ag	-0.0017	-0.0003	ppb	359.38	100.	
109 Ag	0.0095	0.0019	ppb	94.51	#VALUE!	
111 Cd	-0.612	-0.1224	ppb	9.22	#VALUE!	
114 Cd	-0.0392	-0.0078	ppb	82.74	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	38.715	7.743	ppb	1.41	1000.	
120 Sn	39.73	7.946	ppb	1.32	#VALUE!	
121 Sb	0.0212	0.0042	ppb	58.21	#VALUE!	
123 Sb	0.0264	0.0053	ppb	13.45	1000.	
135 Ba	0.3478	0.0696	ppb	28.87	2000.	
137 Ba	0.3331	0.0666	ppb	21.86	#VALUE!	
182 W	0.0032	0.0006	ppb	289.87	1000.	
203 Tl	-0.1181	-0.0236	ppb	13.58	1000.	
205 Tl	-0.1597	-0.0319	ppb	15.69	#VALUE!	
208 Pb	-0.1355	-0.0271	ppb	20.35	2000.	
232 Th	0.0528	0.0106	ppb	21.91	1000.	
238 U	0.0006	0.0001	ppb	309.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1781289.50	4.25	1729334.00	103.0	69.5 - 120	
45 Sc	2470995.30	3.21	2274967.30	108.6	69.5 - 120	
72 Ge	622078.13	1.81	590563.19	105.3	69.5 - 120	
159 Tb	6202279.50	2.07	6367688.00	97.4	69.5 - 120	
209 Bi	2720439.30	0.50	2872959.00	94.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000814

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\084SMPL.D\084SMPL.D#
Date Acquired: May 10 2018 11:16 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE08IMS1
Misc Info:
Vial Number: 2411
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	48.1	9.62	ppb	4.09	100.	
11 B	514.5	102.9	ppb	1.74	1000.	
23 Na	7,735.	1,547.	ppb	2.56	200000.	
25 Mg	4,915.5	983.1	ppb	2.82	200000.	
27 Al	2,098.	419.6	ppb	0.44	200000.	
28 Si	965.5	193.1	ppb	2.44	#VALUE!	
29 Si	391.65	78.33	ppb	12.04	10000.	
39 K	10,100.	2,020.	ppb	1.89	200000.	
43 Ca	2,819.5	563.9	ppb	4.20	#VALUE!	
44 Ca	2,416.5	483.3	ppb	1.36	200000.	
51 V	528.	105.6	ppb	2.63	1000.	
52 Cr	204.9	40.98	ppb	2.66	2000.	
53 Cr	240.45	48.09	ppb	1.30	#VALUE!	
55 Mn	518.5	103.7	ppb	0.34	2000.	
56 Fe	1,082.	216.4	ppb	2.70	#VALUE!	
57 Fe	1,061.	212.2	ppb	3.44	100000.	
59 Co	526.5	105.3	ppb	0.85	1000.	
60 Ni	514.5	102.9	ppb	2.53	1000.	
63 Cu	256.85	51.37	ppb	0.53	#VALUE!	
65 Cu	253.8	50.76	ppb	0.38	2000.	
66 Zn	487.85	97.57	ppb	1.01	2000.	
68 Zn	540.	108.	ppb	0.53	#VALUE!	
75 As	100.8	20.16	ppb	1.27	1000.	
82 Se	98.25	19.65	ppb	0.81	1000.	
88 Sr	488.	97.6	ppb	0.64	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	98.5	19.7	ppb	0.20	1000.	
107 Ag	49.175	9.835	ppb	0.46	100.	
109 Ag	48.905	9.781	ppb	0.34	#VALUE!	
111 Cd	238.8	47.76	ppb	0.24	#VALUE!	
114 Cd	238.2	47.64	ppb	0.25	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	566.5	113.3	ppb	1.54	1000.	
120 Sn	574.	114.8	ppb	2.31	#VALUE!	
121 Sb	107.55	21.51	ppb	1.79	#VALUE!	
123 Sb	106.5	21.3	ppb	1.70	1000.	
135 Ba	2,150.	430.	ppb	1.62	2000.	
137 Ba	2,157.5	431.5	ppb	1.21	#VALUE!	
182 W	102.2	20.44	ppb	1.34	1000.	
203 Tl	103.85	20.77	ppb	0.31	1000.	
205 Tl	103.4	20.68	ppb	0.65	#VALUE!	
208 Pb	104.5	20.9	ppb	0.46	2000.	
232 Th	101.25	20.25	ppb	1.46	1000.	
238 U	101.3	20.26	ppb	1.70	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1919751.60	0.44	1729334.00	111.0	69.5 - 120	
45 Sc	2530575.00	1.16	2274967.30	111.2	69.5 - 120	
72 Ge	634676.00	0.87	590563.19	107.5	69.5 - 120	
159 Tb	6367691.00	1.45	6367688.00	100.0	69.5 - 120	
209 Bi	2763407.00	0.92	2872959.00	96.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000815

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\085SMPL.D\085SMPL.D#
Date Acquired: May 10 2018 11:20 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-016
Misc Info:
Vial Number: 2412
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.3	1.66	ppb	2.44	100.	
11 B	154.	30.8	ppb	1.55	1000.	
23 Na	3,959.	791.8	ppb	1.89	200000.	
25 Mg	95,350.	19,070.	ppb	2.07	200000.	
27 Al	170,900.	34,180.	ppb	3.40	200000.	
28 Si	2,539.	507.8	ppb	7.15	#VALUE!	
29 Si	1,949.5	389.9	ppb	4.63	10000.	
39 K	45,905.	9,181.	ppb	1.64	200000.	
43 Ca	672,000.	134,400.	ppb	0.91	#VALUE!	
44 Ca	618,500.	123,700.	ppb	1.14	200000.	
51 V	345.25	69.05	ppb	0.59	1000.	
52 Cr	155.75	31.15	ppb	1.12	2000.	
53 Cr	157.15	31.43	ppb	1.83	#VALUE!	
55 Mn	2,473.5	494.7	ppb	2.23	2000.	
56 Fe	159,850.	31,970.	ppb	2.35	#VALUE!	
57 Fe	155,750.	31,150.	ppb	1.67	100000.	
59 Co	59.35	11.87	ppb	1.72	1000.	
60 Ni	127.7	25.54	ppb	2.16	1000.	
63 Cu	101.1	20.22	ppb	2.38	#VALUE!	
65 Cu	102.75	20.55	ppb	2.03	2000.	
66 Zn	379.4	75.88	ppb	1.16	2000.	
68 Zn	487.9	97.58	ppb	1.57	#VALUE!	
75 As	50.45	10.09	ppb	1.68	1000.	
82 Se	3.691	0.7382	ppb	8.34	1000.	
88 Sr	1,716.	343.2	ppb	0.75	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.0875	0.6175	ppb	3.16	1000.	
107 Ag	0.7975	0.1595	ppb	7.08	100.	
109 Ag	0.638	0.1276	ppb	6.14	#VALUE!	
111 Cd	2.031	0.4062	ppb	4.34	#VALUE!	
114 Cd	0.4797	0.0959	ppb	25.14	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.615	9.523	ppb	2.76	1000.	
120 Sn	48.255	9.651	ppb	1.25	#VALUE!	
121 Sb	1.845	0.369	ppb	4.75	#VALUE!	
123 Sb	1.853	0.3706	ppb	4.26	1000.	
135 Ba	4,000.5	800.1	ppb	2.45	2000.	
137 Ba	3,931.5	786.3	ppb	2.51	#VALUE!	
182 W	0.7065	0.1413	ppb	1.15	1000.	
203 Tl	2.8565	0.5713	ppb	6.59	1000.	
205 Tl	2.6485	0.5297	ppb	2.49	#VALUE!	
208 Pb	105.55	21.11	ppb	2.65	2000.	
232 Th	77.3	15.46	ppb	2.55	1000.	
238 U	13.46	2.692	ppb	2.83	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1866194.40	2.69	1729334.00	107.9	69.5 - 120	
45 Sc	2610776.50	0.88	2274967.30	114.8	69.5 - 120	
72 Ge	636427.94	0.74	590563.19	107.8	69.5 - 120	
159 Tb	6708053.50	2.79	6367688.00	105.3	69.5 - 120	
209 Bi	2772792.80	3.66	2872959.00	96.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000816

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\086SMPL.D\086SMPL.D#
Date Acquired: May 10 2018 11:24 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-016L
Misc Info:
Vial Number: 2501
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.23	0.3292	ppb	6.52	100.	
11 B	192.425	7.697	ppb	5.77	1000.	
23 Na	4,437.5	177.5	ppb	5.63	200000.	
25 Mg	106,325.	4,253.	ppb	1.44	200000.	
27 Al	179,850.	7,194.	ppb	1.50	200000.	
28 Si	1,483.25	59.33	ppb	16.35	#VALUE!	
29 Si	-1,719.75	-68.79	ppb	25.61	10000.	
39 K	48,600.	1,944.	ppb	2.62	200000.	
43 Ca	690,500.	27,620.	ppb	4.53	#VALUE!	
44 Ca	663,000.	26,520.	ppb	3.22	200000.	
51 V	358.	14.32	ppb	2.10	1000.	
52 Cr	160.5	6.42	ppb	0.64	2000.	
53 Cr	96.625	3.865	ppb	2.75	#VALUE!	
55 Mn	2,675.	107.	ppb	1.63	2000.	
56 Fe	167,825.	6,713.	ppb	2.13	#VALUE!	
57 Fe	170,025.	6,801.	ppb	1.01	100000.	
59 Co	63.4	2.536	ppb	1.53	1000.	
60 Ni	136.2	5.448	ppb	1.63	1000.	
63 Cu	110.425	4.417	ppb	0.52	#VALUE!	
65 Cu	114.7	4.588	ppb	1.03	2000.	
66 Zn	429.	17.16	ppb	1.14	2000.	
68 Zn	541.75	21.67	ppb	1.93	#VALUE!	
75 As	51.85	2.074	ppb	6.26	1000.	
82 Se	4.865	0.1946	ppb	26.19	1000.	
88 Sr	1,826.75	73.07	ppb	0.91	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.1225	0.1249	ppb	3.16	1000.	
107 Ag	0.8673	0.0347	ppb	11.63	100.	
109 Ag	0.7388	0.0296	ppb	6.41	#VALUE!	
111 Cd	0.8093	0.0324	ppb	12.26	#VALUE!	
114 Cd	0.6063	0.0243	ppb	33.25	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.35	2.094	ppb	3.00	1000.	
120 Sn	51.85	2.074	ppb	3.19	#VALUE!	
121 Sb	2.1335	0.0853	ppb	11.26	#VALUE!	
123 Sb	2.0523	0.0821	ppb	6.25	1000.	
135 Ba	4,232.5	169.3	ppb	3.30	2000.	
137 Ba	4,215.	168.6	ppb	2.99	#VALUE!	
182 W	0.7453	0.0298	ppb	25.71	1000.	
203 Tl	2.63	0.1052	ppb	20.41	1000.	
205 Tl	2.3193	0.0928	ppb	11.69	#VALUE!	
208 Pb	106.475	4.259	ppb	1.73	2000.	
232 Th	73.35	2.934	ppb	2.41	1000.	
238 U	13.4	0.536	ppb	3.10	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2017276.00	1.98	1729334.00	116.7	69.5 - 120	
45 Sc	2684617.30	2.62	2274967.30	118.0	69.5 - 120	
72 Ge	657782.06	1.14	590563.19	111.4	69.5 - 120	
159 Tb	6558891.00	2.46	6367688.00	103.0	69.5 - 120	
209 Bi	2835460.30	1.77	2872959.00	98.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000817

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\087SMPL.D\087SMPL.D#
Date Acquired: May 10 2018 11:29 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-016A
Misc Info:
Vial Number: 2502
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	17.69	3.538	ppb	5.41	100.	
11 B	342.7	68.54	ppb	2.61	1000.	
23 Na	13,645.	2,729.	ppb	2.63	200000.	
25 Mg	95,050.	19,010.	ppb	1.33	200000.	
27 Al	169,950.	33,990.	ppb	0.96	200000.	
28 Si	7,635.	1,527.	ppb	0.81	#VALUE!	
29 Si	7,425.	1,485.	ppb	1.17	10000.	
39 K	54,550.	10,910.	ppb	2.50	200000.	
43 Ca	663,500.	132,700.	ppb	2.49	#VALUE!	
44 Ca	617,500.	123,500.	ppb	2.23	200000.	
51 V	401.55	80.31	ppb	1.66	1000.	
52 Cr	202.9	40.58	ppb	0.79	2000.	
53 Cr	211.8	42.36	ppb	1.66	#VALUE!	
55 Mn	2,436.5	487.3	ppb	0.66	2000.	
56 Fe	159,000.	31,800.	ppb	0.62	#VALUE!	
57 Fe	155,100.	31,020.	ppb	0.49	100000.	
59 Co	69.15	13.83	ppb	0.55	1000.	
60 Ni	142.45	28.49	ppb	1.13	1000.	
63 Cu	129.6	25.92	ppb	0.35	#VALUE!	
65 Cu	131.55	26.31	ppb	0.61	2000.	
66 Zn	474.55	94.91	ppb	0.95	2000.	
68 Zn	574.	114.8	ppb	0.84	#VALUE!	
75 As	100.45	20.09	ppb	1.10	1000.	
82 Se	52.7	10.54	ppb	1.81	1000.	
88 Sr	1,764.	352.8	ppb	1.25	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	53.95	10.79	ppb	0.46	1000.	
107 Ag	10.75	2.15	ppb	1.35	100.	
109 Ag	10.495	2.099	ppb	1.98	#VALUE!	
111 Cd	11.76	2.352	ppb	2.56	#VALUE!	
114 Cd	10.055	2.011	ppb	1.14	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	97.9	19.58	ppb	1.36	1000.	
120 Sn	99.1	19.82	ppb	1.29	#VALUE!	
121 Sb	12.43	2.486	ppb	1.26	#VALUE!	
123 Sb	11.965	2.393	ppb	3.42	1000.	
135 Ba	3,931.5	786.3	ppb	0.46	2000.	
137 Ba	3,873.	774.6	ppb	1.28	#VALUE!	
182 W	52.75	10.55	ppb	1.67	1000.	
203 Tl	13.555	2.711	ppb	3.07	1000.	
205 Tl	13.59	2.718	ppb	0.22	#VALUE!	
208 Pb	113.75	22.75	ppb	1.78	2000.	
232 Th	86.2	17.24	ppb	1.41	1000.	
238 U	24.085	4.817	ppb	1.43	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1830358.80	1.11	1729334.00	105.8	69.5 - 120	
45 Sc	2579548.00	1.89	2274967.30	113.4	69.5 - 120	
72 Ge	626067.94	1.22	590563.19	106.0	69.5 - 120	
159 Tb	6661249.50	1.07	6367688.00	104.6	69.5 - 120	
209 Bi	2777254.30	1.68	2872959.00	96.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000818

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\088_CCV.D\088_CCV.D#
Date Acquired: May 10 2018 11:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.88	ppb	3.09	25	99.52	
11 B	28.78	ppb	4.94	25	115.12	Fail
23 Na	5,172.	ppb	3.02	5,000	103.44	
25 Mg	5,112.	ppb	1.54	5,000	102.24	
27 Al	505.7	ppb	1.63	500	101.14	
28 Si	535.6	ppb	6.05	500	107.12	
29 Si	408.3	ppb	7.67	500	81.66	Fail
39 K	4,952.	ppb	4.30	5,000	99.04	
43 Ca	5,174.	ppb	3.64	5,000	103.48	
44 Ca	5,198.	ppb	2.52	5,000	103.96	
51 V	25.93	ppb	0.28	25	103.72	
52 Cr	25.98	ppb	1.68	25	103.92	
53 Cr	23.83	ppb	1.50	25	95.32	
55 Mn	25.32	ppb	1.10	25	101.28	
56 Fe	5,105.	ppb	0.26	5,000	102.1	
57 Fe	5,302.	ppb	1.79	5,000	106.04	
59 Co	25.96	ppb	0.56	25	103.84	
60 Ni	25.49	ppb	0.14	25	101.96	
63 Cu	25.77	ppb	0.67	25	103.08	
65 Cu	25.74	ppb	0.53	25	102.96	
66 Zn	25.22	ppb	0.82	25	100.88	
68 Zn	24.62	ppb	0.58	25	98.48	
75 As	25.15	ppb	0.47	25	100.6	
82 Se	25.37	ppb	0.64	25	101.48	
88 Sr	24.03	ppb	0.80	25	96.12	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.25	ppb	0.69	25	97	
107 Ag	24.21	ppb	1.40	25	96.84	
109 Ag	24.01	ppb	0.53	25	96.04	
111 Cd	23.7	ppb	1.10	25	94.8	
114 Cd	23.67	ppb	0.49	25	94.68	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	26.39	ppb	1.65	25	105.56	
120 Sn	27.	ppb	2.49	25	108	
121 Sb	27.24	ppb	2.25	25	108.96	
123 Sb	26.91	ppb	2.01	25	107.64	
135 Ba	27.15	ppb	2.91	25	108.6	
137 Ba	27.16	ppb	1.58	25	108.64	
182 W	24.42	ppb	2.18	25	97.68	
203 Tl	25.09	ppb	1.61	25	100.36	
205 Tl	25.14	ppb	1.52	25	100.56	
208 Pb	25.36	ppb	2.01	25	101.44	
232 Th	24.52	ppb	1.26	25	98.08	
238 U	24.7	ppb	1.65	25	98.8	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1925494.80	1.73	1729334.00	111.3	80 - 120.4	
45 Sc	2637535.30	3.65	2274967.30	115.9	80 - 120.4	
72 Ge	651021.75	0.90	590563.19	110.2	80 - 120.4	
159 Tb	6273307.50	1.70	6367688.00	98.5	80 - 120.4	
209 Bi	2709720.50	1.70	2872959.00	94.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000819

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\089_CCB.D\089_CCB.D#
Date Acquired: May 10 2018 11:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0041	ppb	3.44	1.00	
11 B	2.711	ppb	10.35	1.00	
23 Na	-2.776	ppb	3.08	1.00	
25 Mg	0.0054	ppb	916.36	1.00	
27 Al	0.0261	ppb	171.12	1.00	
28 Si	-15.64	ppb	39.51	1.00	
29 Si	-141.1	ppb	6.37	1.00	
39 K	-13.08	ppb	23.23	1.00	
43 Ca	-5.063	ppb	56.98	1.00	
44 Ca	-3.531	ppb	24.05	1.00	
51 V	0.11	ppb	99.18	1.00	
52 Cr	-0.0482	ppb	49.67	1.00	
53 Cr	-2.029	ppb	11.71	1.00	
55 Mn	-0.0098	ppb	65.11	1.00	
56 Fe	3.596	ppb	148.94	1.00	
57 Fe	3.339	ppb	36.60	1.00	
59 Co	0.002	ppb	101.07	1.00	
60 Ni	0.001	ppb	519.69	1.00	
63 Cu	-0.0201	ppb	24.25	1.00	
65 Cu	-0.0235	ppb	24.18	1.00	
66 Zn	0.0124	ppb	389.07	1.00	
68 Zn	-0.0178	ppb	13.13	1.00	
75 As	-0.029	ppb	155.75	1.00	
82 Se	0.0333	ppb	251.64	1.00	
88 Sr	0.0018	ppb	89.23	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0286	ppb	48.88	1.00	
107 Ag	0.0024	ppb	30.60	1.00	
109 Ag	0.0015	ppb	50.86	1.00	
111 Cd	-0.081	ppb	13.55	1.00	
114 Cd	-0.0007	ppb	356.97	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0405	ppb	19.10	1.00	
120 Sn	0.0259	ppb	31.47	1.00	
121 Sb	0.0078	ppb	43.91	1.00	
123 Sb	0.0055	ppb	14.43	1.00	
135 Ba	0.0142	ppb	35.04	1.00	
137 Ba	0.0003	ppb	1540.70	1.00	
182 W	0.0503	ppb	29.67	1.00	
203 Tl	-0.0178	ppb	86.75	1.00	
205 Tl	-0.0148	ppb	35.68	1.00	
208 Pb	-0.0587	ppb	14.75	1.00	
232 Th	0.0671	ppb	25.06	1.00	
238 U	0.0026	ppb	23.16	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2147813.50	3.73	1729334.00	124.2	79.5 - 120	ISFail
45 Sc	2847741.00	1.52	2274967.30	125.2	79.5 - 120	ISFail
72 Ge	693183.13	0.72	590563.19	117.4	79.5 - 120	
159 Tb	6228596.50	1.51	6367688.00	97.8	79.5 - 120	
209 Bi	2685634.30	2.15	2872959.00	93.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
2 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\090SMPL.D\090SMPL.D#
Date Acquired: May 10 2018 11:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-016S
Misc Info:
Vial Number: 2503
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	53.85	10.77	ppb	1.88	100.	
11 B	604.	120.8	ppb	4.44	1000.	
23 Na	11,550.	2,310.	ppb	1.95	200000.	
25 Mg	106,250.	21,250.	ppb	1.59	200000.	
27 Al	193,400.	38,680.	ppb	1.12	200000.	
28 Si	3,286.	657.2	ppb	5.07	#VALUE!	
29 Si	2,669.	533.8	ppb	2.08	10000.	
39 K	58,700.	11,740.	ppb	0.39	200000.	
43 Ca	804,000.	160,800.	ppb	1.16	#VALUE!	
44 Ca	761,500.	152,300.	ppb	1.61	200000.	
51 V	911.5	182.3	ppb	1.30	1000.	
52 Cr	371.3	74.26	ppb	0.75	2000.	
53 Cr	379.1	75.82	ppb	1.41	#VALUE!	
55 Mn	3,293.	658.6	ppb	0.81	2000.	
56 Fe	167,400.	33,480.	ppb	0.70	#VALUE!	
57 Fe	163,600.	32,720.	ppb	0.36	100000.	
59 Co	557.	111.4	ppb	0.62	1000.	
60 Ni	604.	120.8	ppb	0.68	1000.	
63 Cu	337.5	67.5	ppb	1.34	#VALUE!	
65 Cu	341.4	68.28	ppb	0.49	2000.	
66 Zn	832.5	166.5	ppb	0.65	2000.	
68 Zn	941.5	188.3	ppb	0.53	#VALUE!	
75 As	146.65	29.33	ppb	1.07	1000.	
82 Se	92.35	18.47	ppb	0.51	1000.	
88 Sr	2,360.5	472.1	ppb	1.51	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	92.2	18.44	ppb	0.90	1000.	
107 Ag	46.255	9.251	ppb	0.63	100.	
109 Ag	46.	9.2	ppb	0.19	#VALUE!	
111 Cd	227.55	45.51	ppb	0.98	#VALUE!	
114 Cd	223.55	44.71	ppb	0.81	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	521.5	104.3	ppb	1.74	1000.	
120 Sn	527.	105.4	ppb	1.97	#VALUE!	
121 Sb	32.28	6.456	ppb	2.63	#VALUE!	
123 Sb	31.81	6.362	ppb	1.68	1000.	
135 Ba	4,692.5	938.5	ppb	0.24	2000.	
137 Ba	4,587.5	917.5	ppb	1.34	#VALUE!	
182 W	44.465	8.893	ppb	1.17	1000.	
203 Tl	103.35	20.67	ppb	0.44	1000.	
205 Tl	104.2	20.84	ppb	0.84	#VALUE!	
208 Pb	211.05	42.21	ppb	0.79	2000.	
232 Th	180.7	36.14	ppb	1.53	1000.	
238 U	115.15	23.03	ppb	1.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1895222.50	3.17	1729334.00	109.6	69.5 - 120	
45 Sc	2584113.00	2.33	2274967.30	113.6	69.5 - 120	
72 Ge	618401.75	0.96	590563.19	104.7	69.5 - 120	
159 Tb	6517520.00	1.83	6367688.00	102.4	69.5 - 120	
209 Bi	2725280.50	2.04	2872959.00	94.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000821

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\091SMPL.D\091SMPL.D#
Date Acquired: May 10 2018 11:46 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-016P
Misc Info:
Vial Number: 2504
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	54.	10.8	ppb	2.63	100.	
11 B	633.5	126.7	ppb	2.15	1000.	
23 Na	12,450.	2,490.	ppb	2.46	200000.	
25 Mg	115,750.	23,150.	ppb	1.72	200000.	
27 Al	229,100.	45,820.	ppb	3.26	200000.	
28 Si	3,551.	710.2	ppb	9.26	#VALUE!	
29 Si	2,963.	592.6	ppb	8.03	10000.	
39 K	64,950.	12,990.	ppb	1.76	200000.	
43 Ca	547,000.	109,400.	ppb	1.00	#VALUE!	
44 Ca	499,000.	99,800.	ppb	1.40	200000.	
51 V	923.5	184.7	ppb	1.85	1000.	
52 Cr	396.45	79.29	ppb	2.28	2000.	
53 Cr	416.75	83.35	ppb	1.91	#VALUE!	
55 Mn	3,880.	776.	ppb	1.06	2000.	
56 Fe	191,350.	38,270.	ppb	1.70	#VALUE!	
57 Fe	187,900.	37,580.	ppb	0.91	100000.	
59 Co	581.	116.2	ppb	1.68	1000.	
60 Ni	637.	127.4	ppb	2.37	1000.	
63 Cu	353.25	70.65	ppb	1.67	#VALUE!	
65 Cu	354.4	70.88	ppb	0.69	2000.	
66 Zn	908.5	181.7	ppb	1.46	2000.	
68 Zn	1,021.5	204.3	ppb	2.30	#VALUE!	
75 As	132.75	26.55	ppb	0.78	1000.	
82 Se	91.85	18.37	ppb	1.67	1000.	
88 Sr	2,011.	402.2	ppb	1.68	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	92.85	18.57	ppb	0.93	1000.	
107 Ag	47.155	9.431	ppb	0.38	100.	
109 Ag	46.195	9.239	ppb	0.51	#VALUE!	
111 Cd	227.65	45.53	ppb	0.78	#VALUE!	
114 Cd	225.85	45.17	ppb	0.60	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	524.5	104.9	ppb	1.12	1000.	
120 Sn	533.5	106.7	ppb	1.66	#VALUE!	
121 Sb	35.115	7.023	ppb	1.77	#VALUE!	
123 Sb	34.765	6.953	ppb	2.31	1000.	
135 Ba	4,759.5	951.9	ppb	1.38	2000.	
137 Ba	4,649.	929.8	ppb	0.27	#VALUE!	
182 W	42.535	8.507	ppb	1.67	1000.	
203 Tl	105.7	21.14	ppb	1.07	1000.	
205 Tl	105.55	21.11	ppb	1.09	#VALUE!	
208 Pb	225.55	45.11	ppb	1.01	2000.	
232 Th	196.15	39.23	ppb	2.33	1000.	
238 U	116.	23.2	ppb	1.14	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1923920.60	4.53	1729334.00	111.3	69.5 - 120	
45 Sc	2592065.00	2.65	2274967.30	113.9	69.5 - 120	
72 Ge	620783.31	0.94	590563.19	105.1	69.5 - 120	
159 Tb	6540645.50	1.21	6367688.00	102.7	69.5 - 120	
209 Bi	2732008.00	2.01	2872959.00	95.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000822

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\092SMPL.D\092SMPL.D#
Date Acquired: May 10 2018 11:50 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-021
Misc Info:
Vial Number: 2505
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.865	1.773	ppb	3.95	100.	
11 B	210.85	42.17	ppb	1.33	1000.	
23 Na	2,698.	539.6	ppb	1.25	200000.	
25 Mg	69,350.	13,870.	ppb	2.00	200000.	
27 Al	230,300.	46,060.	ppb	1.16	200000.	
28 Si	2,877.5	575.5	ppb	4.73	#VALUE!	
29 Si	2,336.5	467.3	ppb	2.60	10000.	
39 K	62,300.	12,460.	ppb	1.23	200000.	
43 Ca	211,500.	42,300.	ppb	0.79	#VALUE!	
44 Ca	201,200.	40,240.	ppb	1.07	200000.	
51 V	405.6	81.12	ppb	0.49	1000.	
52 Cr	170.75	34.15	ppb	1.06	2000.	
53 Cr	209.35	41.87	ppb	1.60	#VALUE!	
55 Mn	3,287.5	657.5	ppb	1.39	2000.	
56 Fe	171,600.	34,320.	ppb	0.46	#VALUE!	
57 Fe	168,450.	33,690.	ppb	1.45	100000.	
59 Co	79.15	15.83	ppb	2.75	1000.	
60 Ni	145.55	29.11	ppb	1.62	1000.	
63 Cu	124.45	24.89	ppb	0.95	#VALUE!	
65 Cu	125.3	25.06	ppb	2.27	2000.	
66 Zn	492.05	98.41	ppb	1.72	2000.	
68 Zn	564.5	112.9	ppb	1.55	#VALUE!	
75 As	95.4	19.08	ppb	1.36	1000.	
82 Se	3.2965	0.6593	ppb	32.02	1000.	
88 Sr	966.5	193.3	ppb	0.32	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.285	1.257	ppb	4.98	1000.	
107 Ag	0.836	0.1672	ppb	3.35	100.	
109 Ag	0.6825	0.1365	ppb	7.71	#VALUE!	
111 Cd	2.564	0.5128	ppb	5.67	#VALUE!	
114 Cd	0.9235	0.1847	ppb	18.07	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.63	9.926	ppb	1.15	1000.	
120 Sn	49.88	9.976	ppb	1.77	#VALUE!	
121 Sb	2.2905	0.4581	ppb	2.03	#VALUE!	
123 Sb	2.2745	0.4549	ppb	1.97	1000.	
135 Ba	3,062.	612.4	ppb	2.39	2000.	
137 Ba	3,034.5	606.9	ppb	1.34	#VALUE!	
182 W	0.9125	0.1825	ppb	14.12	1000.	
203 Tl	3.092	0.6184	ppb	2.22	1000.	
205 Tl	2.984	0.5968	ppb	1.00	#VALUE!	
208 Pb	149.5	29.9	ppb	0.75	2000.	
232 Th	87.15	17.43	ppb	1.35	1000.	
238 U	9.71	1.942	ppb	1.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1893181.40	3.51	1729334.00	109.5	69.5 - 120	
45 Sc	2699819.30	2.93	2274967.30	118.7	69.5 - 120	
72 Ge	654676.56	1.28	590563.19	110.9	69.5 - 120	
159 Tb	6477844.50	1.41	6367688.00	101.7	69.5 - 120	
209 Bi	2710166.50	1.49	2872959.00	94.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000823

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\093SMPL.D\093SMPL.D#
Date Acquired: May 10 2018 11:54 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-022
Misc Info:
Vial Number: 2506
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.44	2.088	ppb	2.22	100.	
11 B	164.9	32.98	ppb	4.18	1000.	
23 Na	3,398.5	679.7	ppb	2.83	200000.	
25 Mg	98,900.	19,780.	ppb	2.40	200000.	
27 Al	217,500.	43,500.	ppb	1.99	200000.	
28 Si	3,053.	610.6	ppb	3.18	#VALUE!	
29 Si	2,473.5	494.7	ppb	2.99	10000.	
39 K	55,250.	11,050.	ppb	2.06	200000.	
43 Ca	578,000.	115,600.	ppb	1.97	#VALUE!	
44 Ca	535,000.	107,000.	ppb	1.63	200000.	
51 V	442.75	88.55	ppb	2.01	1000.	
52 Cr	205.45	41.09	ppb	1.73	2000.	
53 Cr	208.85	41.77	ppb	0.71	#VALUE!	
55 Mn	6,355.	1,271.	ppb	1.30	2000.	
56 Fe	215,850.	43,170.	ppb	1.18	#VALUE!	
57 Fe	207,400.	41,480.	ppb	1.44	100000.	
59 Co	76.35	15.27	ppb	1.44	1000.	
60 Ni	215.55	43.11	ppb	1.32	1000.	
63 Cu	142.4	28.48	ppb	2.49	#VALUE!	
65 Cu	141.15	28.23	ppb	2.31	2000.	
66 Zn	557.5	111.5	ppb	2.69	2000.	
68 Zn	654.5	130.9	ppb	1.78	#VALUE!	
75 As	67.8	13.56	ppb	2.16	1000.	
82 Se	4.597	0.9194	ppb	9.20	1000.	
88 Sr	1,509.5	301.9	ppb	0.50	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.685	1.337	ppb	2.72	1000.	
107 Ag	0.8855	0.1771	ppb	3.83	100.	
109 Ag	0.697	0.1394	ppb	6.11	#VALUE!	
111 Cd	3.673	0.7346	ppb	1.56	#VALUE!	
114 Cd	1.487	0.2974	ppb	9.29	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.37	9.674	ppb	2.40	1000.	
120 Sn	49.29	9.858	ppb	2.36	#VALUE!	
121 Sb	3.542	0.7084	ppb	4.19	#VALUE!	
123 Sb	3.5485	0.7097	ppb	1.50	1000.	
135 Ba	3,974.	794.8	ppb	0.89	2000.	
137 Ba	3,915.	783.	ppb	0.91	#VALUE!	
182 W	0.7755	0.1551	ppb	4.57	1000.	
203 Tl	3.801	0.7602	ppb	4.05	1000.	
205 Tl	3.7335	0.7467	ppb	0.99	#VALUE!	
208 Pb	148.2	29.64	ppb	0.80	2000.	
232 Th	101.35	20.27	ppb	0.61	1000.	
238 U	14.025	2.805	ppb	0.59	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1844385.10	3.48	1729334.00	106.7	69.5 - 120	
45 Sc	2549027.80	2.58	2274967.30	112.0	69.5 - 120	
72 Ge	620317.94	1.22	590563.19	105.0	69.5 - 120	
159 Tb	6531388.00	1.90	6367688.00	102.6	69.5 - 120	
209 Bi	2745513.30	0.27	2872959.00	95.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000824

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\094SMPL.D\094SMPL.D#
Date Acquired: May 10 2018 11:59 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-023
Misc Info:
Vial Number: 2507
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.415	2.683	ppb	1.62	100.	
11 B	220.7	44.14	ppb	0.99	1000.	
23 Na	6,990.	1,398.	ppb	4.06	200000.	
25 Mg	129,300.	25,860.	ppb	1.42	200000.	
27 Al	273,800.	54,760.	ppb	0.92	200000.	
28 Si	3,344.5	668.9	ppb	2.98	#VALUE!	
29 Si	2,842.5	568.5	ppb	2.47	10000.	
39 K	70,300.	14,060.	ppb	3.70	200000.	
43 Ca	289,300.	57,860.	ppb	0.52	#VALUE!	
44 Ca	267,300.	53,460.	ppb	0.97	200000.	
51 V	595.	119.	ppb	1.81	1000.	
52 Cr	266.45	53.29	ppb	2.08	2000.	
53 Cr	299.1	59.82	ppb	0.76	#VALUE!	
55 Mn	2,227.5	445.5	ppb	1.53	2000.	
56 Fe	263,000.	52,600.	ppb	0.75	#VALUE!	
57 Fe	258,150.	51,630.	ppb	1.24	100000.	
59 Co	68.75	13.75	ppb	1.73	1000.	
60 Ni	184.05	36.81	ppb	0.89	1000.	
63 Cu	156.35	31.27	ppb	2.16	#VALUE!	
65 Cu	158.	31.6	ppb	2.30	2000.	
66 Zn	647.	129.4	ppb	1.21	2000.	
68 Zn	729.	145.8	ppb	1.01	#VALUE!	
75 As	68.45	13.69	ppb	1.41	1000.	
82 Se	4.797	0.9594	ppb	10.33	1000.	
88 Sr	1,356.5	271.3	ppb	0.26	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	2.772	0.5544	ppb	2.73	1000.	
107 Ag	1.2465	0.2493	ppb	5.90	100.	
109 Ag	1.0515	0.2103	ppb	4.60	#VALUE!	
111 Cd	3.092	0.6184	ppb	2.44	#VALUE!	
114 Cd	0.0169	0.0034	ppb	658.29	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.25	10.45	ppb	1.32	1000.	
120 Sn	53.35	10.67	ppb	1.39	#VALUE!	
121 Sb	2.714	0.5428	ppb	4.23	#VALUE!	
123 Sb	2.7595	0.5519	ppb	1.03	1000.	
135 Ba	3,424.	684.8	ppb	1.30	2000.	
137 Ba	3,371.5	674.3	ppb	0.66	#VALUE!	
182 W	0.573	0.1146	ppb	3.42	1000.	
203 Tl	3.9365	0.7873	ppb	5.78	1000.	
205 Tl	4.139	0.8278	ppb	3.41	#VALUE!	
208 Pb	187.35	37.47	ppb	0.32	2000.	
232 Th	127.8	25.56	ppb	0.83	1000.	
238 U	14.095	2.819	ppb	1.97	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1886019.80	3.04	1729334.00	109.1	69.5 - 120	
45 Sc	2726238.00	2.16	2274967.30	119.8	69.5 - 120	
72 Ge	649766.75	1.90	590563.19	110.0	69.5 - 120	
159 Tb	6510106.00	1.07	6367688.00	102.2	69.5 - 120	
209 Bi	2663589.30	0.06	2872959.00	92.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000825

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\095SMPL.D\095SMPL.D#
Date Acquired: May 11 2018 12:03 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-025
Misc Info:
Vial Number: 2508
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.07	1.814	ppb	1.77	100.	
11 B	173.15	34.63	ppb	3.75	1000.	
23 Na	4,158.5	831.7	ppb	4.52	200000.	
25 Mg	123,450.	24,690.	ppb	3.45	200000.	
27 Al	197,500.	39,500.	ppb	1.93	200000.	
28 Si	2,695.5	539.1	ppb	4.41	#VALUE!	
29 Si	2,302.	460.4	ppb	7.94	10000.	
39 K	50,900.	10,180.	ppb	5.02	200000.	
43 Ca	942,500.	188,500.	ppb	3.88	#VALUE!	
44 Ca	890,500.	178,100.	ppb	1.53	200000.	
51 V	438.85	87.77	ppb	1.20	1000.	
52 Cr	179.75	35.95	ppb	1.58	2000.	
53 Cr	182.3	36.46	ppb	1.42	#VALUE!	
55 Mn	3,661.	732.2	ppb	0.80	2000.	
56 Fe	192,550.	38,510.	ppb	1.05	#VALUE!	
57 Fe	186,550.	37,310.	ppb	1.22	100000.	
59 Co	73.45	14.69	ppb	2.30	1000.	
60 Ni	151.65	30.33	ppb	0.83	1000.	
63 Cu	116.	23.2	ppb	0.06	#VALUE!	
65 Cu	117.5	23.5	ppb	1.48	2000.	
66 Zn	453.05	90.61	ppb	0.30	2000.	
68 Zn	549.5	109.9	ppb	0.82	#VALUE!	
75 As	92.65	18.53	ppb	0.77	1000.	
82 Se	5.455	1.091	ppb	8.25	1000.	
88 Sr	2,960.	592.	ppb	1.78	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.7595	0.9519	ppb	1.41	1000.	
107 Ag	0.784	0.1568	ppb	3.24	100.	
109 Ag	0.6395	0.1279	ppb	8.30	#VALUE!	
111 Cd	3.139	0.6278	ppb	2.21	#VALUE!	
114 Cd	0.9705	0.1941	ppb	14.23	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.825	9.565	ppb	1.62	1000.	
120 Sn	48.105	9.621	ppb	0.24	#VALUE!	
121 Sb	2.3655	0.4731	ppb	4.92	#VALUE!	
123 Sb	2.3755	0.4751	ppb	1.34	1000.	
135 Ba	3,777.	755.4	ppb	0.66	2000.	
137 Ba	3,712.	742.4	ppb	0.39	#VALUE!	
182 W	0.8355	0.1671	ppb	5.65	1000.	
203 Tl	3.2395	0.6479	ppb	3.69	1000.	
205 Tl	3.2555	0.6511	ppb	2.32	#VALUE!	
208 Pb	127.4	25.48	ppb	0.39	2000.	
232 Th	87.3	17.46	ppb	0.87	1000.	
238 U	15.995	3.199	ppb	1.93	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1888617.90	2.74	1729334.00	109.2	69.5 - 120	
45 Sc	2638262.80	2.90	2274967.30	116.0	69.5 - 120	
72 Ge	627622.81	0.47	590563.19	106.3	69.5 - 120	
159 Tb	6573596.00	0.90	6367688.00	103.2	69.5 - 120	
209 Bi	2732486.50	1.16	2872959.00	95.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000826

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\096SMPL.D\096SMPL.D#
Date Acquired: May 11 2018 12:07 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-026
Misc Info:
Vial Number: 2509
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.335	1.267	ppb	2.23	100.	
11 B	102.55	20.51	ppb	0.23	1000.	
23 Na	1,226.	245.2	ppb	2.03	200000.	
25 Mg	33,455.	6,691.	ppb	1.41	200000.	
27 Al	125,050.	25,010.	ppb	3.09	200000.	
28 Si	3,036.5	607.3	ppb	2.12	#VALUE!	
29 Si	2,362.	472.4	ppb	3.54	10000.	
39 K	37,945.	7,589.	ppb	0.60	200000.	
43 Ca	29,920.	5,984.	ppb	2.85	#VALUE!	
44 Ca	29,910.	5,982.	ppb	2.53	200000.	
51 V	218.75	43.75	ppb	0.31	1000.	
52 Cr	126.9	25.38	ppb	0.33	2000.	
53 Cr	169.6	33.92	ppb	2.18	#VALUE!	
55 Mn	3,401.5	680.3	ppb	0.40	2000.	
56 Fe	119,300.	23,860.	ppb	1.04	#VALUE!	
57 Fe	116,950.	23,390.	ppb	1.74	100000.	
59 Co	52.85	10.57	ppb	0.77	1000.	
60 Ni	110.45	22.09	ppb	2.18	1000.	
63 Cu	101.75	20.35	ppb	0.55	#VALUE!	
65 Cu	101.15	20.23	ppb	0.45	2000.	
66 Zn	417.65	83.53	ppb	1.14	2000.	
68 Zn	455.3	91.06	ppb	0.63	#VALUE!	
75 As	19.47	3.894	ppb	3.54	1000.	
82 Se	4.124	0.8248	ppb	22.32	1000.	
88 Sr	323.75	64.75	ppb	1.64	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.545	1.109	ppb	1.32	1000.	
107 Ag	0.6795	0.1359	ppb	7.35	100.	
109 Ag	0.609	0.1218	ppb	3.37	#VALUE!	
111 Cd	3.564	0.7128	ppb	5.11	#VALUE!	
114 Cd	2.5265	0.5053	ppb	0.81	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.695	9.339	ppb	1.06	1000.	
120 Sn	46.545	9.309	ppb	0.45	#VALUE!	
121 Sb	1.9005	0.3801	ppb	3.38	#VALUE!	
123 Sb	1.995	0.399	ppb	3.03	1000.	
135 Ba	1,707.	341.4	ppb	0.29	2000.	
137 Ba	1,677.5	335.5	ppb	1.58	#VALUE!	
182 W	0.684	0.1368	ppb	4.51	1000.	
203 Tl	2.1325	0.4265	ppb	5.76	1000.	
205 Tl	2.298	0.4596	ppb	0.73	#VALUE!	
208 Pb	283.5	56.7	ppb	1.33	2000.	
232 Th	75.9	15.18	ppb	0.91	1000.	
238 U	9.19	1.838	ppb	1.39	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1893562.50	2.20	1729334.00	109.5	69.5 - 120	
45 Sc	2683825.80	1.02	2274967.30	118.0	69.5 - 120	
72 Ge	652982.25	0.82	590563.19	110.6	69.5 - 120	
159 Tb	6464167.00	0.26	6367688.00	101.5	69.5 - 120	
209 Bi	2748811.00	1.14	2872959.00	95.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000827

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\097SMPL.D\097SMPL.D#
Date Acquired: May 11 2018 12:11 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-027
Misc Info:
Vial Number: 2510
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.045	2.609	ppb	2.27	100.	
11 B	272.25	54.45	ppb	2.22	1000.	
23 Na	2,155.5	431.1	ppb	4.06	200000.	
25 Mg	115,600.	23,120.	ppb	1.31	200000.	
27 Al	294,700.	58,940.	ppb	1.00	200000.	
28 Si	3,088.	617.6	ppb	1.53	#VALUE!	
29 Si	2,445.	489.	ppb	1.76	10000.	
39 K	85,300.	17,060.	ppb	3.69	200000.	
43 Ca	372,100.	74,420.	ppb	1.40	#VALUE!	
44 Ca	343,250.	68,650.	ppb	2.11	200000.	
51 V	693.	138.6	ppb	0.87	1000.	
52 Cr	252.75	50.55	ppb	0.71	2000.	
53 Cr	279.	55.8	ppb	1.62	#VALUE!	
55 Mn	4,998.	999.6	ppb	1.80	2000.	
56 Fe	249,200.	49,840.	ppb	2.41	#VALUE!	
57 Fe	244,450.	48,890.	ppb	2.19	100000.	
59 Co	116.2	23.24	ppb	0.47	1000.	
60 Ni	220.25	44.05	ppb	0.66	1000.	
63 Cu	154.15	30.83	ppb	1.56	#VALUE!	
65 Cu	154.95	30.99	ppb	1.21	2000.	
66 Zn	627.	125.4	ppb	0.97	2000.	
68 Zn	736.	147.2	ppb	1.59	#VALUE!	
75 As	178.65	35.73	ppb	1.38	1000.	
82 Se	5.72	1.144	ppb	8.99	1000.	
88 Sr	2,213.	442.6	ppb	1.03	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	9.19	1.838	ppb	0.83	1000.	
107 Ag	1.0235	0.2047	ppb	3.35	100.	
109 Ag	0.807	0.1614	ppb	5.85	#VALUE!	
111 Cd	4.428	0.8856	ppb	3.27	#VALUE!	
114 Cd	1.332	0.2664	ppb	1.14	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.3	10.26	ppb	2.50	1000.	
120 Sn	51.9	10.38	ppb	2.01	#VALUE!	
121 Sb	3.0185	0.6037	ppb	3.10	#VALUE!	
123 Sb	3.011	0.6022	ppb	2.21	1000.	
135 Ba	4,327.5	865.5	ppb	1.22	2000.	
137 Ba	4,249.5	849.9	ppb	0.71	#VALUE!	
182 W	1.156	0.2312	ppb	0.48	1000.	
203 Tl	4.45	0.89	ppb	1.72	1000.	
205 Tl	4.5225	0.9045	ppb	1.10	#VALUE!	
208 Pb	190.05	38.01	ppb	0.50	2000.	
232 Th	119.	23.8	ppb	0.88	1000.	
238 U	13.22	2.644	ppb	1.87	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1895162.30	3.07	1729334.00	109.6	69.5 - 120	
45 Sc	2709184.50	1.55	2274967.30	119.1	69.5 - 120	
72 Ge	643129.56	1.29	590563.19	108.9	69.5 - 120	
159 Tb	6433365.50	1.56	6367688.00	101.0	69.5 - 120	
209 Bi	2672850.50	0.97	2872959.00	93.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000828

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\098SMPL.D\098SMPL.D#
Date Acquired: May 11 2018 12:16 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-028
Misc Info:
Vial Number: 2511
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.75	1.75	ppb	6.57	100.	
11 B	198.55	39.71	ppb	3.70	1000.	
23 Na	8,590.	1,718.	ppb	3.05	200000.	
25 Mg	95,800.	19,160.	ppb	1.87	200000.	
27 Al	200,850.	40,170.	ppb	2.99	200000.	
28 Si	3,772.5	754.5	ppb	5.24	#VALUE!	
29 Si	3,270.5	654.1	ppb	5.31	10000.	
39 K	49,755.	9,951.	ppb	1.37	200000.	
43 Ca	785,500.	157,100.	ppb	1.61	#VALUE!	
44 Ca	740,000.	148,000.	ppb	1.67	200000.	
51 V	406.05	81.21	ppb	2.80	1000.	
52 Cr	186.25	37.25	ppb	3.64	2000.	
53 Cr	195.15	39.03	ppb	5.26	#VALUE!	
55 Mn	10,755.	2,151.	ppb	1.29	2000.	>LDR
56 Fe	170,600.	34,120.	ppb	2.03	#VALUE!	
57 Fe	164,700.	32,940.	ppb	2.28	100000.	
59 Co	86.1	17.22	ppb	1.59	1000.	
60 Ni	199.9	39.98	ppb	3.08	1000.	
63 Cu	112.8	22.56	ppb	3.22	#VALUE!	
65 Cu	115.3	23.06	ppb	2.73	2000.	
66 Zn	423.8	84.76	ppb	3.88	2000.	
68 Zn	532.	106.4	ppb	4.14	#VALUE!	
75 As	35.875	7.175	ppb	8.04	1000.	
82 Se	4.68	0.936	ppb	20.17	1000.	
88 Sr	1,729.	345.8	ppb	0.90	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.7	3.54	ppb	3.02	1000.	
107 Ag	0.771	0.1542	ppb	7.94	100.	
109 Ag	0.6255	0.1251	ppb	5.37	#VALUE!	
111 Cd	3.4455	0.6891	ppb	3.55	#VALUE!	
114 Cd	1.322	0.2644	ppb	3.64	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.805	9.961	ppb	2.48	1000.	
120 Sn	50.35	10.07	ppb	3.02	#VALUE!	
121 Sb	2.3535	0.4707	ppb	4.55	#VALUE!	
123 Sb	2.311	0.4622	ppb	5.30	1000.	
135 Ba	4,275.	855.	ppb	2.57	2000.	
137 Ba	4,163.5	832.7	ppb	2.68	#VALUE!	
182 W	1.0055	0.2011	ppb	3.18	1000.	
203 Tl	3.258	0.6516	ppb	1.21	1000.	
205 Tl	3.197	0.6394	ppb	3.12	#VALUE!	
208 Pb	125.5	25.1	ppb	2.44	2000.	
232 Th	90.1	18.02	ppb	1.00	1000.	
238 U	13.675	2.735	ppb	2.42	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1838022.30	2.05	1729334.00	106.3	69.5 - 120	
45 Sc	2584755.50	0.66	2274967.30	113.6	69.5 - 120	
72 Ge	624057.19	1.34	590563.19	105.7	69.5 - 120	
159 Tb	6451347.50	2.64	6367688.00	101.3	69.5 - 120	
209 Bi	2709756.00	2.47	2872959.00	94.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000829

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\099SMPL.D\099SMPL.D#
Date Acquired: May 11 2018 12:20 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2512
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0024	-0.0024	ppb	76.37	100.	
11 B	3.371	3.371	ppb	9.33	1000.	
23 Na	-2.429	-2.429	ppb	9.22	200000.	
25 Mg	0.2024	0.2024	ppb	22.08	200000.	
27 Al	0.7504	0.7504	ppb	17.67	200000.	
28 Si	0.045	0.045	ppb	28800.00	#VALUE!	
29 Si	-134.3	-134.3	ppb	9.40	10000.	LOW
39 K	-10.43	-10.43	ppb	18.97	200000.	
43 Ca	-5.745	-5.745	ppb	60.78	#VALUE!	
44 Ca	-2.923	-2.923	ppb	35.31	200000.	
51 V	0.0745	0.0745	ppb	61.52	1000.	
52 Cr	-0.0436	-0.0436	ppb	86.73	2000.	
53 Cr	-1.895	-1.895	ppb	11.45	#VALUE!	
55 Mn	-0.0088	-0.0088	ppb	38.68	2000.	
56 Fe	11.57	11.57	ppb	38.96	#VALUE!	
57 Fe	6.517	6.517	ppb	11.85	100000.	
59 Co	0.0038	0.0038	ppb	77.23	1000.	
60 Ni	0.0062	0.0062	ppb	44.16	1000.	
63 Cu	0.0886	0.0886	ppb	14.19	#VALUE!	
65 Cu	0.1139	0.1139	ppb	10.69	2000.	
66 Zn	0.0045	0.0045	ppb	560.95	2000.	
68 Zn	0.1006	0.1006	ppb	101.79	#VALUE!	
75 As	0.0914	0.0914	ppb	44.96	1000.	
82 Se	-0.0213	-0.0213	ppb	320.06	1000.	
88 Sr	0.002	0.002	ppb	160.30	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0003	0.0003	ppb	1083.10	1000.	
107 Ag	0.0005	0.0005	ppb	200.77	100.	
109 Ag	0.	0.	ppb	2256.00	#VALUE!	
111 Cd	-0.097	-0.097	ppb	7.38	#VALUE!	
114 Cd	-0.0013	-0.0013	ppb	85.78	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0216	0.0216	ppb	46.32	1000.	
120 Sn	0.0191	0.0191	ppb	28.89	#VALUE!	
121 Sb	0.0016	0.0016	ppb	37.95	#VALUE!	
123 Sb	0.0019	0.0019	ppb	66.70	1000.	
135 Ba	0.0029	0.0029	ppb	217.10	2000.	
137 Ba	0.	0.	ppb	15782.00	#VALUE!	
182 W	0.0009	0.0009	ppb	147.37	1000.	
203 Tl	-0.0142	-0.0142	ppb	85.72	1000.	
205 Tl	-0.028	-0.028	ppb	31.91	#VALUE!	
208 Pb	0.0594	0.0594	ppb	16.48	2000.	
232 Th	0.0093	0.0093	ppb	42.92	1000.	
238 U	0.0003	0.0003	ppb	81.80	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2003877.60	1.04	1729334.00	115.9	69.5 - 120	
45 Sc	2699441.00	1.24	2274967.30	118.7	69.5 - 120	
72 Ge	664140.13	1.98	590563.19	112.5	69.5 - 120	
159 Tb	6157768.50	2.69	6367688.00	96.7	69.5 - 120	
209 Bi	2695973.50	1.18	2872959.00	93.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000830

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\100_CCV.D\100_CCV.D#
Date Acquired: May 11 2018 12:24 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.1	ppb	1.22	25	100.4	
11 B	26.8	ppb	3.81	25	107.2	
23 Na	5,270.	ppb	2.64	5,000	105.4	
25 Mg	5,105.	ppb	1.42	5,000	102.1	
27 Al	509.6	ppb	3.00	500	101.92	
28 Si	527.4	ppb	4.81	500	105.48	
29 Si	408.6	ppb	4.18	500	81.72	Fail
39 K	5,061.	ppb	0.47	5,000	101.22	
43 Ca	5,101.	ppb	1.21	5,000	102.02	
44 Ca	5,236.	ppb	1.60	5,000	104.72	
51 V	26.27	ppb	1.93	25	105.08	
52 Cr	25.85	ppb	0.28	25	103.4	
53 Cr	24.02	ppb	1.36	25	96.08	
55 Mn	25.59	ppb	1.20	25	102.36	
56 Fe	5,129.	ppb	0.89	5,000	102.58	
57 Fe	5,292.	ppb	1.34	5,000	105.84	
59 Co	26.11	ppb	1.76	25	104.44	
60 Ni	25.95	ppb	1.82	25	103.8	
63 Cu	26.03	ppb	0.90	25	104.12	
65 Cu	25.82	ppb	2.96	25	103.28	
66 Zn	25.85	ppb	1.33	25	103.4	
68 Zn	24.98	ppb	0.87	25	99.92	
75 As	25.43	ppb	1.20	25	101.72	
82 Se	25.11	ppb	0.13	25	100.44	
88 Sr	24.12	ppb	0.50	25	96.48	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.66	ppb	1.01	25	94.64	
107 Ag	23.9	ppb	0.86	25	95.6	
109 Ag	23.59	ppb	0.09	25	94.36	
111 Cd	23.28	ppb	1.08	25	93.12	
114 Cd	23.15	ppb	0.95	25	92.6	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	26.6	ppb	1.06	25	106.4	
120 Sn	26.98	ppb	0.76	25	107.92	
121 Sb	27.03	ppb	1.24	25	108.12	
123 Sb	26.82	ppb	1.11	25	107.28	
135 Ba	27.19	ppb	1.38	25	108.76	
137 Ba	26.94	ppb	0.79	25	107.76	
182 W	24.16	ppb	0.87	25	96.64	
203 Tl	24.91	ppb	1.40	25	99.64	
205 Tl	24.94	ppb	1.16	25	99.76	
208 Pb	24.96	ppb	0.74	25	99.84	
232 Th	24.43	ppb	1.47	25	97.72	
238 U	24.49	ppb	1.17	25	97.96	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2034212.60	1.62	1729334.00	117.6	80 - 120.4	
45 Sc	2751599.30	1.38	2274967.30	121.0	80 - 120.4	ISFail
72 Ge	665195.44	1.69	590563.19	112.6	80 - 120.4	
159 Tb	6276103.00	0.88	6367688.00	98.6	80 - 120.4	
209 Bi	2713734.30	0.15	2872959.00	94.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\101_CCB.D\101_CCB.D#
Date Acquired: May 11 2018 12:28 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0022	ppb	53.78	1.00	
11 B	2.727	ppb	9.35	1.00	
23 Na	-2.737	ppb	13.94	1.00	
25 Mg	-0.0338	ppb	108.97	1.00	
27 Al	-0.0329	ppb	129.49	1.00	
28 Si	10.18	ppb	187.52	1.00	
29 Si	-126.9	ppb	11.71	1.00	
39 K	-9.622	ppb	28.88	1.00	
43 Ca	-8.133	ppb	26.23	1.00	
44 Ca	-3.949	ppb	47.89	1.00	
51 V	0.1117	ppb	14.09	1.00	
52 Cr	-0.0174	ppb	69.14	1.00	
53 Cr	-1.726	ppb	11.74	1.00	
55 Mn	-0.0066	ppb	70.33	1.00	
56 Fe	9.189	ppb	15.73	1.00	
57 Fe	4.095	ppb	22.38	1.00	
59 Co	0.0043	ppb	108.02	1.00	
60 Ni	0.0045	ppb	95.07	1.00	
63 Cu	-0.0173	ppb	23.37	1.00	
65 Cu	-0.0229	ppb	10.07	1.00	
66 Zn	0.0083	ppb	931.39	1.00	
68 Zn	-0.0199	ppb	343.64	1.00	
75 As	-0.0279	ppb	605.53	1.00	
82 Se	-0.04	ppb	112.13	1.00	
88 Sr	0.0018	ppb	111.68	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0284	ppb	40.29	1.00	
107 Ag	0.0009	ppb	273.46	1.00	
109 Ag	0.0039	ppb	42.31	1.00	
111 Cd	-0.097	ppb	22.68	1.00	
114 Cd	-0.0002	ppb	762.30	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0428	ppb	30.05	1.00	
120 Sn	0.037	ppb	10.28	1.00	
121 Sb	0.0066	ppb	91.02	1.00	
123 Sb	0.0057	ppb	42.13	1.00	
135 Ba	0.0076	ppb	53.51	1.00	
137 Ba	-0.0006	ppb	1125.60	1.00	
182 W	0.0489	ppb	9.62	1.00	
203 Tl	-0.0164	ppb	68.07	1.00	
205 Tl	-0.023	ppb	31.46	1.00	
208 Pb	-0.0476	ppb	19.10	1.00	
232 Th	0.0622	ppb	19.43	1.00	
238 U	0.0023	ppb	63.45	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1981865.40	6.26	1729334.00	114.6	79.5 - 120	
45 Sc	2644180.50	3.38	2274967.30	116.2	79.5 - 120	
72 Ge	641719.75	1.58	590563.19	108.7	79.5 - 120	
159 Tb	5790339.50	0.70	6367688.00	90.9	79.5 - 120	
209 Bi	2575738.80	1.08	2872959.00	89.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\102SMPL.D\102SMPL.D#
Date Acquired: May 11 2018 12:33 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-029
Misc Info:
Vial Number: 3101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.82	1.964	ppb	5.16	100.	
11 B	175.85	35.17	ppb	3.91	1000.	
23 Na	3,477.	695.4	ppb	1.47	200000.	
25 Mg	96,700.	19,340.	ppb	1.39	200000.	
27 Al	214,300.	42,860.	ppb	2.32	200000.	
28 Si	2,871.	574.2	ppb	2.99	#VALUE!	
29 Si	2,342.	468.4	ppb	10.20	10000.	
39 K	59,100.	11,820.	ppb	1.00	200000.	
43 Ca	793,500.	158,700.	ppb	0.93	#VALUE!	
44 Ca	746,500.	149,300.	ppb	0.98	200000.	
51 V	429.25	85.85	ppb	0.41	1000.	
52 Cr	189.3	37.86	ppb	0.51	2000.	
53 Cr	191.7	38.34	ppb	0.53	#VALUE!	
55 Mn	5,205.	1,041.	ppb	0.60	2000.	
56 Fe	202,300.	40,460.	ppb	0.85	#VALUE!	
57 Fe	197,400.	39,480.	ppb	1.80	100000.	
59 Co	91.15	18.23	ppb	0.49	1000.	
60 Ni	174.6	34.92	ppb	0.87	1000.	
63 Cu	122.45	24.49	ppb	2.01	#VALUE!	
65 Cu	127.05	25.41	ppb	1.47	2000.	
66 Zn	492.85	98.57	ppb	0.79	2000.	
68 Zn	570.	114.	ppb	1.07	#VALUE!	
75 As	58.4	11.68	ppb	3.39	1000.	
82 Se	5.19	1.038	ppb	3.94	1000.	
88 Sr	2,133.	426.6	ppb	2.12	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.455	1.491	ppb	1.74	1000.	
107 Ag	0.873	0.1746	ppb	3.45	100.	
109 Ag	0.695	0.139	ppb	6.43	#VALUE!	
111 Cd	3.504	0.7008	ppb	2.98	#VALUE!	
114 Cd	1.564	0.3128	ppb	7.95	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.715	9.943	ppb	0.44	1000.	
120 Sn	50.25	10.05	ppb	1.01	#VALUE!	
121 Sb	2.4545	0.4909	ppb	3.67	#VALUE!	
123 Sb	2.415	0.483	ppb	3.58	1000.	
135 Ba	3,341.5	668.3	ppb	1.51	2000.	
137 Ba	3,294.5	658.9	ppb	0.17	#VALUE!	
182 W	0.999	0.1998	ppb	1.32	1000.	
203 Tl	3.3315	0.6663	ppb	1.77	1000.	
205 Tl	3.322	0.6644	ppb	3.43	#VALUE!	
208 Pb	145.75	29.15	ppb	0.08	2000.	
232 Th	90.55	18.11	ppb	0.50	1000.	
238 U	15.7	3.14	ppb	0.28	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1861851.60	1.71	1729334.00	107.7	69.5 - 120	
45 Sc	2641061.50	3.11	2274967.30	116.1	69.5 - 120	
72 Ge	621905.88	2.00	590563.19	105.3	69.5 - 120	
159 Tb	6482822.00	0.71	6367688.00	101.8	69.5 - 120	
209 Bi	2693049.30	0.41	2872959.00	93.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000833

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\103SMPL.D\103SMPL.D#
Date Acquired: May 11 2018 12:37 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-030
Misc Info:
Vial Number: 3102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.515	1.903	ppb	3.21	100.	
11 B	205.3	41.06	ppb	8.92	1000.	
23 Na	3,459.5	691.9	ppb	1.99	200000.	
25 Mg	88,350.	17,670.	ppb	3.28	200000.	
27 Al	214,300.	42,860.	ppb	0.52	200000.	
28 Si	3,435.	687.	ppb	3.49	#VALUE!	
29 Si	2,819.	563.8	ppb	2.79	10000.	
39 K	62,300.	12,460.	ppb	2.14	200000.	
43 Ca	572,500.	114,500.	ppb	1.09	#VALUE!	
44 Ca	528,500.	105,700.	ppb	1.51	200000.	
51 V	432.7	86.54	ppb	1.73	1000.	
52 Cr	188.6	37.72	ppb	1.22	2000.	
53 Cr	198.3	39.66	ppb	2.14	#VALUE!	
55 Mn	5,160.	1,032.	ppb	1.79	2000.	
56 Fe	183,450.	36,690.	ppb	2.61	#VALUE!	
57 Fe	179,800.	35,960.	ppb	1.62	100000.	
59 Co	89.75	17.95	ppb	0.68	1000.	
60 Ni	164.95	32.99	ppb	0.74	1000.	
63 Cu	118.2	23.64	ppb	0.43	#VALUE!	
65 Cu	118.55	23.71	ppb	1.31	2000.	
66 Zn	459.4	91.88	ppb	1.58	2000.	
68 Zn	524.	104.8	ppb	1.14	#VALUE!	
75 As	50.75	10.15	ppb	1.89	1000.	
82 Se	4.5395	0.9079	ppb	12.34	1000.	
88 Sr	1,749.	349.8	ppb	2.25	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.925	1.785	ppb	6.06	1000.	
107 Ag	0.8125	0.1625	ppb	5.63	100.	
109 Ag	0.7005	0.1401	ppb	1.36	#VALUE!	
111 Cd	2.787	0.5574	ppb	3.74	#VALUE!	
114 Cd	0.9935	0.1987	ppb	6.53	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.685	9.937	ppb	0.85	1000.	
120 Sn	50.8	10.16	ppb	0.19	#VALUE!	
121 Sb	2.296	0.4592	ppb	1.61	#VALUE!	
123 Sb	2.3375	0.4675	ppb	8.26	1000.	
135 Ba	2,865.5	573.1	ppb	0.35	2000.	
137 Ba	2,844.5	568.9	ppb	1.11	#VALUE!	
182 W	1.09	0.218	ppb	5.76	1000.	
203 Tl	3.944	0.7888	ppb	3.09	1000.	
205 Tl	3.765	0.753	ppb	4.06	#VALUE!	
208 Pb	153.7	30.74	ppb	1.10	2000.	
232 Th	89.75	17.95	ppb	1.41	1000.	
238 U	11.97	2.394	ppb	2.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1898986.90	5.22	1729334.00	109.8	69.5 - 120	
45 Sc	2627387.30	2.31	2274967.30	115.5	69.5 - 120	
72 Ge	633217.56	2.26	590563.19	107.2	69.5 - 120	
159 Tb	6487292.00	0.67	6367688.00	101.9	69.5 - 120	
209 Bi	2729435.00	0.94	2872959.00	95.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000834

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\104SMPL.D\104SMPL.D#
Date Acquired: May 11 2018 12:41 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-031
Misc Info:
Vial Number: 3103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.8	1.56	ppb	4.45	100.	
11 B	178.05	35.61	ppb	1.49	1000.	
23 Na	6,400.	1,280.	ppb	1.66	200000.	
25 Mg	96,250.	19,250.	ppb	2.47	200000.	
27 Al	178,250.	35,650.	ppb	2.20	200000.	
28 Si	3,232.5	646.5	ppb	4.37	#VALUE!	
29 Si	2,668.	533.6	ppb	5.69	10000.	
39 K	45,360.	9,072.	ppb	0.82	200000.	
43 Ca	680,000.	136,000.	ppb	0.67	#VALUE!	
44 Ca	635,500.	127,100.	ppb	1.66	200000.	
51 V	411.9	82.38	ppb	2.70	1000.	
52 Cr	168.45	33.69	ppb	0.80	2000.	
53 Cr	173.85	34.77	ppb	1.27	#VALUE!	
55 Mn	9,850.	1,970.	ppb	1.62	2000.	
56 Fe	171,850.	34,370.	ppb	3.79	#VALUE!	
57 Fe	166,350.	33,270.	ppb	1.95	100000.	
59 Co	72.1	14.42	ppb	1.51	1000.	
60 Ni	223.8	44.76	ppb	2.07	1000.	
63 Cu	118.3	23.66	ppb	2.43	#VALUE!	
65 Cu	120.	24.	ppb	1.27	2000.	
66 Zn	366.5	73.3	ppb	0.44	2000.	
68 Zn	447.2	89.44	ppb	2.72	#VALUE!	
75 As	81.2	16.24	ppb	2.33	1000.	
82 Se	3.9875	0.7975	ppb	23.34	1000.	
88 Sr	1,846.5	369.3	ppb	1.41	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.235	3.447	ppb	2.34	1000.	
107 Ag	0.7565	0.1513	ppb	13.01	100.	
109 Ag	0.562	0.1124	ppb	2.90	#VALUE!	
111 Cd	2.6755	0.5351	ppb	0.44	#VALUE!	
114 Cd	0.738	0.1476	ppb	21.56	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.53	9.506	ppb	2.38	1000.	
120 Sn	48.155	9.631	ppb	1.85	#VALUE!	
121 Sb	2.476	0.4952	ppb	3.91	#VALUE!	
123 Sb	2.388	0.4776	ppb	3.23	1000.	
135 Ba	3,059.	611.8	ppb	1.72	2000.	
137 Ba	3,018.	603.6	ppb	1.95	#VALUE!	
182 W	0.972	0.1944	ppb	3.11	1000.	
203 Tl	3.1805	0.6361	ppb	6.69	1000.	
205 Tl	3.294	0.6588	ppb	3.20	#VALUE!	
208 Pb	107.4	21.48	ppb	2.22	2000.	
232 Th	77.85	15.57	ppb	1.41	1000.	
238 U	13.555	2.711	ppb	2.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1906243.80	2.59	1729334.00	110.2	69.5 - 120	
45 Sc	2626910.30	2.51	2274967.30	115.5	69.5 - 120	
72 Ge	627794.25	2.30	590563.19	106.3	69.5 - 120	
159 Tb	6493969.00	1.64	6367688.00	102.0	69.5 - 120	
209 Bi	2712591.00	2.90	2872959.00	94.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000835

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\105SMPL.D\105SMPL.D#
Date Acquired: May 11 2018 12:46 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-032
Misc Info:
Vial Number: 3104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	12.735	2.547	ppb	7.96	100.	
11 B	281.9	56.38	ppb	4.98	1000.	
23 Na	8,195.	1,639.	ppb	3.30	200000.	
25 Mg	168,850.	33,770.	ppb	0.61	200000.	
27 Al	289,300.	57,860.	ppb	1.08	200000.	
28 Si	3,306.	661.2	ppb	2.99	#VALUE!	
29 Si	2,657.5	531.5	ppb	3.38	10000.	
39 K	73,800.	14,760.	ppb	1.96	200000.	
43 Ca	1,266,000.	253,200.	ppb	0.77	#VALUE!	
44 Ca	1,221,000.	244,200.	ppb	0.96	200000.	>LDR
51 V	634.	126.8	ppb	3.01	1000.	
52 Cr	270.05	54.01	ppb	1.78	2000.	
53 Cr	277.5	55.5	ppb	1.49	#VALUE!	
55 Mn	4,273.	854.6	ppb	2.49	2000.	
56 Fe	263,700.	52,740.	ppb	2.92	#VALUE!	
57 Fe	253,950.	50,790.	ppb	2.11	100000.	
59 Co	88.15	17.63	ppb	1.08	1000.	
60 Ni	194.65	38.93	ppb	1.33	1000.	
63 Cu	152.6	30.52	ppb	2.14	#VALUE!	
65 Cu	155.3	31.06	ppb	2.83	2000.	
66 Zn	570.	114.	ppb	1.64	2000.	
68 Zn	737.5	147.5	ppb	1.65	#VALUE!	
75 As	105.5	21.1	ppb	3.90	1000.	
82 Se	6.43	1.286	ppb	7.90	1000.	
88 Sr	3,757.5	751.5	ppb	1.40	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.295	1.459	ppb	0.36	1000.	
107 Ag	1.106	0.2212	ppb	7.67	100.	
109 Ag	0.8895	0.1779	ppb	11.47	#VALUE!	
111 Cd	4.1195	0.8239	ppb	0.91	#VALUE!	
114 Cd	0.868	0.1736	ppb	7.78	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.25	10.25	ppb	2.49	1000.	
120 Sn	51.9	10.38	ppb	2.52	#VALUE!	
121 Sb	2.97	0.594	ppb	1.53	#VALUE!	
123 Sb	3.0145	0.6029	ppb	2.46	1000.	
135 Ba	6,695.	1,339.	ppb	0.61	2000.	
137 Ba	6,555.	1,311.	ppb	0.85	#VALUE!	
182 W	0.8295	0.1659	ppb	9.54	1000.	
203 Tl	4.6485	0.9297	ppb	4.93	1000.	
205 Tl	4.691	0.9382	ppb	2.91	#VALUE!	
208 Pb	162.2	32.44	ppb	1.93	2000.	
232 Th	119.5	23.9	ppb	2.36	1000.	
238 U	27.93	5.586	ppb	2.89	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1837288.30	4.12	1729334.00	106.2	69.5 - 120	
45 Sc	2621178.00	1.87	2274967.30	115.2	69.5 - 120	
72 Ge	622263.00	1.43	590563.19	105.4	69.5 - 120	
159 Tb	6492462.00	1.30	6367688.00	102.0	69.5 - 120	
209 Bi	2657839.30	2.35	2872959.00	92.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000836

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\106SMPL.D\106SMPL.D#
Date Acquired: May 11 2018 12:50 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-033
Misc Info:
Vial Number: 3105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.51	1.502	ppb	1.31	100.	
11 B	148.1	29.62	ppb	2.07	1000.	
23 Na	8,400.	1,680.	ppb	1.43	200000.	
25 Mg	106,700.	21,340.	ppb	1.22	200000.	
27 Al	162,400.	32,480.	ppb	2.09	200000.	
28 Si	3,085.	617.	ppb	2.66	#VALUE!	
29 Si	2,563.5	512.7	ppb	5.23	10000.	
39 K	39,155.	7,831.	ppb	1.25	200000.	
43 Ca	1,413,500.	282,700.	ppb	1.95	#VALUE!	
44 Ca	1,334,500.	266,900.	ppb	0.95	200000.	>LDR
51 V	309.35	61.87	ppb	1.40	1000.	
52 Cr	151.05	30.21	ppb	0.34	2000.	
53 Cr	156.1	31.22	ppb	2.63	#VALUE!	
55 Mn	4,157.5	831.5	ppb	0.95	2000.	
56 Fe	148,800.	29,760.	ppb	1.70	#VALUE!	
57 Fe	144,000.	28,800.	ppb	0.22	100000.	
59 Co	66.35	13.27	ppb	0.96	1000.	
60 Ni	116.7	23.34	ppb	1.11	1000.	
63 Cu	89.4	17.88	ppb	0.99	#VALUE!	
65 Cu	92.05	18.41	ppb	1.19	2000.	
66 Zn	349.8	69.96	ppb	0.85	2000.	
68 Zn	419.8	83.96	ppb	0.34	#VALUE!	
75 As	30.955	6.191	ppb	4.00	1000.	
82 Se	5.485	1.097	ppb	21.81	1000.	
88 Sr	2,416.	483.2	ppb	0.85	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.635	1.127	ppb	3.09	1000.	
107 Ag	0.647	0.1294	ppb	5.69	100.	
109 Ag	0.4949	0.099	ppb	12.58	#VALUE!	
111 Cd	3.5875	0.7175	ppb	9.36	#VALUE!	
114 Cd	1.504	0.3008	ppb	7.22	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.745	9.549	ppb	1.60	1000.	
120 Sn	48.635	9.727	ppb	0.28	#VALUE!	
121 Sb	1.814	0.3628	ppb	6.63	#VALUE!	
123 Sb	1.831	0.3662	ppb	2.23	1000.	
135 Ba	2,901.5	580.3	ppb	1.58	2000.	
137 Ba	2,875.	575.	ppb	0.64	#VALUE!	
182 W	0.733	0.1466	ppb	6.37	1000.	
203 Tl	2.9845	0.5969	ppb	0.43	1000.	
205 Tl	2.8585	0.5717	ppb	3.77	#VALUE!	
208 Pb	108.25	21.65	ppb	0.85	2000.	
232 Th	74.9	14.98	ppb	0.57	1000.	
238 U	15.195	3.039	ppb	0.53	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1879703.30	2.27	1729334.00	108.7	69.5 - 120	
45 Sc	2591024.00	1.23	2274967.30	113.9	69.5 - 120	
72 Ge	622086.31	0.96	590563.19	105.3	69.5 - 120	
159 Tb	6422470.50	1.18	6367688.00	100.9	69.5 - 120	
209 Bi	2646766.50	1.97	2872959.00	92.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000837

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\107SMPL.D\107SMPL.D#
Date Acquired: May 11 2018 12:54 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-034
Misc Info:
Vial Number: 3106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.06	2.012	ppb	1.41	100.	
11 B	222.5	44.5	ppb	3.88	1000.	
23 Na	9,740.	1,948.	ppb	1.21	200000.	
25 Mg	145,950.	29,190.	ppb	2.79	200000.	
27 Al	227,800.	45,560.	ppb	2.16	200000.	
28 Si	3,602.5	720.5	ppb	4.82	#VALUE!	
29 Si	3,231.	646.2	ppb	6.46	10000.	
39 K	55,950.	11,190.	ppb	1.68	200000.	
43 Ca	1,739,500.	347,900.	ppb	2.12	#VALUE!	
44 Ca	1,658,000.	331,600.	ppb	1.03	200000.	>LDR
51 V	546.	109.2	ppb	1.12	1000.	
52 Cr	205.25	41.05	ppb	0.92	2000.	
53 Cr	218.9	43.78	ppb	1.30	#VALUE!	
55 Mn	2,688.5	537.7	ppb	0.71	2000.	
56 Fe	198,450.	39,690.	ppb	1.22	#VALUE!	
57 Fe	193,250.	38,650.	ppb	0.22	100000.	
59 Co	66.1	13.22	ppb	1.99	1000.	
60 Ni	142.8	28.56	ppb	0.60	1000.	
63 Cu	115.1	23.02	ppb	1.56	#VALUE!	
65 Cu	117.5	23.5	ppb	1.15	2000.	
66 Zn	460.2	92.04	ppb	0.95	2000.	
68 Zn	678.	135.6	ppb	0.65	#VALUE!	
75 As	105.65	21.13	ppb	0.08	1000.	
82 Se	7.255	1.451	ppb	3.46	1000.	
88 Sr	4,356.	871.2	ppb	0.95	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.1105	0.8221	ppb	1.95	1000.	
107 Ag	0.7725	0.1545	ppb	8.24	100.	
109 Ag	0.649	0.1298	ppb	3.45	#VALUE!	
111 Cd	3.8615	0.7723	ppb	4.51	#VALUE!	
114 Cd	1.233	0.2466	ppb	4.61	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.16	9.632	ppb	0.82	1000.	
120 Sn	48.25	9.65	ppb	1.48	#VALUE!	
121 Sb	2.5145	0.5029	ppb	2.25	#VALUE!	
123 Sb	2.326	0.4652	ppb	9.59	1000.	
135 Ba	8,290.	1,658.	ppb	1.60	2000.	
137 Ba	8,125.	1,625.	ppb	1.26	#VALUE!	
182 W	0.8975	0.1795	ppb	6.89	1000.	
203 Tl	4.0825	0.8165	ppb	1.60	1000.	
205 Tl	4.1	0.82	ppb	0.83	#VALUE!	
208 Pb	137.6	27.52	ppb	1.63	2000.	
232 Th	94.1	18.82	ppb	1.21	1000.	
238 U	22.6	4.52	ppb	1.72	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1878348.50	0.66	1729334.00	108.6	69.5 - 120	
45 Sc	2642455.30	3.01	2274967.30	116.2	69.5 - 120	
72 Ge	629708.44	0.89	590563.19	106.6	69.5 - 120	
159 Tb	6418399.50	0.88	6367688.00	100.8	69.5 - 120	
209 Bi	2587445.00	1.80	2872959.00	90.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000838

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\108SMPL.D\108SMPL.D#
Date Acquired: May 11 2018 12:59 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-035
Misc Info:
Vial Number: 3107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.495	1.299	ppb	1.88	100.	
11 B	151.2	30.24	ppb	2.82	1000.	
23 Na	2,916.	583.2	ppb	1.85	200000.	
25 Mg	74,300.	14,860.	ppb	2.33	200000.	
27 Al	151,250.	30,250.	ppb	1.05	200000.	
28 Si	3,551.5	710.3	ppb	2.10	#VALUE!	
29 Si	3,041.	608.2	ppb	1.89	10000.	
39 K	39,770.	7,954.	ppb	1.78	200000.	
43 Ca	707,500.	141,500.	ppb	1.04	#VALUE!	
44 Ca	651,000.	130,200.	ppb	1.23	200000.	
51 V	313.35	62.67	ppb	1.03	1000.	
52 Cr	134.25	26.85	ppb	1.62	2000.	
53 Cr	142.1	28.42	ppb	3.14	#VALUE!	
55 Mn	3,590.5	718.1	ppb	1.06	2000.	
56 Fe	153,800.	30,760.	ppb	1.44	#VALUE!	
57 Fe	151,700.	30,340.	ppb	0.66	100000.	
59 Co	52.35	10.47	ppb	1.49	1000.	
60 Ni	107.35	21.47	ppb	3.79	1000.	
63 Cu	78.75	15.75	ppb	0.98	#VALUE!	
65 Cu	79.75	15.95	ppb	0.69	2000.	
66 Zn	310.5	62.1	ppb	1.42	2000.	
68 Zn	396.55	79.31	ppb	1.68	#VALUE!	
75 As	93.4	18.68	ppb	0.81	1000.	
82 Se	3.259	0.6518	ppb	16.60	1000.	
88 Sr	1,650.5	330.1	ppb	2.00	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.36	1.472	ppb	2.35	1000.	
107 Ag	0.5215	0.1043	ppb	10.33	100.	
109 Ag	0.405	0.081	ppb	2.80	#VALUE!	
111 Cd	2.4715	0.4943	ppb	7.35	#VALUE!	
114 Cd	0.8615	0.1723	ppb	1.43	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.345	8.869	ppb	3.69	1000.	
120 Sn	44.885	8.977	ppb	4.21	#VALUE!	
121 Sb	1.661	0.3322	ppb	3.61	#VALUE!	
123 Sb	1.578	0.3156	ppb	4.46	1000.	
135 Ba	3,330.5	666.1	ppb	3.34	2000.	
137 Ba	3,286.	657.2	ppb	3.32	#VALUE!	
182 W	0.655	0.131	ppb	4.92	1000.	
203 Tl	2.231	0.4462	ppb	7.04	1000.	
205 Tl	2.2025	0.4405	ppb	4.47	#VALUE!	
208 Pb	84.35	16.87	ppb	2.34	2000.	
232 Th	61.4	12.28	ppb	3.98	1000.	
238 U	12.235	2.447	ppb	2.95	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1943476.30	3.65	1729334.00	112.4	69.5 - 120	
45 Sc	2656638.00	1.27	2274967.30	116.8	69.5 - 120	
72 Ge	644075.13	1.18	590563.19	109.1	69.5 - 120	
159 Tb	6590369.00	3.24	6367688.00	103.5	69.5 - 120	
209 Bi	2775861.30	3.47	2872959.00	96.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000839

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\109SMPL.D\109SMPL.D#
Date Acquired: May 11 2018 01:03 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-036
Misc Info:
Vial Number: 3108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.42	1.484	ppb	2.21	100.	
11 B	167.85	33.57	ppb	3.16	1000.	
23 Na	5,650.	1,130.	ppb	1.15	200000.	
25 Mg	90,250.	18,050.	ppb	3.25	200000.	
27 Al	168,850.	33,770.	ppb	2.61	200000.	
28 Si	3,271.	654.2	ppb	7.51	#VALUE!	
29 Si	2,657.5	531.5	ppb	2.05	10000.	
39 K	45,925.	9,185.	ppb	1.47	200000.	
43 Ca	738,000.	147,600.	ppb	2.39	#VALUE!	
44 Ca	689,500.	137,900.	ppb	2.25	200000.	
51 V	417.5	83.5	ppb	1.39	1000.	
52 Cr	155.4	31.08	ppb	0.28	2000.	
53 Cr	160.4	32.08	ppb	2.53	#VALUE!	
55 Mn	5,160.	1,032.	ppb	1.18	2000.	
56 Fe	152,550.	30,510.	ppb	1.36	#VALUE!	
57 Fe	149,350.	29,870.	ppb	0.69	100000.	
59 Co	94.1	18.82	ppb	1.12	1000.	
60 Ni	153.9	30.78	ppb	0.85	1000.	
63 Cu	96.35	19.27	ppb	1.13	#VALUE!	
65 Cu	95.55	19.11	ppb	1.84	2000.	
66 Zn	362.65	72.53	ppb	1.27	2000.	
68 Zn	440.35	88.07	ppb	2.31	#VALUE!	
75 As	96.4	19.28	ppb	1.11	1000.	
82 Se	3.5995	0.7199	ppb	26.31	1000.	
88 Sr	1,736.5	347.3	ppb	1.10	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.35	1.47	ppb	1.24	1000.	
107 Ag	0.626	0.1252	ppb	5.64	100.	
109 Ag	0.4958	0.0992	ppb	1.69	#VALUE!	
111 Cd	3.3315	0.6663	ppb	1.75	#VALUE!	
114 Cd	1.749	0.3498	ppb	3.03	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.22	9.244	ppb	1.35	1000.	
120 Sn	46.26	9.252	ppb	0.31	#VALUE!	
121 Sb	2.0395	0.4079	ppb	5.34	#VALUE!	
123 Sb	2.0165	0.4033	ppb	8.04	1000.	
135 Ba	3,182.	636.4	ppb	1.61	2000.	
137 Ba	3,125.	625.	ppb	0.10	#VALUE!	
182 W	0.8235	0.1647	ppb	9.22	1000.	
203 Tl	2.76	0.552	ppb	4.46	1000.	
205 Tl	2.703	0.5406	ppb	3.05	#VALUE!	
208 Pb	132.	26.4	ppb	0.95	2000.	
232 Th	71.05	14.21	ppb	0.73	1000.	
238 U	15.005	3.001	ppb	0.55	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1861723.50	1.92	1729334.00	107.7	69.5 - 120	
45 Sc	2608019.30	2.60	2274967.30	114.6	69.5 - 120	
72 Ge	623827.00	1.66	590563.19	105.6	69.5 - 120	
159 Tb	6422818.50	0.48	6367688.00	100.9	69.5 - 120	
209 Bi	2700614.00	0.45	2872959.00	94.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000840

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\110SMPL.D\110SMPL.D#
Date Acquired: May 11 2018 01:07 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-037
Misc Info:
Vial Number: 3109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.4	2.68	ppb	1.86	100.	
11 B	294.3	58.86	ppb	1.34	1000.	
23 Na	5,250.	1,050.	ppb	3.16	200000.	
25 Mg	145,350.	29,070.	ppb	3.59	200000.	
27 Al	307,200.	61,440.	ppb	2.33	200000.	
28 Si	3,240.	648.	ppb	2.95	#VALUE!	
29 Si	2,655.	531.	ppb	3.67	10000.	
39 K	89,800.	17,960.	ppb	2.62	200000.	
43 Ca	630,000.	126,000.	ppb	3.34	#VALUE!	
44 Ca	578,000.	115,600.	ppb	1.93	200000.	
51 V	630.5	126.1	ppb	1.51	1000.	
52 Cr	268.6	53.72	ppb	1.52	2000.	
53 Cr	277.7	55.54	ppb	0.91	#VALUE!	
55 Mn	3,736.	747.2	ppb	2.11	2000.	
56 Fe	274,650.	54,930.	ppb	1.00	#VALUE!	
57 Fe	269,650.	53,930.	ppb	1.80	100000.	
59 Co	100.35	20.07	ppb	1.46	1000.	
60 Ni	215.2	43.04	ppb	1.46	1000.	
63 Cu	170.65	34.13	ppb	1.59	#VALUE!	
65 Cu	173.15	34.63	ppb	2.55	2000.	
66 Zn	684.	136.8	ppb	1.81	2000.	
68 Zn	783.	156.6	ppb	1.48	#VALUE!	
75 As	105.4	21.08	ppb	0.36	1000.	
82 Se	5.905	1.181	ppb	12.89	1000.	
88 Sr	2,982.	596.4	ppb	1.96	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.51	1.102	ppb	5.97	1000.	
107 Ag	1.1605	0.2321	ppb	1.99	100.	
109 Ag	0.941	0.1882	ppb	1.50	#VALUE!	
111 Cd	4.638	0.9276	ppb	2.75	#VALUE!	
114 Cd	1.376	0.2752	ppb	10.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.755	9.951	ppb	1.46	1000.	
120 Sn	50.5	10.1	ppb	2.00	#VALUE!	
121 Sb	2.837	0.5674	ppb	2.98	#VALUE!	
123 Sb	2.8345	0.5669	ppb	5.82	1000.	
135 Ba	4,236.	847.2	ppb	1.14	2000.	
137 Ba	4,174.	834.8	ppb	1.47	#VALUE!	
182 W	0.975	0.195	ppb	4.37	1000.	
203 Tl	4.5525	0.9105	ppb	5.26	1000.	
205 Tl	4.4205	0.8841	ppb	3.71	#VALUE!	
208 Pb	175.1	35.02	ppb	0.95	2000.	
232 Th	119.95	23.99	ppb	2.07	1000.	
238 U	16.885	3.377	ppb	1.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1871254.10	3.45	1729334.00	108.2	69.5 - 120	
45 Sc	2612002.50	4.80	2274967.30	114.8	69.5 - 120	
72 Ge	622226.00	1.99	590563.19	105.4	69.5 - 120	
159 Tb	6469889.00	1.68	6367688.00	101.6	69.5 - 120	
209 Bi	2648841.80	1.93	2872959.00	92.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000841

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\111SMPL.D\111SMPL.D#
Date Acquired: May 11 2018 01:12 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 3110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0024	-0.0024	ppb	37.85	100.	
11 B	3.813	3.813	ppb	8.10	1000.	
23 Na	-2.437	-2.437	ppb	15.63	200000.	
25 Mg	0.2634	0.2634	ppb	13.11	200000.	
27 Al	0.7797	0.7797	ppb	17.89	200000.	
28 Si	11.98	11.98	ppb	161.19	#VALUE!	
29 Si	-128.3	-128.3	ppb	13.52	10000.	LOW
39 K	-10.1	-10.1	ppb	39.72	200000.	
43 Ca	-5.89	-5.89	ppb	7.77	#VALUE!	
44 Ca	-1.759	-1.759	ppb	40.03	200000.	
51 V	0.0538	0.0538	ppb	104.83	1000.	
52 Cr	-0.0431	-0.0431	ppb	29.04	2000.	
53 Cr	-2.249	-2.249	ppb	6.96	#VALUE!	
55 Mn	-0.0034	-0.0034	ppb	27.07	2000.	
56 Fe	12.92	12.92	ppb	39.79	#VALUE!	
57 Fe	6.425	6.425	ppb	17.85	100000.	
59 Co	0.0015	0.0015	ppb	309.91	1000.	
60 Ni	0.0135	0.0135	ppb	79.73	1000.	
63 Cu	0.1181	0.1181	ppb	4.55	#VALUE!	
65 Cu	0.1074	0.1074	ppb	20.49	2000.	
66 Zn	0.0613	0.0613	ppb	88.64	2000.	
68 Zn	0.0521	0.0521	ppb	220.37	#VALUE!	
75 As	-0.0389	-0.0389	ppb	288.25	1000.	
82 Se	-0.0175	-0.0175	ppb	909.71	1000.	
88 Sr	0.0058	0.0058	ppb	63.75	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0018	0.0018	ppb	310.91	1000.	
107 Ag	-0.0003	-0.0003	ppb	431.92	100.	
109 Ag	0.0002	0.0002	ppb	184.98	#VALUE!	
111 Cd	-0.0979	-0.0979	ppb	10.70	#VALUE!	
114 Cd	0.	0.	ppb	7550.70	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0374	0.0374	ppb	22.42	1000.	
120 Sn	0.0308	0.0308	ppb	15.21	#VALUE!	
121 Sb	0.0062	0.0062	ppb	71.19	#VALUE!	
123 Sb	0.0031	0.0031	ppb	48.61	1000.	
135 Ba	0.0089	0.0089	ppb	59.37	2000.	
137 Ba	0.0056	0.0056	ppb	45.55	#VALUE!	
182 W	-0.0008	-0.0008	ppb	117.72	1000.	
203 Tl	-0.0228	-0.0228	ppb	29.70	1000.	
205 Tl	-0.0246	-0.0246	ppb	20.59	#VALUE!	
208 Pb	0.0714	0.0714	ppb	11.03	2000.	
232 Th	0.0086	0.0086	ppb	30.26	1000.	
238 U	0.0003	0.0003	ppb	162.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1898147.90	5.49	1729334.00	109.8	69.5 - 120	
45 Sc	2595689.50	2.66	2274967.30	114.1	69.5 - 120	
72 Ge	638708.75	1.88	590563.19	108.2	69.5 - 120	
159 Tb	5921290.50	0.53	6367688.00	93.0	69.5 - 120	
209 Bi	2615366.50	0.79	2872959.00	91.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000842

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\112_CCV.D\112_CCV.D#
Date Acquired: May 11 2018 01:16 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.99	ppb	0.89	25	99.96	
11 B	26.88	ppb	5.70	25	107.52	
23 Na	5,226.	ppb	0.62	5,000	104.52	
25 Mg	5,195.	ppb	2.65	5,000	103.9	
27 Al	510.8	ppb	2.67	500	102.16	
28 Si	549.8	ppb	4.00	500	109.96	
29 Si	410.3	ppb	3.72	500	82.06	Fail
39 K	5,079.	ppb	2.08	5,000	101.58	
43 Ca	5,187.	ppb	1.37	5,000	103.74	
44 Ca	5,195.	ppb	1.43	5,000	103.9	
51 V	26.25	ppb	1.96	25	105	
52 Cr	26.25	ppb	0.48	25	105	
53 Cr	23.88	ppb	0.53	25	95.52	
55 Mn	25.61	ppb	1.12	25	102.44	
56 Fe	5,164.	ppb	0.86	5,000	103.28	
57 Fe	5,284.	ppb	1.10	5,000	105.68	
59 Co	26.1	ppb	1.52	25	104.4	
60 Ni	26.22	ppb	1.59	25	104.88	
63 Cu	26.09	ppb	0.77	25	104.36	
65 Cu	25.91	ppb	0.97	25	103.64	
66 Zn	25.53	ppb	1.15	25	102.12	
68 Zn	25.54	ppb	2.06	25	102.16	
75 As	25.3	ppb	1.73	25	101.2	
82 Se	25.54	ppb	1.46	25	102.16	
88 Sr	23.95	ppb	1.06	25	95.8	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.66	ppb	1.35	25	94.64	
107 Ag	23.85	ppb	1.70	25	95.4	
109 Ag	23.47	ppb	1.67	25	93.88	
111 Cd	23.19	ppb	0.40	25	92.76	
114 Cd	23.01	ppb	1.37	25	92.04	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	26.51	ppb	3.28	25	106.04	
120 Sn	26.69	ppb	2.29	25	106.76	
121 Sb	27.11	ppb	3.20	25	108.44	
123 Sb	26.83	ppb	2.61	25	107.32	
135 Ba	26.96	ppb	2.73	25	107.84	
137 Ba	26.88	ppb	3.33	25	107.52	
182 W	24.21	ppb	2.47	25	96.84	
203 Tl	25.16	ppb	2.23	25	100.64	
205 Tl	25.09	ppb	1.61	25	100.36	
208 Pb	25.25	ppb	2.71	25	101	
232 Th	24.61	ppb	2.20	25	98.44	
238 U	24.62	ppb	2.44	25	98.48	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1955500.60	1.07	1729334.00	113.1	80 - 120.4	
45 Sc	2655698.00	1.40	2274967.30	116.7	80 - 120.4	
72 Ge	642348.56	1.05	590563.19	108.8	80 - 120.4	
159 Tb	6061501.00	1.55	6367688.00	95.2	80 - 120.4	
209 Bi	2620995.50	1.61	2872959.00	91.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000843

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\113_CCB.D\113_CCB.D#
Date Acquired: May 11 2018 01:20 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0024	ppb	24.26	1.00	
11 B	2.662	ppb	7.82	1.00	
23 Na	-3.159	ppb	1.60	1.00	
25 Mg	-0.024	ppb	182.35	1.00	
27 Al	-0.0177	ppb	144.87	1.00	
28 Si	14.89	ppb	77.30	1.00	
29 Si	-123.	ppb	4.63	1.00	
39 K	-9.384	ppb	32.69	1.00	
43 Ca	-5.711	ppb	67.50	1.00	
44 Ca	-3.529	ppb	15.54	1.00	
51 V	0.1045	ppb	16.00	1.00	
52 Cr	-0.0183	ppb	111.65	1.00	
53 Cr	-1.415	ppb	5.33	1.00	
55 Mn	-0.0131	ppb	66.49	1.00	
56 Fe	13.04	ppb	2.85	1.00	
57 Fe	5.499	ppb	44.35	1.00	
59 Co	0.0029	ppb	70.22	1.00	
60 Ni	-0.004	ppb	146.57	1.00	
63 Cu	-0.0083	ppb	8.72	1.00	
65 Cu	-0.0099	ppb	25.37	1.00	
66 Zn	-0.0835	ppb	88.56	1.00	
68 Zn	-0.0002	ppb	34345.00	1.00	
75 As	0.0115	ppb	141.05	1.00	
82 Se	-0.014	ppb	793.55	1.00	
88 Sr	-0.0002	ppb	261.68	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0295	ppb	61.47	1.00	
107 Ag	0.0008	ppb	137.22	1.00	
109 Ag	0.0037	ppb	45.97	1.00	
111 Cd	-0.101	ppb	10.24	1.00	
114 Cd	0.0028	ppb	85.47	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0467	ppb	35.08	1.00	
120 Sn	0.0168	ppb	78.56	1.00	
121 Sb	0.007	ppb	31.68	1.00	
123 Sb	0.0051	ppb	43.39	1.00	
135 Ba	0.004	ppb	194.02	1.00	
137 Ba	0.004	ppb	197.41	1.00	
182 W	0.0501	ppb	36.12	1.00	
203 Tl	-0.0222	ppb	65.99	1.00	
205 Tl	-0.0285	ppb	28.10	1.00	
208 Pb	-0.0554	ppb	10.83	1.00	
232 Th	0.0661	ppb	16.87	1.00	
238 U	0.003	ppb	34.41	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1997168.50	2.35	1729334.00	115.5	79.5 - 120	
45 Sc	2655426.30	0.67	2274967.30	116.7	79.5 - 120	
72 Ge	643289.25	0.93	590563.19	108.9	79.5 - 120	
159 Tb	5799882.50	0.92	6367688.00	91.1	79.5 - 120	
209 Bi	2547524.00	0.25	2872959.00	88.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000844

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\114SMPL.D\114SMPL.D#
Date Acquired: May 11 2018 01:24 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-038
Misc Info:
Vial Number: 3111
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	12.395	2.479	ppb	2.31	100.	
11 B	188.45	37.69	ppb	2.62	1000.	
23 Na	7,990.	1,598.	ppb	3.05	200000.	
25 Mg	116,000.	23,200.	ppb	3.09	200000.	
27 Al	261,150.	52,230.	ppb	3.51	200000.	
28 Si	3,304.5	660.9	ppb	3.36	#VALUE!	
29 Si	2,747.	549.4	ppb	4.25	10000.	
39 K	61,050.	12,210.	ppb	1.50	200000.	
43 Ca	614,000.	122,800.	ppb	0.53	#VALUE!	
44 Ca	570,000.	114,000.	ppb	1.10	200000.	
51 V	504.5	100.9	ppb	0.85	1000.	
52 Cr	249.	49.8	ppb	1.14	2000.	
53 Cr	254.	50.8	ppb	0.83	#VALUE!	
55 Mn	6,915.	1,383.	ppb	2.06	2000.	
56 Fe	272,350.	54,470.	ppb	0.79	#VALUE!	
57 Fe	268,150.	53,630.	ppb	0.40	100000.	
59 Co	74.85	14.97	ppb	0.59	1000.	
60 Ni	194.95	38.99	ppb	0.74	1000.	
63 Cu	157.	31.4	ppb	2.27	#VALUE!	
65 Cu	161.3	32.26	ppb	0.76	2000.	
66 Zn	651.	130.2	ppb	1.92	2000.	
68 Zn	754.	150.8	ppb	2.03	#VALUE!	
75 As	30.49	6.098	ppb	2.65	1000.	
82 Se	4.6945	0.9389	ppb	23.14	1000.	
88 Sr	1,487.	297.4	ppb	1.49	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.55	1.31	ppb	0.43	1000.	
107 Ag	0.974	0.1948	ppb	0.30	100.	
109 Ag	0.835	0.167	ppb	8.91	#VALUE!	
111 Cd	3.959	0.7918	ppb	0.77	#VALUE!	
114 Cd	1.263	0.2526	ppb	7.00	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	53.35	10.67	ppb	2.06	1000.	
120 Sn	53.8	10.76	ppb	2.78	#VALUE!	
121 Sb	2.194	0.4388	ppb	1.49	#VALUE!	
123 Sb	2.293	0.4586	ppb	2.75	1000.	
135 Ba	4,508.	901.6	ppb	0.76	2000.	
137 Ba	4,414.	882.8	ppb	1.64	#VALUE!	
182 W	0.66	0.132	ppb	6.00	1000.	
203 Tl	4.058	0.8116	ppb	2.73	1000.	
205 Tl	4.0785	0.8157	ppb	1.51	#VALUE!	
208 Pb	195.8	39.16	ppb	1.89	2000.	
232 Th	120.25	24.05	ppb	1.79	1000.	
238 U	15.145	3.029	ppb	2.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1921197.50	2.60	1729334.00	111.1	69.5 - 120	
45 Sc	2639208.50	1.67	2274967.30	116.0	69.5 - 120	
72 Ge	621856.94	0.71	590563.19	105.3	69.5 - 120	
159 Tb	6265138.00	1.94	6367688.00	98.4	69.5 - 120	
209 Bi	2619930.00	2.32	2872959.00	91.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000845

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\115SMPL.D\115SMPL.D#
Date Acquired: May 11 2018 01:29 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-039
Misc Info:
Vial Number: 3112
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.525	1.905	ppb	0.88	100.	
11 B	182.25	36.45	ppb	1.47	1000.	
23 Na	2,439.5	487.9	ppb	2.81	200000.	
25 Mg	73,250.	14,650.	ppb	2.66	200000.	
27 Al	217,600.	43,520.	ppb	1.88	200000.	
28 Si	3,043.	608.6	ppb	0.94	#VALUE!	
29 Si	2,421.	484.2	ppb	0.34	10000.	
39 K	69,800.	13,960.	ppb	2.25	200000.	
43 Ca	135,900.	27,180.	ppb	2.07	#VALUE!	
44 Ca	129,650.	25,930.	ppb	1.68	200000.	
51 V	390.25	78.05	ppb	0.30	1000.	
52 Cr	181.45	36.29	ppb	0.56	2000.	
53 Cr	243.05	48.61	ppb	2.65	#VALUE!	
55 Mn	2,993.	598.6	ppb	1.64	2000.	
56 Fe	185,900.	37,180.	ppb	1.08	#VALUE!	
57 Fe	180,550.	36,110.	ppb	1.82	100000.	
59 Co	66.75	13.35	ppb	1.03	1000.	
60 Ni	175.3	35.06	ppb	0.92	1000.	
63 Cu	115.7	23.14	ppb	1.50	#VALUE!	
65 Cu	116.35	23.27	ppb	0.70	2000.	
66 Zn	477.55	95.51	ppb	0.92	2000.	
68 Zn	509.	101.8	ppb	1.72	#VALUE!	
75 As	60.45	12.09	ppb	1.19	1000.	
82 Se	3.2295	0.6459	ppb	12.38	1000.	
88 Sr	846.5	169.3	ppb	0.94	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.0115	0.6023	ppb	3.88	1000.	
107 Ag	0.8165	0.1633	ppb	7.73	100.	
109 Ag	0.6385	0.1277	ppb	8.03	#VALUE!	
111 Cd	1.905	0.381	ppb	11.12	#VALUE!	
114 Cd	0.589	0.1178	ppb	14.45	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.945	9.989	ppb	0.61	1000.	
120 Sn	51.15	10.23	ppb	0.75	#VALUE!	
121 Sb	2.032	0.4064	ppb	1.21	#VALUE!	
123 Sb	2.0135	0.4027	ppb	2.51	1000.	
135 Ba	1,935.	387.	ppb	0.67	2000.	
137 Ba	1,928.	385.6	ppb	1.15	#VALUE!	
182 W	0.725	0.145	ppb	3.60	1000.	
203 Tl	2.9855	0.5971	ppb	2.40	1000.	
205 Tl	2.952	0.5904	ppb	2.82	#VALUE!	
208 Pb	112.25	22.45	ppb	1.08	2000.	
232 Th	72.95	14.59	ppb	1.11	1000.	
238 U	6.68	1.336	ppb	1.82	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1932135.00	2.77	1729334.00	111.7	69.5 - 120	
45 Sc	2688872.80	1.74	2274967.30	118.2	69.5 - 120	
72 Ge	645946.63	1.18	590563.19	109.4	69.5 - 120	
159 Tb	6174185.50	0.27	6367688.00	97.0	69.5 - 120	
209 Bi	2587002.80	0.69	2872959.00	90.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000846

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\116SMPL.D\116SMPL.D#
Date Acquired: May 11 2018 01:33 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-040
Misc Info:
Vial Number: 3201
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.135	1.827	ppb	4.03	100.	
11 B	223.3	44.66	ppb	0.97	1000.	
23 Na	11,250.	2,250.	ppb	2.32	200000.	
25 Mg	110,050.	22,010.	ppb	2.19	200000.	
27 Al	207,950.	41,590.	ppb	2.48	200000.	
28 Si	3,893.5	778.7	ppb	3.40	#VALUE!	
29 Si	3,392.	678.4	ppb	5.76	10000.	
39 K	61,950.	12,390.	ppb	1.50	200000.	
43 Ca	867,500.	173,500.	ppb	2.22	#VALUE!	
44 Ca	809,500.	161,900.	ppb	1.61	200000.	
51 V	815.5	163.1	ppb	1.54	1000.	
52 Cr	187.55	37.51	ppb	1.65	2000.	
53 Cr	195.8	39.16	ppb	1.69	#VALUE!	
55 Mn	3,411.5	682.3	ppb	1.13	2000.	
56 Fe	192,100.	38,420.	ppb	0.42	#VALUE!	
57 Fe	187,700.	37,540.	ppb	1.72	100000.	
59 Co	102.15	20.43	ppb	1.29	1000.	
60 Ni	180.7	36.14	ppb	0.23	1000.	
63 Cu	120.6	24.12	ppb	0.26	#VALUE!	
65 Cu	122.65	24.53	ppb	0.77	2000.	
66 Zn	425.85	85.17	ppb	0.75	2000.	
68 Zn	589.	117.8	ppb	1.86	#VALUE!	
75 As	290.7	58.14	ppb	0.67	1000.	
82 Se	5.21	1.042	ppb	18.03	1000.	
88 Sr	3,214.5	642.9	ppb	2.47	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.63	1.726	ppb	3.94	1000.	
107 Ag	0.7615	0.1523	ppb	3.20	100.	
109 Ag	0.586	0.1172	ppb	2.16	#VALUE!	
111 Cd	2.9665	0.5933	ppb	4.53	#VALUE!	
114 Cd	0.718	0.1436	ppb	8.09	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.44	9.488	ppb	0.41	1000.	
120 Sn	48.28	9.656	ppb	1.12	#VALUE!	
121 Sb	3.207	0.6414	ppb	0.78	#VALUE!	
123 Sb	3.147	0.6294	ppb	5.06	1000.	
135 Ba	6,205.	1,241.	ppb	2.45	2000.	
137 Ba	6,005.	1,201.	ppb	1.60	#VALUE!	
182 W	1.7265	0.3453	ppb	4.21	1000.	
203 Tl	3.421	0.6842	ppb	2.50	1000.	
205 Tl	3.519	0.7038	ppb	1.30	#VALUE!	
208 Pb	125.3	25.06	ppb	1.76	2000.	
232 Th	80.85	16.17	ppb	1.61	1000.	
238 U	16.395	3.279	ppb	0.32	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1888483.10	0.28	1729334.00	109.2	69.5 - 120	
45 Sc	2587209.50	3.78	2274967.30	113.7	69.5 - 120	
72 Ge	619792.56	1.94	590563.19	104.9	69.5 - 120	
159 Tb	6344201.00	0.71	6367688.00	99.6	69.5 - 120	
209 Bi	2667582.00	0.90	2872959.00	92.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000847

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\117SMPL.D\117SMPL.D#
Date Acquired: May 11 2018 01:37 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 3202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0023	-0.0023	ppb	151.29	100.	
11 B	3.21	3.21	ppb	11.01	1000.	
23 Na	-2.331	-2.331	ppb	9.42	200000.	
25 Mg	0.1707	0.1707	ppb	57.08	200000.	
27 Al	0.6874	0.6874	ppb	5.04	200000.	
28 Si	28.65	28.65	ppb	19.66	#VALUE!	
29 Si	-125.2	-125.2	ppb	6.19	10000.	LOW
39 K	-9.022	-9.022	ppb	17.07	200000.	
43 Ca	-2.902	-2.902	ppb	161.30	#VALUE!	
44 Ca	-1.509	-1.509	ppb	117.03	200000.	
51 V	0.0641	0.0641	ppb	33.72	1000.	
52 Cr	-0.0234	-0.0234	ppb	83.39	2000.	
53 Cr	-2.098	-2.098	ppb	7.35	#VALUE!	
55 Mn	-0.0068	-0.0068	ppb	65.60	2000.	
56 Fe	16.18	16.18	ppb	18.07	#VALUE!	
57 Fe	7.594	7.594	ppb	7.86	100000.	
59 Co	0.0052	0.0052	ppb	19.63	1000.	
60 Ni	-0.0007	-0.0007	ppb	968.23	1000.	
63 Cu	0.102	0.102	ppb	8.83	#VALUE!	
65 Cu	0.1038	0.1038	ppb	9.11	2000.	
66 Zn	0.0271	0.0271	ppb	76.94	2000.	
68 Zn	0.0225	0.0225	ppb	54.46	#VALUE!	
75 As	-0.0165	-0.0165	ppb	1016.40	1000.	
82 Se	0.065	0.065	ppb	295.49	1000.	
88 Sr	0.0012	0.0012	ppb	255.86	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0017	0.0017	ppb	68.52	1000.	
107 Ag	-0.0004	-0.0004	ppb	185.41	100.	
109 Ag	0.0008	0.0008	ppb	103.98	#VALUE!	
111 Cd	-0.1024	-0.1024	ppb	17.80	#VALUE!	
114 Cd	0.	0.	ppb	13076.00	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0094	0.0094	ppb	14.17	1000.	
120 Sn	0.0226	0.0226	ppb	28.96	#VALUE!	
121 Sb	-0.0005	-0.0005	ppb	316.18	#VALUE!	
123 Sb	0.0001	0.0001	ppb	4138.30	1000.	
135 Ba	0.0074	0.0074	ppb	76.64	2000.	
137 Ba	0.0028	0.0028	ppb	90.82	#VALUE!	
182 W	0.0017	0.0017	ppb	173.30	1000.	
203 Tl	-0.022	-0.022	ppb	59.56	1000.	
205 Tl	-0.0267	-0.0267	ppb	16.16	#VALUE!	
208 Pb	0.0584	0.0584	ppb	38.02	2000.	
232 Th	0.0087	0.0087	ppb	41.45	1000.	
238 U	0.0005	0.0005	ppb	123.84	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1876396.30	2.25	1729334.00	108.5	69.5 - 120	
45 Sc	2575281.80	0.41	2274967.30	113.2	69.5 - 120	
72 Ge	635352.56	0.66	590563.19	107.6	69.5 - 120	
159 Tb	5860918.00	1.24	6367688.00	92.0	69.5 - 120	
209 Bi	2554030.00	1.26	2872959.00	88.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000848

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\118SMPL.D\118SMPL.D#
Date Acquired: May 11 2018 01:42 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE09IMW1
Misc Info:
Vial Number: 3203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0006	-0.0006	ppb	493.85	100.	
11 B	2.093	2.093	ppb	3.85	1000.	
23 Na	6.082	6.082	ppb	7.02	200000.	
25 Mg	8.36	8.36	ppb	8.11	200000.	
27 Al	4.625	4.625	ppb	2.61	200000.	
28 Si	31.47	31.47	ppb	61.20	#VALUE!	
29 Si	-121.4	-121.4	ppb	5.52	10000.	LOW
39 K	-9.444	-9.444	ppb	16.59	200000.	
43 Ca	-2.187	-2.187	ppb	147.69	#VALUE!	
44 Ca	3.091	3.091	ppb	24.16	200000.	
51 V	0.1019	0.1019	ppb	13.50	1000.	
52 Cr	0.0917	0.0917	ppb	13.70	2000.	
53 Cr	-0.4865	-0.4865	ppb	24.48	#VALUE!	
55 Mn	0.0591	0.0591	ppb	6.68	2000.	
56 Fe	15.89	15.89	ppb	16.72	#VALUE!	
57 Fe	9.616	9.616	ppb	2.82	100000.	
59 Co	0.0086	0.0086	ppb	29.26	1000.	
60 Ni	0.0199	0.0199	ppb	20.27	1000.	
63 Cu	0.0435	0.0435	ppb	15.62	#VALUE!	
65 Cu	0.0483	0.0483	ppb	32.30	2000.	
66 Zn	0.5884	0.5884	ppb	7.70	2000.	
68 Zn	0.6328	0.6328	ppb	3.69	#VALUE!	
75 As	-0.0019	-0.0019	ppb	4288.10	1000.	
82 Se	-0.0683	-0.0683	ppb	89.22	1000.	
88 Sr	0.0144	0.0144	ppb	31.03	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	-0.0012	-0.0012	ppb	185.71	1000.	
107 Ag	-0.0003	-0.0003	ppb	180.41	100.	
109 Ag	0.0009	0.0009	ppb	135.32	#VALUE!	
111 Cd	-0.1052	-0.1052	ppb	20.49	#VALUE!	
114 Cd	-0.0005	-0.0005	ppb	368.19	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0701	0.0701	ppb	4.65	1000.	
120 Sn	0.0918	0.0918	ppb	39.08	#VALUE!	
121 Sb	0.0226	0.0226	ppb	7.51	#VALUE!	
123 Sb	0.0167	0.0167	ppb	11.98	1000.	
135 Ba	0.0486	0.0486	ppb	4.76	2000.	
137 Ba	0.0496	0.0496	ppb	19.37	#VALUE!	
182 W	0.002	0.002	ppb	138.90	1000.	
203 Tl	-0.02	-0.02	ppb	68.78	1000.	
205 Tl	-0.0241	-0.0241	ppb	41.60	#VALUE!	
208 Pb	-0.044	-0.044	ppb	5.30	2000.	
232 Th	0.0086	0.0086	ppb	38.26	1000.	
238 U	0.0005	0.0005	ppb	97.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1939332.50	3.30	1729334.00	112.1	69.5 - 120	
45 Sc	2594528.00	1.02	2274967.30	114.0	69.5 - 120	
72 Ge	634148.88	1.51	590563.19	107.4	69.5 - 120	
159 Tb	5831983.00	0.63	6367688.00	91.6	69.5 - 120	
209 Bi	2569254.30	2.10	2872959.00	89.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000849

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\119SMPL.D\119SMPL.D#
Date Acquired: May 11 2018 01:46 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE09IMW1
Misc Info:
Vial Number: 3204
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	50.9	10.18	ppb	3.71	100.	
11 B	536.	107.2	ppb	0.85	1000.	
23 Na	8,455.	1,691.	ppb	3.67	200000.	
25 Mg	5,310.	1,062.	ppb	2.75	200000.	
27 Al	2,174.	434.8	ppb	2.05	200000.	
28 Si	1,282.	256.4	ppb	6.70	#VALUE!	
29 Si	494.55	98.91	ppb	23.19	10000.	
39 K	10,725.	2,145.	ppb	2.80	200000.	
43 Ca	2,964.	592.8	ppb	5.57	#VALUE!	
44 Ca	2,496.5	499.3	ppb	2.34	200000.	
51 V	558.	111.6	ppb	0.86	1000.	
52 Cr	212.35	42.47	ppb	2.46	2000.	
53 Cr	216.	43.2	ppb	0.82	#VALUE!	
55 Mn	538.5	107.7	ppb	0.39	2000.	
56 Fe	1,149.	229.8	ppb	2.51	#VALUE!	
57 Fe	1,106.	221.2	ppb	3.47	100000.	
59 Co	564.	112.8	ppb	1.48	1000.	
60 Ni	548.5	109.7	ppb	1.42	1000.	
63 Cu	264.95	52.99	ppb	1.73	#VALUE!	
65 Cu	267.6	53.52	ppb	1.65	2000.	
66 Zn	539.5	107.9	ppb	1.19	2000.	
68 Zn	581.	116.2	ppb	1.68	#VALUE!	
75 As	107.4	21.48	ppb	1.91	1000.	
82 Se	105.2	21.04	ppb	2.39	1000.	
88 Sr	489.55	97.91	ppb	0.55	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	98.35	19.67	ppb	1.16	1000.	
107 Ag	49.395	9.879	ppb	0.54	100.	
109 Ag	48.715	9.743	ppb	1.46	#VALUE!	
111 Cd	241.05	48.21	ppb	1.54	#VALUE!	
114 Cd	240.7	48.14	ppb	0.82	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	561.	112.2	ppb	2.60	1000.	
120 Sn	566.5	113.3	ppb	2.22	#VALUE!	
121 Sb	115.7	23.14	ppb	2.68	#VALUE!	
123 Sb	114.8	22.96	ppb	2.05	1000.	
135 Ba	2,270.	454.	ppb	1.58	2000.	
137 Ba	2,269.	453.8	ppb	2.08	#VALUE!	
182 W	101.7	20.34	ppb	1.23	1000.	
203 Tl	105.3	21.06	ppb	4.53	1000.	
205 Tl	104.15	20.83	ppb	2.88	#VALUE!	
208 Pb	105.9	21.18	ppb	2.63	2000.	
232 Th	101.8	20.36	ppb	4.71	1000.	
238 U	102.9	20.58	ppb	3.66	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1989758.80	2.35	1729334.00	115.1	69.5 - 120	
45 Sc	2630747.00	3.33	2274967.30	115.6	69.5 - 120	
72 Ge	634307.69	2.58	590563.19	107.4	69.5 - 120	
159 Tb	5854935.50	1.44	6367688.00	91.9	69.5 - 120	
209 Bi	2534252.30	1.56	2872959.00	88.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000850

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\120SMPL.D\120SMPL.D#
Date Acquired: May 11 2018 01:50 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3836-002
Misc Info:
Vial Number: 3205
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0071	0.0071	ppb	18.08	100.	
11 B	84.46	84.46	ppb	2.53	1000.	
23 Na	44,600.	44,600.	ppb	1.76	200000.	
25 Mg	67,060.	67,060.	ppb	3.91	200000.	
27 Al	83.3	83.3	ppb	2.69	200000.	
28 Si	19,480.	19,480.	ppb	3.96	#VALUE!	
29 Si	20,760.	20,760.	ppb	2.96	10000.	>LDR
39 K	3,354.	3,354.	ppb	3.96	200000.	
43 Ca	10,100.	10,100.	ppb	2.73	#VALUE!	
44 Ca	9,924.	9,924.	ppb	2.19	200000.	
51 V	2.998	2.998	ppb	7.89	1000.	
52 Cr	4.66	4.66	ppb	4.66	2000.	
53 Cr	25.01	25.01	ppb	11.22	#VALUE!	
55 Mn	51.29	51.29	ppb	4.11	2000.	
56 Fe	238.1	238.1	ppb	6.32	#VALUE!	
57 Fe	216.8	216.8	ppb	4.46	100000.	
59 Co	0.317	0.317	ppb	1.05	1000.	
60 Ni	13.12	13.12	ppb	2.19	1000.	
63 Cu	25.4	25.4	ppb	4.20	#VALUE!	
65 Cu	24.29	24.29	ppb	2.95	2000.	
66 Zn	128.8	128.8	ppb	3.61	2000.	
68 Zn	123.4	123.4	ppb	3.97	#VALUE!	
75 As	2.937	2.937	ppb	6.92	1000.	
82 Se	0.2644	0.2644	ppb	6.23	1000.	
88 Sr	59.61	59.61	ppb	3.87	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.882	7.882	ppb	3.87	1000.	
107 Ag	0.0174	0.0174	ppb	13.71	100.	
109 Ag	0.0155	0.0155	ppb	18.36	#VALUE!	
111 Cd	-0.1219	-0.1219	ppb	16.63	#VALUE!	
114 Cd	-0.0013	-0.0013	ppb	536.78	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.084	2.084	ppb	3.40	1000.	
120 Sn	2.123	2.123	ppb	6.26	#VALUE!	
121 Sb	0.3415	0.3415	ppb	3.98	#VALUE!	
123 Sb	0.3476	0.3476	ppb	2.80	1000.	
135 Ba	6.736	6.736	ppb	7.98	2000.	
137 Ba	6.727	6.727	ppb	4.00	#VALUE!	
182 W	225.5	225.5	ppb	5.02	1000.	
203 Tl	0.0118	0.0118	ppb	184.63	1000.	
205 Tl	-0.0184	-0.0184	ppb	49.75	#VALUE!	
208 Pb	0.1971	0.1971	ppb	5.69	2000.	
232 Th	0.1706	0.1706	ppb	9.30	1000.	
238 U	0.3977	0.3977	ppb	3.85	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2025480.00	2.91	1729334.00	117.1	69.5 - 120	
45 Sc	2750338.50	3.36	2274967.30	120.9	69.5 - 120	IS Fai
72 Ge	653603.94	2.75	590563.19	110.7	69.5 - 120	
159 Tb	5869611.00	3.80	6367688.00	92.2	69.5 - 120	
209 Bi	2392517.30	2.72	2872959.00	83.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000851

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\121SMPL.D\121SMPL.D#
Date Acquired: May 11 2018 01:54 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3836-002L
Misc Info:
Vial Number: 3206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0074	-0.0015	ppb	137.43	100.	
11 B	106.3	21.26	ppb	2.67	1000.	
23 Na	45,620.	9,124.	ppb	3.71	200000.	
25 Mg	69,700.	13,940.	ppb	3.88	200000.	
27 Al	92.3	18.46	ppb	3.48	200000.	
28 Si	19,665.	3,933.	ppb	3.34	#VALUE!	
29 Si	19,395.	3,879.	ppb	4.19	10000.	
39 K	3,276.	655.2	ppb	5.15	200000.	
43 Ca	10,105.	2,021.	ppb	3.18	#VALUE!	
44 Ca	9,785.	1,957.	ppb	2.19	200000.	
51 V	3.1145	0.6229	ppb	22.97	1000.	
52 Cr	5.32	1.064	ppb	3.97	2000.	
53 Cr	106.5	21.3	ppb	2.55	#VALUE!	
55 Mn	51.45	10.29	ppb	0.94	2000.	
56 Fe	379.55	75.91	ppb	3.35	#VALUE!	
57 Fe	242.75	48.55	ppb	2.11	100000.	
59 Co	0.3922	0.0784	ppb	3.84	1000.	
60 Ni	13.2	2.64	ppb	2.12	1000.	
63 Cu	26.28	5.256	ppb	2.52	#VALUE!	
65 Cu	25.22	5.044	ppb	1.67	2000.	
66 Zn	134.9	26.98	ppb	2.42	2000.	
68 Zn	130.15	26.03	ppb	0.26	#VALUE!	
75 As	3.5405	0.7081	ppb	26.86	1000.	
82 Se	0.1981	0.0396	ppb	49.65	1000.	
88 Sr	58.45	11.69	ppb	2.32	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.405	1.481	ppb	2.47	1000.	
107 Ag	0.0124	0.0025	ppb	18.22	100.	
109 Ag	0.0181	0.0036	ppb	28.82	#VALUE!	
111 Cd	-0.661	-0.1322	ppb	1.18	#VALUE!	
114 Cd	0.0155	0.0031	ppb	72.19	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.0665	0.4133	ppb	4.61	1000.	
120 Sn	2.1575	0.4315	ppb	3.86	#VALUE!	
121 Sb	0.3511	0.0702	ppb	9.41	#VALUE!	
123 Sb	0.3445	0.0689	ppb	17.58	1000.	
135 Ba	6.65	1.33	ppb	2.27	2000.	
137 Ba	6.795	1.359	ppb	3.51	#VALUE!	
182 W	224.45	44.89	ppb	0.72	1000.	
203 Tl	-0.061	-0.0122	ppb	56.49	1000.	
205 Tl	-0.1322	-0.0264	ppb	16.59	#VALUE!	
208 Pb	0.4983	0.0997	ppb	20.27	2000.	
232 Th	0.0846	0.0169	ppb	45.04	1000.	
238 U	0.3888	0.0778	ppb	8.00	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2063570.10	1.13	1729334.00	119.3	69.5 - 120	
45 Sc	2805434.30	4.75	2274967.30	123.3	69.5 - 120	IS Fai
72 Ge	673516.06	3.53	590563.19	114.0	69.5 - 120	
159 Tb	5911183.00	1.33	6367688.00	92.8	69.5 - 120	
209 Bi	2515147.50	0.83	2872959.00	87.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000852

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\122SMPL.D\122SMPL.D#
Date Acquired: May 11 2018 01:58 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3836-002S
Misc Info:
Vial Number: 3207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	51.8	10.36	ppb	4.43	100.	
11 B	604.	120.8	ppb	4.03	1000.	
23 Na	56,450.	11,290.	ppb	0.86	200000.	
25 Mg	77,450.	15,490.	ppb	3.08	200000.	
27 Al	2,346.	469.2	ppb	2.24	200000.	
28 Si	21,105.	4,221.	ppb	3.60	#VALUE!	
29 Si	21,055.	4,211.	ppb	6.34	10000.	
39 K	14,060.	2,812.	ppb	3.69	200000.	
43 Ca	13,200.	2,640.	ppb	1.24	#VALUE!	
44 Ca	12,375.	2,475.	ppb	2.48	200000.	
51 V	575.	115.	ppb	1.85	1000.	
52 Cr	218.05	43.61	ppb	2.73	2000.	
53 Cr	324.75	64.95	ppb	3.25	#VALUE!	
55 Mn	593.5	118.7	ppb	2.90	2000.	
56 Fe	1,451.	290.2	ppb	2.57	#VALUE!	
57 Fe	1,306.	261.2	ppb	2.00	100000.	
59 Co	555.5	111.1	ppb	2.45	1000.	
60 Ni	553.5	110.7	ppb	2.28	1000.	
63 Cu	290.	58.	ppb	1.24	#VALUE!	
65 Cu	292.3	58.46	ppb	2.35	2000.	
66 Zn	660.	132.	ppb	2.32	2000.	
68 Zn	703.	140.6	ppb	1.78	#VALUE!	
75 As	110.05	22.01	ppb	1.81	1000.	
82 Se	103.9	20.78	ppb	2.78	1000.	
88 Sr	549.	109.8	ppb	3.19	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	104.25	20.85	ppb	2.23	1000.	
107 Ag	48.21	9.642	ppb	1.57	100.	
109 Ag	47.705	9.541	ppb	2.82	#VALUE!	
111 Cd	236.15	47.23	ppb	2.01	#VALUE!	
114 Cd	233.95	46.79	ppb	1.95	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	556.5	111.3	ppb	2.60	1000.	
120 Sn	565.	113.	ppb	2.10	#VALUE!	
121 Sb	116.7	23.34	ppb	2.50	#VALUE!	
123 Sb	115.75	23.15	ppb	1.93	1000.	
135 Ba	2,275.	455.	ppb	1.96	2000.	
137 Ba	2,262.5	452.5	ppb	0.75	#VALUE!	
182 W	326.9	65.38	ppb	3.14	1000.	
203 Tl	107.1	21.42	ppb	1.90	1000.	
205 Tl	105.95	21.19	ppb	4.04	#VALUE!	
208 Pb	107.55	21.51	ppb	3.23	2000.	
232 Th	97.15	19.43	ppb	3.29	1000.	
238 U	105.65	21.13	ppb	3.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2204291.30	3.07	1729334.00	127.5	69.5 - 120	IS Fai
45 Sc	2781935.30	4.23	2274967.30	122.3	69.5 - 120	IS Fai
72 Ge	662784.06	3.33	590563.19	112.2	69.5 - 120	
159 Tb	5985645.00	2.45	6367688.00	94.0	69.5 - 120	
209 Bi	2547679.30	2.99	2872959.00	88.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
2 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000853

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\123SMPL.D\123SMPL.D#
Date Acquired: May 11 2018 02:02 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3836-002P
Misc Info:
Vial Number: 3208
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	50.45	10.09	ppb	2.06	100.	
11 B	611.5	122.3	ppb	2.42	1000.	
23 Na	54,150.	10,830.	ppb	6.50	200000.	
25 Mg	74,100.	14,820.	ppb	6.56	200000.	
27 Al	2,223.	444.6	ppb	2.87	200000.	
28 Si	23,070.	4,614.	ppb	2.57	#VALUE!	
29 Si	24,665.	4,933.	ppb	3.86	10000.	
39 K	13,780.	2,756.	ppb	6.73	200000.	
43 Ca	12,525.	2,505.	ppb	3.54	#VALUE!	
44 Ca	11,805.	2,361.	ppb	3.55	200000.	
51 V	565.	113.	ppb	1.69	1000.	
52 Cr	212.55	42.51	ppb	0.95	2000.	
53 Cr	318.75	63.75	ppb	0.82	#VALUE!	
55 Mn	579.5	115.9	ppb	3.38	2000.	
56 Fe	1,422.5	284.5	ppb	3.29	#VALUE!	
57 Fe	1,293.	258.6	ppb	1.82	100000.	
59 Co	547.5	109.5	ppb	2.42	1000.	
60 Ni	536.5	107.3	ppb	2.54	1000.	
63 Cu	282.35	56.47	ppb	1.88	#VALUE!	
65 Cu	280.45	56.09	ppb	1.41	2000.	
66 Zn	644.	128.8	ppb	2.46	2000.	
68 Zn	684.	136.8	ppb	1.99	#VALUE!	
75 As	108.55	21.71	ppb	2.01	1000.	
82 Se	102.75	20.55	ppb	1.07	1000.	
88 Sr	528.5	105.7	ppb	2.13	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	102.75	20.55	ppb	2.35	1000.	
107 Ag	47.315	9.463	ppb	2.07	100.	
109 Ag	46.705	9.341	ppb	2.12	#VALUE!	
111 Cd	231.55	46.31	ppb	1.59	#VALUE!	
114 Cd	231.75	46.35	ppb	1.87	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	540.5	108.1	ppb	2.35	1000.	
120 Sn	550.	110.	ppb	2.59	#VALUE!	
121 Sb	114.3	22.86	ppb	2.52	#VALUE!	
123 Sb	112.3	22.46	ppb	1.73	1000.	
135 Ba	2,227.	445.4	ppb	2.81	2000.	
137 Ba	2,241.	448.2	ppb	3.69	#VALUE!	
182 W	313.1	62.62	ppb	2.52	1000.	
203 Tl	103.85	20.77	ppb	3.54	1000.	
205 Tl	104.1	20.82	ppb	0.81	#VALUE!	
208 Pb	104.85	20.97	ppb	2.81	2000.	
232 Th	94.9	18.98	ppb	2.46	1000.	
238 U	102.15	20.43	ppb	2.95	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2131563.50	1.78	1729334.00	123.3	69.5 - 120	IS Fai
45 Sc	2687586.50	3.36	2274967.30	118.1	69.5 - 120	
72 Ge	643455.75	2.39	590563.19	109.0	69.5 - 120	
159 Tb	5874931.50	3.29	6367688.00	92.3	69.5 - 120	
209 Bi	2528414.30	3.27	2872959.00	88.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000854

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\124_CCV.D\124_CCV.D#
Date Acquired: May 11 2018 02:07 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.92	ppb	2.00	25	103.68	
11 B	32.55	ppb	1.26	25	130.2	Fail
23 Na	5,655.	ppb	3.58	5,000	113.1	Fail
25 Mg	5,426.	ppb	0.99	5,000	108.52	
27 Al	529.3	ppb	1.00	500	105.86	
28 Si	522.7	ppb	2.51	500	104.54	
29 Si	412.2	ppb	3.37	500	82.44	Fail
39 K	5,237.	ppb	1.79	5,000	104.74	
43 Ca	5,087.	ppb	3.70	5,000	101.74	
44 Ca	5,190.	ppb	2.45	5,000	103.8	
51 V	27.08	ppb	0.92	25	108.32	
52 Cr	26.67	ppb	1.39	25	106.68	
53 Cr	37.23	ppb	13.14	25	148.92	
55 Mn	26.1	ppb	0.58	25	104.4	
56 Fe	5,282.	ppb	0.94	5,000	105.64	
57 Fe	5,352.	ppb	1.86	5,000	107.04	
59 Co	26.46	ppb	2.27	25	105.84	
60 Ni	26.31	ppb	1.74	25	105.24	
63 Cu	26.6	ppb	1.81	25	106.4	
65 Cu	26.11	ppb	1.45	25	104.44	
66 Zn	25.44	ppb	0.92	25	101.76	
68 Zn	25.87	ppb	0.76	25	103.48	
75 As	25.25	ppb	1.12	25	101	
82 Se	24.85	ppb	1.03	25	99.4	
88 Sr	23.48	ppb	0.92	25	93.92	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.24	ppb	1.89	25	92.96	
107 Ag	23.27	ppb	0.72	25	93.08	
109 Ag	23.04	ppb	1.00	25	92.16	
111 Cd	22.74	ppb	0.26	25	90.96	
114 Cd	22.66	ppb	0.85	25	90.64	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	27.16	ppb	2.06	25	108.64	
120 Sn	27.13	ppb	0.31	25	108.52	
121 Sb	27.44	ppb	0.92	25	109.76	
123 Sb	27.28	ppb	0.85	25	109.12	
135 Ba	27.1	ppb	0.72	25	108.4	
137 Ba	26.79	ppb	0.59	25	107.16	
182 W	24.36	ppb	0.66	25	97.44	
203 Tl	25.16	ppb	1.13	25	100.64	
205 Tl	25.08	ppb	0.99	25	100.32	
208 Pb	25.28	ppb	0.36	25	101.12	
232 Th	24.89	ppb	0.98	25	99.56	
238 U	25.02	ppb	1.94	25	100.08	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2250640.50	2.81	1729334.00	130.1	80 - 120.4	ISFail
45 Sc	2876590.80	1.26	2274967.30	126.4	80 - 120.4	ISFail
72 Ge	673919.69	0.72	590563.19	114.1	80 - 120.4	
159 Tb	6113693.00	1.21	6367688.00	96.0	80 - 120.4	
209 Bi	2638150.80	0.95	2872959.00	91.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

3 :Element Failures 0 :Max. Number of Failures Allowed
2 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000855

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE10C.B\125_CCB.D\125_CCB.D#
Date Acquired: May 11 2018 02:11 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 10 2018 06:34 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0016	ppb	98.86	1.00	
11 B	5.066	ppb	12.60	1.00	Fail
23 Na	-2.136	ppb	9.11	1.00	
25 Mg	-0.0058	ppb	780.24	1.00	
27 Al	-0.0184	ppb	107.57	1.00	
28 Si	19.14	ppb	68.13	1.00	
29 Si	-107.2	ppb	15.60	1.00	
39 K	-3.478	ppb	27.83	1.00	
43 Ca	-9.41	ppb	25.70	1.00	
44 Ca	-3.771	ppb	30.81	1.00	
51 V	0.1498	ppb	31.96	1.00	
52 Cr	0.1212	ppb	21.22	1.00	
53 Cr	9.478	ppb	5.31	1.00	
55 Mn	-0.001	ppb	698.38	1.00	
56 Fe	16.7	ppb	20.38	1.00	
57 Fe	5.731	ppb	9.20	1.00	
59 Co	0.0034	ppb	89.10	1.00	
60 Ni	0.0002	ppb	2546.40	1.00	
63 Cu	-0.0175	ppb	52.65	1.00	
65 Cu	-0.0115	ppb	136.14	1.00	
66 Zn	-0.0004	ppb	10826.00	1.00	
68 Zn	-0.0062	ppb	1439.60	1.00	
75 As	0.1559	ppb	78.38	1.00	
82 Se	0.0143	ppb	966.39	1.00	
88 Sr	-0.0001	ppb	2638.70	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.034	ppb	65.36	1.00	
107 Ag	0.0036	ppb	72.95	1.00	
109 Ag	0.004	ppb	29.62	1.00	
111 Cd	-0.091	ppb	3.91	1.00	
114 Cd	0.0014	ppb	162.92	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0726	ppb	8.93	1.00	
120 Sn	0.0673	ppb	20.63	1.00	
121 Sb	0.0085	ppb	26.29	1.00	
123 Sb	0.01	ppb	28.41	1.00	
135 Ba	0.0125	ppb	76.28	1.00	
137 Ba	0.0129	ppb	174.40	1.00	
182 W	0.0851	ppb	32.43	1.00	
203 Tl	-0.0326	ppb	16.20	1.00	
205 Tl	-0.0287	ppb	16.65	1.00	
208 Pb	-0.049	ppb	13.20	1.00	
232 Th	0.1101	ppb	8.30	1.00	
238 U	0.004	ppb	41.84	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1958260.10	3.01	1729334.00	113.2	79.5 - 120	
45 Sc	2610762.30	1.12	2274967.30	114.8	79.5 - 120	
72 Ge	627928.94	0.62	590563.19	106.3	79.5 - 120	
159 Tb	5670149.50	1.53	6367688.00	89.0	79.5 - 120	
209 Bi	2511085.50	1.05	2872959.00	87.4	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE10C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000856

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500) **ANALYST**: JS **ANALYSIS DATE**: 05/11/2018

FILE NAME: JLE11B

METHOD: ICP-MS
- ☑ 200.8
- ☑ 6020
- ☑ DOD

REVIEWED
JS 5.15.18
KATAHDIN ANALYTICAL
METALS SECTION

The pHs of all samples that were tested by direct analysis in this analytical run were checked just prior to analysis and confirmed to be <2. The time of preservation of these samples was checked in the "Measured Turbidity and Preservation of Incoming Samples" logbook to verify that they had been preserved at least 16 hours prior to analysis. These verifications were performed by JS (initals) on 5.11.18 (date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17756	05/11/2018	05/11/2019	0 ug/L
Standard 1	MW17738	05/11/2018	06/21/2018	Varies by Element
ICV	MW17701	04/24/2018	07/24/2018	Varies by Element
PQL	MW17755	05/10/2018	07/13/2018	Varies by Element
LRS1	MW17735	05/04/2018	08/04/2018	Varies by Element
LRS2	MW17704	04/25/2018	07/25/2018	Varies by Element
ICSA	MW17751	05/09/2018	05/15/2018	Varies by Element
ICSAB	MW17752	05/09/2018	05/15/2018	Varies by Element
CCV	MW17759	05/11/2018	06/21/2018	Varies by Element
Internal Standard	MW17712	04/27/2018	07/192018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

JS 5.15.18

Dilutions: Some samples were diluted based on history or due to interfering element concentrations. Dilution preparations are as follows:

10x diln.: 1.0mL of sample (pipet M19) + 9.0mL of MW17756 (pipet M18)

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17756 (pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL of MW17756 (pipet M18)

Post Spike: 0.08mL of MW17698(pipet M16) into 5x diln. of sample(pipet M18)

(Unless otherwise specified)

INSTRUMENT RUNLOG

Instrument: AGILENT 7500

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
6020 TUNE	1	JLE11B	5/11/2018	6:17:00 15:24	JS
200.8 TUNE	1	JLE11B	5/11/2018	6:17:00 15:27	JS
Cal Blank	1	JLE11B	5/11/2018	6:17:00 18:17	JS
Cal Std	1	JLE11B	5/11/2018	6:21:00 18:21	JS
ICV	1	JLE11B	5/11/2018	6:25:00 18:25	JS
ICB	1	JLE11B	5/11/2018	6:29:00 18:29	JS
PQL	1	JLE11B	5/11/2018	6:33:00 18:33	JS
RINSE	1	JLE11B	5/11/2018	6:37:00 18:37	JS
ICSA	1	JLE11B	5/11/2018	6:41:00 18:41	JS
ICSAB	1	JLE11B	5/11/2018	6:45:00 18:45	JS
RINSE	1	JLE11B	5/11/2018	6:50:00 18:50	JS
LRS1	1	JLE11B	5/11/2018	6:54:00 18:54	JS
LRS2	1	JLE11B	5/11/2018	6:57:00 18:57	JS
RINSE	1	JLE11B	5/11/2018	7:01:00 19:01	JS
RINSE	1	JLE11B	5/11/2018	7:05:00 19:05	JS
CCV	1	JLE11B	5/11/2018	7:09:00 19:09	JS
CCB	1	JLE11B	5/11/2018	7:13:00 19:13	JS
SL4044-002	1	JLE11B	5/11/2018	7:17:00 19:17	JS
PBWLE09IMW1	1	JLE11B	5/11/2018	7:21:00 19:21	JS
LCSWLE09IMW1	5	JLE11B	5/11/2018	7:25:00 19:25	JS
SL3844-001	1	JLE11B	5/11/2018	7:29:00 19:29	JS
SL3855-001	1	JLE11B	5/11/2018	7:33:00 19:33	JS
PBWLE11IMW1	1	JLE11B	5/11/2018	7:38:00 19:38	JS
LCSWLE11IMW1	5	JLE11B	5/11/2018	7:42:00 19:42	JS
SL3997-001	1	JLE11B	5/11/2018	7:46:00 19:46	JS
SL3997-002	1	JLE11B	5/11/2018	7:50:00 19:50	JS
SL3998-001	1	JLE11B	5/11/2018	7:54:00 19:54	JS
CCV	1	JLE11B	5/11/2018	7:58:00 19:58	JS
CCB	1	JLE11B	5/11/2018	8:02:00 20:02	JS
SL4027-001	1	JLE11B	5/11/2018	8:06:00 20:06	JS
SL4028-001	1	JLE11B	5/11/2018	8:10:00 20:10	JS
SL4030-001	1	JLE11B	5/11/2018	8:14:00 20:14	JS
SL4038-001	1	JLE11B	5/11/2018	8:19:00 20:19	JS
SL4038-002	1	JLE11B	5/11/2018	8:23:00 20:23	JS
SL4038-003	1	JLE11B	5/11/2018	8:27:00 20:27	JS
SL4044-001	1	JLE11B	5/11/2018	8:31:00 20:31	JS
SL4055-001	1	JLE11B	5/11/2018	8:35:00 20:35	JS
SL4056-001	1	JLE11B	5/11/2018	8:39:00 20:39	JS
SL4057-001	1	JLE11B	5/11/2018	8:44:00 20:44	JS
CCV	1	JLE11B	5/11/2018	8:48:00 20:48	JS
CCB	1	JLE11B	5/11/2018	8:52:00 20:52	JS
SL4060-001	1	JLE11B	5/11/2018	8:56:00 20:56	JS
SL4061-001	1	JLE11B	5/11/2018	9:00:00 21:00	JS
SL4065-001	1	JLE11B	5/11/2018	9:04:00 21:04	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL4066-001	1	JLE11B	5/11/2018	9:09:00 21:09	JS
PBSLE04IMS1	5	JLE11B	5/11/2018	9:13:00 21:13	JS
LCSOLE04IMS1	5	JLE11B	5/11/2018	9:17:00 21:17	JS
SL3708-007	10	JLE11B	5/11/2018	9:21:00 21:21	JS
SL3708-019	10	JLE11B	5/11/2018	9:25:00 21:25	JS
SL3708-020	10	JLE11B	5/11/2018	9:29:00 21:29	JS
TEST	10	JLE11B	5/11/2018	9:33:00 21:33	JS
CCV	1	JLE11B	5/11/2018	9:38:00 21:38	JS
CCB	1	JLE11B	5/11/2018	9:42:00 21:42	JS
SL3807-001	10	JLE11B	5/11/2018	9:46:00 21:46	JS
SL3807-002	10	JLE11B	5/11/2018	9:50:00 21:50	JS
RINSE	1	JLE11B	5/11/2018	9:54:00 21:54	JS
PBSLE11IMS2	5	JLE11B	5/11/2018	9:58:00 21:58	JS
LCSOLE11IMS2	5	JLE11B	5/11/2018	10:03:0 22:03	JS
LC2OLE11IMS2	5	JLE11B	5/11/2018	10:07:0 22:07	JS
SL3756-001	5	JLE11B	5/11/2018	10:11:0 22:11	JS
SL3756-003	5	JLE11B	5/11/2018	10:15:0 22:15	JS
SL3756-004	5	JLE11B	5/11/2018	10:19:0 22:19	JS
SL3756-005	5	JLE11B	5/11/2018	10:23:0 22:23	JS
CCV	1	JLE11B	5/11/2018	10:28:0 22:28	JS
CCB	1	JLE11B	5/11/2018	10:32:0 22:32	JS
SL3756-006	5	JLE11B	5/11/2018	10:36:0 22:36	JS
SL3756-007	5	JLE11B	5/11/2018	10:40:0 22:40	JS
SL3756-008	5	JLE11B	5/11/2018	10:44:0 22:44	JS
SL3756-009	5	JLE11B	5/11/2018	10:48:0 22:48	JS
SL3756-010	5	JLE11B	5/11/2018	10:53:0 22:53	JS
SL3756-011	5	JLE11B	5/11/2018	10:57:0 22:57	JS
SL3756-012	5	JLE11B	5/11/2018	11:01:0 23:01	JS
SL3756-013	5	JLE11B	5/11/2018	11:05:0 23:05	JS
SL3756-014	5	JLE11B	5/11/2018	11:09:0 23:09	JS
SL3756-029	5	JLE11B	5/11/2018	11:14:0 23:14	JS
CCV	1	JLE11B	5/11/2018	11:18:0 23:18	JS
CCB	1	JLE11B	5/11/2018	11:22:0 23:22	JS
SL3756-030	5	JLE11B	5/11/2018	11:26:0 23:26	JS
RINSE	1	JLE11B	5/11/2018	11:31:0 23:31	JS
PBSLE09IMS1	5	JLE11B	5/11/2018	11:35:0 23:35	JS
LCSOLE09IMS1	5	JLE11B	5/11/2018	11:39:0 23:39	JS
SL3809-049	5	JLE11B	5/11/2018	11:43:0 23:43	JS
SL3809-050	5	JLE11B	5/11/2018	11:48:0 23:48	JS
SL3809-051	5	JLE11B	5/11/2018	11:52:0 23:52	JS
SL3809-052	5	JLE11B	5/11/2018	11:56:0 23:56	JS
SL3809-053	5	JLE11B	5/12/2018	12:01:0 0:01	JS
RINSE	1	JLE11B	5/12/2018	12:05:0 0:05	JS
CCV	1	JLE11B	5/12/2018	12:09:0 0:09	JS
CCB	1	JLE11B	5/12/2018	12:13:0 0:13	JS
SL3809-054	5	JLE11B	5/12/2018	12:18:0 0:18	JS
SL3809-055	5	JLE11B	5/12/2018	12:22:0 0:22	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3951-001	5	JLE11B	5/12/2018	12:26:0 0:26	JS
SL3951-001L	25	JLE11B	5/12/2018	12:31:0 0:31	JS
SL3951-001A	5	JLE11B	5/12/2018	12:35:0 0:35	JS
SL3951-001S	5	JLE11B	5/12/2018	12:39:0 0:39	JS
SL3951-001P	5	JLE11B	5/12/2018	12:43:0 0:43	JS
SL3951-002	5	JLE11B	5/12/2018	12:48:0 0:48	JS
RINSE	1	JLE11B	5/12/2018	12:52:0 0:52	JS
PBSLE08IMS1	5	JLE11B	5/12/2018	12:56:0 0:56	JS
CCV	1	JLE11B	5/12/2018	1:00:00 1:00	JS
CCB	1	JLE11B	5/12/2018	1:04:00 1:04	JS
LCSOLE08IMS1	5	JLE11B	5/12/2018	1:08:00 1:08	JS
SL3809-016	5	JLE11B	5/12/2018	1:13:00 1:13	JS
SL3809-016L	25	JLE11B	5/12/2018	1:17:00 1:17	JS
SL3809-016A	5	JLE11B	5/12/2018	1:21:00 1:21	JS
SL3809-016S	5	JLE11B	5/12/2018	1:25:00 1:25	JS
SL3809-016P	5	JLE11B	5/12/2018	1:30:00 1:30	JS
SL3809-021	5	JLE11B	5/12/2018	1:34:00 1:34	JS
SL3809-022	5	JLE11B	5/12/2018	1:38:00 1:38	JS
SL3809-023	5	JLE11B	5/12/2018	1:43:00 1:43	JS
RINSE	1	JLE11B	5/12/2018	1:47:00 1:47	JS
CCV	1	JLE11B	5/12/2018	1:51:00 1:51	JS
CCB	1	JLE11B	5/12/2018	1:55:00 1:55	JS
SL3809-025	5	JLE11B	5/12/2018	2:00:00 2:00	JS
SL3809-026	5	JLE11B	5/12/2018	2:04:00 2:04	JS
SL3809-027	5	JLE11B	5/12/2018	2:08:00 2:08	JS
SL3809-028	5	JLE11B	5/12/2018	2:13:00 2:13	JS
SL3809-028	10	JLE11B	5/12/2018	2:17:00 2:17	JS
SL3809-029	5	JLE11B	5/12/2018	2:21:00 2:21	JS
SL3809-030	5	JLE11B	5/12/2018	2:25:00 2:25	JS
SL3809-031	5	JLE11B	5/12/2018	2:30:00 2:30	JS
SL3809-032	10	JLE11B	5/12/2018	2:34:00 2:34	JS
RINSE	1	JLE11B	5/12/2018	2:38:00 2:38	JS
CCV	1	JLE11B	5/12/2018	2:43:00 2:43	JS
CCB	1	JLE11B	5/12/2018	2:47:00 2:47	JS
SL3809-033	10	JLE11B	5/12/2018	2:51:00 2:51	JS
SL3809-034	10	JLE11B	5/12/2018	2:55:00 2:55	JS
SL3809-035	5	JLE11B	5/12/2018	3:00:00 3:00	JS
SL3809-036	5	JLE11B	5/12/2018	3:04:00 3:04	JS
SL3809-037	5	JLE11B	5/12/2018	3:09:00 3:09	JS
SL3809-038	5	JLE11B	5/12/2018	3:13:00 3:13	JS
SL3809-039	5	JLE11B	5/12/2018	3:17:00 3:17	JS
SL3809-040	5	JLE11B	5/12/2018	3:22:00 3:22	JS
SL3809-048	5	JLE11B	5/12/2018	3:26:00 3:26	JS
RINSE	1	JLE11B	5/12/2018	3:30:00 3:30	JS
CCV	1	JLE11B	5/12/2018	3:35:00 3:35	JS
CCB	1	JLE11B	5/12/2018	3:39:00 3:39	JS
PQL	1	JLE11B	5/12/2018	3:43:00 3:43	JS

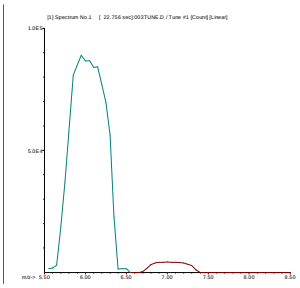
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
CCV	1	JLE11B	5/12/2018 3:47:00	3:47	JS
CCB	1	JLE11B	5/12/2018 3:51:00	3:51	JS

6020 QC Tune Report

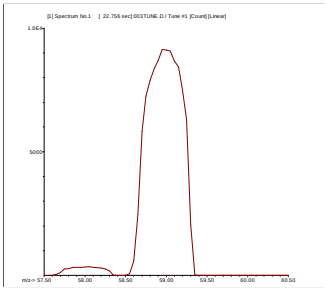
Data File: C:\ICPCHEM\1\DATA\JLE11A.B\003TUNE.D
Date Acquired: May 11 2018 03:24 pm
Acq. Method: TN6020E.M
Operator: JS
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

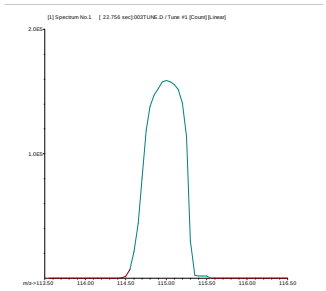
Element	Actual	Required	Flag
7 Li	2.24	5.00	
59 Co	2.52	5.00	
115 In	1.40	5.00	
205 Tl	1.74	5.00	



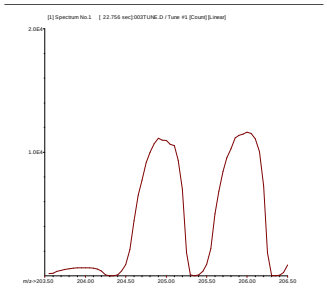
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 0.90
Flag:



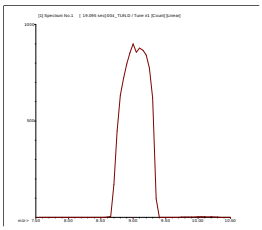
205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

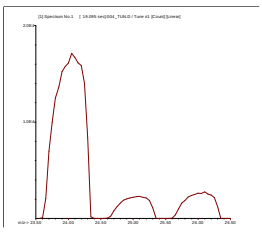
Data File: C:\ICPCHEM\1\DATA\JLE11A.B\004_TUN.D
Date Acquired: May 11 2018 03:27 pm
Acq. Method: TN200_8E.M
Operator: JS
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

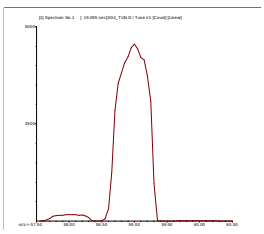
Element	Actual	Required	Flag
9 Be	3.13	5.00	
24 Mg	3.04	5.00	
59 Co	1.06	5.00	
115 In	1.50	5.00	
208 Pb	1.43	5.00	



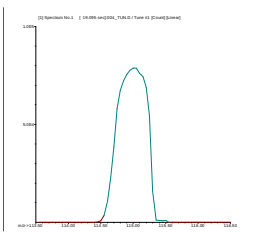
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



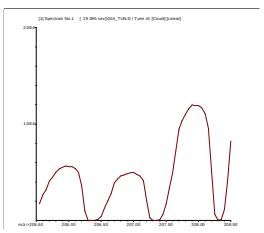
24 Mg
Mass Calib.
Actual: 24.10
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:

Tune Result: Pass

Katahdin Analytical Services 4000863

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.I
Date Acquired: May 11 2018 06:17 pm
Operator: JS
Sample Name: Cal Blank
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: May 11 2018 06:20 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	2844111.00	A	139300.00	4.90
9	Be	6.30	P	2.31	36.74
11	B	260.01	P	56.08	21.57
23	Na	35374.57	P	242.20	0.68
25	Mg	93.34	P	6.67	7.14
27	Al	1567.27	P	218.70	13.95
28	Si	1278140.00	A	12690.00	0.99
29	Si	101211.10	P	418.30	0.41
39	K	808431.00	A	11770.00	1.46
43	Ca	129.64	P	27.97	21.57
44	Ca	3503.88	P	44.91	1.28
45	Sc	2809797.00	A	79210.00	2.82
51	V	3077.00	P	322.50	10.48
52	Cr	8163.59	P	266.90	3.27
53	Cr	10389.43	P	228.40	2.20
55	Mn	1106.75	P	58.41	5.28
56	Fe	1699575.00	A	26100.00	1.54
57	Fe	8792.18	P	280.40	3.19
59	Co	124.45	P	27.76	22.31
60	Ni	58.51	P	5.09	8.71
63	Cu	303.35	P	26.03	8.58
65	Cu	183.34	P	45.83	25.00
66	Zn	983.40	P	29.63	3.01
68	Zn	1273.43	P	46.67	3.66
72	Ge	642252.38	P	6295.00	0.98
75	As	-250.96	P	242.20	96.51
82	Se	-15.90	P	10.25	64.45
88	Sr	88.90	P	11.11	12.50
89	Y	4985208.00	A	5424.00	0.11
98	Mo	48.08	P	16.61	34.55
107	Ag	33.33	P	5.77	17.32
109	Ag	18.89	P	5.09	26.96
111	Cd	857.36	P	24.03	2.80
114	Cd	0.74	P	2.95	399.24
115	In	4962449.00	A	44820.00	0.90
118	Sn	456.69	P	18.56	4.06
120	Sn	645.59	P	50.92	7.89
121	Sb	44.45	P	10.18	22.90
123	Sb	31.11	P	3.85	12.37
135	Ba	22.22	P	6.94	31.22
137	Ba	45.56	P	9.62	21.12
159	Tb	7051087.00	A	90010.00	1.28
182	W	38.89	P	1.93	4.95
203	Tl	408.91	P	20.09	4.91
205	Tl	996.74	P	53.34	5.35
208	Pb	1476.75	P	128.40	8.69
209	Bi	3594227.00	A	11450.00	0.32
232	Th	47.78	P	13.88	29.05
238	U	5.56	P	1.93	34.65

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\016CALI.D\016CALI.D#
Date Acquired: May 11 2018 06:21 pm
Operator: JS
Sample Name: Cal Std
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: May 11 2018 06:20 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	2931355.00	A	70920.00	2.42
9 Be	106573.70	P	1622.00	1.52
11 B	54089.23	P	1565.00	2.89
23 Na	63601540.00	A	1718000.00	2.70
25 Mg	5438607.00	A	86330.00	1.59
27 Al	5354109.00	A	115400.00	2.16
28 Si	4284597.00	A	41870.00	0.98
29 Si	266486.41	P	998.80	0.37
39 K	80867672.00	A	1090000.00	1.35
43 Ca	150413.30	P	4180.00	2.78
44 Ca	2437266.00	A	6117.00	0.25
45 Sc	2812814.00	A	25690.00	0.91
51 V	517677.41	P	2932.00	0.57
52 Cr	456203.69	P	4227.00	0.93
53 Cr	59004.18	P	1272.00	2.16
55 Mn	589346.38	P	9749.00	1.65
56 Fe	97779520.00	A	768000.00	0.79
57 Fe	2406833.00	A	14720.00	0.61
59 Co	515124.69	P	2619.00	0.51
60 Ni	114913.50	P	1547.00	1.35
63 Cu	274185.00	P	5417.00	1.98
65 Cu	129263.30	P	1710.00	1.32
66 Zn	70025.76	P	676.60	0.97
68 Zn	50598.90	P	1237.00	2.44
72 Ge	622769.31	P	3436.00	0.55
75 As	67639.45	P	531.40	0.79
82 Se	5576.09	P	66.36	1.19
88 Sr	788962.69	A	5345.00	0.68
89 Y	4941294.00	A	21390.00	0.43
98 Mo	243432.09	P	1647.00	0.68
107 Ag	395281.50	P	1376.00	0.35
109 Ag	378730.09	P	2137.00	0.56
111 Cd	80254.87	P	833.30	1.04
114 Cd	176652.41	P	1112.00	0.63
115 In	4820432.00	A	32990.00	0.68
118 Sn	239066.09	P	1061.00	0.44
120 Sn	330234.09	P	1200.00	0.36
121 Sb	287803.41	P	1434.00	0.50
123 Sb	219236.30	P	2085.00	0.95
135 Ba	70655.81	P	216.40	0.31
137 Ba	123398.10	P	1256.00	1.02
159 Tb	7039091.00	A	39390.00	0.56
182 W	311043.59	P	1144.00	0.37
203 Tl	256375.20	P	948.90	0.37
205 Tl	600002.19	P	4261.00	0.71
208 Pb	821089.50	P	1934.00	0.24
209 Bi	3471543.00	A	47460.00	1.37
232 Th	830437.13	A	10630.00	1.28
238 U	770462.13	P	7400.00	0.96

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2931355.30	2.42	2844110.50	103.1	79.5 - 120.4	
45 Sc	2812814.00	0.91	2809797.00	100.1	79.5 - 120.4	
72 Ge	622769.25	0.55	642252.38	97.0	79.5 - 120.4	
159 Tb	7039091.50	0.56	7051087.50	99.8	79.5 - 120.4	
209 Bi	3471542.80	1.37	3594227.50	96.6	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000865

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\017_ICV.D\017_ICV.D#
Date Acquired: May 11 2018 06:25 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: ICV
Misc Info:
Vial Number: 1202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	20.96	ppb	3.05	20	104.8	
11 B	21.75	ppb	4.41	20	108.75	
23 Na	4,156.	ppb	5.35	4,000	103.9	
25 Mg	4,238.	ppb	1.60	4,000	105.95	
27 Al	414.2	ppb	1.79	400	103.55	
28 Si	432.6	ppb	5.03	400	108.15	
29 Si	413.3	ppb	3.95	400	103.325	
39 K	4,053.	ppb	1.13	4,000	101.325	
43 Ca	4,045.	ppb	2.09	4,000	101.125	
44 Ca	4,127.	ppb	2.18	4,000	103.175	
51 V	19.68	ppb	1.06	20	98.4	
52 Cr	19.91	ppb	1.13	20	99.55	
53 Cr	15.66	ppb	2.57	20	78.3	
55 Mn	19.92	ppb	1.46	20	99.6	
56 Fe	3,991.	ppb	0.61	4,000	99.775	
57 Fe	4,102.	ppb	0.98	4,000	102.55	
59 Co	20.2	ppb	1.26	20	101	
60 Ni	19.9	ppb	3.22	20	99.5	
63 Cu	20.28	ppb	0.33	20	101.4	
65 Cu	20.36	ppb	0.81	20	101.8	
66 Zn	20.31	ppb	2.01	20	101.55	
68 Zn	20.74	ppb	0.64	20	103.7	
75 As	20.28	ppb	1.08	20	101.4	
82 Se	20.95	ppb	1.64	20	104.75	
88 Sr	19.71	ppb	0.64	20	98.55	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	39.7	ppb	0.68	40	99.25	
107 Ag	20.44	ppb	0.80	20	102.2	
109 Ag	20.34	ppb	0.51	20	101.7	
111 Cd	20.53	ppb	0.25	20	102.65	
114 Cd	20.57	ppb	0.60	20	102.85	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	20.2	ppb	1.91	20	101	
120 Sn	20.14	ppb	1.40	20	100.7	
121 Sb	20.33	ppb	1.44	20	101.65	
123 Sb	20.33	ppb	0.81	20	101.65	
135 Ba	20.33	ppb	2.51	20	101.65	
137 Ba	20.54	ppb	1.76	20	102.7	
182 W	20.03	ppb	0.42	20	100.15	
203 Tl	20.52	ppb	0.95	20	102.6	
205 Tl	20.83	ppb	0.58	20	104.15	
208 Pb	20.27	ppb	0.77	20	101.35	
232 Th	19.97	ppb	0.52	20	99.85	
238 U	20.1	ppb	2.47	20	100.5	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2736177.00	6.27	2844110.50	96.2	80 - 120.4	
45 Sc	2715163.00	0.53	2809797.00	96.6	80 - 120.4	
72 Ge	617631.88	0.85	642252.38	96.2	80 - 120.4	
159 Tb	6926850.00	1.00	7051087.50	98.2	80 - 120.4	
209 Bi	3438285.30	0.40	3594227.50	95.7	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000866

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\018_ICB.D\018_ICB.D#
Date Acquired: May 11 2018 06:29 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: ICB
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0013	ppb	45.46	1.00	
11 B	1.592	ppb	14.79	1.00	
23 Na	-0.1731	ppb	100.29	1.00	
25 Mg	0.0312	ppb	314.80	1.00	
27 Al	0.0033	ppb	453.22	1.00	
28 Si	22.93	ppb	45.49	1.00	
29 Si	12.47	ppb	40.17	1.00	
39 K	0.3917	ppb	375.80	1.00	
43 Ca	1.051	ppb	214.56	1.00	
44 Ca	0.6982	ppb	45.26	1.00	
51 V	-0.0718	ppb	33.87	1.00	
52 Cr	-0.0611	ppb	14.96	1.00	
53 Cr	-4.619	ppb	4.91	1.00	
55 Mn	-0.0011	ppb	149.17	1.00	
56 Fe	-1.283	ppb	80.83	1.00	
57 Fe	1.667	ppb	36.53	1.00	
59 Co	0.0024	ppb	161.40	1.00	
60 Ni	0.0058	ppb	63.94	1.00	
63 Cu	0.0064	ppb	112.63	1.00	
65 Cu	-0.008	ppb	45.76	1.00	
66 Zn	-0.0432	ppb	49.47	1.00	
68 Zn	-0.0046	ppb	2369.90	1.00	
75 As	0.048	ppb	272.06	1.00	
82 Se	-0.0225	ppb	754.11	1.00	
88 Sr	0.0027	ppb	78.66	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0532	ppb	38.32	1.00	
107 Ag	0.0161	ppb	39.43	1.00	
109 Ag	0.0153	ppb	42.68	1.00	
111 Cd	-0.0343	ppb	27.88	1.00	
114 Cd	-0.0009	ppb	76.83	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0258	ppb	34.91	1.00	
120 Sn	0.0106	ppb	54.13	1.00	
121 Sb	0.0034	ppb	50.51	1.00	
123 Sb	0.0096	ppb	32.78	1.00	
135 Ba	0.0018	ppb	431.05	1.00	
137 Ba	-0.0015	ppb	262.14	1.00	
182 W	0.0498	ppb	18.59	1.00	
203 Tl	0.0023	ppb	306.83	1.00	
205 Tl	0.0008	ppb	230.86	1.00	
208 Pb	-0.0038	ppb	174.53	1.00	
232 Th	0.0534	ppb	10.41	1.00	
238 U	0.0046	ppb	60.53	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2675927.00	1.81	2844110.50	94.1	79.5 - 120	
45 Sc	2724571.30	1.54	2809797.00	97.0	79.5 - 120	
72 Ge	628654.81	0.42	642252.38	97.9	79.5 - 120	
159 Tb	6958238.50	0.68	7051087.50	98.7	79.5 - 120	
209 Bi	3518316.30	0.62	3594227.50	97.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000867

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\019_PQL.D\019_PQL.D#
Date Acquired: May 11 2018 06:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PQL
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.1957	ppb	7.68	0.20	97.85	
11 B	4.339	ppb	4.38	4.00	108.475	
23 Na	204.5	ppb	4.58	200.00	102.25	
25 Mg	19.64	ppb	4.58	20.00	98.2	
27 Al	19.77	ppb	2.79	20.00	98.85	
28 Si	112.7	ppb	10.52	100.00	112.7	
29 Si	106.	ppb	9.96	100.00	106	
39 K	200.4	ppb	4.05	200.00	100.2	
43 Ca	19.73	ppb	19.58	20.00	98.65	
44 Ca	19.82	ppb	7.96	20.00	99.1	
51 V	0.9221	ppb	7.51	1.00	92.21	
52 Cr	0.9501	ppb	5.48	1.00	95.01	
53 Cr	-3.128	ppb	3.97	---	#VALUE!	
55 Mn	0.3894	ppb	0.42	0.40	97.35	
56 Fe	16.43	ppb	14.73	20.00	82.15	
57 Fe	20.33	ppb	7.78	20.00	101.65	
59 Co	0.1962	ppb	3.90	0.20	98.1	
60 Ni	0.4064	ppb	11.16	0.40	101.6	
63 Cu	0.6246	ppb	0.76	0.60	104.1	
65 Cu	0.5771	ppb	6.32	0.60	96.1833	
66 Zn	2.015	ppb	2.51	2.00	100.75	
68 Zn	2.068	ppb	8.38	2.00	103.4	
75 As	0.9882	ppb	17.18	1.00	98.82	
82 Se	1.118	ppb	5.31	1.00	111.8	
88 Sr	0.9812	ppb	2.23	1.00	98.12	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	0.9975	ppb	3.65	1.00	99.75	
107 Ag	0.2104	ppb	3.26	0.20	105.2	
109 Ag	0.2125	ppb	6.22	0.20	106.25	
111 Cd	0.2025	ppb	12.57	0.20	101.25	
114 Cd	0.2089	ppb	1.70	0.20	104.45	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	0.9798	ppb	4.59	1.00	97.98	
120 Sn	0.9935	ppb	1.41	1.00	99.35	
121 Sb	0.2096	ppb	11.21	0.20	104.8	
123 Sb	0.2008	ppb	8.78	0.20	100.4	
135 Ba	0.4165	ppb	0.34	0.40	104.125	
137 Ba	0.3766	ppb	5.49	0.40	94.15	
182 W	1.042	ppb	4.04	1.00	104.2	
203 Tl	0.1965	ppb	2.02	0.20	98.25	
205 Tl	0.2017	ppb	3.06	0.20	100.85	
208 Pb	0.2119	ppb	2.60	0.20	105.95	
232 Th	0.2129	ppb	4.36	0.20	106.45	
238 U	0.1866	ppb	2.14	0.20	93.3	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2742700.50	2.55	2844110.50	96.4	80 - 120.4	
45 Sc	2740519.50	2.09	2809797.00	97.5	80 - 120.4	
72 Ge	625656.56	0.05	642252.38	97.4	80 - 120.4	
159 Tb	6956509.00	1.69	7051087.50	98.7	80 - 120.4	
209 Bi	3496871.30	1.56	3594227.50	97.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000868

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\020SMPL.D\020SMPL.D#
Date Acquired: May 11 2018 06:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0006	0.0006	ppb	101.53	100.	
11 B	0.4463	0.4463	ppb	17.07	1000.	
23 Na	0.031	0.031	ppb	537.94	200000.	
25 Mg	0.065	0.065	ppb	74.75	200000.	
27 Al	0.2511	0.2511	ppb	18.67	200000.	
28 Si	32.42	32.42	ppb	7.29	#VALUE!	
29 Si	15.78	15.78	ppb	33.64	10000.	
39 K	-1.391	-1.391	ppb	94.82	200000.	
43 Ca	-1.991	-1.991	ppb	61.78	#VALUE!	
44 Ca	0.5596	0.5596	ppb	32.36	200000.	
51 V	-0.1106	-0.1106	ppb	93.22	1000.	
52 Cr	-0.0481	-0.0481	ppb	23.31	2000.	
53 Cr	-3.924	-3.924	ppb	5.69	#VALUE!	
55 Mn	0.0107	0.0107	ppb	7.97	2000.	
56 Fe	4.922	4.922	ppb	40.39	#VALUE!	
57 Fe	1.782	1.782	ppb	22.42	100000.	
59 Co	-0.0034	-0.0034	ppb	72.08	1000.	
60 Ni	0.0079	0.0079	ppb	91.90	1000.	
63 Cu	0.0877	0.0877	ppb	15.52	#VALUE!	
65 Cu	0.0558	0.0558	ppb	21.98	2000.	
66 Zn	0.0401	0.0401	ppb	145.01	2000.	
68 Zn	0.1599	0.1599	ppb	19.13	#VALUE!	
75 As	0.1048	0.1048	ppb	65.13	1000.	
82 Se	0.1458	0.1458	ppb	110.36	1000.	
88 Sr	-0.0006	-0.0006	ppb	276.11	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0079	0.0079	ppb	53.65	1000.	
107 Ag	0.0046	0.0046	ppb	34.59	100.	
109 Ag	0.0043	0.0043	ppb	26.86	#VALUE!	
111 Cd	-0.0268	-0.0268	ppb	116.28	#VALUE!	
114 Cd	0.0005	0.0005	ppb	638.16	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0052	-0.0052	ppb	95.18	1000.	
120 Sn	-0.0009	-0.0009	ppb	384.77	#VALUE!	
121 Sb	0.0017	0.0017	ppb	74.69	#VALUE!	
123 Sb	0.0029	0.0029	ppb	68.41	1000.	
135 Ba	-0.0019	-0.0019	ppb	318.49	2000.	
137 Ba	0.0016	0.0016	ppb	126.57	#VALUE!	
182 W	0.0093	0.0093	ppb	92.57	1000.	
203 Tl	0.0079	0.0079	ppb	46.09	1000.	
205 Tl	0.0031	0.0031	ppb	186.68	#VALUE!	
208 Pb	0.0809	0.0809	ppb	11.28	2000.	
232 Th	0.0092	0.0092	ppb	32.66	1000.	
238 U	0.0005	0.0005	ppb	98.11	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2502433.00	1.25	2844110.50	88.0	69.5 - 120	
45 Sc	2621208.50	0.60	2809797.00	93.3	69.5 - 120	
72 Ge	597187.56	0.95	642252.38	93.0	69.5 - 120	
159 Tb	6804308.00	0.49	7051087.50	96.5	69.5 - 120	
209 Bi	3393525.00	0.83	3594227.50	94.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000869

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\021ICSA.D\021ICSA.D#
Date Acquired: May 11 2018 06:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: ICSA
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0019	ppb	105.69		
11 B	0.7831	ppb	8.81		
23 Na	97,520.	ppb	2.82		
25 Mg	94,800.	ppb	1.54		
27 Al	96,990.	ppb	2.85		
28 Si	24.08	ppb	47.59		
29 Si	39.81	ppb	21.99		
39 K	96,810.	ppb	0.61		
43 Ca	99,610.	ppb	0.48		
44 Ca	95,750.	ppb	0.80		
51 V	0.1228	ppb	23.91		
52 Cr	0.8825	ppb	3.06		
53 Cr	-3.016	ppb	2.23		
55 Mn	0.3797	ppb	0.67		
56 Fe	96,110.	ppb	0.54		
57 Fe	92,660.	ppb	0.58		
59 Co	0.0776	ppb	4.75		
60 Ni	-0.3165	ppb	10.02		
63 Cu	4.186	ppb	1.25		
65 Cu	1.132	ppb	5.99		
66 Zn	2.127	ppb	1.44		
68 Zn	0.56	ppb	23.23		
75 As	0.2788	ppb	28.90		
82 Se	0.3681	ppb	11.46		
88 Sr	0.9284	ppb	1.75		
89 Y	--------	---	--------		
98 Mo	1,934.	ppb	0.43		
107 Ag	0.0379	ppb	12.24		
109 Ag	0.039	ppb	9.09		
111 Cd	0.0089	ppb	537.07		
114 Cd	0.0162	ppb	120.59		
115 In	--------	---	--------		
118 Sn	0.0388	ppb	42.66		
120 Sn	0.032	ppb	30.93		
121 Sb	0.0516	ppb	18.96		
123 Sb	0.0457	ppb	6.19		
135 Ba	0.1035	ppb	16.92		
137 Ba	0.0739	ppb	20.61		
182 W	0.2336	ppb	1.26		
203 Tl	0.0051	ppb	101.91		
205 Tl	0.0031	ppb	132.75		
208 Pb	0.1577	ppb	6.26		
232 Th	0.0536	ppb	20.12		
238 U	0.0011	ppb	89.67		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2632333.00	2.56	2844110.50	92.6	69.5 - 120.4	
45 Sc	2932201.50	3.17	2809797.00	104.4	69.5 - 120.4	
72 Ge	651694.56	2.88	642252.38	101.5	69.5 - 120.4	
159 Tb	6826769.50	1.05	7051087.50	96.8	69.5 - 120.4	
209 Bi	2913051.80	1.69	3594227.50	81.0	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000870

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\022ICSB.D\022ICSB.D#
Date Acquired: May 11 2018 06:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: ICSAB
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	21.24	ppb	1.17	20.00	79.5 - 120	
11 B	23.13	ppb	3.66	20.00	79.5 - 120	
23 Na	96,190.	ppb	3.92	#########	79.5 - 120	
25 Mg	95,470.	ppb	3.61	#########	79.5 - 120	
27 Al	96,230.	ppb	2.75	#########	79.5 - 120	
28 Si	513.8	ppb	5.10	---	##### - #####	
29 Si	504.8	ppb	7.41	---	##### - #####	
39 K	95,870.	ppb	3.26	#########	79.5 - 120	
43 Ca	99,650.	ppb	3.62	#########	79.5 - 120	
44 Ca	96,210.	ppb	1.56	#########	79.5 - 120	
51 V	20.51	ppb	2.16	20.00	79.5 - 120	
52 Cr	20.72	ppb	1.78	20.00	79.5 - 120	
53 Cr	19.06	ppb	3.34	---	##### - #####	
55 Mn	20.36	ppb	0.19	20.00	79.5 - 120	
56 Fe	97,540.	ppb	2.01	#########	79.5 - 120	
57 Fe	93,850.	ppb	0.21	#########	79.5 - 120	
59 Co	19.8	ppb	1.72	20.00	79.5 - 120	
60 Ni	18.82	ppb	0.42	20.00	79.5 - 120	
63 Cu	23.14	ppb	1.14	20.00	79.5 - 120	
65 Cu	20.35	ppb	2.74	20.00	79.5 - 120	
66 Zn	19.86	ppb	1.01	20.00	79.5 - 120	
68 Zn	18.55	ppb	0.66	20.00	79.5 - 120	
75 As	20.	ppb	1.14	20.00	79.5 - 120	
82 Se	19.19	ppb	1.36	20.00	79.5 - 120	
88 Sr	20.85	ppb	0.23	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,979.	ppb	1.04	2000.00	79.5 - 120	
107 Ag	18.47	ppb	0.10	20.00	79.5 - 120	
109 Ag	18.35	ppb	1.06	20.00	79.5 - 120	
111 Cd	18.5	ppb	0.84	20.00	79.5 - 120	
114 Cd	18.4	ppb	0.70	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	21.33	ppb	0.55	20.00	79.5 - 120	
120 Sn	21.19	ppb	0.27	20.00	79.5 - 120	
121 Sb	21.58	ppb	0.41	20.00	79.5 - 120	
123 Sb	21.4	ppb	0.55	20.00	79.5 - 120	
135 Ba	21.58	ppb	0.40	20.00	79.5 - 120	
137 Ba	21.36	ppb	0.30	20.00	79.5 - 120	
182 W	19.88	ppb	1.64	20.00	79.5 - 120	
203 Tl	21.39	ppb	2.15	20.00	79.5 - 120	
205 Tl	21.42	ppb	1.72	20.00	79.5 - 120	
208 Pb	21.46	ppb	1.53	20.00	79.5 - 120	
232 Th	22.17	ppb	1.03	20.00	79.5 - 120	
238 U	21.7	ppb	1.85	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2646425.80	0.63	2844110.50	93.0	69.5 - 120	
45 Sc	3035567.80	1.72	2809797.00	108.0	69.5 - 120	
72 Ge	664811.44	0.42	642252.38	103.5	69.5 - 120	
159 Tb	6890558.00	0.54	7051087.50	97.7	69.5 - 120	
209 Bi	2907023.80	1.18	3594227.50	80.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000871

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\023SMPL.D\023SMPL.D#
Date Acquired: May 11 2018 06:50 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0024	0.0024	ppb	23.11	100.	
11 B	0.4741	0.4741	ppb	12.01	1000.	
23 Na	5.605	5.605	ppb	19.23	200000.	
25 Mg	1.254	1.254	ppb	137.40	200000.	
27 Al	1.454	1.454	ppb	115.13	200000.	
28 Si	41.11	41.11	ppb	8.56	#VALUE!	
29 Si	-22.61	-22.61	ppb	19.09	10000.	
39 K	-2.737	-2.737	ppb	59.55	200000.	
43 Ca	-0.1783	-0.1783	ppb	1157.60	#VALUE!	
44 Ca	2.675	2.675	ppb	90.92	200000.	
51 V	-0.0693	-0.0693	ppb	61.57	1000.	
52 Cr	0.0023	0.0023	ppb	1728.00	2000.	
53 Cr	-1.528	-1.528	ppb	29.31	#VALUE!	
55 Mn	0.0071	0.0071	ppb	67.43	2000.	
56 Fe	6.959	6.959	ppb	69.51	#VALUE!	
57 Fe	7.359	7.359	ppb	52.63	100000.	
59 Co	0.0019	0.0019	ppb	185.47	1000.	
60 Ni	0.0231	0.0231	ppb	12.68	1000.	
63 Cu	0.1141	0.1141	ppb	2.55	#VALUE!	
65 Cu	0.1077	0.1077	ppb	6.74	2000.	
66 Zn	0.1929	0.1929	ppb	15.43	2000.	
68 Zn	0.3248	0.3248	ppb	7.22	#VALUE!	
75 As	0.0217	0.0217	ppb	351.20	1000.	
82 Se	0.1498	0.1498	ppb	75.37	1000.	
88 Sr	0.0011	0.0011	ppb	224.60	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.138	1.138	ppb	55.63	1000.	
107 Ag	0.0088	0.0088	ppb	29.45	100.	
109 Ag	0.0091	0.0091	ppb	55.22	#VALUE!	
111 Cd	-0.0764	-0.0764	ppb	15.76	#VALUE!	
114 Cd	0.0016	0.0016	ppb	65.83	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0099	0.0099	ppb	92.88	1000.	
120 Sn	0.0021	0.0021	ppb	574.26	#VALUE!	
121 Sb	-0.0011	-0.0011	ppb	236.05	#VALUE!	
123 Sb	0.0018	0.0018	ppb	150.03	1000.	
135 Ba	0.0229	0.0229	ppb	53.60	2000.	
137 Ba	0.0254	0.0254	ppb	27.05	#VALUE!	
182 W	0.0079	0.0079	ppb	26.43	1000.	
203 Tl	0.0016	0.0016	ppb	159.18	1000.	
205 Tl	0.0041	0.0041	ppb	31.96	#VALUE!	
208 Pb	0.1048	0.1048	ppb	8.08	2000.	
232 Th	0.0122	0.0122	ppb	18.05	1000.	
238 U	0.0024	0.0024	ppb	48.99	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2781891.00	0.72	2844110.50	97.8	69.5 - 120	
45 Sc	2959036.50	0.59	2809797.00	105.3	69.5 - 120	
72 Ge	672289.44	1.03	642252.38	104.7	69.5 - 120	
159 Tb	7029585.00	0.72	7051087.50	99.7	69.5 - 120	
209 Bi	3327474.30	1.17	3594227.50	92.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000872

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\024SMPL.D\024SMPL.D#
Date Acquired: May 11 2018 06:54 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LRS1
Misc Info:
Vial Number: 3511
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	106.	106.	ppb	3.08	100.	>LDR
11 B	0.1924	0.1924	ppb	21.44	1000.	
23 Na	3.99	3.99	ppb	16.53	200000.	
25 Mg	0.915	0.915	ppb	6.38	200000.	
27 Al	2.674	2.674	ppb	4.89	200000.	
28 Si	27.62	27.62	ppb	16.45	#VALUE!	
29 Si	2.321	2.321	ppb	278.80	10000.	
39 K	0.2438	0.2438	ppb	506.15	200000.	
43 Ca	1,281.	1,281.	ppb	1.85	#VALUE!	
44 Ca	-185.5	-185.5	ppb	14.54	200000.	LOW
51 V	1,023.	1,023.	ppb	0.37	1000.	>LDR
52 Cr	2,023.	2,023.	ppb	0.92	2000.	>LDR
53 Cr	2,252.	2,252.	ppb	0.81	#VALUE!	
55 Mn	2,011.	2,011.	ppb	0.93	2000.	>LDR
56 Fe	7.129	7.129	ppb	8.14	#VALUE!	
57 Fe	0.1383	0.1383	ppb	64.01	100000.	
59 Co	1,021.	1,021.	ppb	1.23	1000.	>LDR
60 Ni	1,030.	1,030.	ppb	1.21	1000.	>LDR
63 Cu	1,982.	1,982.	ppb	0.58	#VALUE!	
65 Cu	2,018.	2,018.	ppb	1.39	2000.	>LDR
66 Zn	2,028.	2,028.	ppb	1.34	2000.	>LDR
68 Zn	2,091.	2,091.	ppb	0.71	#VALUE!	
75 As	1,041.	1,041.	ppb	0.65	1000.	>LDR
82 Se	1,067.	1,067.	ppb	0.80	1000.	>LDR
88 Sr	1,921.	1,921.	ppb	0.91	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1,007.	1,007.	ppb	0.32	1000.	>LDR
107 Ag	105.1	105.1	ppb	1.45	100.	>LDR
109 Ag	103.8	103.8	ppb	2.32	#VALUE!	
111 Cd	1,037.	1,037.	ppb	1.59	#VALUE!	
114 Cd	1,012.	1,012.	ppb	1.13	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,027.	1,027.	ppb	1.18	1000.	>LDR
120 Sn	1,019.	1,019.	ppb	0.99	#VALUE!	
121 Sb	1,034.	1,034.	ppb	1.01	#VALUE!	
123 Sb	1,042.	1,042.	ppb	1.25	1000.	>LDR
135 Ba	2,099.	2,099.	ppb	1.22	2000.	>LDR
137 Ba	2,046.	2,046.	ppb	0.62	#VALUE!	
182 W	987.	987.	ppb	0.09	1000.	
203 Tl	995.3	995.3	ppb	1.79	1000.	
205 Tl	997.4	997.4	ppb	1.16	#VALUE!	
208 Pb	1,982.	1,982.	ppb	0.93	2000.	
232 Th	965.9	965.9	ppb	0.19	1000.	
238 U	953.2	953.2	ppb	1.09	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2764505.30	1.44	2844110.50	97.2	69.5 - 120	
45 Sc	2812327.00	1.28	2809797.00	100.1	69.5 - 120	
72 Ge	628414.06	2.07	642252.38	97.8	69.5 - 120	
159 Tb	6909206.00	0.80	7051087.50	98.0	69.5 - 120	
209 Bi	3423627.50	0.82	3594227.50	95.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

16 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000873

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\025SMPL.D\025SMPL.D#
Date Acquired: May 11 2018 06:57 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LRS2
Misc Info:
Vial Number: 3512
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0096	0.0096	ppb	50.31	100.	
11 B	0.5595	0.5595	ppb	4.10	1000.	
23 Na	202,600.	202,600.	ppb	3.44	200000.	>LDR
25 Mg	195,300.	195,300.	ppb	1.92	200000.	
27 Al	192,600.	192,600.	ppb	1.80	200000.	
28 Si	10,160.	10,160.	ppb	3.71	#VALUE!	
29 Si	10,280.	10,280.	ppb	1.86	10000.	>LDR
39 K	191,700.	191,700.	ppb	2.64	200000.	
43 Ca	192,300.	192,300.	ppb	3.51	#VALUE!	
44 Ca	189,400.	189,400.	ppb	2.55	200000.	
51 V	0.2004	0.2004	ppb	27.92	1000.	
52 Cr	3.062	3.062	ppb	3.95	2000.	
53 Cr	-2.006	-2.006	ppb	20.35	#VALUE!	
55 Mn	7.478	7.478	ppb	0.88	2000.	
56 Fe	95,530.	95,530.	ppb	1.27	#VALUE!	
57 Fe	92,110.	92,110.	ppb	0.08	100000.	
59 Co	2.759	2.759	ppb	1.26	1000.	
60 Ni	2.944	2.944	ppb	2.66	1000.	
63 Cu	10.15	10.15	ppb	1.31	#VALUE!	
65 Cu	3.176	3.176	ppb	2.69	2000.	
66 Zn	3.598	3.598	ppb	4.77	2000.	
68 Zn	1.21	1.21	ppb	3.10	#VALUE!	
75 As	0.5394	0.5394	ppb	8.25	1000.	
82 Se	0.4989	0.4989	ppb	50.49	1000.	
88 Sr	6.541	6.541	ppb	3.35	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.588	1.588	ppb	45.87	1000.	
107 Ag	0.3723	0.3723	ppb	4.50	100.	
109 Ag	0.3649	0.3649	ppb	4.56	#VALUE!	
111 Cd	0.0187	0.0187	ppb	177.21	#VALUE!	
114 Cd	0.0135	0.0135	ppb	265.19	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.6193	0.6193	ppb	25.14	1000.	
120 Sn	0.6304	0.6304	ppb	22.27	#VALUE!	
121 Sb	0.19	0.19	ppb	24.72	#VALUE!	
123 Sb	0.1966	0.1966	ppb	25.26	1000.	
135 Ba	0.2901	0.2901	ppb	32.51	2000.	
137 Ba	0.2913	0.2913	ppb	21.52	#VALUE!	
182 W	1.205	1.205	ppb	38.16	1000.	
203 Tl	0.0737	0.0737	ppb	54.01	1000.	
205 Tl	0.0566	0.0566	ppb	66.53	#VALUE!	
208 Pb	0.5269	0.5269	ppb	10.50	2000.	
232 Th	1.201	1.201	ppb	23.04	1000.	
238 U	0.1583	0.1583	ppb	38.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2721404.80	5.86	2844110.50	95.7	69.5 - 120	
45 Sc	3005638.50	4.95	2809797.00	107.0	69.5 - 120	
72 Ge	642207.88	3.89	642252.38	100.0	69.5 - 120	
159 Tb	6035088.00	1.07	7051087.50	85.6	69.5 - 120	
209 Bi	2362543.00	2.77	3594227.50	65.7	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000874

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\026SMPL.D\026SMPL.D#
Date Acquired: May 11 2018 07:01 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0004	0.0004	ppb	396.50	100.	
11 B	0.0896	0.0896	ppb	24.21	1000.	
23 Na	16.38	16.38	ppb	73.50	200000.	
25 Mg	5.566	5.566	ppb	164.07	200000.	
27 Al	6.547	6.547	ppb	160.68	200000.	
28 Si	59.83	59.83	ppb	17.23	#VALUE!	
29 Si	-12.02	-12.02	ppb	79.47	10000.	
39 K	4.87	4.87	ppb	179.69	200000.	
43 Ca	7.908	7.908	ppb	82.31	#VALUE!	
44 Ca	6.821	6.821	ppb	128.54	200000.	
51 V	-0.0549	-0.0549	ppb	40.28	1000.	
52 Cr	0.036	0.036	ppb	52.81	2000.	
53 Cr	-0.0637	-0.0637	ppb	504.63	#VALUE!	
55 Mn	0.0213	0.0213	ppb	29.90	2000.	
56 Fe	16.84	16.84	ppb	42.19	#VALUE!	
57 Fe	7.09	7.09	ppb	24.81	100000.	
59 Co	0.0026	0.0026	ppb	151.34	1000.	
60 Ni	0.0342	0.0342	ppb	17.99	1000.	
63 Cu	0.155	0.155	ppb	14.19	#VALUE!	
65 Cu	0.1306	0.1306	ppb	18.31	2000.	
66 Zn	0.1761	0.1761	ppb	11.47	2000.	
68 Zn	0.3532	0.3532	ppb	17.11	#VALUE!	
75 As	0.1769	0.1769	ppb	86.09	1000.	
82 Se	0.0245	0.0245	ppb	394.03	1000.	
88 Sr	0.0021	0.0021	ppb	204.35	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.2251	0.2251	ppb	51.53	1000.	
107 Ag	0.0049	0.0049	ppb	86.17	100.	
109 Ag	0.0067	0.0067	ppb	12.41	#VALUE!	
111 Cd	-0.0687	-0.0687	ppb	21.68	#VALUE!	
114 Cd	0.0007	0.0007	ppb	383.66	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.1051	0.1051	ppb	22.34	1000.	
120 Sn	0.0864	0.0864	ppb	24.29	#VALUE!	
121 Sb	0.0195	0.0195	ppb	9.29	#VALUE!	
123 Sb	0.0225	0.0225	ppb	18.91	1000.	
135 Ba	0.0339	0.0339	ppb	29.01	2000.	
137 Ba	0.0291	0.0291	ppb	8.20	#VALUE!	
182 W	0.2051	0.2051	ppb	46.87	1000.	
203 Tl	0.001	0.001	ppb	715.68	1000.	
205 Tl	0.0016	0.0016	ppb	418.78	#VALUE!	
208 Pb	0.1185	0.1185	ppb	9.94	2000.	
232 Th	0.0433	0.0433	ppb	73.16	1000.	
238 U	0.0069	0.0069	ppb	16.71	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3111777.80	1.91	2844110.50	109.4	69.5 - 120	
45 Sc	3177000.30	1.73	2809797.00	113.1	69.5 - 120	
72 Ge	714104.75	1.61	642252.38	111.2	69.5 - 120	
159 Tb	6805341.00	0.26	7051087.50	96.5	69.5 - 120	
209 Bi	3191624.00	0.53	3594227.50	88.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000875

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\027SMPL.D\027SMPL.D#
Date Acquired: May 11 2018 07:05 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0022	0.0022	ppb	82.02	100.	
11 B	0.0732	0.0732	ppb	53.55	1000.	
23 Na	5.147	5.147	ppb	8.85	200000.	
25 Mg	0.2292	0.2292	ppb	6.25	200000.	
27 Al	0.4453	0.4453	ppb	1.32	200000.	
28 Si	58.17	58.17	ppb	18.27	#VALUE!	
29 Si	-2.456	-2.456	ppb	391.90	10000.	
39 K	-1.004	-1.004	ppb	245.22	200000.	
43 Ca	3.366	3.366	ppb	38.24	#VALUE!	
44 Ca	2.315	2.315	ppb	63.07	200000.	
51 V	-0.0324	-0.0324	ppb	63.94	1000.	
52 Cr	0.0505	0.0505	ppb	40.48	2000.	
53 Cr	0.6189	0.6189	ppb	8.64	#VALUE!	
55 Mn	0.011	0.011	ppb	35.51	2000.	
56 Fe	9.145	9.145	ppb	2.99	#VALUE!	
57 Fe	3.938	3.938	ppb	47.05	100000.	
59 Co	0.0028	0.0028	ppb	67.34	1000.	
60 Ni	0.0191	0.0191	ppb	34.31	1000.	
63 Cu	0.141	0.141	ppb	11.36	#VALUE!	
65 Cu	0.1157	0.1157	ppb	8.89	2000.	
66 Zn	0.2255	0.2255	ppb	16.84	2000.	
68 Zn	0.2499	0.2499	ppb	31.51	#VALUE!	
75 As	0.1267	0.1267	ppb	27.00	1000.	
82 Se	0.2225	0.2225	ppb	93.30	1000.	
88 Sr	0.0006	0.0006	ppb	233.90	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0908	0.0908	ppb	39.95	1000.	
107 Ag	0.0038	0.0038	ppb	16.35	100.	
109 Ag	0.0027	0.0027	ppb	38.34	#VALUE!	
111 Cd	-0.0693	-0.0693	ppb	27.26	#VALUE!	
114 Cd	0.0012	0.0012	ppb	70.19	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0403	0.0403	ppb	12.06	1000.	
120 Sn	0.0526	0.0526	ppb	28.15	#VALUE!	
121 Sb	0.0073	0.0073	ppb	30.12	#VALUE!	
123 Sb	0.0071	0.0071	ppb	18.23	1000.	
135 Ba	0.0381	0.0381	ppb	0.98	2000.	
137 Ba	0.0213	0.0213	ppb	50.96	#VALUE!	
182 W	0.0873	0.0873	ppb	42.59	1000.	
203 Tl	0.0015	0.0015	ppb	684.17	1000.	
205 Tl	-0.005	-0.005	ppb	174.91	#VALUE!	
208 Pb	0.1151	0.1151	ppb	8.79	2000.	
232 Th	0.0319	0.0319	ppb	56.94	1000.	
238 U	0.0031	0.0031	ppb	22.01	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2911613.30	0.80	2844110.50	102.4	69.5 - 120	
45 Sc	3008502.50	1.71	2809797.00	107.1	69.5 - 120	
72 Ge	677931.56	0.84	642252.38	105.6	69.5 - 120	
159 Tb	6792393.00	0.69	7051087.50	96.3	69.5 - 120	
209 Bi	3203547.80	1.21	3594227.50	89.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000876

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\028_CCV.D\028_CCV.D#
Date Acquired: May 11 2018 07:09 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	27.76	ppb	5.19	25	111.04	Fail
11 B	26.04	ppb	1.24	25	104.16	
23 Na	4,936.	ppb	2.99	5,000	98.72	
25 Mg	4,951.	ppb	3.17	5,000	99.02	
27 Al	494.1	ppb	1.07	500	98.82	
28 Si	519.3	ppb	0.68	500	103.86	
29 Si	472.6	ppb	1.17	500	94.52	
39 K	4,949.	ppb	2.47	5,000	98.98	
43 Ca	4,749.	ppb	2.15	5,000	94.98	
44 Ca	4,935.	ppb	1.03	5,000	98.7	
51 V	24.93	ppb	1.34	25	99.72	
52 Cr	25.01	ppb	1.08	25	100.04	
53 Cr	23.34	ppb	3.89	25	93.36	
55 Mn	24.8	ppb	0.73	25	99.2	
56 Fe	4,931.	ppb	1.33	5,000	98.62	
57 Fe	4,986.	ppb	0.94	5,000	99.72	
59 Co	24.99	ppb	0.79	25	99.96	
60 Ni	24.94	ppb	1.90	25	99.76	
63 Cu	25.28	ppb	0.78	25	101.12	
65 Cu	25.17	ppb	0.53	25	100.68	
66 Zn	24.66	ppb	1.59	25	98.64	
68 Zn	24.92	ppb	2.93	25	99.68	
75 As	24.92	ppb	1.93	25	99.68	
82 Se	24.99	ppb	1.25	25	99.96	
88 Sr	23.94	ppb	0.75	25	95.76	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.63	ppb	0.21	25	98.52	
107 Ag	24.76	ppb	1.12	25	99.04	
109 Ag	24.67	ppb	0.94	25	98.68	
111 Cd	24.68	ppb	0.97	25	98.72	
114 Cd	24.62	ppb	0.90	25	98.48	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.5	ppb	0.95	25	102	
120 Sn	25.33	ppb	1.27	25	101.32	
121 Sb	25.97	ppb	0.88	25	103.88	
123 Sb	25.86	ppb	0.64	25	103.44	
135 Ba	25.75	ppb	0.87	25	103	
137 Ba	25.49	ppb	0.55	25	101.96	
182 W	23.59	ppb	0.45	25	94.36	
203 Tl	24.61	ppb	2.46	25	98.44	
205 Tl	24.9	ppb	1.29	25	99.6	
208 Pb	24.77	ppb	1.68	25	99.08	
232 Th	23.55	ppb	1.86	25	94.2	
238 U	23.07	ppb	1.56	25	92.28	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2660030.30	3.69	2844110.50	93.5	80 - 120.4	
45 Sc	2924701.50	0.05	2809797.00	104.1	80 - 120.4	
72 Ge	649791.13	1.66	642252.38	101.2	80 - 120.4	
159 Tb	6926449.00	0.55	7051087.50	98.2	80 - 120.4	
209 Bi	3305539.00	1.59	3594227.50	92.0	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000877

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\029_CCB.D\029_CCB.D#
Date Acquired: May 11 2018 07:13 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0012	ppb	77.43	1.00	
11 B	0.9267	ppb	14.28	1.00	
23 Na	2.341	ppb	2.54	1.00	
25 Mg	0.1353	ppb	60.24	1.00	
27 Al	0.0723	ppb	75.29	1.00	
28 Si	44.04	ppb	30.75	1.00	
29 Si	-4.201	ppb	238.28	1.00	
39 K	-2.272	ppb	26.22	1.00	
43 Ca	3.666	ppb	72.12	1.00	
44 Ca	0.9248	ppb	132.68	1.00	
51 V	-0.0141	ppb	613.80	1.00	
52 Cr	-0.0448	ppb	31.61	1.00	
53 Cr	-3.293	ppb	0.53	1.00	
55 Mn	0.0015	ppb	576.12	1.00	
56 Fe	-0.321	ppb	1072.00	1.00	
57 Fe	0.5402	ppb	207.89	1.00	
59 Co	-0.002	ppb	249.06	1.00	
60 Ni	-0.0009	ppb	428.44	1.00	
63 Cu	0.0208	ppb	19.51	1.00	
65 Cu	0.018	ppb	74.82	1.00	
66 Zn	-0.0094	ppb	562.40	1.00	
68 Zn	0.1326	ppb	96.68	1.00	
75 As	0.0655	ppb	116.40	1.00	
82 Se	0.0298	ppb	240.12	1.00	
88 Sr	0.0015	ppb	69.56	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0582	ppb	48.02	1.00	
107 Ag	0.0115	ppb	30.72	1.00	
109 Ag	0.0095	ppb	29.39	1.00	
111 Cd	-0.0303	ppb	57.37	1.00	
114 Cd	0.0012	ppb	55.03	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0389	ppb	29.88	1.00	
120 Sn	0.0443	ppb	13.07	1.00	
121 Sb	0.0099	ppb	6.61	1.00	
123 Sb	0.0103	ppb	57.86	1.00	
135 Ba	0.0036	ppb	241.98	1.00	
137 Ba	0.0097	ppb	118.30	1.00	
182 W	0.0714	ppb	36.22	1.00	
203 Tl	0.0053	ppb	137.64	1.00	
205 Tl	-0.0017	ppb	264.42	1.00	
208 Pb	-0.0118	ppb	41.28	1.00	
232 Th	0.0964	ppb	5.75	1.00	
238 U	0.0036	ppb	69.99	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2737194.30	2.73	2844110.50	96.2	79.5 - 120	
45 Sc	2883470.00	1.36	2809797.00	102.6	79.5 - 120	
72 Ge	652854.25	0.74	642252.38	101.7	79.5 - 120	
159 Tb	6877438.00	0.78	7051087.50	97.5	79.5 - 120	
209 Bi	3380464.30	0.18	3594227.50	94.1	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\030SMPL.D\030SMPL.D#
Date Acquired: May 11 2018 07:17 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4044-002
Misc Info: AQ
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0036	0.0036	ppb	66.29	100.	
11 B	14.33	14.33	ppb	1.50	1000.	
23 Na	15,270.	15,270.	ppb	1.39	200000.	
25 Mg	2,885.	2,885.	ppb	2.32	200000.	
27 Al	42.49	42.49	ppb	3.34	200000.	
28 Si	8,234.	8,234.	ppb	2.79	#VALUE!	
29 Si	8,732.	8,732.	ppb	1.57	10000.	
39 K	2,746.	2,746.	ppb	1.64	200000.	
43 Ca	14,650.	14,650.	ppb	0.86	#VALUE!	
44 Ca	14,620.	14,620.	ppb	1.13	200000.	
51 V	0.3516	0.3516	ppb	7.35	1000.	
52 Cr	1.029	1.029	ppb	4.13	2000.	
53 Cr	-2.241	-2.241	ppb	54.53	#VALUE!	
55 Mn	1.952	1.952	ppb	1.47	2000.	
56 Fe	5.52	5.52	ppb	35.25	#VALUE!	
57 Fe	3.012	3.012	ppb	69.32	100000.	
59 Co	0.0355	0.0355	ppb	24.99	1000.	
60 Ni	0.8047	0.8047	ppb	2.52	1000.	
63 Cu	1,805.	1,805.	ppb	0.50	#VALUE!	
65 Cu	1,831.	1,831.	ppb	0.94	2000.	
66 Zn	21.75	21.75	ppb	1.17	2000.	
68 Zn	22.18	22.18	ppb	0.61	#VALUE!	
75 As	0.3172	0.3172	ppb	27.29	1000.	
82 Se	0.3301	0.3301	ppb	9.98	1000.	
88 Sr	67.96	67.96	ppb	0.52	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.254	0.254	ppb	4.77	1000.	
107 Ag	0.0419	0.0419	ppb	12.84	100.	
109 Ag	0.0469	0.0469	ppb	11.95	#VALUE!	
111 Cd	-0.0792	-0.0792	ppb	24.55	#VALUE!	
114 Cd	0.0112	0.0112	ppb	47.37	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0028	-0.0028	ppb	216.93	1000.	
120 Sn	0.0047	0.0047	ppb	78.73	#VALUE!	
121 Sb	0.0593	0.0593	ppb	18.33	#VALUE!	
123 Sb	0.0537	0.0537	ppb	10.62	1000.	
135 Ba	6.441	6.441	ppb	0.58	2000.	
137 Ba	6.268	6.268	ppb	0.58	#VALUE!	
182 W	0.0351	0.0351	ppb	27.87	1000.	
203 Tl	0.0117	0.0117	ppb	78.69	1000.	
205 Tl	0.0094	0.0094	ppb	64.72	#VALUE!	
208 Pb	0.363	0.363	ppb	2.27	2000.	
232 Th	0.0639	0.0639	ppb	12.03	1000.	
238 U	0.3833	0.3833	ppb	1.18	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2595658.80	0.20	2844110.50	91.3	69.5 - 120	
45 Sc	2770126.80	0.88	2809797.00	98.6	69.5 - 120	
72 Ge	631551.00	0.35	642252.38	98.3	69.5 - 120	
159 Tb	6837805.50	0.80	7051087.50	97.0	69.5 - 120	
209 Bi	3348242.80	0.34	3594227.50	93.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000879

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\031SMPL.D\031SMPL.D#
Date Acquired: May 11 2018 07:21 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE09IMW1
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0001	0.0001	ppb	336.59	100.	
11 B	0.6679	0.6679	ppb	14.94	1000.	
23 Na	10.41	10.41	ppb	5.00	200000.	
25 Mg	7.884	7.884	ppb	4.84	200000.	
27 Al	4.835	4.835	ppb	0.77	200000.	
28 Si	57.93	57.93	ppb	9.52	#VALUE!	
29 Si	4.313	4.313	ppb	114.28	10000.	
39 K	-2.282	-2.282	ppb	20.89	200000.	
43 Ca	6.389	6.389	ppb	16.61	#VALUE!	
44 Ca	5.85	5.85	ppb	21.28	200000.	
51 V	-0.0633	-0.0633	ppb	189.60	1000.	
52 Cr	0.1218	0.1218	ppb	5.24	2000.	
53 Cr	6.264	6.264	ppb	3.39	#VALUE!	
55 Mn	0.0749	0.0749	ppb	5.50	2000.	
56 Fe	10.77	10.77	ppb	32.04	#VALUE!	
57 Fe	2.959	2.959	ppb	31.70	100000.	
59 Co	0.0051	0.0051	ppb	77.96	1000.	
60 Ni	0.0221	0.0221	ppb	46.38	1000.	
63 Cu	0.1084	0.1084	ppb	14.19	#VALUE!	
65 Cu	0.094	0.094	ppb	19.85	2000.	
66 Zn	0.6921	0.6921	ppb	2.98	2000.	
68 Zn	0.8131	0.8131	ppb	7.71	#VALUE!	
75 As	-0.0359	-0.0359	ppb	310.57	1000.	
82 Se	-0.0946	-0.0946	ppb	218.82	1000.	
88 Sr	0.0176	0.0176	ppb	22.38	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0202	0.0202	ppb	37.58	1000.	
107 Ag	0.0048	0.0048	ppb	22.84	100.	
109 Ag	0.0064	0.0064	ppb	6.77	#VALUE!	
111 Cd	-0.0731	-0.0731	ppb	27.34	#VALUE!	
114 Cd	-0.0012	-0.0012	ppb	212.45	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0554	0.0554	ppb	3.83	1000.	
120 Sn	0.0504	0.0504	ppb	9.36	#VALUE!	
121 Sb	0.0307	0.0307	ppb	25.31	#VALUE!	
123 Sb	0.0293	0.0293	ppb	6.82	1000.	
135 Ba	0.0536	0.0536	ppb	21.51	2000.	
137 Ba	0.0554	0.0554	ppb	29.20	#VALUE!	
182 W	0.0235	0.0235	ppb	31.50	1000.	
203 Tl	0.0052	0.0052	ppb	294.54	1000.	
205 Tl	-0.0009	-0.0009	ppb	390.16	#VALUE!	
208 Pb	0.0019	0.0019	ppb	126.82	2000.	
232 Th	0.0253	0.0253	ppb	29.72	1000.	
238 U	0.001	0.001	ppb	46.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2599309.30	3.54	2844110.50	91.4	69.5 - 120	
45 Sc	2729309.30	1.19	2809797.00	97.1	69.5 - 120	
72 Ge	621860.31	0.31	642252.38	96.8	69.5 - 120	
159 Tb	6717940.50	1.83	7051087.50	95.3	69.5 - 120	
209 Bi	3320114.00	2.14	3594227.50	92.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000880

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\032SMPL.D\032SMPL.D#
Date Acquired: May 11 2018 07:25 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE09IMW1
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	53.6	10.72	ppb	2.19	100.	
11 B	519.	103.8	ppb	6.71	1000.	
23 Na	8,040.	1,608.	ppb	5.96	200000.	
25 Mg	5,185.	1,037.	ppb	3.73	200000.	
27 Al	2,151.	430.2	ppb	2.97	200000.	
28 Si	1,264.5	252.9	ppb	1.34	#VALUE!	
29 Si	963.5	192.7	ppb	6.69	10000.	
39 K	10,405.	2,081.	ppb	4.93	200000.	
43 Ca	2,936.	587.2	ppb	5.54	#VALUE!	
44 Ca	2,512.5	502.5	ppb	2.96	200000.	
51 V	527.	105.4	ppb	2.29	1000.	
52 Cr	206.35	41.27	ppb	1.09	2000.	
53 Cr	240.55	48.11	ppb	1.76	#VALUE!	
55 Mn	533.	106.6	ppb	1.25	2000.	
56 Fe	1,073.5	214.7	ppb	0.50	#VALUE!	
57 Fe	1,035.5	207.1	ppb	0.28	100000.	
59 Co	545.5	109.1	ppb	0.72	1000.	
60 Ni	529.	105.8	ppb	0.93	1000.	
63 Cu	260.4	52.08	ppb	0.27	#VALUE!	
65 Cu	265.9	53.18	ppb	1.07	2000.	
66 Zn	532.5	106.5	ppb	1.01	2000.	
68 Zn	594.	118.8	ppb	0.34	#VALUE!	
75 As	107.45	21.49	ppb	0.75	1000.	
82 Se	107.8	21.56	ppb	0.53	1000.	
88 Sr	515.	103.	ppb	1.00	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	106.45	21.29	ppb	0.40	1000.	
107 Ag	53.5	10.7	ppb	1.78	100.	
109 Ag	53.55	10.71	ppb	0.65	#VALUE!	
111 Cd	269.05	53.81	ppb	0.43	#VALUE!	
114 Cd	269.5	53.9	ppb	0.60	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	536.5	107.3	ppb	2.59	1000.	
120 Sn	538.	107.6	ppb	2.48	#VALUE!	
121 Sb	110.15	22.03	ppb	3.67	#VALUE!	
123 Sb	110.25	22.05	ppb	1.86	1000.	
135 Ba	2,169.5	433.9	ppb	2.39	2000.	
137 Ba	2,200.	440.	ppb	1.59	#VALUE!	
182 W	102.3	20.46	ppb	2.59	1000.	
203 Tl	105.45	21.09	ppb	2.85	1000.	
205 Tl	106.6	21.32	ppb	2.44	#VALUE!	
208 Pb	107.45	21.49	ppb	2.88	2000.	
232 Th	97.35	19.47	ppb	2.84	1000.	
238 U	95.4	19.08	ppb	3.15	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2678651.80	1.69	2844110.50	94.2	69.5 - 120	
45 Sc	2755301.50	1.16	2809797.00	98.1	69.5 - 120	
72 Ge	621081.13	0.74	642252.38	96.7	69.5 - 120	
159 Tb	6870831.50	1.81	7051087.50	97.4	69.5 - 120	
209 Bi	3362659.00	2.25	3594227.50	93.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000881

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\033SMPL.D\033SMPL.D#
Date Acquired: May 11 2018 07:29 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3844-001
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0252	0.0252	ppb	18.86	100.	
11 B	65.91	65.91	ppb	1.72	1000.	
23 Na	183,400.	183,400.	ppb	0.97	200000.	
25 Mg	16,660.	16,660.	ppb	2.52	200000.	
27 Al	1,431.	1,431.	ppb	3.81	200000.	
28 Si	11,950.	11,950.	ppb	3.40	#VALUE!	
29 Si	13,000.	13,000.	ppb	1.81	10000.	>LDR
39 K	71,790.	71,790.	ppb	1.16	200000.	
43 Ca	33,530.	33,530.	ppb	1.75	#VALUE!	
44 Ca	32,340.	32,340.	ppb	1.90	200000.	
51 V	4.89	4.89	ppb	3.72	1000.	
52 Cr	16.05	16.05	ppb	2.93	2000.	
53 Cr	10.02	10.02	ppb	22.96	#VALUE!	
55 Mn	511.6	511.6	ppb	1.34	2000.	
56 Fe	832.3	832.3	ppb	1.51	#VALUE!	
57 Fe	820.4	820.4	ppb	0.84	100000.	
59 Co	0.6858	0.6858	ppb	4.10	1000.	
60 Ni	12.31	12.31	ppb	0.78	1000.	
63 Cu	181.7	181.7	ppb	0.77	#VALUE!	
65 Cu	178.	178.	ppb	0.87	2000.	
66 Zn	273.8	273.8	ppb	0.84	2000.	
68 Zn	271.	271.	ppb	0.84	#VALUE!	
75 As	1.404	1.404	ppb	14.45	1000.	
82 Se	1.652	1.652	ppb	1.63	1000.	
88 Sr	147.9	147.9	ppb	0.40	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.354	4.354	ppb	3.42	1000.	
107 Ag	0.0641	0.0641	ppb	4.65	100.	
109 Ag	0.0604	0.0604	ppb	9.01	#VALUE!	
111 Cd	0.171	0.171	ppb	8.56	#VALUE!	
114 Cd	0.2169	0.2169	ppb	2.71	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	4.636	4.636	ppb	0.60	1000.	
120 Sn	4.66	4.66	ppb	0.48	#VALUE!	
121 Sb	0.2445	0.2445	ppb	2.84	#VALUE!	
123 Sb	0.2603	0.2603	ppb	5.86	1000.	
135 Ba	63.76	63.76	ppb	0.39	2000.	
137 Ba	63.08	63.08	ppb	0.38	#VALUE!	
182 W	0.3578	0.3578	ppb	4.34	1000.	
203 Tl	0.0283	0.0283	ppb	20.34	1000.	
205 Tl	0.0182	0.0182	ppb	45.66	#VALUE!	
208 Pb	44.85	44.85	ppb	0.61	2000.	
232 Th	0.2807	0.2807	ppb	30.27	1000.	
238 U	0.1542	0.1542	ppb	5.49	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3827973.80	9.73	2844110.50	134.6	69.5 - 120	IS Fai
45 Sc	3509951.50	5.59	2809797.00	124.9	69.5 - 120	IS Fai
72 Ge	708694.00	4.80	642252.38	110.3	69.5 - 120	
159 Tb	6701818.00	1.89	7051087.50	95.0	69.5 - 120	
209 Bi	2945220.30	0.35	3594227.50	81.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
2 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000882

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\034SMPL.D\034SMPL.D#
Date Acquired: May 11 2018 07:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3855-001
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.01	0.01	ppb	8.49	100.	
11 B	194.	194.	ppb	5.76	1000.	
23 Na	121,200.	121,200.	ppb	3.69	200000.	
25 Mg	4,992.	4,992.	ppb	2.15	200000.	
27 Al	230.	230.	ppb	0.46	200000.	
28 Si	4,422.	4,422.	ppb	2.15	#VALUE!	
29 Si	4,641.	4,641.	ppb	0.97	10000.	
39 K	10,860.	10,860.	ppb	1.66	200000.	
43 Ca	27,110.	27,110.	ppb	1.27	#VALUE!	
44 Ca	27,000.	27,000.	ppb	1.64	200000.	
51 V	0.4186	0.4186	ppb	10.25	1000.	
52 Cr	1.573	1.573	ppb	3.59	2000.	
53 Cr	7.935	7.935	ppb	12.33	#VALUE!	
55 Mn	51.2	51.2	ppb	0.37	2000.	
56 Fe	450.2	450.2	ppb	1.34	#VALUE!	
57 Fe	445.1	445.1	ppb	0.34	100000.	
59 Co	0.4167	0.4167	ppb	1.99	1000.	
60 Ni	3.259	3.259	ppb	1.31	1000.	
63 Cu	31.99	31.99	ppb	0.75	#VALUE!	
65 Cu	28.23	28.23	ppb	0.80	2000.	
66 Zn	65.17	65.17	ppb	1.23	2000.	
68 Zn	62.99	62.99	ppb	0.39	#VALUE!	
75 As	1.195	1.195	ppb	9.97	1000.	
82 Se	0.5611	0.5611	ppb	9.30	1000.	
88 Sr	118.	118.	ppb	1.69	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.9841	0.9841	ppb	1.29	1000.	
107 Ag	0.0798	0.0798	ppb	5.72	100.	
109 Ag	0.092	0.092	ppb	2.59	#VALUE!	
111 Cd	0.0368	0.0368	ppb	50.80	#VALUE!	
114 Cd	0.0726	0.0726	ppb	20.51	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.702	3.702	ppb	2.06	1000.	
120 Sn	3.645	3.645	ppb	0.39	#VALUE!	
121 Sb	0.583	0.583	ppb	2.62	#VALUE!	
123 Sb	0.6023	0.6023	ppb	5.85	1000.	
135 Ba	16.48	16.48	ppb	1.90	2000.	
137 Ba	16.47	16.47	ppb	1.00	#VALUE!	
182 W	0.0702	0.0702	ppb	12.82	1000.	
203 Tl	0.0194	0.0194	ppb	33.90	1000.	
205 Tl	0.0112	0.0112	ppb	96.69	#VALUE!	
208 Pb	1.658	1.658	ppb	1.84	2000.	
232 Th	0.029	0.029	ppb	40.26	1000.	
238 U	2.185	2.185	ppb	1.62	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2730179.80	3.47	2844110.50	96.0	69.5 - 120	
45 Sc	2873332.80	0.97	2809797.00	102.3	69.5 - 120	
72 Ge	636786.06	0.35	642252.38	99.1	69.5 - 120	
159 Tb	6593341.50	0.82	7051087.50	93.5	69.5 - 120	
209 Bi	2974434.00	0.91	3594227.50	82.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000883

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\035SMPL.D\035SMPL.D#
Date Acquired: May 11 2018 07:38 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE11IMW1
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0013	-0.0013	ppb	139.16	100.	
11 B	8.183	8.183	ppb	16.13	1000.	
23 Na	16.61	16.61	ppb	1.52	200000.	
25 Mg	8.221	8.221	ppb	3.30	200000.	
27 Al	5.079	5.079	ppb	2.56	200000.	
28 Si	61.02	61.02	ppb	11.42	#VALUE!	
29 Si	33.01	33.01	ppb	6.85	10000.	
39 K	6.854	6.854	ppb	26.64	200000.	
43 Ca	4.088	4.088	ppb	38.63	#VALUE!	
44 Ca	3.471	3.471	ppb	32.73	200000.	
51 V	0.0068	0.0068	ppb	1855.50	1000.	
52 Cr	0.3424	0.3424	ppb	4.74	2000.	
53 Cr	9.221	9.221	ppb	3.65	#VALUE!	
55 Mn	0.094	0.094	ppb	6.62	2000.	
56 Fe	24.44	24.44	ppb	10.49	#VALUE!	
57 Fe	5.791	5.791	ppb	22.07	100000.	
59 Co	0.0023	0.0023	ppb	154.35	1000.	
60 Ni	0.0128	0.0128	ppb	18.06	1000.	
63 Cu	0.0516	0.0516	ppb	14.44	#VALUE!	
65 Cu	0.0384	0.0384	ppb	19.46	2000.	
66 Zn	0.5964	0.5964	ppb	13.75	2000.	
68 Zn	0.6599	0.6599	ppb	3.10	#VALUE!	
75 As	0.2156	0.2156	ppb	40.92	1000.	
82 Se	0.0639	0.0639	ppb	75.24	1000.	
88 Sr	0.0064	0.0064	ppb	48.69	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0073	0.0073	ppb	11.57	1000.	
107 Ag	0.0034	0.0034	ppb	32.28	100.	
109 Ag	0.0037	0.0037	ppb	62.83	#VALUE!	
111 Cd	-0.0334	-0.0334	ppb	0.76	#VALUE!	
114 Cd	0.0022	0.0022	ppb	60.73	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.1795	0.1795	ppb	8.14	1000.	
120 Sn	0.1908	0.1908	ppb	1.21	#VALUE!	
121 Sb	0.0116	0.0116	ppb	33.81	#VALUE!	
123 Sb	0.0134	0.0134	ppb	13.41	1000.	
135 Ba	0.0335	0.0335	ppb	64.57	2000.	
137 Ba	0.0204	0.0204	ppb	10.89	#VALUE!	
182 W	0.0141	0.0141	ppb	41.68	1000.	
203 Tl	0.0181	0.0181	ppb	51.85	1000.	
205 Tl	0.0056	0.0056	ppb	126.42	#VALUE!	
208 Pb	0.1188	0.1188	ppb	7.46	2000.	
232 Th	0.0032	0.0032	ppb	74.79	1000.	
238 U	0.0009	0.0009	ppb	91.62	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2829275.50	2.58	2844110.50	99.5	69.5 - 120	
45 Sc	2786897.50	0.78	2809797.00	99.2	69.5 - 120	
72 Ge	631357.69	0.80	642252.38	98.3	69.5 - 120	
159 Tb	6534282.00	0.86	7051087.50	92.7	69.5 - 120	
209 Bi	3237179.30	1.33	3594227.50	90.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000884

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\036SMPL.D\036SMPL.D#
Date Acquired: May 11 2018 07:42 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE11IMW1
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	51.6	10.32	ppb	1.75	100.	
11 B	467.7	93.54	ppb	3.59	1000.	
23 Na	8,210.	1,642.	ppb	1.31	200000.	
25 Mg	5,525.	1,105.	ppb	3.61	200000.	
27 Al	2,181.	436.2	ppb	0.77	200000.	
28 Si	1,004.5	200.9	ppb	4.13	#VALUE!	
29 Si	808.5	161.7	ppb	7.39	10000.	
39 K	10,300.	2,060.	ppb	0.37	200000.	
43 Ca	2,811.5	562.3	ppb	5.43	#VALUE!	
44 Ca	2,471.	494.2	ppb	2.76	200000.	
51 V	533.5	106.7	ppb	1.60	1000.	
52 Cr	205.7	41.14	ppb	0.65	2000.	
53 Cr	250.25	50.05	ppb	1.45	#VALUE!	
55 Mn	530.5	106.1	ppb	1.68	2000.	
56 Fe	1,109.	221.8	ppb	2.36	#VALUE!	
57 Fe	1,023.5	204.7	ppb	0.92	100000.	
59 Co	545.	109.	ppb	2.09	1000.	
60 Ni	530.5	106.1	ppb	0.83	1000.	
63 Cu	265.3	53.06	ppb	0.33	#VALUE!	
65 Cu	267.5	53.5	ppb	0.22	2000.	
66 Zn	536.5	107.3	ppb	0.33	2000.	
68 Zn	593.5	118.7	ppb	1.91	#VALUE!	
75 As	105.95	21.19	ppb	1.21	1000.	
82 Se	107.3	21.46	ppb	1.11	1000.	
88 Sr	486.65	97.33	ppb	0.61	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	99.45	19.89	ppb	0.78	1000.	
107 Ag	51.2	10.24	ppb	0.46	100.	
109 Ag	51.1	10.22	ppb	1.10	#VALUE!	
111 Cd	257.75	51.55	ppb	0.79	#VALUE!	
114 Cd	257.05	51.41	ppb	1.06	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	508.5	101.7	ppb	1.45	1000.	
120 Sn	512.5	102.5	ppb	1.99	#VALUE!	
121 Sb	104.65	20.93	ppb	2.70	#VALUE!	
123 Sb	104.2	20.84	ppb	2.01	1000.	
135 Ba	2,106.	421.2	ppb	2.20	2000.	
137 Ba	2,127.5	425.5	ppb	1.35	#VALUE!	
182 W	99.05	19.81	ppb	2.32	1000.	
203 Tl	103.55	20.71	ppb	2.50	1000.	
205 Tl	104.95	20.99	ppb	0.39	#VALUE!	
208 Pb	105.35	21.07	ppb	0.32	2000.	
232 Th	99.15	19.83	ppb	1.80	1000.	
238 U	105.25	21.05	ppb	1.42	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3304482.80	6.00	2844110.50	116.2	69.5 - 120	
45 Sc	2998253.00	2.96	2809797.00	106.7	69.5 - 120	
72 Ge	639103.19	1.47	642252.38	99.5	69.5 - 120	
159 Tb	6918376.00	1.58	7051087.50	98.1	69.5 - 120	
209 Bi	3430764.80	1.01	3594227.50	95.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000885

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\037SMPL.D\037SMPL.D#
Date Acquired: May 11 2018 07:46 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3997-001
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0023	0.0023	ppb	47.29	100.	
11 B	12.44	12.44	ppb	8.02	1000.	
23 Na	9,040.	9,040.	ppb	3.45	200000.	
25 Mg	6,469.	6,469.	ppb	1.56	200000.	
27 Al	4.602	4.602	ppb	3.05	200000.	
28 Si	3,554.	3,554.	ppb	2.06	#VALUE!	
29 Si	3,620.	3,620.	ppb	4.88	10000.	
39 K	744.5	744.5	ppb	1.06	200000.	
43 Ca	19,530.	19,530.	ppb	1.72	#VALUE!	
44 Ca	19,210.	19,210.	ppb	1.38	200000.	
51 V	0.0404	0.0404	ppb	47.21	1000.	
52 Cr	0.4023	0.4023	ppb	12.64	2000.	
53 Cr	5.817	5.817	ppb	15.69	#VALUE!	
55 Mn	0.2107	0.2107	ppb	8.30	2000.	
56 Fe	12.53	12.53	ppb	35.17	#VALUE!	
57 Fe	4.725	4.725	ppb	65.71	100000.	
59 Co	0.0298	0.0298	ppb	5.18	1000.	
60 Ni	0.2908	0.2908	ppb	9.81	1000.	
63 Cu	0.485	0.485	ppb	4.46	#VALUE!	
65 Cu	0.2311	0.2311	ppb	4.80	2000.	
66 Zn	0.5377	0.5377	ppb	11.41	2000.	
68 Zn	0.9714	0.9714	ppb	11.52	#VALUE!	
75 As	0.2675	0.2675	ppb	58.88	1000.	
82 Se	0.2749	0.2749	ppb	75.26	1000.	
88 Sr	71.23	71.23	ppb	1.23	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0393	0.0393	ppb	30.03	1000.	
107 Ag	0.0096	0.0096	ppb	7.94	100.	
109 Ag	0.0099	0.0099	ppb	26.51	#VALUE!	
111 Cd	-0.0444	-0.0444	ppb	18.32	#VALUE!	
114 Cd	0.0086	0.0086	ppb	46.85	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1325	0.1325	ppb	21.29	1000.	
120 Sn	0.1311	0.1311	ppb	18.83	#VALUE!	
121 Sb	0.0155	0.0155	ppb	16.70	#VALUE!	
123 Sb	0.0195	0.0195	ppb	8.04	1000.	
135 Ba	14.29	14.29	ppb	0.87	2000.	
137 Ba	14.44	14.44	ppb	1.41	#VALUE!	
182 W	0.0547	0.0547	ppb	20.28	1000.	
203 Tl	0.0208	0.0208	ppb	3.82	1000.	
205 Tl	0.0166	0.0166	ppb	14.79	#VALUE!	
208 Pb	0.1027	0.1027	ppb	15.07	2000.	
232 Th	0.2462	0.2462	ppb	40.22	1000.	
238 U	0.0074	0.0074	ppb	24.40	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3158586.00	2.02	2844110.50	111.1	69.5 - 120	
45 Sc	2913932.80	0.16	2809797.00	103.7	69.5 - 120	
72 Ge	638246.50	0.98	642252.38	99.4	69.5 - 120	
159 Tb	6844421.50	0.90	7051087.50	97.1	69.5 - 120	
209 Bi	3393625.00	1.22	3594227.50	94.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000886

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\038SMPL.D\038SMPL.D#
Date Acquired: May 11 2018 07:50 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3997-002
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0051	0.0051	ppb	34.80	100.	
11 B	12.97	12.97	ppb	3.07	1000.	
23 Na	16,670.	16,670.	ppb	1.96	200000.	
25 Mg	11,500.	11,500.	ppb	2.45	200000.	
27 Al	5.547	5.547	ppb	3.17	200000.	
28 Si	3,125.	3,125.	ppb	4.02	#VALUE!	
29 Si	3,065.	3,065.	ppb	3.00	10000.	
39 K	1,088.	1,088.	ppb	1.43	200000.	
43 Ca	32,630.	32,630.	ppb	2.76	#VALUE!	
44 Ca	32,000.	32,000.	ppb	2.09	200000.	
51 V	-0.0545	-0.0545	ppb	173.79	1000.	
52 Cr	0.4012	0.4012	ppb	0.55	2000.	
53 Cr	4.881	4.881	ppb	10.40	#VALUE!	
55 Mn	0.5113	0.5113	ppb	3.33	2000.	
56 Fe	17.01	17.01	ppb	15.46	#VALUE!	
57 Fe	9.438	9.438	ppb	41.12	100000.	
59 Co	0.0572	0.0572	ppb	18.04	1000.	
60 Ni	0.5015	0.5015	ppb	6.70	1000.	
63 Cu	0.8229	0.8229	ppb	1.56	#VALUE!	
65 Cu	0.3208	0.3208	ppb	10.39	2000.	
66 Zn	1.605	1.605	ppb	10.86	2000.	
68 Zn	2.961	2.961	ppb	2.92	#VALUE!	
75 As	0.2156	0.2156	ppb	130.29	1000.	
82 Se	0.4305	0.4305	ppb	32.08	1000.	
88 Sr	128.5	128.5	ppb	1.54	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0277	0.0277	ppb	43.54	1000.	
107 Ag	0.0085	0.0085	ppb	17.81	100.	
109 Ag	0.0079	0.0079	ppb	22.18	#VALUE!	
111 Cd	0.0009	0.0009	ppb	2650.70	#VALUE!	
114 Cd	0.0277	0.0277	ppb	20.12	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0748	0.0748	ppb	15.67	1000.	
120 Sn	0.0718	0.0718	ppb	13.79	#VALUE!	
121 Sb	0.0156	0.0156	ppb	13.48	#VALUE!	
123 Sb	0.0227	0.0227	ppb	22.87	1000.	
135 Ba	42.28	42.28	ppb	2.04	2000.	
137 Ba	42.01	42.01	ppb	2.31	#VALUE!	
182 W	0.0194	0.0194	ppb	58.09	1000.	
203 Tl	0.0285	0.0285	ppb	29.48	1000.	
205 Tl	0.025	0.025	ppb	33.95	#VALUE!	
208 Pb	0.128	0.128	ppb	10.17	2000.	
232 Th	0.0948	0.0948	ppb	5.69	1000.	
238 U	0.0035	0.0035	ppb	30.00	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2866352.80	2.44	2844110.50	100.8	69.5 - 120	
45 Sc	2794496.00	1.48	2809797.00	99.5	69.5 - 120	
72 Ge	609509.69	0.95	642252.38	94.9	69.5 - 120	
159 Tb	6713810.50	1.00	7051087.50	95.2	69.5 - 120	
209 Bi	3358746.00	1.08	3594227.50	93.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000887

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\039SMPL.D\039SMPL.D#
Date Acquired: May 11 2018 07:54 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3998-001
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0057	0.0057	ppb	27.80	100.	
11 B	15.72	15.72	ppb	4.37	1000.	
23 Na	51,800.	51,800.	ppb	3.07	200000.	
25 Mg	18,500.	18,500.	ppb	2.98	200000.	
27 Al	6.19	6.19	ppb	2.53	200000.	
28 Si	2,353.	2,353.	ppb	2.01	#VALUE!	
29 Si	2,326.	2,326.	ppb	1.48	10000.	
39 K	1,615.	1,615.	ppb	4.60	200000.	
43 Ca	60,500.	60,500.	ppb	3.35	#VALUE!	
44 Ca	57,310.	57,310.	ppb	2.40	200000.	
51 V	-0.0277	-0.0277	ppb	313.98	1000.	
52 Cr	0.7114	0.7114	ppb	11.75	2000.	
53 Cr	3.247	3.247	ppb	3.90	#VALUE!	
55 Mn	0.6467	0.6467	ppb	2.02	2000.	
56 Fe	27.97	27.97	ppb	1.66	#VALUE!	
57 Fe	27.	27.	ppb	6.75	100000.	
59 Co	0.1587	0.1587	ppb	9.82	1000.	
60 Ni	0.6052	0.6052	ppb	8.42	1000.	
63 Cu	2.308	2.308	ppb	1.37	#VALUE!	
65 Cu	0.6703	0.6703	ppb	2.87	2000.	
66 Zn	2.072	2.072	ppb	1.41	2000.	
68 Zn	3.335	3.335	ppb	1.45	#VALUE!	
75 As	0.4455	0.4455	ppb	33.31	1000.	
82 Se	0.5939	0.5939	ppb	26.72	1000.	
88 Sr	232.1	232.1	ppb	0.81	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0267	0.0267	ppb	8.48	1000.	
107 Ag	0.0111	0.0111	ppb	16.45	100.	
109 Ag	0.0103	0.0103	ppb	7.32	#VALUE!	
111 Cd	0.0341	0.0341	ppb	98.07	#VALUE!	
114 Cd	0.0396	0.0396	ppb	22.97	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0531	0.0531	ppb	33.04	1000.	
120 Sn	0.0574	0.0574	ppb	15.91	#VALUE!	
121 Sb	0.0193	0.0193	ppb	14.86	#VALUE!	
123 Sb	0.0222	0.0222	ppb	19.55	1000.	
135 Ba	46.17	46.17	ppb	0.83	2000.	
137 Ba	45.74	45.74	ppb	1.39	#VALUE!	
182 W	0.0133	0.0133	ppb	17.17	1000.	
203 Tl	0.0194	0.0194	ppb	15.10	1000.	
205 Tl	0.0245	0.0245	ppb	43.65	#VALUE!	
208 Pb	0.1442	0.1442	ppb	3.00	2000.	
232 Th	0.0542	0.0542	ppb	13.80	1000.	
238 U	0.0036	0.0036	ppb	6.43	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3060444.00	3.56	2844110.50	107.6	69.5 - 120	
45 Sc	2869928.00	1.35	2809797.00	102.1	69.5 - 120	
72 Ge	618023.50	0.95	642252.38	96.2	69.5 - 120	
159 Tb	6832819.50	1.68	7051087.50	96.9	69.5 - 120	
209 Bi	3302295.30	1.29	3594227.50	91.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000888

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\040_CCV.D\040_CCV.D#
Date Acquired: May 11 2018 07:58 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.13	ppb	5.11	25	100.52	
11 B	24.86	ppb	2.79	25	99.44	
23 Na	5,580.	ppb	7.27	5,000	111.6	Fail
25 Mg	5,501.	ppb	4.91	5,000	110.02	
27 Al	521.2	ppb	0.95	500	104.24	
28 Si	465.6	ppb	1.97	500	93.12	
29 Si	463.	ppb	4.29	500	92.6	
39 K	5,091.	ppb	2.49	5,000	101.82	
43 Ca	4,877.	ppb	2.80	5,000	97.54	
44 Ca	5,046.	ppb	1.74	5,000	100.92	
51 V	25.76	ppb	1.11	25	103.04	
52 Cr	25.71	ppb	0.83	25	102.84	
53 Cr	28.09	ppb	11.53	25	112.36	
55 Mn	25.36	ppb	1.05	25	101.44	
56 Fe	4,986.	ppb	1.41	5,000	99.72	
57 Fe	5,072.	ppb	1.86	5,000	101.44	
59 Co	25.57	ppb	1.74	25	102.28	
60 Ni	25.87	ppb	1.09	25	103.48	
63 Cu	25.95	ppb	0.36	25	103.8	
65 Cu	25.82	ppb	1.64	25	103.28	
66 Zn	25.4	ppb	0.83	25	101.6	
68 Zn	26.04	ppb	1.75	25	104.16	
75 As	24.97	ppb	0.84	25	99.88	
82 Se	25.85	ppb	0.06	25	103.4	
88 Sr	23.49	ppb	0.48	25	93.96	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.1	ppb	1.01	25	96.4	
107 Ag	24.41	ppb	0.23	25	97.64	
109 Ag	24.41	ppb	0.65	25	97.64	
111 Cd	24.4	ppb	1.70	25	97.6	
114 Cd	24.39	ppb	1.22	25	97.56	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.95	ppb	1.41	25	99.8	
120 Sn	24.77	ppb	1.21	25	99.08	
121 Sb	25.12	ppb	1.13	25	100.48	
123 Sb	25.14	ppb	1.41	25	100.56	
135 Ba	25.43	ppb	1.79	25	101.72	
137 Ba	25.67	ppb	1.59	25	102.68	
182 W	25.03	ppb	1.96	25	100.12	
203 Tl	25.1	ppb	1.20	25	100.4	
205 Tl	25.28	ppb	1.46	25	101.12	
208 Pb	25.49	ppb	1.76	25	101.96	
232 Th	25.23	ppb	2.33	25	100.92	
238 U	26.95	ppb	1.72	25	107.8	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3708157.50	10.46	2844110.50	130.4	80 - 120.4	ISFail
45 Sc	3090825.50	2.92	2809797.00	110.0	80 - 120.4	
72 Ge	651285.38	2.12	642252.38	101.4	80 - 120.4	
159 Tb	6978229.00	1.67	7051087.50	99.0	80 - 120.4	
209 Bi	3580422.00	1.46	3594227.50	99.6	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000889

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\041_CCB.D\041_CCB.D#
Date Acquired: May 11 2018 08:02 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0015	ppb	37.14	1.00	
11 B	2.55	ppb	17.38	1.00	
23 Na	2.096	ppb	7.86	1.00	
25 Mg	0.1364	ppb	83.21	1.00	
27 Al	0.0183	ppb	164.57	1.00	
28 Si	4.418	ppb	210.03	1.00	
29 Si	12.24	ppb	157.11	1.00	
39 K	4.247	ppb	37.09	1.00	
43 Ca	-0.6794	ppb	279.66	1.00	
44 Ca	-0.442	ppb	201.33	1.00	
51 V	-0.0287	ppb	58.84	1.00	
52 Cr	0.1983	ppb	11.35	1.00	
53 Cr	-3.238	ppb	10.66	1.00	
55 Mn	0.005	ppb	137.58	1.00	
56 Fe	10.54	ppb	26.12	1.00	
57 Fe	2.123	ppb	82.90	1.00	
59 Co	0.0029	ppb	108.88	1.00	
60 Ni	-0.0054	ppb	141.80	1.00	
63 Cu	0.0124	ppb	65.32	1.00	
65 Cu	0.0014	ppb	449.35	1.00	
66 Zn	0.0026	ppb	2668.40	1.00	
68 Zn	0.1229	ppb	26.89	1.00	
75 As	0.1301	ppb	62.97	1.00	
82 Se	-0.1322	ppb	90.77	1.00	
88 Sr	0.0008	ppb	317.51	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0262	ppb	65.79	1.00	
107 Ag	0.0099	ppb	42.47	1.00	
109 Ag	0.0119	ppb	24.53	1.00	
111 Cd	0.0033	ppb	414.15	1.00	
114 Cd	0.0004	ppb	306.84	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0754	ppb	33.03	1.00	
120 Sn	0.0725	ppb	25.49	1.00	
121 Sb	0.0089	ppb	56.37	1.00	
123 Sb	0.0085	ppb	107.93	1.00	
135 Ba	0.0148	ppb	32.22	1.00	
137 Ba	0.0087	ppb	44.82	1.00	
182 W	0.0454	ppb	46.44	1.00	
203 Tl	0.0156	ppb	39.08	1.00	
205 Tl	0.0111	ppb	46.27	1.00	
208 Pb	0.1201	ppb	9.13	1.00	
232 Th	0.1107	ppb	15.79	1.00	
238 U	0.0043	ppb	29.01	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2805648.50	2.92	2844110.50	98.6	79.5 - 120	
45 Sc	2614487.30	2.31	2809797.00	93.0	79.5 - 120	
72 Ge	586771.06	0.89	642252.38	91.4	79.5 - 120	
159 Tb	6548914.50	1.08	7051087.50	92.9	79.5 - 120	
209 Bi	3461879.80	0.25	3594227.50	96.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000890

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\042SMPL.D\042SMPL.D#
Date Acquired: May 11 2018 08:06 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4027-001
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0218	0.0218	ppb	15.12	100.	
11 B	3,801.	3,801.	ppb	3.85	1000.	>LDR
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	754.5	754.5	ppb	1.98	200000.	
27 Al	800.8	800.8	ppb	2.15	200000.	
28 Si	84,040.	84,040.	ppb	2.48	#VALUE!	
29 Si	84,130.	84,130.	ppb	2.08	10000.	>LDR
39 K	----	--------	ppb	--------	200000.	>LDR
43 Ca	9,832.	9,832.	ppb	1.39	#VALUE!	
44 Ca	9,914.	9,914.	ppb	1.64	200000.	
51 V	5.082	5.082	ppb	3.51	1000.	
52 Cr	21.41	21.41	ppb	1.91	2000.	
53 Cr	15.55	15.55	ppb	21.46	#VALUE!	
55 Mn	6.775	6.775	ppb	0.81	2000.	
56 Fe	110.5	110.5	ppb	4.07	#VALUE!	
57 Fe	80.71	80.71	ppb	0.35	100000.	
59 Co	19.21	19.21	ppb	1.67	1000.	
60 Ni	56.54	56.54	ppb	1.42	1000.	
63 Cu	188.	188.	ppb	1.07	#VALUE!	
65 Cu	138.8	138.8	ppb	1.54	2000.	
66 Zn	40.13	40.13	ppb	1.09	2000.	
68 Zn	41.19	41.19	ppb	0.78	#VALUE!	
75 As	0.7795	0.7795	ppb	33.75	1000.	
82 Se	0.572	0.572	ppb	35.59	1000.	
88 Sr	67.21	67.21	ppb	1.09	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.011	8.011	ppb	2.57	1000.	
107 Ag	0.0192	0.0192	ppb	15.70	100.	
109 Ag	0.0131	0.0131	ppb	23.98	#VALUE!	
111 Cd	0.0273	0.0273	ppb	136.32	#VALUE!	
114 Cd	0.0053	0.0053	ppb	284.56	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.127	3.127	ppb	3.01	1000.	
120 Sn	3.111	3.111	ppb	2.57	#VALUE!	
121 Sb	4.434	4.434	ppb	1.82	#VALUE!	
123 Sb	4.411	4.411	ppb	2.01	1000.	
135 Ba	6.052	6.052	ppb	1.23	2000.	
137 Ba	6.01	6.01	ppb	1.86	#VALUE!	
182 W	20.76	20.76	ppb	0.42	1000.	
203 Tl	0.0301	0.0301	ppb	9.72	1000.	
205 Tl	0.0289	0.0289	ppb	40.19	#VALUE!	
208 Pb	14.61	14.61	ppb	0.85	2000.	
232 Th	0.1725	0.1725	ppb	13.66	1000.	
238 U	0.5277	0.5277	ppb	3.95	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2747715.50	3.15	2844110.50	96.6	69.5 - 120	
45 Sc	2962147.80	1.73	2809797.00	105.4	69.5 - 120	
72 Ge	593431.88	0.91	642252.38	92.4	69.5 - 120	
159 Tb	5736164.00	0.99	7051087.50	81.4	69.5 - 120	
209 Bi	2317942.50	1.45	3594227.50	64.5	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

4 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000891

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\043SMPL.D\043SMPL.D#
Date Acquired: May 11 2018 08:10 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4028-001
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0042	0.0042	ppb	11.78	100.	
11 B	573.9	573.9	ppb	0.33	1000.	
23 Na	139,300.	139,300.	ppb	1.03	200000.	
25 Mg	178.4	178.4	ppb	1.32	200000.	
27 Al	273.7	273.7	ppb	2.72	200000.	
28 Si	22,360.	22,360.	ppb	2.94	#VALUE!	
29 Si	22,120.	22,120.	ppb	3.24	10000.	>LDR
39 K	46,390.	46,390.	ppb	1.68	200000.	
43 Ca	987.2	987.2	ppb	4.94	#VALUE!	
44 Ca	1,065.	1,065.	ppb	1.82	200000.	
51 V	0.48	0.48	ppb	6.83	1000.	
52 Cr	6.237	6.237	ppb	1.03	2000.	
53 Cr	12.02	12.02	ppb	1.89	#VALUE!	
55 Mn	7.532	7.532	ppb	0.62	2000.	
56 Fe	76.66	76.66	ppb	3.86	#VALUE!	
57 Fe	56.31	56.31	ppb	4.11	100000.	
59 Co	8.306	8.306	ppb	1.79	1000.	
60 Ni	41.72	41.72	ppb	0.35	1000.	
63 Cu	137.3	137.3	ppb	1.72	#VALUE!	
65 Cu	133.2	133.2	ppb	1.02	2000.	
66 Zn	21.5	21.5	ppb	1.48	2000.	
68 Zn	21.92	21.92	ppb	1.81	#VALUE!	
75 As	0.3501	0.3501	ppb	24.91	1000.	
82 Se	0.1454	0.1454	ppb	112.45	1000.	
88 Sr	2.49	2.49	ppb	0.50	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	2.232	2.232	ppb	0.35	1000.	
107 Ag	0.0169	0.0169	ppb	19.66	100.	
109 Ag	0.011	0.011	ppb	36.52	#VALUE!	
111 Cd	-0.0871	-0.0871	ppb	24.24	#VALUE!	
114 Cd	0.0031	0.0031	ppb	111.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.7721	0.7721	ppb	3.62	1000.	
120 Sn	0.7731	0.7731	ppb	1.89	#VALUE!	
121 Sb	2.547	2.547	ppb	1.70	#VALUE!	
123 Sb	2.526	2.526	ppb	1.49	1000.	
135 Ba	1.645	1.645	ppb	3.18	2000.	
137 Ba	1.615	1.615	ppb	3.51	#VALUE!	
182 W	5.189	5.189	ppb	1.97	1000.	
203 Tl	0.0117	0.0117	ppb	67.86	1000.	
205 Tl	0.0116	0.0116	ppb	27.00	#VALUE!	
208 Pb	7.391	7.391	ppb	1.69	2000.	
232 Th	0.0452	0.0452	ppb	14.09	1000.	
238 U	0.0941	0.0941	ppb	3.03	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2784158.30	3.97	2844110.50	97.9	69.5 - 120	
45 Sc	3039975.30	0.90	2809797.00	108.2	69.5 - 120	
72 Ge	649428.81	1.50	642252.38	101.1	69.5 - 120	
159 Tb	6921994.00	0.50	7051087.50	98.2	69.5 - 120	
209 Bi	3137191.80	1.08	3594227.50	87.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000892

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\044SMPL.D\044SMPL.D#
Date Acquired: May 11 2018 08:14 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4030-001
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0589	0.0589	ppb	9.39	100.	
11 B	33.43	33.43	ppb	5.96	1000.	
23 Na	13,450.	13,450.	ppb	2.12	200000.	
25 Mg	2,157.	2,157.	ppb	1.82	200000.	
27 Al	247.	247.	ppb	3.46	200000.	
28 Si	3,400.	3,400.	ppb	3.54	#VALUE!	
29 Si	3,491.	3,491.	ppb	5.96	10000.	
39 K	1,799.	1,799.	ppb	0.94	200000.	
43 Ca	7,558.	7,558.	ppb	0.24	#VALUE!	
44 Ca	7,602.	7,602.	ppb	1.19	200000.	
51 V	0.7699	0.7699	ppb	16.37	1000.	
52 Cr	1.496	1.496	ppb	1.09	2000.	
53 Cr	6.552	6.552	ppb	13.99	#VALUE!	
55 Mn	114.6	114.6	ppb	1.05	2000.	
56 Fe	1,768.	1,768.	ppb	1.13	#VALUE!	
57 Fe	1,758.	1,758.	ppb	0.79	100000.	
59 Co	1.131	1.131	ppb	5.04	1000.	
60 Ni	5.177	5.177	ppb	2.15	1000.	
63 Cu	7.789	7.789	ppb	1.24	#VALUE!	
65 Cu	7.418	7.418	ppb	0.55	2000.	
66 Zn	27.11	27.11	ppb	1.54	2000.	
68 Zn	26.79	26.79	ppb	0.70	#VALUE!	
75 As	2.846	2.846	ppb	7.89	1000.	
82 Se	0.4328	0.4328	ppb	61.58	1000.	
88 Sr	47.77	47.77	ppb	0.89	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.6353	0.6353	ppb	2.65	1000.	
107 Ag	0.0368	0.0368	ppb	12.06	100.	
109 Ag	0.039	0.039	ppb	6.38	#VALUE!	
111 Cd	0.1365	0.1365	ppb	8.86	#VALUE!	
114 Cd	0.2302	0.2302	ppb	4.07	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2073	0.2073	ppb	6.59	1000.	
120 Sn	0.2119	0.2119	ppb	6.18	#VALUE!	
121 Sb	0.2209	0.2209	ppb	2.59	#VALUE!	
123 Sb	0.2139	0.2139	ppb	7.98	1000.	
135 Ba	6.037	6.037	ppb	1.40	2000.	
137 Ba	5.981	5.981	ppb	1.38	#VALUE!	
182 W	0.5119	0.5119	ppb	3.22	1000.	
203 Tl	0.0308	0.0308	ppb	10.00	1000.	
205 Tl	0.0223	0.0223	ppb	29.45	#VALUE!	
208 Pb	1.53	1.53	ppb	1.48	2000.	
232 Th	0.1247	0.1247	ppb	0.88	1000.	
238 U	0.3105	0.3105	ppb	3.79	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2691823.50	2.78	2844110.50	94.6	69.5 - 120	
45 Sc	2880326.50	0.59	2809797.00	102.5	69.5 - 120	
72 Ge	645958.44	0.75	642252.38	100.6	69.5 - 120	
159 Tb	7083885.50	1.29	7051087.50	100.5	69.5 - 120	
209 Bi	3469002.50	0.84	3594227.50	96.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000893

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\045SMPL.D\045SMPL.D#
Date Acquired: May 11 2018 08:19 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4038-001
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0066	0.0066	ppb	5.27	100.	
11 B	49.77	49.77	ppb	0.96	1000.	
23 Na	39,680.	39,680.	ppb	2.03	200000.	
25 Mg	21,620.	21,620.	ppb	2.36	200000.	
27 Al	4.749	4.749	ppb	2.97	200000.	
28 Si	9,208.	9,208.	ppb	3.26	#VALUE!	
29 Si	9,454.	9,454.	ppb	2.93	10000.	
39 K	3,998.	3,998.	ppb	1.59	200000.	
43 Ca	76,090.	76,090.	ppb	1.34	#VALUE!	
44 Ca	72,600.	72,600.	ppb	0.74	200000.	
51 V	0.0426	0.0426	ppb	264.44	1000.	
52 Cr	0.307	0.307	ppb	21.13	2000.	
53 Cr	5.278	5.278	ppb	28.29	#VALUE!	
55 Mn	22.77	22.77	ppb	0.56	2000.	
56 Fe	20.16	20.16	ppb	7.89	#VALUE!	
57 Fe	7.323	7.323	ppb	50.72	100000.	
59 Co	0.1326	0.1326	ppb	1.34	1000.	
60 Ni	-0.1501	-0.1501	ppb	1.84	1000.	
63 Cu	9.588	9.588	ppb	0.80	#VALUE!	
65 Cu	8.261	8.261	ppb	1.11	2000.	
66 Zn	2.645	2.645	ppb	2.77	2000.	
68 Zn	8.719	8.719	ppb	2.32	#VALUE!	
75 As	0.3989	0.3989	ppb	57.13	1000.	
82 Se	0.2757	0.2757	ppb	70.26	1000.	
88 Sr	951.5	951.5	ppb	0.73	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.3417	0.3417	ppb	6.26	1000.	
107 Ag	0.0049	0.0049	ppb	64.94	100.	
109 Ag	0.0019	0.0019	ppb	105.79	#VALUE!	
111 Cd	-0.0528	-0.0528	ppb	27.50	#VALUE!	
114 Cd	0.0009	0.0009	ppb	89.14	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0269	0.0269	ppb	51.90	1000.	
120 Sn	0.0326	0.0326	ppb	11.27	#VALUE!	
121 Sb	0.198	0.198	ppb	1.89	#VALUE!	
123 Sb	0.1994	0.1994	ppb	8.31	1000.	
135 Ba	189.3	189.3	ppb	1.71	2000.	
137 Ba	189.1	189.1	ppb	1.74	#VALUE!	
182 W	0.0287	0.0287	ppb	26.85	1000.	
203 Tl	0.018	0.018	ppb	28.46	1000.	
205 Tl	0.0135	0.0135	ppb	39.85	#VALUE!	
208 Pb	0.4075	0.4075	ppb	2.38	2000.	
232 Th	0.0174	0.0174	ppb	24.78	1000.	
238 U	15.77	15.77	ppb	1.30	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2695321.50	2.29	2844110.50	94.8	69.5 - 120	
45 Sc	2896299.00	1.34	2809797.00	103.1	69.5 - 120	
72 Ge	637607.38	0.79	642252.38	99.3	69.5 - 120	
159 Tb	7124118.00	1.43	7051087.50	101.0	69.5 - 120	
209 Bi	3318362.30	1.18	3594227.50	92.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000894

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\046SMPL.D\046SMPL.D#
Date Acquired: May 11 2018 08:23 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4038-002
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0031	0.0031	ppb	77.77	100.	
11 B	35.67	35.67	ppb	6.30	1000.	
23 Na	20,460.	20,460.	ppb	1.34	200000.	
25 Mg	23,010.	23,010.	ppb	1.47	200000.	
27 Al	4.305	4.305	ppb	4.67	200000.	
28 Si	10,450.	10,450.	ppb	2.13	#VALUE!	
29 Si	11,020.	11,020.	ppb	1.54	10000.	>LDR
39 K	2,720.	2,720.	ppb	1.76	200000.	
43 Ca	88,690.	88,690.	ppb	0.33	#VALUE!	
44 Ca	84,670.	84,670.	ppb	1.15	200000.	
51 V	0.156	0.156	ppb	36.58	1000.	
52 Cr	0.5299	0.5299	ppb	12.63	2000.	
53 Cr	3.445	3.445	ppb	24.69	#VALUE!	
55 Mn	5.889	5.889	ppb	1.54	2000.	
56 Fe	19.91	19.91	ppb	5.16	#VALUE!	
57 Fe	16.38	16.38	ppb	17.58	100000.	
59 Co	0.1484	0.1484	ppb	5.53	1000.	
60 Ni	-0.1898	-0.1898	ppb	9.20	1000.	
63 Cu	3.121	3.121	ppb	2.05	#VALUE!	
65 Cu	2.559	2.559	ppb	0.03	2000.	
66 Zn	3.072	3.072	ppb	2.87	2000.	
68 Zn	7.248	7.248	ppb	2.64	#VALUE!	
75 As	0.6398	0.6398	ppb	15.24	1000.	
82 Se	0.4968	0.4968	ppb	26.63	1000.	
88 Sr	590.	590.	ppb	1.38	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0509	0.0509	ppb	18.35	1000.	
107 Ag	0.0019	0.0019	ppb	112.59	100.	
109 Ag	0.0024	0.0024	ppb	30.09	#VALUE!	
111 Cd	-0.0423	-0.0423	ppb	37.85	#VALUE!	
114 Cd	0.0067	0.0067	ppb	105.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0189	0.0189	ppb	47.34	1000.	
120 Sn	0.0168	0.0168	ppb	56.83	#VALUE!	
121 Sb	0.116	0.116	ppb	7.67	#VALUE!	
123 Sb	0.1261	0.1261	ppb	5.35	1000.	
135 Ba	142.	142.	ppb	1.47	2000.	
137 Ba	140.5	140.5	ppb	1.25	#VALUE!	
182 W	0.0138	0.0138	ppb	14.28	1000.	
203 Tl	0.0151	0.0151	ppb	46.41	1000.	
205 Tl	0.0128	0.0128	ppb	48.31	#VALUE!	
208 Pb	0.3954	0.3954	ppb	6.98	2000.	
232 Th	0.0113	0.0113	ppb	36.75	1000.	
238 U	13.9	13.9	ppb	0.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2721533.50	3.63	2844110.50	95.7	69.5 - 120	
45 Sc	2841135.30	0.68	2809797.00	101.1	69.5 - 120	
72 Ge	630350.75	0.84	642252.38	98.1	69.5 - 120	
159 Tb	7082381.50	1.56	7051087.50	100.4	69.5 - 120	
209 Bi	3412292.30	1.48	3594227.50	94.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000895

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\047SMPL.D\047SMPL.D#
Date Acquired: May 11 2018 08:27 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4038-003
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0049	0.0049	ppb	40.00	100.	
11 B	78.5	78.5	ppb	2.59	1000.	
23 Na	124,800.	124,800.	ppb	3.79	200000.	
25 Mg	9,894.	9,894.	ppb	0.58	200000.	
27 Al	8.815	8.815	ppb	3.24	200000.	
28 Si	7,283.	7,283.	ppb	2.11	#VALUE!	
29 Si	7,577.	7,577.	ppb	2.33	10000.	
39 K	5,496.	5,496.	ppb	2.39	200000.	
43 Ca	33,310.	33,310.	ppb	0.24	#VALUE!	
44 Ca	32,840.	32,840.	ppb	1.18	200000.	
51 V	0.0066	0.0066	ppb	465.97	1000.	
52 Cr	0.384	0.384	ppb	8.22	2000.	
53 Cr	9.899	9.899	ppb	2.35	#VALUE!	
55 Mn	123.7	123.7	ppb	1.38	2000.	
56 Fe	204.2	204.2	ppb	4.86	#VALUE!	
57 Fe	197.5	197.5	ppb	3.61	100000.	
59 Co	0.1356	0.1356	ppb	12.15	1000.	
60 Ni	0.442	0.442	ppb	2.68	1000.	
63 Cu	44.46	44.46	ppb	0.88	#VALUE!	
65 Cu	40.22	40.22	ppb	0.25	2000.	
66 Zn	7.907	7.907	ppb	1.30	2000.	
68 Zn	11.04	11.04	ppb	2.83	#VALUE!	
75 As	1.23	1.23	ppb	15.59	1000.	
82 Se	0.3538	0.3538	ppb	72.33	1000.	
88 Sr	213.5	213.5	ppb	0.87	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.725	1.725	ppb	1.60	1000.	
107 Ag	0.0027	0.0027	ppb	8.62	100.	
109 Ag	0.0037	0.0037	ppb	36.98	#VALUE!	
111 Cd	-0.0158	-0.0158	ppb	27.33	#VALUE!	
114 Cd	0.0194	0.0194	ppb	9.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0926	0.0926	ppb	18.94	1000.	
120 Sn	0.1026	0.1026	ppb	20.15	#VALUE!	
121 Sb	0.2539	0.2539	ppb	1.46	#VALUE!	
123 Sb	0.2586	0.2586	ppb	4.79	1000.	
135 Ba	98.75	98.75	ppb	1.49	2000.	
137 Ba	98.06	98.06	ppb	0.49	#VALUE!	
182 W	0.0729	0.0729	ppb	6.63	1000.	
203 Tl	0.0092	0.0092	ppb	75.49	1000.	
205 Tl	0.0106	0.0106	ppb	22.30	#VALUE!	
208 Pb	0.8683	0.8683	ppb	0.82	2000.	
232 Th	0.0162	0.0162	ppb	20.19	1000.	
238 U	15.65	15.65	ppb	0.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2695622.80	2.43	2844110.50	94.8	69.5 - 120	
45 Sc	2908831.30	0.09	2809797.00	103.5	69.5 - 120	
72 Ge	630840.38	0.88	642252.38	98.2	69.5 - 120	
159 Tb	7118420.50	1.03	7051087.50	101.0	69.5 - 120	
209 Bi	3299173.80	0.65	3594227.50	91.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000896

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\048SMPL.D\048SMPL.D#
Date Acquired: May 11 2018 08:31 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4044-001
Misc Info:
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0185	0.0185	ppb	24.25	100.	
11 B	54.32	54.32	ppb	3.80	1000.	
23 Na	15,200.	15,200.	ppb	1.46	200000.	
25 Mg	2,997.	2,997.	ppb	1.71	200000.	
27 Al	478.1	478.1	ppb	1.90	200000.	
28 Si	7,982.	7,982.	ppb	2.56	#VALUE!	
29 Si	8,375.	8,375.	ppb	3.45	10000.	
39 K	2,793.	2,793.	ppb	2.80	200000.	
43 Ca	15,970.	15,970.	ppb	2.65	#VALUE!	
44 Ca	15,730.	15,730.	ppb	1.83	200000.	
51 V	0.3149	0.3149	ppb	22.08	1000.	
52 Cr	0.5659	0.5659	ppb	4.00	2000.	
53 Cr	9.119	9.119	ppb	5.27	#VALUE!	
55 Mn	2.745	2.745	ppb	1.23	2000.	
56 Fe	18.75	18.75	ppb	7.48	#VALUE!	
57 Fe	12.91	12.91	ppb	20.27	100000.	
59 Co	0.0582	0.0582	ppb	10.13	1000.	
60 Ni	2.092	2.092	ppb	2.31	1000.	
63 Cu	924.4	924.4	ppb	0.70	#VALUE!	
65 Cu	948.6	948.6	ppb	0.58	2000.	
66 Zn	1,166.	1,166.	ppb	0.34	2000.	
68 Zn	1,146.	1,146.	ppb	0.62	#VALUE!	
75 As	0.4563	0.4563	ppb	7.87	1000.	
82 Se	0.2389	0.2389	ppb	47.80	1000.	
88 Sr	89.92	89.92	ppb	0.48	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.2315	0.2315	ppb	8.08	1000.	
107 Ag	0.0402	0.0402	ppb	6.71	100.	
109 Ag	0.0321	0.0321	ppb	21.83	#VALUE!	
111 Cd	-0.0314	-0.0314	ppb	25.05	#VALUE!	
114 Cd	-0.0129	-0.0129	ppb	54.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0201	0.0201	ppb	5.28	1000.	
120 Sn	0.0127	0.0127	ppb	36.96	#VALUE!	
121 Sb	0.0626	0.0626	ppb	10.28	#VALUE!	
123 Sb	0.0686	0.0686	ppb	11.94	1000.	
135 Ba	8.948	8.948	ppb	0.12	2000.	
137 Ba	8.904	8.904	ppb	0.56	#VALUE!	
182 W	0.0138	0.0138	ppb	7.58	1000.	
203 Tl	0.0237	0.0237	ppb	17.56	1000.	
205 Tl	0.0314	0.0314	ppb	29.64	#VALUE!	
208 Pb	2.948	2.948	ppb	1.13	2000.	
232 Th	0.0347	0.0347	ppb	4.72	1000.	
238 U	0.4519	0.4519	ppb	2.47	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2675050.80	2.19	2844110.50	94.1	69.5 - 120	
45 Sc	2895015.50	2.12	2809797.00	103.0	69.5 - 120	
72 Ge	648313.00	0.86	642252.38	100.9	69.5 - 120	
159 Tb	7283897.50	0.31	7051087.50	103.3	69.5 - 120	
209 Bi	3591753.30	1.18	3594227.50	99.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000897

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\049SMPL.D\049SMPL.D#
Date Acquired: May 11 2018 08:35 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4055-001
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0025	0.0025	ppb	26.50	100.	
11 B	43.16	43.16	ppb	5.40	1000.	
23 Na	83,260.	83,260.	ppb	1.18	200000.	
25 Mg	8,697.	8,697.	ppb	1.67	200000.	
27 Al	9.181	9.181	ppb	3.03	200000.	
28 Si	2,944.	2,944.	ppb	0.62	#VALUE!	
29 Si	2,931.	2,931.	ppb	2.95	10000.	
39 K	3,796.	3,796.	ppb	2.07	200000.	
43 Ca	98,500.	98,500.	ppb	2.52	#VALUE!	
44 Ca	92,080.	92,080.	ppb	1.38	200000.	
51 V	0.0031	0.0031	ppb	1860.20	1000.	
52 Cr	0.3702	0.3702	ppb	7.39	2000.	
53 Cr	1.927	1.927	ppb	73.22	#VALUE!	
55 Mn	55.6	55.6	ppb	0.63	2000.	
56 Fe	59.74	59.74	ppb	5.57	#VALUE!	
57 Fe	65.1	65.1	ppb	10.52	100000.	
59 Co	0.2888	0.2888	ppb	1.45	1000.	
60 Ni	0.071	0.071	ppb	63.53	1000.	
63 Cu	6.266	6.266	ppb	2.07	#VALUE!	
65 Cu	3.294	3.294	ppb	2.03	2000.	
66 Zn	17.31	17.31	ppb	0.36	2000.	
68 Zn	17.83	17.83	ppb	0.80	#VALUE!	
75 As	0.3476	0.3476	ppb	25.73	1000.	
82 Se	0.4164	0.4164	ppb	53.12	1000.	
88 Sr	492.8	492.8	ppb	0.31	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.531	1.531	ppb	3.16	1000.	
107 Ag	0.0052	0.0052	ppb	69.54	100.	
109 Ag	0.0034	0.0034	ppb	25.49	#VALUE!	
111 Cd	0.0004	0.0004	ppb	1569.10	#VALUE!	
114 Cd	0.0151	0.0151	ppb	18.45	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1101	0.1101	ppb	16.78	1000.	
120 Sn	0.0966	0.0966	ppb	4.51	#VALUE!	
121 Sb	0.1289	0.1289	ppb	11.78	#VALUE!	
123 Sb	0.1216	0.1216	ppb	7.24	1000.	
135 Ba	24.23	24.23	ppb	0.83	2000.	
137 Ba	24.69	24.69	ppb	1.29	#VALUE!	
182 W	0.0084	0.0084	ppb	5.14	1000.	
203 Tl	0.0147	0.0147	ppb	47.56	1000.	
205 Tl	0.0057	0.0057	ppb	128.81	#VALUE!	
208 Pb	0.1943	0.1943	ppb	7.69	2000.	
232 Th	0.0099	0.0099	ppb	3.90	1000.	
238 U	0.3294	0.3294	ppb	2.27	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2660913.00	0.28	2844110.50	93.6	69.5 - 120	
45 Sc	2780671.80	1.94	2809797.00	99.0	69.5 - 120	
72 Ge	613966.94	0.54	642252.38	95.6	69.5 - 120	
159 Tb	6959347.00	0.78	7051087.50	98.7	69.5 - 120	
209 Bi	3299206.50	0.18	3594227.50	91.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000898

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\050SMPL.D\050SMPL.D#
Date Acquired: May 11 2018 08:39 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4056-001
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0037	0.0037	ppb	23.45	100.	
11 B	92.5	92.5	ppb	1.00	1000.	
23 Na	79,040.	79,040.	ppb	2.58	200000.	
25 Mg	4,286.	4,286.	ppb	3.10	200000.	
27 Al	51.39	51.39	ppb	2.44	200000.	
28 Si	5,772.	5,772.	ppb	0.74	#VALUE!	
29 Si	6,157.	6,157.	ppb	1.37	10000.	
39 K	9,027.	9,027.	ppb	1.48	200000.	
43 Ca	21,040.	21,040.	ppb	1.84	#VALUE!	
44 Ca	21,260.	21,260.	ppb	1.36	200000.	
51 V	0.3835	0.3835	ppb	16.18	1000.	
52 Cr	0.5768	0.5768	ppb	5.81	2000.	
53 Cr	9.816	9.816	ppb	9.35	#VALUE!	
55 Mn	40.39	40.39	ppb	0.58	2000.	
56 Fe	140.9	140.9	ppb	3.24	#VALUE!	
57 Fe	135.2	135.2	ppb	1.59	100000.	
59 Co	0.2592	0.2592	ppb	1.75	1000.	
60 Ni	3.219	3.219	ppb	1.87	1000.	
63 Cu	20.55	20.55	ppb	0.22	#VALUE!	
65 Cu	17.86	17.86	ppb	1.29	2000.	
66 Zn	145.2	145.2	ppb	0.46	2000.	
68 Zn	141.7	141.7	ppb	0.48	#VALUE!	
75 As	0.9112	0.9112	ppb	15.47	1000.	
82 Se	0.2562	0.2562	ppb	84.54	1000.	
88 Sr	86.83	86.83	ppb	0.31	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.552	1.552	ppb	0.33	1000.	
107 Ag	0.0181	0.0181	ppb	10.02	100.	
109 Ag	0.0185	0.0185	ppb	17.87	#VALUE!	
111 Cd	0.0453	0.0453	ppb	42.48	#VALUE!	
114 Cd	0.0873	0.0873	ppb	6.84	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3956	0.3956	ppb	7.55	1000.	
120 Sn	0.4077	0.4077	ppb	1.65	#VALUE!	
121 Sb	0.395	0.395	ppb	0.54	#VALUE!	
123 Sb	0.4064	0.4064	ppb	5.05	1000.	
135 Ba	15.86	15.86	ppb	1.13	2000.	
137 Ba	15.9	15.9	ppb	1.63	#VALUE!	
182 W	0.0661	0.0661	ppb	20.20	1000.	
203 Tl	0.0111	0.0111	ppb	23.36	1000.	
205 Tl	0.0097	0.0097	ppb	54.99	#VALUE!	
208 Pb	0.8771	0.8771	ppb	1.88	2000.	
232 Th	0.0195	0.0195	ppb	18.47	1000.	
238 U	0.0651	0.0651	ppb	6.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2646357.00	2.82	2844110.50	93.0	69.5 - 120	
45 Sc	2807630.50	0.76	2809797.00	99.9	69.5 - 120	
72 Ge	620444.06	0.22	642252.38	96.6	69.5 - 120	
159 Tb	7057753.00	0.56	7051087.50	100.1	69.5 - 120	
209 Bi	3382624.00	0.93	3594227.50	94.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000899

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\051SMPL.D\051SMPL.D#
Date Acquired: May 11 2018 08:44 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4057-001
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0046	0.0046	ppb	11.34	100.	
11 B	15.27	15.27	ppb	6.09	1000.	
23 Na	2,947.	2,947.	ppb	2.27	200000.	
25 Mg	5,793.	5,793.	ppb	1.45	200000.	
27 Al	61.97	61.97	ppb	0.89	200000.	
28 Si	4,233.	4,233.	ppb	0.55	#VALUE!	
29 Si	4,579.	4,579.	ppb	4.46	10000.	
39 K	841.7	841.7	ppb	1.95	200000.	
43 Ca	47,820.	47,820.	ppb	0.42	#VALUE!	
44 Ca	45,330.	45,330.	ppb	1.81	200000.	
51 V	0.4706	0.4706	ppb	1.66	1000.	
52 Cr	0.2008	0.2008	ppb	13.14	2000.	
53 Cr	-4.613	-4.613	ppb	31.00	#VALUE!	
55 Mn	14,260.	14,260.	ppb	0.58	2000.	>LDR
56 Fe	103.1	103.1	ppb	4.36	#VALUE!	
57 Fe	112.1	112.1	ppb	7.63	100000.	
59 Co	1.227	1.227	ppb	2.15	1000.	
60 Ni	0.4848	0.4848	ppb	11.08	1000.	
63 Cu	0.6378	0.6378	ppb	1.13	#VALUE!	
65 Cu	0.5631	0.5631	ppb	4.10	2000.	
66 Zn	2.42	2.42	ppb	3.95	2000.	
68 Zn	3.26	3.26	ppb	4.34	#VALUE!	
75 As	0.1868	0.1868	ppb	11.68	1000.	
82 Se	0.202	0.202	ppb	82.08	1000.	
88 Sr	263.	263.	ppb	0.77	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.4673	0.4673	ppb	3.41	1000.	
107 Ag	0.0033	0.0033	ppb	97.08	100.	
109 Ag	0.0035	0.0035	ppb	31.68	#VALUE!	
111 Cd	0.1111	0.1111	ppb	29.43	#VALUE!	
114 Cd	0.1002	0.1002	ppb	1.53	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0273	0.0273	ppb	23.63	1000.	
120 Sn	0.0295	0.0295	ppb	44.49	#VALUE!	
121 Sb	0.0552	0.0552	ppb	10.84	#VALUE!	
123 Sb	0.0492	0.0492	ppb	5.16	1000.	
135 Ba	27.81	27.81	ppb	1.51	2000.	
137 Ba	27.69	27.69	ppb	0.85	#VALUE!	
182 W	0.01	0.01	ppb	20.85	1000.	
203 Tl	0.0279	0.0279	ppb	19.38	1000.	
205 Tl	0.0171	0.0171	ppb	49.80	#VALUE!	
208 Pb	0.1696	0.1696	ppb	4.19	2000.	
232 Th	0.0153	0.0153	ppb	26.18	1000.	
238 U	0.2909	0.2909	ppb	3.71	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2772721.80	1.14	2844110.50	97.5	69.5 - 120	
45 Sc	2791117.50	1.60	2809797.00	99.3	69.5 - 120	
72 Ge	614213.94	0.16	642252.38	95.6	69.5 - 120	
159 Tb	6978810.50	0.59	7051087.50	99.0	69.5 - 120	
209 Bi	3536172.50	0.93	3594227.50	98.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000900

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\052_CCV.D\052_CCV.D#
Date Acquired: May 11 2018 08:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.94	ppb	2.93	25	99.76	
11 B	28.4	ppb	1.68	25	113.6	Fail
23 Na	5,040.	ppb	1.70	5,000	100.8	
25 Mg	5,145.	ppb	1.70	5,000	102.9	
27 Al	501.6	ppb	0.96	500	100.32	
28 Si	482.9	ppb	2.37	500	96.58	
29 Si	459.2	ppb	3.22	500	91.84	
39 K	4,860.	ppb	1.31	5,000	97.2	
43 Ca	4,760.	ppb	1.10	5,000	95.2	
44 Ca	4,978.	ppb	0.42	5,000	99.56	
51 V	25.36	ppb	1.46	25	101.44	
52 Cr	25.08	ppb	0.48	25	100.32	
53 Cr	21.81	ppb	2.62	25	87.24	
55 Mn	25.11	ppb	0.46	25	100.44	
56 Fe	4,953.	ppb	1.12	5,000	99.06	
57 Fe	5,066.	ppb	1.24	5,000	101.32	
59 Co	25.1	ppb	0.46	25	100.4	
60 Ni	25.19	ppb	0.72	25	100.76	
63 Cu	25.39	ppb	0.68	25	101.56	
65 Cu	25.32	ppb	0.67	25	101.28	
66 Zn	25.43	ppb	1.33	25	101.72	
68 Zn	25.55	ppb	1.01	25	102.2	
75 As	25.09	ppb	0.30	25	100.36	
82 Se	25.99	ppb	2.41	25	103.96	
88 Sr	24.3	ppb	0.53	25	97.2	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.74	ppb	1.01	25	98.96	
107 Ag	25.22	ppb	0.73	25	100.88	
109 Ag	24.94	ppb	1.25	25	99.76	
111 Cd	25.41	ppb	0.84	25	101.64	
114 Cd	25.31	ppb	1.18	25	101.24	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.85	ppb	1.97	25	95.4	
120 Sn	23.89	ppb	1.70	25	95.56	
121 Sb	24.15	ppb	1.40	25	96.6	
123 Sb	24.06	ppb	1.57	25	96.24	
135 Ba	24.72	ppb	1.53	25	98.88	
137 Ba	24.52	ppb	0.91	25	98.08	
182 W	24.81	ppb	1.21	25	99.24	
203 Tl	24.61	ppb	0.86	25	98.44	
205 Tl	25.	ppb	1.98	25	100	
208 Pb	24.97	ppb	2.15	25	99.88	
232 Th	25.12	ppb	0.85	25	100.48	
238 U	26.7	ppb	1.62	25	106.8	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2881501.50	1.28	2844110.50	101.3	80 - 120.4	
45 Sc	2738857.80	0.69	2809797.00	97.5	80 - 120.4	
72 Ge	595223.69	0.59	642252.38	92.7	80 - 120.4	
159 Tb	6933873.00	0.15	7051087.50	98.3	80 - 120.4	
209 Bi	3591840.30	0.69	3594227.50	99.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000901

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\053_CCB.D\053_CCB.D#
Date Acquired: May 11 2018 08:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0012	ppb	131.19	1.00	
11 B	6.104	ppb	10.37	1.00	Fail
23 Na	7.448	ppb	3.05	1.00	
25 Mg	0.152	ppb	137.43	1.00	
27 Al	0.0224	ppb	248.22	1.00	
28 Si	9.745	ppb	83.89	1.00	
29 Si	-2.966	ppb	374.92	1.00	
39 K	1.562	ppb	183.93	1.00	
43 Ca	3.037	ppb	159.33	1.00	
44 Ca	1.215	ppb	95.80	1.00	
51 V	-0.0455	ppb	52.12	1.00	
52 Cr	0.1285	ppb	16.88	1.00	
53 Cr	-4.609	ppb	6.64	1.00	
55 Mn	0.1028	ppb	129.77	1.00	
56 Fe	11.74	ppb	39.39	1.00	
57 Fe	1.716	ppb	68.07	1.00	
59 Co	0.0023	ppb	223.72	1.00	
60 Ni	0.0069	ppb	114.47	1.00	
63 Cu	0.0205	ppb	18.52	1.00	
65 Cu	0.0013	ppb	274.98	1.00	
66 Zn	-0.0112	ppb	371.62	1.00	
68 Zn	0.177	ppb	71.41	1.00	
75 As	0.0033	ppb	4986.40	1.00	
82 Se	-0.058	ppb	169.92	1.00	
88 Sr	0.0022	ppb	169.50	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0292	ppb	63.91	1.00	
107 Ag	0.0103	ppb	40.94	1.00	
109 Ag	0.0117	ppb	10.57	1.00	
111 Cd	0.0143	ppb	75.28	1.00	
114 Cd	-0.0011	ppb	294.97	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0549	ppb	25.50	1.00	
120 Sn	0.0539	ppb	17.28	1.00	
121 Sb	0.01	ppb	31.60	1.00	
123 Sb	0.0084	ppb	41.47	1.00	
135 Ba	0.0092	ppb	76.13	1.00	
137 Ba	0.0115	ppb	29.86	1.00	
182 W	0.0461	ppb	43.58	1.00	
203 Tl	0.0122	ppb	29.50	1.00	
205 Tl	-0.0006	ppb	243.76	1.00	
208 Pb	0.0472	ppb	3.26	1.00	
232 Th	0.0964	ppb	13.54	1.00	
238 U	0.0039	ppb	12.57	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2622576.80	3.58	2844110.50	92.2	79.5 - 120	
45 Sc	2586504.80	3.75	2809797.00	92.1	79.5 - 120	
72 Ge	576457.13	3.16	642252.38	89.8	79.5 - 120	
159 Tb	6679868.50	1.65	7051087.50	94.7	79.5 - 120	
209 Bi	3560855.80	0.82	3594227.50	99.1	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000902

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\054SMPL.D\054SMPL.D#
Date Acquired: May 11 2018 08:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4060-001
Misc Info:
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0025	0.0025	ppb	100.45	100.	
11 B	316.3	316.3	ppb	5.82	1000.	
23 Na	134,700.	134,700.	ppb	4.46	200000.	
25 Mg	3,146.	3,146.	ppb	1.87	200000.	
27 Al	412.1	412.1	ppb	1.34	200000.	
28 Si	2,111.	2,111.	ppb	5.86	#VALUE!	
29 Si	2,074.	2,074.	ppb	5.14	10000.	
39 K	9,327.	9,327.	ppb	2.06	200000.	
43 Ca	11,420.	11,420.	ppb	1.67	#VALUE!	
44 Ca	11,450.	11,450.	ppb	0.55	200000.	
51 V	0.2225	0.2225	ppb	25.90	1000.	
52 Cr	0.9702	0.9702	ppb	2.06	2000.	
53 Cr	-2.544	-2.544	ppb	15.18	#VALUE!	
55 Mn	15.25	15.25	ppb	0.52	2000.	
56 Fe	58.74	58.74	ppb	4.82	#VALUE!	
57 Fe	46.94	46.94	ppb	9.59	100000.	
59 Co	37.89	37.89	ppb	0.45	1000.	
60 Ni	69.31	69.31	ppb	0.61	1000.	
63 Cu	37.34	37.34	ppb	1.20	#VALUE!	
65 Cu	33.23	33.23	ppb	0.96	2000.	
66 Zn	23.93	23.93	ppb	0.54	2000.	
68 Zn	23.9	23.9	ppb	0.36	#VALUE!	
75 As	1.765	1.765	ppb	8.35	1000.	
82 Se	6.848	6.848	ppb	2.79	1000.	
88 Sr	100.4	100.4	ppb	0.69	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1,970.	1,970.	ppb	0.18	1000.	>LDR
107 Ag	0.0922	0.0922	ppb	8.12	100.	
109 Ag	0.0831	0.0831	ppb	3.87	#VALUE!	
111 Cd	0.1962	0.1962	ppb	7.77	#VALUE!	
114 Cd	0.1511	0.1511	ppb	10.85	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0394	0.0394	ppb	14.32	1000.	
120 Sn	0.0455	0.0455	ppb	12.43	#VALUE!	
121 Sb	0.4119	0.4119	ppb	1.28	#VALUE!	
123 Sb	0.4058	0.4058	ppb	3.70	1000.	
135 Ba	2.742	2.742	ppb	3.60	2000.	
137 Ba	2.653	2.653	ppb	2.07	#VALUE!	
182 W	37.99	37.99	ppb	2.08	1000.	
203 Tl	0.0235	0.0235	ppb	37.63	1000.	
205 Tl	0.0071	0.0071	ppb	82.79	#VALUE!	
208 Pb	0.9598	0.9598	ppb	3.09	2000.	
232 Th	0.0894	0.0894	ppb	26.02	1000.	
238 U	0.0523	0.0523	ppb	7.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2695303.00	3.45	2844110.50	94.8	69.5 - 120	
45 Sc	2671022.80	1.83	2809797.00	95.1	69.5 - 120	
72 Ge	577719.00	0.88	642252.38	90.0	69.5 - 120	
159 Tb	6563166.00	1.66	7051087.50	93.1	69.5 - 120	
209 Bi	3123846.50	0.55	3594227.50	86.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000903

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\055SMPL.D\055SMPL.D#
Date Acquired: May 11 2018 09:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4061-001
Misc Info:
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0006	0.0006	ppb	175.36	100.	
11 B	16.26	16.26	ppb	15.50	1000.	
23 Na	6,821.	6,821.	ppb	4.36	200000.	
25 Mg	328.4	328.4	ppb	4.67	200000.	
27 Al	1,126.	1,126.	ppb	4.39	200000.	
28 Si	1,063.	1,063.	ppb	0.75	#VALUE!	
29 Si	1,056.	1,056.	ppb	2.38	10000.	
39 K	200.1	200.1	ppb	7.04	200000.	
43 Ca	2,175.	2,175.	ppb	4.85	#VALUE!	
44 Ca	2,179.	2,179.	ppb	1.22	200000.	
51 V	-0.0053	-0.0053	ppb	524.33	1000.	
52 Cr	0.3606	0.3606	ppb	7.37	2000.	
53 Cr	-0.4515	-0.4515	ppb	146.16	#VALUE!	
55 Mn	1.25	1.25	ppb	2.01	2000.	
56 Fe	32.06	32.06	ppb	3.81	#VALUE!	
57 Fe	14.72	14.72	ppb	4.72	100000.	
59 Co	0.0166	0.0166	ppb	52.91	1000.	
60 Ni	0.1097	0.1097	ppb	18.51	1000.	
63 Cu	0.9018	0.9018	ppb	1.53	#VALUE!	
65 Cu	0.6627	0.6627	ppb	3.58	2000.	
66 Zn	1.707	1.707	ppb	4.42	2000.	
68 Zn	1.967	1.967	ppb	8.76	#VALUE!	
75 As	0.4414	0.4414	ppb	17.52	1000.	
82 Se	0.0911	0.0911	ppb	167.67	1000.	
88 Sr	7.36	7.36	ppb	1.50	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	2.265	2.265	ppb	58.54	1000.	
107 Ag	0.0033	0.0033	ppb	36.15	100.	
109 Ag	0.0037	0.0037	ppb	72.34	#VALUE!	
111 Cd	-0.0247	-0.0247	ppb	110.59	#VALUE!	
114 Cd	0.0049	0.0049	ppb	13.47	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0282	0.0282	ppb	29.51	1000.	
120 Sn	0.0251	0.0251	ppb	19.48	#VALUE!	
121 Sb	0.0266	0.0266	ppb	8.27	#VALUE!	
123 Sb	0.0276	0.0276	ppb	32.68	1000.	
135 Ba	1.617	1.617	ppb	0.62	2000.	
137 Ba	1.657	1.657	ppb	1.50	#VALUE!	
182 W	0.0712	0.0712	ppb	43.60	1000.	
203 Tl	0.0056	0.0056	ppb	125.15	1000.	
205 Tl	0.0117	0.0117	ppb	35.07	#VALUE!	
208 Pb	0.1663	0.1663	ppb	4.32	2000.	
232 Th	0.0228	0.0228	ppb	16.97	1000.	
238 U	0.0472	0.0472	ppb	10.21	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2663222.80	4.98	2844110.50	93.6	69.5 - 120	
45 Sc	2584467.80	2.97	2809797.00	92.0	69.5 - 120	
72 Ge	570156.75	0.83	642252.38	88.8	69.5 - 120	
159 Tb	6542575.50	1.27	7051087.50	92.8	69.5 - 120	
209 Bi	3424229.00	1.37	3594227.50	95.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000904

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\056SMPL.D\056SMPL.D#
Date Acquired: May 11 2018 09:04 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4065-001
Misc Info:
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.035	0.035	ppb	12.20	100.	
11 B	13.08	13.08	ppb	3.54	1000.	
23 Na	2,320.	2,320.	ppb	1.26	200000.	
25 Mg	499.5	499.5	ppb	2.14	200000.	
27 Al	31.7	31.7	ppb	4.39	200000.	
28 Si	729.8	729.8	ppb	0.40	#VALUE!	
29 Si	728.	728.	ppb	3.19	10000.	
39 K	423.7	423.7	ppb	1.64	200000.	
43 Ca	2,198.	2,198.	ppb	3.89	#VALUE!	
44 Ca	2,170.	2,170.	ppb	1.27	200000.	
51 V	0.0118	0.0118	ppb	701.69	1000.	
52 Cr	0.3615	0.3615	ppb	3.23	2000.	
53 Cr	0.371	0.371	ppb	117.33	#VALUE!	
55 Mn	3.025	3.025	ppb	0.51	2000.	
56 Fe	37.43	37.43	ppb	8.82	#VALUE!	
57 Fe	15.52	15.52	ppb	9.70	100000.	
59 Co	0.0126	0.0126	ppb	18.87	1000.	
60 Ni	0.1144	0.1144	ppb	15.82	1000.	
63 Cu	0.4088	0.4088	ppb	7.10	#VALUE!	
65 Cu	0.3023	0.3023	ppb	5.95	2000.	
66 Zn	1.17	1.17	ppb	5.88	2000.	
68 Zn	1.356	1.356	ppb	4.99	#VALUE!	
75 As	0.3781	0.3781	ppb	35.86	1000.	
82 Se	-0.0298	-0.0298	ppb	361.90	1000.	
88 Sr	10.13	10.13	ppb	0.61	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.6785	0.6785	ppb	30.70	1000.	
107 Ag	0.0049	0.0049	ppb	18.87	100.	
109 Ag	0.0018	0.0018	ppb	86.94	#VALUE!	
111 Cd	-0.0347	-0.0347	ppb	17.88	#VALUE!	
114 Cd	0.0044	0.0044	ppb	97.31	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0346	0.0346	ppb	19.49	1000.	
120 Sn	0.0452	0.0452	ppb	33.29	#VALUE!	
121 Sb	0.0435	0.0435	ppb	17.22	#VALUE!	
123 Sb	0.0423	0.0423	ppb	9.94	1000.	
135 Ba	1.624	1.624	ppb	8.88	2000.	
137 Ba	1.567	1.567	ppb	2.66	#VALUE!	
182 W	0.0197	0.0197	ppb	21.30	1000.	
203 Tl	0.0111	0.0111	ppb	15.48	1000.	
205 Tl	0.0045	0.0045	ppb	78.75	#VALUE!	
208 Pb	0.111	0.111	ppb	2.56	2000.	
232 Th	0.0253	0.0253	ppb	13.08	1000.	
238 U	0.1728	0.1728	ppb	5.00	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2567440.30	1.99	2844110.50	90.3	69.5 - 120	
45 Sc	2534559.50	1.62	2809797.00	90.2	69.5 - 120	
72 Ge	567541.38	2.11	642252.38	88.4	69.5 - 120	
159 Tb	6457645.00	1.38	7051087.50	91.6	69.5 - 120	
209 Bi	3397901.50	0.46	3594227.50	94.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000905

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\057SMPL.D\057SMPL.D#
Date Acquired: May 11 2018 09:09 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4066-001
Misc Info:
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0021	0.0021	ppb	59.38	100.	
11 B	15.82	15.82	ppb	5.05	1000.	
23 Na	13,330.	13,330.	ppb	3.56	200000.	
25 Mg	5,403.	5,403.	ppb	1.97	200000.	
27 Al	6.518	6.518	ppb	5.23	200000.	
28 Si	5,958.	5,958.	ppb	0.89	#VALUE!	
29 Si	6,295.	6,295.	ppb	1.40	10000.	
39 K	2,344.	2,344.	ppb	4.30	200000.	
43 Ca	58,140.	58,140.	ppb	0.77	#VALUE!	
44 Ca	54,890.	54,890.	ppb	1.00	200000.	
51 V	0.0773	0.0773	ppb	65.52	1000.	
52 Cr	0.4239	0.4239	ppb	4.00	2000.	
53 Cr	-2.087	-2.087	ppb	8.83	#VALUE!	
55 Mn	10.21	10.21	ppb	0.93	2000.	
56 Fe	27.1	27.1	ppb	8.76	#VALUE!	
57 Fe	16.83	16.83	ppb	9.18	100000.	
59 Co	0.0699	0.0699	ppb	2.62	1000.	
60 Ni	1.535	1.535	ppb	3.94	1000.	
63 Cu	42.15	42.15	ppb	1.08	#VALUE!	
65 Cu	41.29	41.29	ppb	0.69	2000.	
66 Zn	10.85	10.85	ppb	2.12	2000.	
68 Zn	11.05	11.05	ppb	2.33	#VALUE!	
75 As	0.8922	0.8922	ppb	9.44	1000.	
82 Se	0.2987	0.2987	ppb	73.12	1000.	
88 Sr	246.2	246.2	ppb	1.31	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.3896	0.3896	ppb	12.74	1000.	
107 Ag	2.674	2.674	ppb	0.04	100.	
109 Ag	2.633	2.633	ppb	1.92	#VALUE!	
111 Cd	0.0302	0.0302	ppb	35.36	#VALUE!	
114 Cd	0.0672	0.0672	ppb	8.61	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.197	0.197	ppb	12.59	1000.	
120 Sn	0.2138	0.2138	ppb	5.54	#VALUE!	
121 Sb	0.3219	0.3219	ppb	4.00	#VALUE!	
123 Sb	0.342	0.342	ppb	5.14	1000.	
135 Ba	5.133	5.133	ppb	0.46	2000.	
137 Ba	4.936	4.936	ppb	0.58	#VALUE!	
182 W	0.0285	0.0285	ppb	12.52	1000.	
203 Tl	0.0012	0.0012	ppb	125.96	1000.	
205 Tl	0.0058	0.0058	ppb	112.97	#VALUE!	
208 Pb	0.6204	0.6204	ppb	2.26	2000.	
232 Th	0.0232	0.0232	ppb	14.98	1000.	
238 U	0.6417	0.6417	ppb	2.56	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2559271.80	4.13	2844110.50	90.0	69.5 - 120	
45 Sc	2555737.80	1.84	2809797.00	91.0	69.5 - 120	
72 Ge	563363.19	1.11	642252.38	87.7	69.5 - 120	
159 Tb	6524538.00	0.93	7051087.50	92.5	69.5 - 120	
209 Bi	3393059.00	1.97	3594227.50	94.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000906

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\058SMPL.D\058SMPL.D#
Date Acquired: May 11 2018 09:13 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE04IMS1
Misc Info:
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0048	-0.001	ppb	154.26	100.	
11 B	27.415	5.483	ppb	2.53	1000.	
23 Na	85.35	17.07	ppb	5.63	200000.	
25 Mg	24.635	4.927	ppb	6.97	200000.	
27 Al	7.67	1.534	ppb	8.70	200000.	
28 Si	-79.35	-15.87	ppb	42.74	#VALUE!	
29 Si	-23.27	-4.654	ppb	191.08	10000.	
39 K	31.77	6.354	ppb	12.44	200000.	
43 Ca	82.75	16.55	ppb	33.05	#VALUE!	
44 Ca	55.15	11.03	ppb	12.01	200000.	
51 V	0.3931	0.0786	ppb	101.50	1000.	
52 Cr	2.9415	0.5883	ppb	7.70	2000.	
53 Cr	38.235	7.647	ppb	12.80	#VALUE!	
55 Mn	1.492	0.2984	ppb	2.23	2000.	
56 Fe	137.1	27.42	ppb	15.56	#VALUE!	
57 Fe	23.035	4.607	ppb	23.03	100000.	
59 Co	0.0383	0.0077	ppb	26.91	1000.	
60 Ni	0.4005	0.0801	ppb	5.13	1000.	
63 Cu	0.893	0.1786	ppb	6.70	#VALUE!	
65 Cu	0.831	0.1662	ppb	8.43	2000.	
66 Zn	0.638	0.1276	ppb	75.67	2000.	
68 Zn	1.3445	0.2689	ppb	35.40	#VALUE!	
75 As	0.4899	0.098	ppb	130.45	1000.	
82 Se	0.6795	0.1359	ppb	34.18	1000.	
88 Sr	0.1612	0.0322	ppb	22.15	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.4612	0.0922	ppb	28.96	1000.	
107 Ag	0.223	0.0446	ppb	40.95	100.	
109 Ag	0.2135	0.0427	ppb	34.86	#VALUE!	
111 Cd	0.0607	0.0121	ppb	17.82	#VALUE!	
114 Cd	-0.0607	-0.0121	ppb	104.95	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.69	8.938	ppb	2.50	1000.	
120 Sn	45.1	9.02	ppb	1.53	#VALUE!	
121 Sb	0.0642	0.0128	ppb	47.14	#VALUE!	
123 Sb	0.0678	0.0136	ppb	65.31	1000.	
135 Ba	0.2836	0.0567	ppb	17.13	2000.	
137 Ba	0.299	0.0598	ppb	17.16	#VALUE!	
182 W	0.0608	0.0122	ppb	13.44	1000.	
203 Tl	0.008	0.0016	ppb	146.51	1000.	
205 Tl	0.0187	0.0037	ppb	212.92	#VALUE!	
208 Pb	0.0477	0.0095	ppb	49.11	2000.	
232 Th	0.1048	0.021	ppb	32.27	1000.	
238 U	0.0044	0.0009	ppb	61.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2704507.80	3.52	2844110.50	95.1	69.5 - 120	
45 Sc	2558535.50	1.94	2809797.00	91.1	69.5 - 120	
72 Ge	561896.25	0.90	642252.38	87.5	69.5 - 120	
159 Tb	6491962.50	0.94	7051087.50	92.1	69.5 - 120	
209 Bi	3483833.30	1.62	3594227.50	96.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000907

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\059SMPL.D\059SMPL.D#
Date Acquired: May 11 2018 09:17 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE04IMS1
Misc Info:
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	50.05	10.01	ppb	3.12	100.	
11 B	509.5	101.9	ppb	1.55	1000.	
23 Na	8,035.	1,607.	ppb	5.60	200000.	
25 Mg	5,160.	1,032.	ppb	1.56	200000.	
27 Al	2,150.	430.	ppb	1.37	200000.	
28 Si	895.	179.	ppb	2.60	#VALUE!	
29 Si	897.	179.4	ppb	5.96	10000.	
39 K	10,480.	2,096.	ppb	5.40	200000.	
43 Ca	2,950.5	590.1	ppb	7.73	#VALUE!	
44 Ca	2,536.5	507.3	ppb	1.50	200000.	
51 V	536.5	107.3	ppb	0.43	1000.	
52 Cr	210.25	42.05	ppb	0.50	2000.	
53 Cr	271.3	54.26	ppb	2.18	#VALUE!	
55 Mn	535.5	107.1	ppb	1.44	2000.	
56 Fe	1,169.5	233.9	ppb	1.70	#VALUE!	
57 Fe	1,067.	213.4	ppb	1.34	100000.	
59 Co	538.	107.6	ppb	0.69	1000.	
60 Ni	522.	104.4	ppb	0.98	1000.	
63 Cu	257.2	51.44	ppb	0.63	#VALUE!	
65 Cu	263.05	52.61	ppb	1.11	2000.	
66 Zn	497.9	99.58	ppb	0.37	2000.	
68 Zn	554.5	110.9	ppb	0.47	#VALUE!	
75 As	101.5	20.3	ppb	1.53	1000.	
82 Se	99.75	19.95	ppb	2.67	1000.	
88 Sr	501.5	100.3	ppb	1.77	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	102.8	20.56	ppb	1.48	1000.	
107 Ag	52.65	10.53	ppb	1.93	100.	
109 Ag	52.45	10.49	ppb	1.18	#VALUE!	
111 Cd	256.2	51.24	ppb	1.43	#VALUE!	
114 Cd	257.25	51.45	ppb	0.81	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	527.	105.4	ppb	1.76	1000.	
120 Sn	529.5	105.9	ppb	1.46	#VALUE!	
121 Sb	99.45	19.89	ppb	2.55	#VALUE!	
123 Sb	99.25	19.85	ppb	1.88	1000.	
135 Ba	2,037.	407.4	ppb	1.51	2000.	
137 Ba	2,051.5	410.3	ppb	1.45	#VALUE!	
182 W	106.55	21.31	ppb	0.94	1000.	
203 Tl	102.85	20.57	ppb	1.54	1000.	
205 Tl	105.35	21.07	ppb	1.79	#VALUE!	
208 Pb	105.7	21.14	ppb	1.31	2000.	
232 Th	106.25	21.25	ppb	1.71	1000.	
238 U	113.85	22.77	ppb	1.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2871387.30	3.10	2844110.50	101.0	69.5 - 120	
45 Sc	2565921.80	1.67	2809797.00	91.3	69.5 - 120	
72 Ge	558860.31	2.15	642252.38	87.0	69.5 - 120	
159 Tb	6608554.50	1.03	7051087.50	93.7	69.5 - 120	
209 Bi	3549846.50	1.67	3594227.50	98.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000908

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\060SMPL.D\060SMPL.D#
Date Acquired: May 11 2018 09:21 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-007
Misc Info:
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	12.87	1.287	ppb	6.21	100.	
11 B	235.4	23.54	ppb	2.80	1000.	
23 Na	20,380.	2,038.	ppb	2.17	200000.	
25 Mg	128,300.	12,830.	ppb	4.10	200000.	
27 Al	268,600.	26,860.	ppb	2.42	200000.	
28 Si	3,146.	314.6	ppb	4.89	#VALUE!	
29 Si	2,909.	290.9	ppb	4.73	10000.	
39 K	61,140.	6,114.	ppb	2.77	200000.	
43 Ca	588,000.	58,800.	ppb	2.07	#VALUE!	
44 Ca	559,000.	55,900.	ppb	1.46	200000.	
51 V	512.9	51.29	ppb	1.13	1000.	
52 Cr	265.9	26.59	ppb	1.55	2000.	
53 Cr	269.1	26.91	ppb	1.89	#VALUE!	
55 Mn	14,460.	1,446.	ppb	1.24	2000.	
56 Fe	280,300.	28,030.	ppb	1.97	#VALUE!	
57 Fe	271,300.	27,130.	ppb	1.35	100000.	
59 Co	104.2	10.42	ppb	1.42	1000.	
60 Ni	274.5	27.45	ppb	1.47	1000.	
63 Cu	184.1	18.41	ppb	0.93	#VALUE!	
65 Cu	184.5	18.45	ppb	1.88	2000.	
66 Zn	714.1	71.41	ppb	1.13	2000.	
68 Zn	816.7	81.67	ppb	1.47	#VALUE!	
75 As	37.57	3.757	ppb	3.40	1000.	
82 Se	5.772	0.5772	ppb	17.21	1000.	
88 Sr	1,550.	155.	ppb	1.84	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	18.72	1.872	ppb	2.81	1000.	
107 Ag	1.166	0.1166	ppb	5.44	100.	
109 Ag	0.9074	0.0907	ppb	6.81	#VALUE!	
111 Cd	4.602	0.4602	ppb	7.45	#VALUE!	
114 Cd	2.103	0.2103	ppb	12.04	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.92	5.292	ppb	2.52	1000.	
120 Sn	53.07	5.307	ppb	1.55	#VALUE!	
121 Sb	2.858	0.2858	ppb	1.60	#VALUE!	
123 Sb	2.744	0.2744	ppb	4.44	1000.	
135 Ba	3,771.	377.1	ppb	0.81	2000.	
137 Ba	3,804.	380.4	ppb	0.90	#VALUE!	
182 W	1.256	0.1256	ppb	11.22	1000.	
203 Tl	4.549	0.4549	ppb	2.14	1000.	
205 Tl	4.545	0.4545	ppb	4.92	#VALUE!	
208 Pb	162.3	16.23	ppb	0.18	2000.	
232 Th	123.5	12.35	ppb	0.31	1000.	
238 U	18.75	1.875	ppb	0.78	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2544775.30	2.89	2844110.50	89.5	69.5 - 120	
45 Sc	2552964.00	3.54	2809797.00	90.9	69.5 - 120	
72 Ge	541227.13	1.62	642252.38	84.3	69.5 - 120	
159 Tb	6668114.00	0.15	7051087.50	94.6	69.5 - 120	
209 Bi	3480791.50	0.11	3594227.50	96.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000909

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\061SMPL.D\061SMPL.D#
Date Acquired: May 11 2018 09:25 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-019
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	14.67	1.467	ppb	4.36	100.	
11 B	225.6	22.56	ppb	3.84	1000.	
23 Na	4,958.	495.8	ppb	3.51	200000.	
25 Mg	117,100.	11,710.	ppb	3.07	200000.	
27 Al	316,200.	31,620.	ppb	2.07	200000.	
28 Si	4,096.	409.6	ppb	1.12	#VALUE!	
29 Si	3,780.	378.	ppb	3.77	10000.	
39 K	78,430.	7,843.	ppb	1.63	200000.	
43 Ca	498,400.	49,840.	ppb	3.20	#VALUE!	
44 Ca	478,100.	47,810.	ppb	0.75	200000.	
51 V	658.4	65.84	ppb	1.56	1000.	
52 Cr	293.	29.3	ppb	0.46	2000.	
53 Cr	293.4	29.34	ppb	0.89	#VALUE!	
55 Mn	12,300.	1,230.	ppb	0.68	2000.	
56 Fe	310,200.	31,020.	ppb	0.94	#VALUE!	
57 Fe	298,700.	29,870.	ppb	0.54	100000.	
59 Co	207.7	20.77	ppb	0.83	1000.	
60 Ni	334.9	33.49	ppb	0.72	1000.	
63 Cu	198.6	19.86	ppb	0.85	#VALUE!	
65 Cu	201.7	20.17	ppb	0.95	2000.	
66 Zn	779.7	77.97	ppb	1.94	2000.	
68 Zn	977.5	97.75	ppb	0.76	#VALUE!	
75 As	139.4	13.94	ppb	1.28	1000.	
82 Se	7.845	0.7845	ppb	29.98	1000.	
88 Sr	1,799.	179.9	ppb	0.94	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.53	1.753	ppb	4.10	1000.	
107 Ag	1.259	0.1259	ppb	3.84	100.	
109 Ag	1.083	0.1083	ppb	8.64	#VALUE!	
111 Cd	6.571	0.6571	ppb	4.54	#VALUE!	
114 Cd	3.277	0.3277	ppb	4.95	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	55.02	5.502	ppb	2.13	1000.	
120 Sn	55.	5.5	ppb	2.69	#VALUE!	
121 Sb	3.225	0.3225	ppb	6.03	#VALUE!	
123 Sb	3.274	0.3274	ppb	4.83	1000.	
135 Ba	6,882.	688.2	ppb	1.75	2000.	
137 Ba	6,742.	674.2	ppb	0.91	#VALUE!	
182 W	1.493	0.1493	ppb	5.23	1000.	
203 Tl	5.522	0.5522	ppb	6.31	1000.	
205 Tl	5.673	0.5673	ppb	3.36	#VALUE!	
208 Pb	252.3	25.23	ppb	0.09	2000.	
232 Th	142.6	14.26	ppb	0.44	1000.	
238 U	28.6	2.86	ppb	1.43	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2591779.80	3.41	2844110.50	91.1	69.5 - 120	
45 Sc	2525621.00	1.05	2809797.00	89.9	69.5 - 120	
72 Ge	534704.00	1.12	642252.38	83.3	69.5 - 120	
159 Tb	6540553.00	0.94	7051087.50	92.8	69.5 - 120	
209 Bi	3464285.30	0.45	3594227.50	96.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000910

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\062SMPL.D\062SMPL.D#
Date Acquired: May 11 2018 09:29 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-020
Misc Info:
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.549	0.7549	ppb	11.62	100.	
11 B	176.	17.6	ppb	5.31	1000.	
23 Na	3,470.	347.	ppb	2.94	200000.	
25 Mg	118,300.	11,830.	ppb	0.85	200000.	
27 Al	166,700.	16,670.	ppb	2.14	200000.	
28 Si	2,829.	282.9	ppb	3.92	#VALUE!	
29 Si	2,494.	249.4	ppb	5.98	10000.	
39 K	42,140.	4,214.	ppb	2.54	200000.	
43 Ca	1,577,000.	157,700.	ppb	2.60	#VALUE!	
44 Ca	1,520,000.	152,000.	ppb	2.12	200000.	
51 V	347.1	34.71	ppb	1.12	1000.	
52 Cr	158.7	15.87	ppb	1.35	2000.	
53 Cr	135.2	13.52	ppb	2.41	#VALUE!	
55 Mn	5,315.	531.5	ppb	0.26	2000.	
56 Fe	150,900.	15,090.	ppb	0.35	#VALUE!	
57 Fe	148,800.	14,880.	ppb	0.74	100000.	
59 Co	82.97	8.297	ppb	2.32	1000.	
60 Ni	182.	18.2	ppb	1.97	1000.	
63 Cu	99.06	9.906	ppb	0.53	#VALUE!	
65 Cu	102.5	10.25	ppb	0.85	2000.	
66 Zn	390.2	39.02	ppb	1.94	2000.	
68 Zn	516.9	51.69	ppb	1.45	#VALUE!	
75 As	63.92	6.392	ppb	1.80	1000.	
82 Se	9.438	0.9438	ppb	14.90	1000.	
88 Sr	3,638.	363.8	ppb	1.09	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.	1.1	ppb	2.12	1000.	
107 Ag	0.6658	0.0666	ppb	19.15	100.	
109 Ag	0.5644	0.0564	ppb	11.19	#VALUE!	
111 Cd	4.82	0.482	ppb	13.81	#VALUE!	
114 Cd	2.386	0.2386	ppb	4.59	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.54	4.754	ppb	0.97	1000.	
120 Sn	47.69	4.769	ppb	0.98	#VALUE!	
121 Sb	2.082	0.2082	ppb	7.44	#VALUE!	
123 Sb	2.127	0.2127	ppb	6.85	1000.	
135 Ba	4,276.	427.6	ppb	0.35	2000.	
137 Ba	4,270.	427.	ppb	0.85	#VALUE!	
182 W	1.248	0.1248	ppb	3.65	1000.	
203 Tl	3.187	0.3187	ppb	4.61	1000.	
205 Tl	3.227	0.3227	ppb	1.85	#VALUE!	
208 Pb	117.9	11.79	ppb	1.07	2000.	
232 Th	72.44	7.244	ppb	0.35	1000.	
238 U	21.21	2.121	ppb	1.45	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2409329.00	3.26	2844110.50	84.7	69.5 - 120	
45 Sc	2348966.30	3.10	2809797.00	83.6	69.5 - 120	
72 Ge	511186.47	1.34	642252.38	79.6	69.5 - 120	
159 Tb	6419857.00	0.28	7051087.50	91.0	69.5 - 120	
209 Bi	3346429.80	1.31	3594227.50	93.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000911

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\063SMPL.D\063SMPL.D#
Date Acquired: May 11 2018 09:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: TEST
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	248.9	24.89	ppb	2.57	100.	
11 B	278.6	27.86	ppb	4.75	1000.	
23 Na	46,540.	4,654.	ppb	2.05	200000.	
25 Mg	47,400.	4,740.	ppb	5.10	200000.	
27 Al	4,791.	479.1	ppb	2.65	200000.	
28 Si	4,851.	485.1	ppb	3.09	#VALUE!	
29 Si	4,345.	434.5	ppb	2.93	10000.	
39 K	48,200.	4,820.	ppb	0.89	200000.	
43 Ca	48,900.	4,890.	ppb	1.18	#VALUE!	
44 Ca	49,750.	4,975.	ppb	1.20	200000.	
51 V	245.5	24.55	ppb	0.81	1000.	
52 Cr	248.9	24.89	ppb	0.32	2000.	
53 Cr	218.	21.8	ppb	0.97	#VALUE!	
55 Mn	249.6	24.96	ppb	0.96	2000.	
56 Fe	49,060.	4,906.	ppb	1.31	#VALUE!	
57 Fe	50,480.	5,048.	ppb	0.58	100000.	
59 Co	249.4	24.94	ppb	0.60	1000.	
60 Ni	248.1	24.81	ppb	1.17	1000.	
63 Cu	250.5	25.05	ppb	0.87	#VALUE!	
65 Cu	248.8	24.88	ppb	0.68	2000.	
66 Zn	248.4	24.84	ppb	1.55	2000.	
68 Zn	255.8	25.58	ppb	0.63	#VALUE!	
75 As	250.8	25.08	ppb	0.71	1000.	
82 Se	264.2	26.42	ppb	0.75	1000.	
88 Sr	248.5	24.85	ppb	0.75	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	257.	25.7	ppb	0.44	1000.	
107 Ag	259.1	25.91	ppb	0.34	100.	
109 Ag	259.6	25.96	ppb	0.83	#VALUE!	
111 Cd	260.5	26.05	ppb	0.62	#VALUE!	
114 Cd	260.1	26.01	ppb	0.55	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	232.4	23.24	ppb	0.49	1000.	
120 Sn	232.1	23.21	ppb	0.40	#VALUE!	
121 Sb	235.7	23.57	ppb	0.54	#VALUE!	
123 Sb	238.	23.8	ppb	1.29	1000.	
135 Ba	245.3	24.53	ppb	1.44	2000.	
137 Ba	242.5	24.25	ppb	1.08	#VALUE!	
182 W	251.2	25.12	ppb	1.03	1000.	
203 Tl	246.4	24.64	ppb	2.24	1000.	
205 Tl	249.1	24.91	ppb	1.68	#VALUE!	
208 Pb	250.2	25.02	ppb	1.63	2000.	
232 Th	251.6	25.16	ppb	1.29	1000.	
238 U	269.2	26.92	ppb	0.92	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2288071.80	2.28	2844110.50	80.4	69.5 - 120	
45 Sc	2339113.00	0.84	2809797.00	83.2	69.5 - 120	
72 Ge	524915.63	1.08	642252.38	81.7	69.5 - 120	
159 Tb	6506648.00	0.35	7051087.50	92.3	69.5 - 120	
209 Bi	3505412.80	1.01	3594227.50	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000912

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\064_CCV.D\064_CCV.D#
Date Acquired: May 11 2018 09:38 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.62	ppb	2.29	25	102.48	
11 B	27.07	ppb	2.51	25	108.28	
23 Na	4,418.	ppb	0.81	5,000	88.36	Fail
25 Mg	4,745.	ppb	1.85	5,000	94.9	
27 Al	488.6	ppb	2.69	500	97.72	
28 Si	466.8	ppb	4.24	500	93.36	
29 Si	410.8	ppb	0.48	500	82.16	Fail
39 K	4,694.	ppb	2.51	5,000	93.88	
43 Ca	4,627.	ppb	1.27	5,000	92.54	
44 Ca	4,862.	ppb	2.19	5,000	97.24	
51 V	24.68	ppb	0.55	25	98.72	
52 Cr	24.81	ppb	1.11	25	99.24	
53 Cr	21.71	ppb	1.32	25	86.84	
55 Mn	25.15	ppb	0.54	25	100.6	
56 Fe	4,926.	ppb	1.13	5,000	98.52	
57 Fe	4,955.	ppb	1.23	5,000	99.1	
59 Co	24.68	ppb	0.88	25	98.72	
60 Ni	24.93	ppb	2.29	25	99.72	
63 Cu	25.	ppb	0.81	25	100	
65 Cu	25.21	ppb	0.67	25	100.84	
66 Zn	25.03	ppb	2.11	25	100.12	
68 Zn	25.02	ppb	2.55	25	100.08	
75 As	25.42	ppb	1.08	25	101.68	
82 Se	26.36	ppb	1.53	25	105.44	
88 Sr	24.94	ppb	1.16	25	99.76	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.5	ppb	0.84	25	102	
107 Ag	25.9	ppb	0.12	25	103.6	
109 Ag	25.82	ppb	1.17	25	103.28	
111 Cd	25.84	ppb	1.19	25	103.36	
114 Cd	25.93	ppb	1.07	25	103.72	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.51	ppb	0.41	25	94.04	
120 Sn	23.38	ppb	0.39	25	93.52	
121 Sb	23.75	ppb	0.96	25	95	
123 Sb	23.87	ppb	0.86	25	95.48	
135 Ba	24.55	ppb	1.97	25	98.2	
137 Ba	24.48	ppb	0.35	25	97.92	
182 W	25.04	ppb	0.92	25	100.16	
203 Tl	24.66	ppb	0.97	25	98.64	
205 Tl	24.82	ppb	0.66	25	99.28	
208 Pb	24.84	ppb	0.30	25	99.36	
232 Th	25.19	ppb	1.79	25	100.76	
238 U	26.9	ppb	0.64	25	107.6	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2331333.80	2.35	2844110.50	82.0	80 - 120.4	
45 Sc	2450939.80	1.30	2809797.00	87.2	80 - 120.4	
72 Ge	533232.50	1.98	642252.38	83.0	80 - 120.4	
159 Tb	6507687.00	1.03	7051087.50	92.3	80 - 120.4	
209 Bi	3479182.00	1.21	3594227.50	96.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\065_CCB.D\065_CCB.D#
Date Acquired: May 11 2018 09:42 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0021	ppb	101.09	1.00	
11 B	4.526	ppb	8.54	1.00	Fail
23 Na	2.289	ppb	8.30	1.00	
25 Mg	0.0965	ppb	117.92	1.00	
27 Al	0.0565	ppb	15.94	1.00	
28 Si	38.18	ppb	13.32	1.00	
29 Si	-0.2181	ppb	2948.20	1.00	
39 K	-0.674	ppb	377.60	1.00	
43 Ca	3.608	ppb	110.42	1.00	
44 Ca	1.459	ppb	56.87	1.00	
51 V	-0.0717	ppb	96.61	1.00	
52 Cr	0.1818	ppb	27.17	1.00	
53 Cr	-5.332	ppb	5.91	1.00	
55 Mn	0.0192	ppb	25.84	1.00	
56 Fe	23.76	ppb	12.37	1.00	
57 Fe	3.983	ppb	13.91	1.00	
59 Co	0.0039	ppb	99.01	1.00	
60 Ni	0.0102	ppb	74.42	1.00	
63 Cu	0.0186	ppb	68.67	1.00	
65 Cu	-0.0034	ppb	325.70	1.00	
66 Zn	-0.0179	ppb	16.07	1.00	
68 Zn	0.2414	ppb	26.90	1.00	
75 As	0.1334	ppb	38.39	1.00	
82 Se	0.2101	ppb	22.95	1.00	
88 Sr	-0.0006	ppb	73.91	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0304	ppb	50.30	1.00	
107 Ag	0.0117	ppb	23.16	1.00	
109 Ag	0.01	ppb	62.73	1.00	
111 Cd	-0.0496	ppb	54.68	1.00	
114 Cd	0.0002	ppb	674.91	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0534	ppb	14.38	1.00	
120 Sn	0.0465	ppb	14.00	1.00	
121 Sb	0.0129	ppb	25.43	1.00	
123 Sb	0.0046	ppb	59.07	1.00	
135 Ba	0.0059	ppb	240.02	1.00	
137 Ba	0.0059	ppb	98.19	1.00	
182 W	0.0592	ppb	30.97	1.00	
203 Tl	0.0078	ppb	15.75	1.00	
205 Tl	0.0073	ppb	41.44	1.00	
208 Pb	0.067	ppb	13.78	1.00	
232 Th	0.0987	ppb	24.01	1.00	
238 U	0.0037	ppb	55.77	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2258364.30	1.08	2844110.50	79.4	79.5 - 120	ISFail
45 Sc	2276785.00	1.30	2809797.00	81.0	79.5 - 120	
72 Ge	514889.16	0.50	642252.38	80.2	79.5 - 120	
159 Tb	6127510.50	0.39	7051087.50	86.9	79.5 - 120	
209 Bi	3335170.30	1.90	3594227.50	92.8	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000914

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\066SMPL.D\066SMPL.D#
Date Acquired: May 11 2018 09:46 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-001
Misc Info:
Vial Number: 2307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.595	0.5595	ppb	1.55	100.	
11 B	85.35	8.535	ppb	5.45	1000.	
23 Na	1,147.	114.7	ppb	1.11	200000.	
25 Mg	25,290.	2,529.	ppb	3.04	200000.	
27 Al	99,420.	9,942.	ppb	1.69	200000.	
28 Si	3,420.	342.	ppb	3.74	#VALUE!	
29 Si	2,922.	292.2	ppb	4.45	10000.	
39 K	33,500.	3,350.	ppb	0.88	200000.	
43 Ca	25,530.	2,553.	ppb	1.16	#VALUE!	
44 Ca	25,230.	2,523.	ppb	0.36	200000.	
51 V	220.	22.	ppb	0.77	1000.	
52 Cr	115.8	11.58	ppb	0.83	2000.	
53 Cr	119.	11.9	ppb	3.07	#VALUE!	
55 Mn	2,986.	298.6	ppb	1.15	2000.	
56 Fe	97,740.	9,774.	ppb	1.53	#VALUE!	
57 Fe	98,130.	9,813.	ppb	1.27	100000.	
59 Co	54.95	5.495	ppb	1.66	1000.	
60 Ni	88.3	8.83	ppb	3.06	1000.	
63 Cu	97.81	9.781	ppb	1.02	#VALUE!	
65 Cu	98.87	9.887	ppb	0.49	2000.	
66 Zn	340.4	34.04	ppb	0.57	2000.	
68 Zn	384.6	38.46	ppb	1.75	#VALUE!	
75 As	28.12	2.812	ppb	4.27	1000.	
82 Se	5.046	0.5046	ppb	21.07	1000.	
88 Sr	350.4	35.04	ppb	1.00	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.28	1.228	ppb	2.66	1000.	
107 Ag	0.6679	0.0668	ppb	4.83	100.	
109 Ag	0.6455	0.0646	ppb	6.43	#VALUE!	
111 Cd	3.259	0.3259	ppb	8.43	#VALUE!	
114 Cd	2.242	0.2242	ppb	4.21	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.13	4.613	ppb	0.54	1000.	
120 Sn	45.97	4.597	ppb	0.41	#VALUE!	
121 Sb	1.386	0.1386	ppb	2.13	#VALUE!	
123 Sb	1.455	0.1455	ppb	5.35	1000.	
135 Ba	1,636.	163.6	ppb	0.82	2000.	
137 Ba	1,624.	162.4	ppb	1.26	#VALUE!	
182 W	0.8739	0.0874	ppb	9.43	1000.	
203 Tl	2.401	0.2401	ppb	7.01	1000.	
205 Tl	2.385	0.2385	ppb	0.97	#VALUE!	
208 Pb	134.	13.4	ppb	1.28	2000.	
232 Th	82.48	8.248	ppb	2.30	1000.	
238 U	19.69	1.969	ppb	1.72	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2447093.30	2.67	2844110.50	86.0	69.5 - 120	
45 Sc	2451431.50	1.89	2809797.00	87.2	69.5 - 120	
72 Ge	535839.75	1.37	642252.38	83.4	69.5 - 120	
159 Tb	6502659.50	0.73	7051087.50	92.2	69.5 - 120	
209 Bi	3471072.80	0.89	3594227.50	96.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000915

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\067SMPL.D\067SMPL.D#
Date Acquired: May 11 2018 09:50 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-002
Misc Info:
Vial Number: 2308
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.921	0.7921	ppb	0.93	100.	
11 B	154.5	15.45	ppb	2.45	1000.	
23 Na	2,119.	211.9	ppb	5.04	200000.	
25 Mg	97,350.	9,735.	ppb	0.89	200000.	
27 Al	174,500.	17,450.	ppb	1.15	200000.	
28 Si	3,724.	372.4	ppb	2.43	#VALUE!	
29 Si	3,284.	328.4	ppb	7.65	10000.	
39 K	47,010.	4,701.	ppb	5.12	200000.	
43 Ca	330,200.	33,020.	ppb	0.94	#VALUE!	
44 Ca	323,200.	32,320.	ppb	1.37	200000.	
51 V	453.7	45.37	ppb	0.94	1000.	
52 Cr	175.8	17.58	ppb	0.39	2000.	
53 Cr	157.3	15.73	ppb	1.18	#VALUE!	
55 Mn	3,139.	313.9	ppb	1.10	2000.	
56 Fe	175,200.	17,520.	ppb	1.34	#VALUE!	
57 Fe	171,900.	17,190.	ppb	0.21	100000.	
59 Co	68.79	6.879	ppb	0.81	1000.	
60 Ni	154.6	15.46	ppb	0.98	1000.	
63 Cu	116.5	11.65	ppb	1.36	#VALUE!	
65 Cu	119.4	11.94	ppb	1.41	2000.	
66 Zn	446.6	44.66	ppb	0.45	2000.	
68 Zn	507.8	50.78	ppb	0.26	#VALUE!	
75 As	117.7	11.77	ppb	2.42	1000.	
82 Se	5.324	0.5324	ppb	37.04	1000.	
88 Sr	1,436.	143.6	ppb	1.04	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.79	1.079	ppb	2.32	1000.	
107 Ag	0.8476	0.0848	ppb	1.68	100.	
109 Ag	0.7438	0.0744	ppb	5.45	#VALUE!	
111 Cd	2.343	0.2343	ppb	10.50	#VALUE!	
114 Cd	0.2781	0.0278	ppb	49.84	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.2	5.02	ppb	0.88	1000.	
120 Sn	49.97	4.997	ppb	2.19	#VALUE!	
121 Sb	2.473	0.2473	ppb	3.70	#VALUE!	
123 Sb	2.646	0.2646	ppb	3.40	1000.	
135 Ba	2,284.	228.4	ppb	0.69	2000.	
137 Ba	2,278.	227.8	ppb	0.84	#VALUE!	
182 W	0.8169	0.0817	ppb	6.31	1000.	
203 Tl	2.895	0.2895	ppb	1.76	1000.	
205 Tl	2.952	0.2952	ppb	6.94	#VALUE!	
208 Pb	112.7	11.27	ppb	0.75	2000.	
232 Th	79.58	7.958	ppb	0.63	1000.	
238 U	17.87	1.787	ppb	1.99	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2693320.00	2.00	2844110.50	94.7	69.5 - 120	
45 Sc	2571143.30	1.90	2809797.00	91.5	69.5 - 120	
72 Ge	550774.81	0.36	642252.38	85.8	69.5 - 120	
159 Tb	6638883.50	1.32	7051087.50	94.2	69.5 - 120	
209 Bi	3458303.50	1.19	3594227.50	96.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000916

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\068SMPL.D\068SMPL.D#
Date Acquired: May 11 2018 09:54 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2309
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0001	-0.0001	ppb	431.94	100.	
11 B	2.966	2.966	ppb	2.53	1000.	
23 Na	0.7425	0.7425	ppb	7.61	200000.	
25 Mg	0.2285	0.2285	ppb	53.74	200000.	
27 Al	0.3951	0.3951	ppb	10.60	200000.	
28 Si	-18.47	-18.47	ppb	89.12	#VALUE!	
29 Si	-60.82	-60.82	ppb	15.51	10000.	
39 K	-7.61	-7.61	ppb	37.62	200000.	
43 Ca	-0.8808	-0.8808	ppb	485.92	#VALUE!	
44 Ca	-0.3884	-0.3884	ppb	210.63	200000.	
51 V	-0.0839	-0.0839	ppb	42.91	1000.	
52 Cr	0.047	0.047	ppb	51.01	2000.	
53 Cr	-4.931	-4.931	ppb	4.13	#VALUE!	
55 Mn	0.0086	0.0086	ppb	94.29	2000.	
56 Fe	11.73	11.73	ppb	9.05	#VALUE!	
57 Fe	1.886	1.886	ppb	35.46	100000.	
59 Co	0.0027	0.0027	ppb	123.46	1000.	
60 Ni	-0.002	-0.002	ppb	377.98	1000.	
63 Cu	0.0031	0.0031	ppb	242.58	#VALUE!	
65 Cu	-0.0052	-0.0052	ppb	63.53	2000.	
66 Zn	-0.022	-0.022	ppb	152.00	2000.	
68 Zn	0.0497	0.0497	ppb	173.95	#VALUE!	
75 As	0.001	0.001	ppb	7710.00	1000.	
82 Se	0.1611	0.1611	ppb	42.48	1000.	
88 Sr	0.0005	0.0005	ppb	813.51	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0002	0.0002	ppb	832.92	1000.	
107 Ag	0.0001	0.0001	ppb	1430.40	100.	
109 Ag	0.0037	0.0037	ppb	9.34	#VALUE!	
111 Cd	-0.0565	-0.0565	ppb	32.02	#VALUE!	
114 Cd	-0.0011	-0.0011	ppb	178.48	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0061	0.0061	ppb	195.96	1000.	
120 Sn	0.0079	0.0079	ppb	168.11	#VALUE!	
121 Sb	0.0015	0.0015	ppb	174.23	#VALUE!	
123 Sb	0.0013	0.0013	ppb	77.64	1000.	
135 Ba	-0.0007	-0.0007	ppb	1313.10	2000.	
137 Ba	-0.005	-0.005	ppb	107.91	#VALUE!	
182 W	0.0074	0.0074	ppb	16.23	1000.	
203 Tl	-0.0004	-0.0004	ppb	1766.60	1000.	
205 Tl	-0.0011	-0.0011	ppb	414.77	#VALUE!	
208 Pb	0.0413	0.0413	ppb	19.16	2000.	
232 Th	0.0222	0.0222	ppb	34.39	1000.	
238 U	0.0006	0.0006	ppb	77.91	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2587223.50	2.93	2844110.50	91.0	69.5 - 120	
45 Sc	2590134.30	1.68	2809797.00	92.2	69.5 - 120	
72 Ge	567210.50	1.43	642252.38	88.3	69.5 - 120	
159 Tb	6627074.50	0.55	7051087.50	94.0	69.5 - 120	
209 Bi	3573849.00	0.73	3594227.50	99.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000917

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\069SMPL.D\069SMPL.D#
Date Acquired: May 11 2018 09:58 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE11IMS2
Misc Info:
Vial Number: 2310
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0042	0.0008	ppb	181.39	100.	
11 B	13.46	2.692	ppb	4.03	1000.	
23 Na	104.5	20.9	ppb	1.42	200000.	
25 Mg	24.045	4.809	ppb	18.21	200000.	
27 Al	20.1	4.02	ppb	38.31	200000.	
28 Si	-15.285	-3.057	ppb	88.16	#VALUE!	
29 Si	-198.05	-39.61	ppb	12.92	10000.	
39 K	14.5	2.9	ppb	59.21	200000.	
43 Ca	2.788	0.5576	ppb	515.78	#VALUE!	
44 Ca	16.465	3.293	ppb	80.57	200000.	
51 V	-0.0401	-0.008	ppb	663.71	1000.	
52 Cr	1.4115	0.2823	ppb	4.85	2000.	
53 Cr	-21.915	-4.383	ppb	3.59	#VALUE!	
55 Mn	0.2906	0.0581	ppb	53.26	2000.	
56 Fe	97.5	19.5	ppb	6.37	#VALUE!	
57 Fe	4.6	0.92	ppb	138.80	100000.	
59 Co	-0.0043	-0.0009	ppb	418.44	1000.	
60 Ni	0.2898	0.058	ppb	20.98	1000.	
63 Cu	0.2208	0.0442	ppb	20.48	#VALUE!	
65 Cu	0.1038	0.0208	ppb	57.06	2000.	
66 Zn	0.8325	0.1665	ppb	32.22	2000.	
68 Zn	1.7875	0.3575	ppb	7.32	#VALUE!	
75 As	0.842	0.1684	ppb	14.06	1000.	
82 Se	0.5025	0.1005	ppb	17.77	1000.	
88 Sr	0.0738	0.0148	ppb	65.83	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0853	0.0171	ppb	3.45	1000.	
107 Ag	0.0011	0.0002	ppb	862.23	100.	
109 Ag	0.0127	0.0025	ppb	46.81	#VALUE!	
111 Cd	-0.229	-0.0458	ppb	27.43	#VALUE!	
114 Cd	-0.1004	-0.0201	ppb	24.83	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	42.16	8.432	ppb	1.31	1000.	
120 Sn	42.195	8.439	ppb	0.49	#VALUE!	
121 Sb	0.0116	0.0023	ppb	120.22	#VALUE!	
123 Sb	0.0126	0.0025	ppb	70.71	1000.	
135 Ba	0.1297	0.0259	ppb	81.34	2000.	
137 Ba	0.0637	0.0127	ppb	163.74	#VALUE!	
182 W	0.0201	0.004	ppb	23.21	1000.	
203 Tl	-0.0136	-0.0027	ppb	130.55	1000.	
205 Tl	0.0095	0.0019	ppb	202.16	#VALUE!	
208 Pb	0.3127	0.0625	ppb	13.92	2000.	
232 Th	0.1265	0.0253	ppb	31.53	1000.	
238 U	0.0029	0.0006	ppb	41.76	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2752826.50	1.06	2844110.50	96.8	69.5 - 120	
45 Sc	2574500.30	0.42	2809797.00	91.6	69.5 - 120	
72 Ge	570474.38	0.89	642252.38	88.8	69.5 - 120	
159 Tb	6497284.00	0.72	7051087.50	92.1	69.5 - 120	
209 Bi	3471969.00	0.51	3594227.50	96.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000918

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\070SMPL.D\070SMPL.D#
Date Acquired: May 11 2018 10:03 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE11IMS2
Misc Info:
Vial Number: 2311
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	48.405	9.681	ppb	3.37	100.	
11 B	468.7	93.74	ppb	4.51	1000.	
23 Na	7,985.	1,597.	ppb	2.08	200000.	
25 Mg	5,250.	1,050.	ppb	2.94	200000.	
27 Al	2,115.	423.	ppb	2.96	200000.	
28 Si	755.	151.	ppb	3.83	#VALUE!	
29 Si	545.5	109.1	ppb	13.06	10000.	
39 K	9,960.	1,992.	ppb	3.60	200000.	
43 Ca	2,865.	573.	ppb	5.78	#VALUE!	
44 Ca	2,419.	483.8	ppb	2.68	200000.	
51 V	526.5	105.3	ppb	2.86	1000.	
52 Cr	207.	41.4	ppb	1.68	2000.	
53 Cr	205.3	41.06	ppb	0.28	#VALUE!	
55 Mn	522.5	104.5	ppb	1.55	2000.	
56 Fe	1,130.	226.	ppb	3.08	#VALUE!	
57 Fe	1,042.5	208.5	ppb	0.15	100000.	
59 Co	538.	107.6	ppb	0.58	1000.	
60 Ni	529.5	105.9	ppb	0.17	1000.	
63 Cu	261.05	52.21	ppb	0.99	#VALUE!	
65 Cu	261.8	52.36	ppb	1.01	2000.	
66 Zn	487.95	97.59	ppb	0.83	2000.	
68 Zn	545.	109.	ppb	0.46	#VALUE!	
75 As	98.65	19.73	ppb	0.71	1000.	
82 Se	95.2	19.04	ppb	1.34	1000.	
88 Sr	493.2	98.64	ppb	1.20	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	100.6	20.12	ppb	0.48	1000.	
107 Ag	51.1	10.22	ppb	0.71	100.	
109 Ag	51.05	10.21	ppb	0.39	#VALUE!	
111 Cd	246.5	49.3	ppb	1.44	#VALUE!	
114 Cd	246.95	49.39	ppb	0.45	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	536.5	107.3	ppb	0.28	1000.	
120 Sn	537.5	107.5	ppb	0.35	#VALUE!	
121 Sb	99.1	19.82	ppb	1.09	#VALUE!	
123 Sb	99.85	19.97	ppb	1.14	1000.	
135 Ba	2,050.	410.	ppb	0.60	2000.	
137 Ba	2,071.	414.2	ppb	1.69	#VALUE!	
182 W	102.45	20.49	ppb	0.93	1000.	
203 Tl	103.55	20.71	ppb	0.62	1000.	
205 Tl	104.6	20.92	ppb	0.22	#VALUE!	
208 Pb	105.45	21.09	ppb	0.31	2000.	
232 Th	104.3	20.86	ppb	1.36	1000.	
238 U	110.7	22.14	ppb	0.35	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2995844.80	0.99	2844110.50	105.3	69.5 - 120	
45 Sc	2723361.00	1.82	2809797.00	96.9	69.5 - 120	
72 Ge	574988.38	0.92	642252.38	89.5	69.5 - 120	
159 Tb	6513123.50	0.81	7051087.50	92.4	69.5 - 120	
209 Bi	3357728.00	0.31	3594227.50	93.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000919

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\071SMPL.D\071SMPL.D#
Date Acquired: May 11 2018 10:07 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LC2OLE11IMS2
Misc Info:
Vial Number: 2312
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	51.55	10.31	ppb	3.22	100.	
11 B	512.5	102.5	ppb	0.68	1000.	
23 Na	7,905.	1,581.	ppb	3.71	200000.	
25 Mg	5,310.	1,062.	ppb	2.51	200000.	
27 Al	2,197.5	439.5	ppb	1.15	200000.	
28 Si	820.	164.	ppb	3.77	#VALUE!	
29 Si	598.	119.6	ppb	2.14	10000.	
39 K	10,295.	2,059.	ppb	1.22	200000.	
43 Ca	2,933.	586.6	ppb	5.26	#VALUE!	
44 Ca	2,496.5	499.3	ppb	2.47	200000.	
51 V	553.5	110.7	ppb	0.91	1000.	
52 Cr	216.1	43.22	ppb	0.53	2000.	
53 Cr	214.55	42.91	ppb	1.39	#VALUE!	
55 Mn	542.5	108.5	ppb	1.93	2000.	
56 Fe	1,200.	240.	ppb	1.61	#VALUE!	
57 Fe	1,065.5	213.1	ppb	1.23	100000.	
59 Co	559.5	111.9	ppb	1.23	1000.	
60 Ni	544.5	108.9	ppb	0.58	1000.	
63 Cu	269.	53.8	ppb	0.77	#VALUE!	
65 Cu	269.5	53.9	ppb	0.75	2000.	
66 Zn	511.5	102.3	ppb	1.09	2000.	
68 Zn	574.	114.8	ppb	0.97	#VALUE!	
75 As	103.55	20.71	ppb	0.43	1000.	
82 Se	101.1	20.22	ppb	2.07	1000.	
88 Sr	513.	102.6	ppb	2.24	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	106.15	21.23	ppb	1.19	1000.	
107 Ag	53.2	10.64	ppb	1.44	100.	
109 Ag	53.25	10.65	ppb	0.80	#VALUE!	
111 Cd	258.55	51.71	ppb	0.92	#VALUE!	
114 Cd	259.2	51.84	ppb	1.06	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	552.	110.4	ppb	1.35	1000.	
120 Sn	555.5	111.1	ppb	1.19	#VALUE!	
121 Sb	102.65	20.53	ppb	1.35	#VALUE!	
123 Sb	103.3	20.66	ppb	1.15	1000.	
135 Ba	2,122.	424.4	ppb	1.18	2000.	
137 Ba	2,169.5	433.9	ppb	1.01	#VALUE!	
182 W	105.55	21.11	ppb	1.26	1000.	
203 Tl	106.95	21.39	ppb	1.75	1000.	
205 Tl	107.5	21.5	ppb	2.23	#VALUE!	
208 Pb	107.9	21.58	ppb	1.28	2000.	
232 Th	106.8	21.36	ppb	2.25	1000.	
238 U	114.7	22.94	ppb	1.65	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2818398.30	0.94	2844110.50	99.1	69.5 - 120	
45 Sc	2650270.50	1.56	2809797.00	94.3	69.5 - 120	
72 Ge	566816.25	2.06	642252.38	88.3	69.5 - 120	
159 Tb	6505719.50	2.04	7051087.50	92.3	69.5 - 120	
209 Bi	3364860.00	2.22	3594227.50	93.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000920

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\072SMPL.D\072SMPL.D#
Date Acquired: May 11 2018 10:11 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-001
Misc Info:
Vial Number: 2401
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0027	0.0005	ppb	329.40	100.	
11 B	40.53	8.106	ppb	16.67	1000.	
23 Na	12,880.	2,576.	ppb	5.99	200000.	
25 Mg	8,245.	1,649.	ppb	0.91	200000.	
27 Al	71.95	14.39	ppb	0.94	200000.	
28 Si	132.25	26.45	ppb	59.36	#VALUE!	
29 Si	41.475	8.295	ppb	222.91	10000.	
39 K	113,500.	22,700.	ppb	2.57	200000.	
43 Ca	4,042.	808.4	ppb	6.33	#VALUE!	
44 Ca	4,050.5	810.1	ppb	1.59	200000.	
51 V	0.7915	0.1583	ppb	46.78	1000.	
52 Cr	5.125	1.025	ppb	1.56	2000.	
53 Cr	-11.855	-2.371	ppb	53.31	#VALUE!	
55 Mn	7.29	1.458	ppb	0.79	2000.	
56 Fe	375.35	75.07	ppb	2.79	#VALUE!	
57 Fe	265.8	53.16	ppb	7.11	100000.	
59 Co	0.195	0.039	ppb	6.83	1000.	
60 Ni	0.7895	0.1579	ppb	9.25	1000.	
63 Cu	26.645	5.329	ppb	0.99	#VALUE!	
65 Cu	26.52	5.304	ppb	1.82	2000.	
66 Zn	123.95	24.79	ppb	0.60	2000.	
68 Zn	120.9	24.18	ppb	1.35	#VALUE!	
75 As	1.8125	0.3625	ppb	31.86	1000.	
82 Se	4.456	0.8912	ppb	3.65	1000.	
88 Sr	5.475	1.095	ppb	3.27	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1983	0.0397	ppb	21.05	1000.	
107 Ag	0.0482	0.0096	ppb	25.64	100.	
109 Ag	0.0628	0.0126	ppb	25.12	#VALUE!	
111 Cd	-0.2476	-0.0495	ppb	68.40	#VALUE!	
114 Cd	-0.1011	-0.0202	ppb	66.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.905	8.981	ppb	0.88	1000.	
120 Sn	44.405	8.881	ppb	1.40	#VALUE!	
121 Sb	0.0921	0.0184	ppb	17.32	#VALUE!	
123 Sb	0.0711	0.0142	ppb	9.66	1000.	
135 Ba	1.0425	0.2085	ppb	6.90	2000.	
137 Ba	1.0005	0.2001	ppb	1.79	#VALUE!	
182 W	0.158	0.0316	ppb	11.77	1000.	
203 Tl	0.1075	0.0215	ppb	20.16	1000.	
205 Tl	0.1006	0.0201	ppb	3.83	#VALUE!	
208 Pb	1.0065	0.2013	ppb	2.38	2000.	
232 Th	1.098	0.2196	ppb	21.23	1000.	
238 U	0.0153	0.0031	ppb	14.59	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2673076.80	1.58	2844110.50	94.0	69.5 - 120	
45 Sc	2548564.30	3.16	2809797.00	90.7	69.5 - 120	
72 Ge	561688.75	0.86	642252.38	87.5	69.5 - 120	
159 Tb	6444406.50	1.66	7051087.50	91.4	69.5 - 120	
209 Bi	3367960.30	0.75	3594227.50	93.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000921

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\073SMPL.D\073SMPL.D#
Date Acquired: May 11 2018 10:15 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-003
Misc Info:
Vial Number: 2402
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0013	0.0003	ppb	667.90	100.	
11 B	24.445	4.889	ppb	4.51	1000.	
23 Na	12,080.	2,416.	ppb	1.46	200000.	
25 Mg	8,655.	1,731.	ppb	2.16	200000.	
27 Al	72.85	14.57	ppb	4.36	200000.	
28 Si	103.8	20.76	ppb	37.14	#VALUE!	
29 Si	57.4	11.48	ppb	88.33	10000.	
39 K	135,000.	27,000.	ppb	2.90	200000.	
43 Ca	9,780.	1,956.	ppb	0.47	#VALUE!	
44 Ca	9,940.	1,988.	ppb	1.08	200000.	
51 V	0.751	0.1502	ppb	35.40	1000.	
52 Cr	5.295	1.059	ppb	5.97	2000.	
53 Cr	-7.23	-1.446	ppb	30.89	#VALUE!	
55 Mn	12.25	2.45	ppb	0.85	2000.	
56 Fe	342.65	68.53	ppb	2.19	#VALUE!	
57 Fe	213.45	42.69	ppb	10.92	100000.	
59 Co	0.1891	0.0378	ppb	26.44	1000.	
60 Ni	0.4634	0.0927	ppb	20.60	1000.	
63 Cu	15.38	3.076	ppb	2.12	#VALUE!	
65 Cu	14.83	2.966	ppb	2.47	2000.	
66 Zn	136.2	27.24	ppb	1.31	2000.	
68 Zn	134.75	26.95	ppb	1.67	#VALUE!	
75 As	1.12	0.224	ppb	45.67	1000.	
82 Se	2.774	0.5548	ppb	23.96	1000.	
88 Sr	15.95	3.19	ppb	1.06	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.123	0.0246	ppb	25.26	1000.	
107 Ag	0.0494	0.0099	ppb	20.35	100.	
109 Ag	0.0436	0.0087	ppb	28.00	#VALUE!	
111 Cd	-0.3483	-0.0697	ppb	22.46	#VALUE!	
114 Cd	-0.0656	-0.0131	ppb	144.97	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	43.94	8.788	ppb	1.12	1000.	
120 Sn	44.2	8.84	ppb	1.17	#VALUE!	
121 Sb	0.0576	0.0115	ppb	64.87	#VALUE!	
123 Sb	0.0379	0.0076	ppb	32.62	1000.	
135 Ba	1.149	0.2298	ppb	10.54	2000.	
137 Ba	0.953	0.1906	ppb	4.96	#VALUE!	
182 W	0.0654	0.0131	ppb	5.36	1000.	
203 Tl	0.0966	0.0193	ppb	22.05	1000.	
205 Tl	0.0845	0.0169	ppb	46.55	#VALUE!	
208 Pb	0.6325	0.1265	ppb	6.17	2000.	
232 Th	0.3307	0.0661	ppb	36.88	1000.	
238 U	0.0103	0.0021	ppb	87.72	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2625379.00	4.64	2844110.50	92.3	69.5 - 120	
45 Sc	2588236.50	0.82	2809797.00	92.1	69.5 - 120	
72 Ge	558196.94	1.04	642252.38	86.9	69.5 - 120	
159 Tb	6447425.50	0.75	7051087.50	91.4	69.5 - 120	
209 Bi	3303351.00	1.75	3594227.50	91.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000922

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\074SMPL.D\074SMPL.D#
Date Acquired: May 11 2018 10:19 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-004
Misc Info:
Vial Number: 2403
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0029	0.0006	ppb	146.39	100.	
11 B	17.215	3.443	ppb	9.03	1000.	
23 Na	11,665.	2,333.	ppb	3.95	200000.	
25 Mg	9,835.	1,967.	ppb	4.21	200000.	
27 Al	61.45	12.29	ppb	1.63	200000.	
28 Si	155.5	31.1	ppb	30.81	#VALUE!	
29 Si	123.95	24.79	ppb	44.01	10000.	
39 K	149,300.	29,860.	ppb	2.12	200000.	
43 Ca	2,797.	559.4	ppb	3.47	#VALUE!	
44 Ca	2,926.5	585.3	ppb	1.23	200000.	
51 V	1.1265	0.2253	ppb	33.80	1000.	
52 Cr	5.615	1.123	ppb	3.51	2000.	
53 Cr	7.07	1.414	ppb	34.19	#VALUE!	
55 Mn	5.575	1.115	ppb	2.32	2000.	
56 Fe	296.2	59.24	ppb	4.02	#VALUE!	
57 Fe	171.55	34.31	ppb	5.85	100000.	
59 Co	0.1673	0.0335	ppb	20.51	1000.	
60 Ni	0.4774	0.0955	ppb	2.19	1000.	
63 Cu	15.345	3.069	ppb	0.66	#VALUE!	
65 Cu	15.375	3.075	ppb	3.34	2000.	
66 Zn	143.65	28.73	ppb	0.51	2000.	
68 Zn	139.8	27.96	ppb	1.51	#VALUE!	
75 As	1.9825	0.3965	ppb	16.29	1000.	
82 Se	3.655	0.731	ppb	28.96	1000.	
88 Sr	3.0095	0.6019	ppb	3.68	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.13	0.026	ppb	33.96	1000.	
107 Ag	0.0314	0.0063	ppb	12.02	100.	
109 Ag	0.0483	0.0097	ppb	26.67	#VALUE!	
111 Cd	-0.3447	-0.0689	ppb	25.36	#VALUE!	
114 Cd	-0.047	-0.0094	ppb	107.31	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.35	9.07	ppb	2.10	1000.	
120 Sn	45.545	9.109	ppb	0.91	#VALUE!	
121 Sb	0.0339	0.0068	ppb	19.03	#VALUE!	
123 Sb	0.058	0.0116	ppb	48.69	1000.	
135 Ba	0.7725	0.1545	ppb	16.81	2000.	
137 Ba	0.7585	0.1517	ppb	12.24	#VALUE!	
182 W	0.0338	0.0068	ppb	24.58	1000.	
203 Tl	0.0977	0.0195	ppb	26.18	1000.	
205 Tl	0.0828	0.0166	ppb	12.71	#VALUE!	
208 Pb	0.535	0.107	ppb	12.99	2000.	
232 Th	0.2251	0.045	ppb	31.59	1000.	
238 U	0.0056	0.0011	ppb	12.95	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2800929.50	2.76	2844110.50	98.5	69.5 - 120	
45 Sc	2649394.30	1.11	2809797.00	94.3	69.5 - 120	
72 Ge	574279.38	0.57	642252.38	89.4	69.5 - 120	
159 Tb	6380138.00	1.44	7051087.50	90.5	69.5 - 120	
209 Bi	3248854.50	0.74	3594227.50	90.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000923

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\075SMPL.D\075SMPL.D#
Date Acquired: May 11 2018 10:23 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-005
Misc Info:
Vial Number: 2404
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.005	0.001	ppb	160.10	100.	
11 B	14.395	2.879	ppb	11.88	1000.	
23 Na	11,850.	2,370.	ppb	4.05	200000.	
25 Mg	10,200.	2,040.	ppb	7.73	200000.	
27 Al	66.65	13.33	ppb	3.40	200000.	
28 Si	164.5	32.9	ppb	40.21	#VALUE!	
29 Si	165.3	33.06	ppb	38.48	10000.	
39 K	158,000.	31,600.	ppb	1.94	200000.	
43 Ca	2,972.	594.4	ppb	5.02	#VALUE!	
44 Ca	2,953.5	590.7	ppb	2.22	200000.	
51 V	0.9865	0.1973	ppb	26.23	1000.	
52 Cr	6.865	1.373	ppb	2.42	2000.	
53 Cr	10.935	2.187	ppb	32.37	#VALUE!	
55 Mn	8.99	1.798	ppb	0.55	2000.	
56 Fe	324.15	64.83	ppb	6.01	#VALUE!	
57 Fe	203.35	40.67	ppb	4.33	100000.	
59 Co	0.1636	0.0327	ppb	12.31	1000.	
60 Ni	0.526	0.1052	ppb	12.12	1000.	
63 Cu	12.205	2.441	ppb	2.74	#VALUE!	
65 Cu	11.995	2.399	ppb	2.76	2000.	
66 Zn	124.45	24.89	ppb	0.95	2000.	
68 Zn	122.05	24.41	ppb	1.75	#VALUE!	
75 As	0.659	0.1318	ppb	141.96	1000.	
82 Se	3.938	0.7876	ppb	38.19	1000.	
88 Sr	3.225	0.645	ppb	4.33	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1209	0.0242	ppb	27.82	1000.	
107 Ag	0.0311	0.0062	ppb	36.32	100.	
109 Ag	0.0322	0.0064	ppb	30.78	#VALUE!	
111 Cd	-0.2338	-0.0468	ppb	4.14	#VALUE!	
114 Cd	-0.038	-0.0076	ppb	55.37	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.6	8.92	ppb	1.30	1000.	
120 Sn	44.78	8.956	ppb	1.15	#VALUE!	
121 Sb	0.0309	0.0062	ppb	82.40	#VALUE!	
123 Sb	0.0596	0.0119	ppb	19.35	1000.	
135 Ba	0.588	0.1176	ppb	15.09	2000.	
137 Ba	0.5265	0.1053	ppb	8.88	#VALUE!	
182 W	0.0358	0.0072	ppb	44.26	1000.	
203 Tl	0.121	0.0242	ppb	41.82	1000.	
205 Tl	0.145	0.029	ppb	20.56	#VALUE!	
208 Pb	0.5185	0.1037	ppb	6.21	2000.	
232 Th	0.1338	0.0268	ppb	26.39	1000.	
238 U	0.004	0.0008	ppb	74.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2740464.80	3.27	2844110.50	96.4	69.5 - 120	
45 Sc	2642105.50	1.88	2809797.00	94.0	69.5 - 120	
72 Ge	577540.00	0.61	642252.38	89.9	69.5 - 120	
159 Tb	6479633.00	0.79	7051087.50	91.9	69.5 - 120	
209 Bi	3252785.50	1.92	3594227.50	90.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000924

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\076_CCV.D\076_CCV.D#
Date Acquired: May 11 2018 10:28 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.43	ppb	5.70	25	101.72	
11 B	24.55	ppb	0.85	25	98.2	
23 Na	4,730.	ppb	5.38	5,000	94.6	
25 Mg	4,933.	ppb	2.11	5,000	98.66	
27 Al	496.1	ppb	2.78	500	99.22	
28 Si	495.6	ppb	3.94	500	99.12	
29 Si	427.7	ppb	6.30	500	85.54	Fail
39 K	4,918.	ppb	1.91	5,000	98.36	
43 Ca	4,805.	ppb	2.48	5,000	96.1	
44 Ca	4,922.	ppb	1.02	5,000	98.44	
51 V	24.61	ppb	0.39	25	98.44	
52 Cr	24.95	ppb	1.46	25	99.8	
53 Cr	22.88	ppb	3.06	25	91.52	
55 Mn	24.93	ppb	0.83	25	99.72	
56 Fe	4,970.	ppb	1.47	5,000	99.4	
57 Fe	5,035.	ppb	0.48	5,000	100.7	
59 Co	25.1	ppb	1.31	25	100.4	
60 Ni	24.92	ppb	1.33	25	99.68	
63 Cu	25.19	ppb	0.11	25	100.76	
65 Cu	25.54	ppb	1.01	25	102.16	
66 Zn	24.78	ppb	1.57	25	99.12	
68 Zn	25.6	ppb	0.07	25	102.4	
75 As	24.91	ppb	1.01	25	99.64	
82 Se	25.75	ppb	0.29	25	103	
88 Sr	24.45	ppb	1.15	25	97.8	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.28	ppb	0.70	25	101.12	
107 Ag	25.42	ppb	0.74	25	101.68	
109 Ag	25.52	ppb	0.57	25	102.08	
111 Cd	25.29	ppb	1.05	25	101.16	
114 Cd	25.32	ppb	0.39	25	101.28	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.18	ppb	2.16	25	96.72	
120 Sn	24.01	ppb	2.17	25	96.04	
121 Sb	24.47	ppb	2.46	25	97.88	
123 Sb	24.47	ppb	2.21	25	97.88	
135 Ba	24.99	ppb	2.47	25	99.96	
137 Ba	24.85	ppb	2.61	25	99.4	
182 W	24.58	ppb	3.07	25	98.32	
203 Tl	24.99	ppb	2.14	25	99.96	
205 Tl	25.19	ppb	1.93	25	100.76	
208 Pb	25.09	ppb	2.04	25	100.36	
232 Th	24.94	ppb	1.65	25	99.76	
238 U	26.64	ppb	2.39	25	106.56	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2521191.80	4.39	2844110.50	88.6	80 - 120.4	
45 Sc	2550826.50	1.76	2809797.00	90.8	80 - 120.4	
72 Ge	558793.63	1.25	642252.38	87.0	80 - 120.4	
159 Tb	6500155.00	1.22	7051087.50	92.2	80 - 120.4	
209 Bi	3369572.80	1.56	3594227.50	93.7	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000925

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\077_CCB.D\077_CCB.D#
Date Acquired: May 11 2018 10:32 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.002	ppb	77.42	1.00	
11 B	2.959	ppb	4.18	1.00	
23 Na	0.6231	ppb	47.22	1.00	
25 Mg	0.0867	ppb	31.34	1.00	
27 Al	0.0039	ppb	1165.20	1.00	
28 Si	39.81	ppb	5.23	1.00	
29 Si	-0.4525	ppb	2419.90	1.00	
39 K	2.039	ppb	13.40	1.00	
43 Ca	2.068	ppb	132.01	1.00	
44 Ca	0.2955	ppb	292.72	1.00	
51 V	-0.0504	ppb	24.05	1.00	
52 Cr	0.222	ppb	9.15	1.00	
53 Cr	-4.83	ppb	0.78	1.00	
55 Mn	0.0152	ppb	51.67	1.00	
56 Fe	25.76	ppb	21.21	1.00	
57 Fe	3.837	ppb	40.71	1.00	
59 Co	0.0059	ppb	42.55	1.00	
60 Ni	0.01	ppb	52.92	1.00	
63 Cu	0.0127	ppb	58.21	1.00	
65 Cu	-0.0068	ppb	77.62	1.00	
66 Zn	-0.0177	ppb	148.08	1.00	
68 Zn	0.1735	ppb	23.25	1.00	
75 As	0.0588	ppb	107.17	1.00	
82 Se	0.1448	ppb	85.15	1.00	
88 Sr	0.0014	ppb	90.61	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0378	ppb	25.46	1.00	
107 Ag	0.0052	ppb	25.05	1.00	
109 Ag	0.0053	ppb	42.14	1.00	
111 Cd	-0.0637	ppb	21.50	1.00	
114 Cd	-0.0008	ppb	43.38	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0507	ppb	20.14	1.00	
120 Sn	0.0439	ppb	22.21	1.00	
121 Sb	0.01	ppb	11.06	1.00	
123 Sb	0.0077	ppb	22.32	1.00	
135 Ba	0.0104	ppb	39.64	1.00	
137 Ba	0.0033	ppb	48.83	1.00	
182 W	0.0462	ppb	29.98	1.00	
203 Tl	0.0069	ppb	143.60	1.00	
205 Tl	0.0011	ppb	310.94	1.00	
208 Pb	0.0851	ppb	10.41	1.00	
232 Th	0.1067	ppb	15.76	1.00	
238 U	0.004	ppb	29.49	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2392114.30	2.10	2844110.50	84.1	79.5 - 120	
45 Sc	2401223.50	1.27	2809797.00	85.5	79.5 - 120	
72 Ge	534882.63	0.41	642252.38	83.3	79.5 - 120	
159 Tb	6149961.50	1.56	7051087.50	87.2	79.5 - 120	
209 Bi	3245547.80	1.09	3594227.50	90.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000926

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\078SMPL.D\078SMPL.D#
Date Acquired: May 11 2018 10:36 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-006
Misc Info:
Vial Number: 2405
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0015	0.0003	ppb	202.77	100.	
11 B	13.52	2.704	ppb	2.26	1000.	
23 Na	13,625.	2,725.	ppb	3.03	200000.	
25 Mg	10,975.	2,195.	ppb	3.39	200000.	
27 Al	199.1	39.82	ppb	1.41	200000.	
28 Si	82.1	16.42	ppb	24.93	#VALUE!	
29 Si	99.95	19.99	ppb	49.73	10000.	
39 K	159,450.	31,890.	ppb	1.27	200000.	
43 Ca	3,905.	781.	ppb	5.49	#VALUE!	
44 Ca	3,804.	760.8	ppb	2.08	200000.	
51 V	0.994	0.1988	ppb	23.88	1000.	
52 Cr	5.675	1.135	ppb	1.20	2000.	
53 Cr	-7.02	-1.404	ppb	96.58	#VALUE!	
55 Mn	6.315	1.263	ppb	1.91	2000.	
56 Fe	265.7	53.14	ppb	10.52	#VALUE!	
57 Fe	166.65	33.33	ppb	3.98	100000.	
59 Co	0.2141	0.0428	ppb	3.40	1000.	
60 Ni	1.16	0.232	ppb	4.28	1000.	
63 Cu	16.655	3.331	ppb	2.63	#VALUE!	
65 Cu	16.31	3.262	ppb	2.88	2000.	
66 Zn	150.15	30.03	ppb	0.62	2000.	
68 Zn	148.15	29.63	ppb	0.38	#VALUE!	
75 As	1.0965	0.2193	ppb	72.50	1000.	
82 Se	4.158	0.8316	ppb	18.49	1000.	
88 Sr	4.6145	0.9229	ppb	2.26	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1631	0.0326	ppb	8.78	1000.	
107 Ag	0.0198	0.004	ppb	24.67	100.	
109 Ag	0.0214	0.0043	ppb	29.78	#VALUE!	
111 Cd	-0.2743	-0.0549	ppb	11.03	#VALUE!	
114 Cd	-0.0711	-0.0142	ppb	113.43	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.42	8.884	ppb	0.89	1000.	
120 Sn	44.32	8.864	ppb	2.73	#VALUE!	
121 Sb	0.0397	0.0079	ppb	13.67	#VALUE!	
123 Sb	0.0638	0.0128	ppb	40.70	1000.	
135 Ba	0.784	0.1568	ppb	18.19	2000.	
137 Ba	0.8595	0.1719	ppb	7.34	#VALUE!	
182 W	0.088	0.0176	ppb	15.23	1000.	
203 Tl	0.1758	0.0352	ppb	17.47	1000.	
205 Tl	0.1381	0.0276	ppb	19.15	#VALUE!	
208 Pb	0.4912	0.0982	ppb	8.60	2000.	
232 Th	0.7655	0.1531	ppb	28.45	1000.	
238 U	0.0066	0.0013	ppb	18.66	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3038326.80	3.58	2844110.50	106.8	69.5 - 120	
45 Sc	2810269.80	2.14	2809797.00	100.0	69.5 - 120	
72 Ge	598750.81	1.14	642252.38	93.2	69.5 - 120	
159 Tb	6527331.50	2.96	7051087.50	92.6	69.5 - 120	
209 Bi	3282204.30	1.74	3594227.50	91.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000927

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\079SMPL.D\079SMPL.D#
Date Acquired: May 11 2018 10:40 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-007
Misc Info:
Vial Number: 2406
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0041	0.0008	ppb	226.23	100.	
11 B	12.375	2.475	ppb	8.30	1000.	
23 Na	9,315.	1,863.	ppb	3.89	200000.	
25 Mg	9,670.	1,934.	ppb	2.64	200000.	
27 Al	42.22	8.444	ppb	2.78	200000.	
28 Si	99.	19.8	ppb	49.02	#VALUE!	
29 Si	35.695	7.139	ppb	138.51	10000.	
39 K	114,900.	22,980.	ppb	2.51	200000.	
43 Ca	4,541.	908.2	ppb	3.55	#VALUE!	
44 Ca	4,477.	895.4	ppb	3.05	200000.	
51 V	0.9395	0.1879	ppb	22.13	1000.	
52 Cr	4.5245	0.9049	ppb	3.83	2000.	
53 Cr	0.1441	0.0288	ppb	1223.80	#VALUE!	
55 Mn	16.535	3.307	ppb	1.88	2000.	
56 Fe	496.2	99.24	ppb	2.40	#VALUE!	
57 Fe	384.5	76.9	ppb	1.06	100000.	
59 Co	0.2252	0.045	ppb	17.24	1000.	
60 Ni	0.738	0.1476	ppb	8.90	1000.	
63 Cu	18.545	3.709	ppb	2.11	#VALUE!	
65 Cu	18.135	3.627	ppb	3.61	2000.	
66 Zn	815.5	163.1	ppb	0.67	2000.	
68 Zn	799.5	159.9	ppb	1.72	#VALUE!	
75 As	5.73	1.146	ppb	15.12	1000.	
82 Se	9.765	1.953	ppb	10.99	1000.	
88 Sr	8.87	1.774	ppb	1.21	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1559	0.0312	ppb	5.34	1000.	
107 Ag	0.0269	0.0054	ppb	37.35	100.	
109 Ag	0.0266	0.0053	ppb	7.17	#VALUE!	
111 Cd	-0.2286	-0.0457	ppb	33.20	#VALUE!	
114 Cd	-0.0589	-0.0118	ppb	32.35	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	43.255	8.651	ppb	1.52	1000.	
120 Sn	42.62	8.524	ppb	0.84	#VALUE!	
121 Sb	0.0721	0.0144	ppb	21.79	#VALUE!	
123 Sb	0.088	0.0176	ppb	19.15	1000.	
135 Ba	1.6975	0.3395	ppb	9.56	2000.	
137 Ba	1.735	0.347	ppb	3.03	#VALUE!	
182 W	0.0549	0.011	ppb	66.81	1000.	
203 Tl	0.1247	0.0249	ppb	22.52	1000.	
205 Tl	0.0814	0.0163	ppb	46.38	#VALUE!	
208 Pb	0.5175	0.1035	ppb	3.61	2000.	
232 Th	0.2391	0.0478	ppb	37.35	1000.	
238 U	0.016	0.0032	ppb	17.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2892568.80	2.63	2844110.50	101.7	69.5 - 120	
45 Sc	2762212.80	0.90	2809797.00	98.3	69.5 - 120	
72 Ge	601415.56	0.95	642252.38	93.6	69.5 - 120	
159 Tb	6577637.00	0.09	7051087.50	93.3	69.5 - 120	
209 Bi	3307119.00	0.62	3594227.50	92.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000928

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\080SMPL.D\080SMPL.D#
Date Acquired: May 11 2018 10:44 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-008
Misc Info:
Vial Number: 2407
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0042	0.0008	ppb	164.38	100.	
11 B	10.34	2.068	ppb	4.28	1000.	
23 Na	13,235.	2,647.	ppb	1.42	200000.	
25 Mg	11,155.	2,231.	ppb	3.69	200000.	
27 Al	105.15	21.03	ppb	2.02	200000.	
28 Si	101.25	20.25	ppb	39.96	#VALUE!	
29 Si	184.5	36.9	ppb	37.64	10000.	
39 K	164,350.	32,870.	ppb	3.07	200000.	
43 Ca	2,829.	565.8	ppb	3.94	#VALUE!	
44 Ca	2,802.5	560.5	ppb	2.44	200000.	
51 V	1.222	0.2444	ppb	21.67	1000.	
52 Cr	5.47	1.094	ppb	6.63	2000.	
53 Cr	7.205	1.441	ppb	34.37	#VALUE!	
55 Mn	4.2305	0.8461	ppb	1.29	2000.	
56 Fe	293.15	58.63	ppb	7.31	#VALUE!	
57 Fe	185.	37.	ppb	9.15	100000.	
59 Co	0.1733	0.0347	ppb	27.35	1000.	
60 Ni	1.1345	0.2269	ppb	7.37	1000.	
63 Cu	14.915	2.983	ppb	0.86	#VALUE!	
65 Cu	14.385	2.877	ppb	1.93	2000.	
66 Zn	132.8	26.56	ppb	1.15	2000.	
68 Zn	128.4	25.68	ppb	1.74	#VALUE!	
75 As	0.7455	0.1491	ppb	41.72	1000.	
82 Se	2.549	0.5098	ppb	31.68	1000.	
88 Sr	2.594	0.5188	ppb	3.04	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1312	0.0262	ppb	22.73	1000.	
107 Ag	0.0173	0.0035	ppb	57.02	100.	
109 Ag	0.0258	0.0052	ppb	8.25	#VALUE!	
111 Cd	-0.1773	-0.0355	ppb	42.05	#VALUE!	
114 Cd	-0.0626	-0.0125	ppb	53.85	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.065	9.013	ppb	2.16	1000.	
120 Sn	45.275	9.055	ppb	1.85	#VALUE!	
121 Sb	0.0337	0.0067	ppb	45.74	#VALUE!	
123 Sb	0.0277	0.0055	ppb	51.14	1000.	
135 Ba	0.5645	0.1129	ppb	22.03	2000.	
137 Ba	0.521	0.1042	ppb	15.79	#VALUE!	
182 W	0.0415	0.0083	ppb	26.82	1000.	
203 Tl	0.1229	0.0246	ppb	10.32	1000.	
205 Tl	0.1063	0.0213	ppb	17.35	#VALUE!	
208 Pb	0.3877	0.0775	ppb	9.09	2000.	
232 Th	0.1351	0.027	ppb	44.60	1000.	
238 U	0.0029	0.0006	ppb	41.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3154726.30	3.14	2844110.50	110.9	69.5 - 120	
45 Sc	2855644.00	1.15	2809797.00	101.6	69.5 - 120	
72 Ge	614025.19	0.67	642252.38	95.6	69.5 - 120	
159 Tb	6494684.50	0.86	7051087.50	92.1	69.5 - 120	
209 Bi	3259674.80	0.80	3594227.50	90.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000929

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\081SMPL.D\081SMPL.D#
Date Acquired: May 11 2018 10:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-009
Misc Info:
Vial Number: 2408
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0036	0.0007	ppb	47.70	100.	
11 B	9.02	1.804	ppb	8.00	1000.	
23 Na	15,070.	3,014.	ppb	3.15	200000.	
25 Mg	11,060.	2,212.	ppb	1.81	200000.	
27 Al	95.95	19.19	ppb	3.24	200000.	
28 Si	165.95	33.19	ppb	20.43	#VALUE!	
29 Si	269.2	53.84	ppb	19.09	10000.	
39 K	149,400.	29,880.	ppb	1.92	200000.	
43 Ca	4,346.	869.2	ppb	2.31	#VALUE!	
44 Ca	4,297.5	859.5	ppb	0.39	200000.	
51 V	1.786	0.3572	ppb	25.82	1000.	
52 Cr	5.355	1.071	ppb	3.40	2000.	
53 Cr	9.87	1.974	ppb	24.13	#VALUE!	
55 Mn	8.18	1.636	ppb	2.25	2000.	
56 Fe	380.7	76.14	ppb	4.52	#VALUE!	
57 Fe	278.85	55.77	ppb	0.89	100000.	
59 Co	0.172	0.0344	ppb	8.57	1000.	
60 Ni	0.7865	0.1573	ppb	3.89	1000.	
63 Cu	12.305	2.461	ppb	2.32	#VALUE!	
65 Cu	11.61	2.322	ppb	3.74	2000.	
66 Zn	160.1	32.02	ppb	0.61	2000.	
68 Zn	155.9	31.18	ppb	1.05	#VALUE!	
75 As	1.035	0.207	ppb	94.73	1000.	
82 Se	3.0635	0.6127	ppb	9.51	1000.	
88 Sr	3.504	0.7008	ppb	2.43	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1321	0.0264	ppb	7.17	1000.	
107 Ag	0.0201	0.004	ppb	38.05	100.	
109 Ag	0.0142	0.0028	ppb	42.80	#VALUE!	
111 Cd	-0.125	-0.025	ppb	59.72	#VALUE!	
114 Cd	-0.0476	-0.0095	ppb	69.22	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.195	8.839	ppb	2.33	1000.	
120 Sn	44.885	8.977	ppb	1.40	#VALUE!	
121 Sb	0.0506	0.0101	ppb	64.14	#VALUE!	
123 Sb	0.0358	0.0072	ppb	14.09	1000.	
135 Ba	0.8235	0.1647	ppb	6.74	2000.	
137 Ba	0.8225	0.1645	ppb	14.29	#VALUE!	
182 W	0.0512	0.0102	ppb	50.67	1000.	
203 Tl	0.1145	0.0229	ppb	45.22	1000.	
205 Tl	0.0953	0.0191	ppb	8.25	#VALUE!	
208 Pb	0.3106	0.0621	ppb	10.89	2000.	
232 Th	0.103	0.0206	ppb	23.71	1000.	
238 U	0.0073	0.0015	ppb	26.41	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3231703.30	5.79	2844110.50	113.6	69.5 - 120	
45 Sc	2904785.30	2.05	2809797.00	103.4	69.5 - 120	
72 Ge	626427.56	1.59	642252.38	97.5	69.5 - 120	
159 Tb	6506873.50	1.71	7051087.50	92.3	69.5 - 120	
209 Bi	3205560.80	2.22	3594227.50	89.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000930

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\082SMPL.D\082SMPL.D#
Date Acquired: May 11 2018 10:53 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-010
Misc Info:
Vial Number: 2409
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0027	-0.0005	ppb	163.93	100.	
11 B	9.24	1.848	ppb	8.51	1000.	
23 Na	13,655.	2,731.	ppb	1.46	200000.	
25 Mg	8,670.	1,734.	ppb	5.76	200000.	
27 Al	32.515	6.503	ppb	3.23	200000.	
28 Si	71.55	14.31	ppb	29.43	#VALUE!	
29 Si	9.365	1.873	ppb	431.77	10000.	
39 K	137,350.	27,470.	ppb	1.19	200000.	
43 Ca	3,060.	612.	ppb	6.73	#VALUE!	
44 Ca	3,037.5	607.5	ppb	0.73	200000.	
51 V	0.3157	0.0631	ppb	92.51	1000.	
52 Cr	4.325	0.865	ppb	3.42	2000.	
53 Cr	5.005	1.001	ppb	4.74	#VALUE!	
55 Mn	5.725	1.145	ppb	1.87	2000.	
56 Fe	267.5	53.5	ppb	1.71	#VALUE!	
57 Fe	182.75	36.55	ppb	6.45	100000.	
59 Co	0.1742	0.0348	ppb	23.85	1000.	
60 Ni	0.5025	0.1005	ppb	5.02	1000.	
63 Cu	12.225	2.445	ppb	0.80	#VALUE!	
65 Cu	11.425	2.285	ppb	1.83	2000.	
66 Zn	127.5	25.5	ppb	0.84	2000.	
68 Zn	128.55	25.71	ppb	0.65	#VALUE!	
75 As	1.105	0.221	ppb	46.56	1000.	
82 Se	2.104	0.4208	ppb	32.87	1000.	
88 Sr	3.91	0.782	ppb	2.46	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.141	0.0282	ppb	18.06	1000.	
107 Ag	0.0135	0.0027	ppb	103.79	100.	
109 Ag	0.0203	0.0041	ppb	28.26	#VALUE!	
111 Cd	-0.1115	-0.0223	ppb	58.86	#VALUE!	
114 Cd	-0.0321	-0.0064	ppb	161.81	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	42.685	8.537	ppb	0.78	1000.	
120 Sn	43.295	8.659	ppb	0.88	#VALUE!	
121 Sb	0.0328	0.0066	ppb	30.48	#VALUE!	
123 Sb	0.0407	0.0081	ppb	38.61	1000.	
135 Ba	0.789	0.1578	ppb	24.09	2000.	
137 Ba	0.6185	0.1237	ppb	13.65	#VALUE!	
182 W	0.0687	0.0137	ppb	30.20	1000.	
203 Tl	0.1135	0.0227	ppb	37.25	1000.	
205 Tl	0.0829	0.0166	ppb	43.40	#VALUE!	
208 Pb	0.4273	0.0855	ppb	1.69	2000.	
232 Th	0.044	0.0088	ppb	29.44	1000.	
238 U	0.0039	0.0008	ppb	51.58	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3026204.80	1.48	2844110.50	106.4	69.5 - 120	
45 Sc	2873551.30	2.21	2809797.00	102.3	69.5 - 120	
72 Ge	620186.88	0.68	642252.38	96.6	69.5 - 120	
159 Tb	6669777.00	0.44	7051087.50	94.6	69.5 - 120	
209 Bi	3352084.00	0.91	3594227.50	93.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000931

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\083SMPL.D\083SMPL.D#
Date Acquired: May 11 2018 10:57 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-011
Misc Info:
Vial Number: 2410
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0004	0.0001	ppb	1109.00	100.	
11 B	9.035	1.807	ppb	5.64	1000.	
23 Na	14,095.	2,819.	ppb	4.98	200000.	
25 Mg	8,620.	1,724.	ppb	1.78	200000.	
27 Al	58.75	11.75	ppb	6.22	200000.	
28 Si	189.25	37.85	ppb	15.39	#VALUE!	
29 Si	209.1	41.82	ppb	11.23	10000.	
39 K	136,800.	27,360.	ppb	1.05	200000.	
43 Ca	2,251.5	450.3	ppb	0.29	#VALUE!	
44 Ca	2,351.5	470.3	ppb	1.21	200000.	
51 V	1.428	0.2856	ppb	14.47	1000.	
52 Cr	4.5895	0.9179	ppb	5.11	2000.	
53 Cr	3.8475	0.7695	ppb	3.58	#VALUE!	
55 Mn	8.595	1.719	ppb	2.03	2000.	
56 Fe	326.15	65.23	ppb	5.39	#VALUE!	
57 Fe	208.55	41.71	ppb	1.53	100000.	
59 Co	0.1319	0.0264	ppb	12.10	1000.	
60 Ni	0.811	0.1622	ppb	9.67	1000.	
63 Cu	10.985	2.197	ppb	0.98	#VALUE!	
65 Cu	10.46	2.092	ppb	1.56	2000.	
66 Zn	114.	22.8	ppb	0.59	2000.	
68 Zn	111.1	22.22	ppb	0.59	#VALUE!	
75 As	1.2345	0.2469	ppb	22.13	1000.	
82 Se	3.4635	0.6927	ppb	18.26	1000.	
88 Sr	2.4865	0.4973	ppb	1.93	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0843	0.0169	ppb	31.64	1000.	
107 Ag	0.0159	0.0032	ppb	45.92	100.	
109 Ag	0.016	0.0032	ppb	71.92	#VALUE!	
111 Cd	-0.228	-0.0456	ppb	21.38	#VALUE!	
114 Cd	-0.0502	-0.01	ppb	13.30	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	42.765	8.553	ppb	1.07	1000.	
120 Sn	43.07	8.614	ppb	0.92	#VALUE!	
121 Sb	0.028	0.0056	ppb	50.84	#VALUE!	
123 Sb	0.0366	0.0073	ppb	25.10	1000.	
135 Ba	0.4629	0.0926	ppb	8.80	2000.	
137 Ba	0.4675	0.0935	ppb	15.78	#VALUE!	
182 W	0.0128	0.0026	ppb	64.78	1000.	
203 Tl	0.0849	0.017	ppb	34.16	1000.	
205 Tl	0.0988	0.0198	ppb	8.79	#VALUE!	
208 Pb	0.3952	0.079	ppb	12.08	2000.	
232 Th	0.0443	0.0089	ppb	14.84	1000.	
238 U	0.0041	0.0008	ppb	27.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2916995.50	2.49	2844110.50	102.6	69.5 - 120	
45 Sc	2754342.30	0.44	2809797.00	98.0	69.5 - 120	
72 Ge	602754.13	1.12	642252.38	93.9	69.5 - 120	
159 Tb	6438135.00	1.13	7051087.50	91.3	69.5 - 120	
209 Bi	3209196.00	0.85	3594227.50	89.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000932

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\084SMPL.D\084SMPL.D#
Date Acquired: May 11 2018 11:01 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-012
Misc Info:
Vial Number: 2411
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0113	0.0023	ppb	44.49	100.	
11 B	7.895	1.579	ppb	2.17	1000.	
23 Na	14,060.	2,812.	ppb	2.21	200000.	
25 Mg	11,280.	2,256.	ppb	2.39	200000.	
27 Al	69.9	13.98	ppb	3.59	200000.	
28 Si	213.3	42.66	ppb	12.12	#VALUE!	
29 Si	331.15	66.23	ppb	14.14	10000.	
39 K	152,600.	30,520.	ppb	1.68	200000.	
43 Ca	6,875.	1,375.	ppb	1.63	#VALUE!	
44 Ca	6,890.	1,378.	ppb	0.97	200000.	
51 V	1.2825	0.2565	ppb	17.44	1000.	
52 Cr	5.345	1.069	ppb	1.91	2000.	
53 Cr	7.125	1.425	ppb	9.38	#VALUE!	
55 Mn	17.02	3.404	ppb	1.08	2000.	
56 Fe	360.6	72.12	ppb	3.84	#VALUE!	
57 Fe	235.9	47.18	ppb	2.28	100000.	
59 Co	0.2499	0.05	ppb	12.14	1000.	
60 Ni	0.5275	0.1055	ppb	11.98	1000.	
63 Cu	12.05	2.41	ppb	3.40	#VALUE!	
65 Cu	11.57	2.314	ppb	3.23	2000.	
66 Zn	158.45	31.69	ppb	1.00	2000.	
68 Zn	154.4	30.88	ppb	3.13	#VALUE!	
75 As	1.812	0.3624	ppb	38.02	1000.	
82 Se	4.674	0.9348	ppb	14.58	1000.	
88 Sr	10.025	2.005	ppb	1.00	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1075	0.0215	ppb	24.13	1000.	
107 Ag	0.0017	0.0003	ppb	128.73	100.	
109 Ag	0.0164	0.0033	ppb	93.00	#VALUE!	
111 Cd	-0.0685	-0.0137	ppb	179.56	#VALUE!	
114 Cd	-0.0065	-0.0013	ppb	406.97	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	43.055	8.611	ppb	0.54	1000.	
120 Sn	43.4	8.68	ppb	0.30	#VALUE!	
121 Sb	0.0419	0.0084	ppb	4.88	#VALUE!	
123 Sb	0.0326	0.0065	ppb	41.45	1000.	
135 Ba	3.098	0.6196	ppb	3.38	2000.	
137 Ba	3.138	0.6276	ppb	11.03	#VALUE!	
182 W	0.0167	0.0033	ppb	71.72	1000.	
203 Tl	0.0958	0.0192	ppb	53.11	1000.	
205 Tl	0.1028	0.0206	ppb	23.34	#VALUE!	
208 Pb	0.3833	0.0767	ppb	11.24	2000.	
232 Th	0.0426	0.0085	ppb	26.23	1000.	
238 U	0.0068	0.0014	ppb	64.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2870461.00	1.42	2844110.50	100.9	69.5 - 120	
45 Sc	2728980.50	0.26	2809797.00	97.1	69.5 - 120	
72 Ge	592750.75	0.81	642252.38	92.3	69.5 - 120	
159 Tb	6423427.50	0.44	7051087.50	91.1	69.5 - 120	
209 Bi	3205685.80	1.05	3594227.50	89.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000933

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\085SMPL.D\085SMPL.D#
Date Acquired: May 11 2018 11:05 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-013
Misc Info:
Vial Number: 2412
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.016	0.0032	ppb	80.48	100.	
11 B	8.2	1.64	ppb	2.58	1000.	
23 Na	12,605.	2,521.	ppb	0.86	200000.	
25 Mg	10,010.	2,002.	ppb	2.24	200000.	
27 Al	81.75	16.35	ppb	0.99	200000.	
28 Si	221.05	44.21	ppb	41.55	#VALUE!	
29 Si	285.45	57.09	ppb	15.52	10000.	
39 K	149,600.	29,920.	ppb	2.65	200000.	
43 Ca	2,932.	586.4	ppb	4.43	#VALUE!	
44 Ca	2,916.5	583.3	ppb	0.80	200000.	
51 V	0.918	0.1836	ppb	85.29	1000.	
52 Cr	5.02	1.004	ppb	2.26	2000.	
53 Cr	10.27	2.054	ppb	24.35	#VALUE!	
55 Mn	7.645	1.529	ppb	1.11	2000.	
56 Fe	304.75	60.95	ppb	8.93	#VALUE!	
57 Fe	201.7	40.34	ppb	6.29	100000.	
59 Co	0.1686	0.0337	ppb	9.93	1000.	
60 Ni	0.749	0.1498	ppb	16.88	1000.	
63 Cu	10.75	2.15	ppb	1.09	#VALUE!	
65 Cu	10.92	2.184	ppb	2.12	2000.	
66 Zn	128.55	25.71	ppb	0.70	2000.	
68 Zn	124.45	24.89	ppb	2.12	#VALUE!	
75 As	0.7135	0.1427	ppb	142.54	1000.	
82 Se	3.494	0.6988	ppb	48.07	1000.	
88 Sr	2.4805	0.4961	ppb	1.99	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1268	0.0254	ppb	32.82	1000.	
107 Ag	0.0032	0.0006	ppb	392.89	100.	
109 Ag	0.0209	0.0042	ppb	55.84	#VALUE!	
111 Cd	-0.0327	-0.0065	ppb	162.62	#VALUE!	
114 Cd	-0.0168	-0.0034	ppb	196.61	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.35	8.87	ppb	2.92	1000.	
120 Sn	44.96	8.992	ppb	2.50	#VALUE!	
121 Sb	0.0301	0.006	ppb	50.52	#VALUE!	
123 Sb	0.0265	0.0053	ppb	88.74	1000.	
135 Ba	0.458	0.0916	ppb	10.02	2000.	
137 Ba	0.4575	0.0915	ppb	30.10	#VALUE!	
182 W	0.0531	0.0106	ppb	61.40	1000.	
203 Tl	0.1647	0.0329	ppb	26.88	1000.	
205 Tl	0.1538	0.0308	ppb	15.66	#VALUE!	
208 Pb	0.3746	0.0749	ppb	11.92	2000.	
232 Th	0.0435	0.0087	ppb	32.96	1000.	
238 U	0.0037	0.0007	ppb	72.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2909421.50	2.81	2844110.50	102.3	69.5 - 120	
45 Sc	2780667.30	3.74	2809797.00	99.0	69.5 - 120	
72 Ge	597352.25	1.84	642252.38	93.0	69.5 - 120	
159 Tb	6344376.00	0.48	7051087.50	90.0	69.5 - 120	
209 Bi	3190819.80	0.83	3594227.50	88.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000934

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\086SMPL.D\086SMPL.D#
Date Acquired: May 11 2018 11:09 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-014
Misc Info:
Vial Number: 2501
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0013	-0.0003	ppb	558.39	100.	
11 B	7.385	1.477	ppb	9.93	1000.	
23 Na	13,125.	2,625.	ppb	0.27	200000.	
25 Mg	10,600.	2,120.	ppb	2.30	200000.	
27 Al	82.7	16.54	ppb	3.44	200000.	
28 Si	220.5	44.1	ppb	25.76	#VALUE!	
29 Si	301.4	60.28	ppb	16.77	10000.	
39 K	149,050.	29,810.	ppb	2.34	200000.	
43 Ca	3,034.5	606.9	ppb	3.83	#VALUE!	
44 Ca	3,002.	600.4	ppb	1.69	200000.	
51 V	1.057	0.2114	ppb	44.95	1000.	
52 Cr	4.9205	0.9841	ppb	1.46	2000.	
53 Cr	6.44	1.288	ppb	10.48	#VALUE!	
55 Mn	5.94	1.188	ppb	1.29	2000.	
56 Fe	273.9	54.78	ppb	12.27	#VALUE!	
57 Fe	182.55	36.51	ppb	6.20	100000.	
59 Co	0.1847	0.0369	ppb	7.24	1000.	
60 Ni	0.4006	0.0801	ppb	16.48	1000.	
63 Cu	8.59	1.718	ppb	1.43	#VALUE!	
65 Cu	8.43	1.686	ppb	1.77	2000.	
66 Zn	142.9	28.58	ppb	1.23	2000.	
68 Zn	140.85	28.17	ppb	1.29	#VALUE!	
75 As	1.0335	0.2067	ppb	93.32	1000.	
82 Se	4.27	0.854	ppb	15.43	1000.	
88 Sr	2.838	0.5676	ppb	3.75	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.1131	0.0226	ppb	22.97	1000.	
107 Ag	0.0153	0.0031	ppb	44.97	100.	
109 Ag	0.0159	0.0032	ppb	56.39	#VALUE!	
111 Cd	0.0071	0.0014	ppb	1214.20	#VALUE!	
114 Cd	-0.1315	-0.0263	ppb	23.82	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	44.125	8.825	ppb	2.11	1000.	
120 Sn	43.435	8.687	ppb	0.65	#VALUE!	
121 Sb	0.0167	0.0033	ppb	28.79	#VALUE!	
123 Sb	0.0175	0.0035	ppb	50.54	1000.	
135 Ba	0.8115	0.1623	ppb	8.33	2000.	
137 Ba	0.7865	0.1573	ppb	9.81	#VALUE!	
182 W	0.0208	0.0042	ppb	32.77	1000.	
203 Tl	0.0706	0.0141	ppb	25.57	1000.	
205 Tl	0.0443	0.0089	ppb	62.85	#VALUE!	
208 Pb	0.3975	0.0795	ppb	10.52	2000.	
232 Th	0.0389	0.0078	ppb	26.64	1000.	
238 U	0.0045	0.0009	ppb	106.38	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2876002.00	4.67	2844110.50	101.1	69.5 - 120	
45 Sc	2800395.30	2.31	2809797.00	99.7	69.5 - 120	
72 Ge	602300.13	2.17	642252.38	93.8	69.5 - 120	
159 Tb	6406267.00	0.27	7051087.50	90.9	69.5 - 120	
209 Bi	3210377.30	1.67	3594227.50	89.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000935

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\087SMPL.D\087SMPL.D#
Date Acquired: May 11 2018 11:14 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-029
Misc Info:
Vial Number: 2502
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0041	0.0008	ppb	77.83	100.	
11 B	6.835	1.367	ppb	7.40	1000.	
23 Na	18,080.	3,616.	ppb	3.30	200000.	
25 Mg	4,755.5	951.1	ppb	1.24	200000.	
27 Al	404.15	80.83	ppb	2.34	200000.	
28 Si	291.2	58.24	ppb	13.77	#VALUE!	
29 Si	248.75	49.75	ppb	27.90	10000.	
39 K	65,950.	13,190.	ppb	2.01	200000.	
43 Ca	952.	190.4	ppb	6.89	#VALUE!	
44 Ca	984.	196.8	ppb	1.05	200000.	
51 V	4.5	0.9	ppb	3.02	1000.	
52 Cr	3.552	0.7104	ppb	6.38	2000.	
53 Cr	-14.31	-2.862	ppb	30.44	#VALUE!	
55 Mn	33.55	6.71	ppb	1.27	2000.	
56 Fe	24,835.	4,967.	ppb	0.80	#VALUE!	
57 Fe	25,125.	5,025.	ppb	1.34	100000.	
59 Co	1.0545	0.2109	ppb	7.05	1000.	
60 Ni	0.69	0.138	ppb	1.16	1000.	
63 Cu	471.15	94.23	ppb	1.16	#VALUE!	
65 Cu	472.4	94.48	ppb	1.77	2000.	
66 Zn	825.	165.	ppb	0.20	2000.	
68 Zn	806.5	161.3	ppb	0.45	#VALUE!	
75 As	2.9045	0.5809	ppb	18.75	1000.	
82 Se	23.405	4.681	ppb	4.23	1000.	
88 Sr	2.056	0.4112	ppb	6.03	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.969	0.9938	ppb	1.44	1000.	
107 Ag	1.2275	0.2455	ppb	1.46	100.	
109 Ag	1.1995	0.2399	ppb	4.95	#VALUE!	
111 Cd	0.2365	0.0473	ppb	44.91	#VALUE!	
114 Cd	0.478	0.0956	ppb	6.08	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	43.425	8.685	ppb	1.64	1000.	
120 Sn	43.65	8.73	ppb	0.71	#VALUE!	
121 Sb	0.0815	0.0163	ppb	5.15	#VALUE!	
123 Sb	0.0473	0.0095	ppb	35.47	1000.	
135 Ba	0.295	0.059	ppb	14.12	2000.	
137 Ba	0.2692	0.0538	ppb	13.24	#VALUE!	
182 W	0.0446	0.0089	ppb	30.60	1000.	
203 Tl	0.2053	0.0411	ppb	23.99	1000.	
205 Tl	0.207	0.0414	ppb	13.81	#VALUE!	
208 Pb	1.109	0.2218	ppb	3.32	2000.	
232 Th	0.0438	0.0088	ppb	33.88	1000.	
238 U	0.1173	0.0235	ppb	14.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2875100.80	4.35	2844110.50	101.1	69.5 - 120	
45 Sc	2752167.80	1.96	2809797.00	97.9	69.5 - 120	
72 Ge	592106.94	0.57	642252.38	92.2	69.5 - 120	
159 Tb	6456476.50	1.94	7051087.50	91.6	69.5 - 120	
209 Bi	3282067.00	0.61	3594227.50	91.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000936

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\088_CCV.D\088_CCV.D#
Date Acquired: May 11 2018 11:18 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.74	ppb	1.00	25	102.96	
11 B	24.76	ppb	5.27	25	99.04	
23 Na	4,949.	ppb	0.27	5,000	98.98	
25 Mg	5,005.	ppb	0.94	5,000	100.1	
27 Al	494.7	ppb	0.92	500	98.94	
28 Si	505.4	ppb	1.06	500	101.08	
29 Si	444.9	ppb	1.70	500	88.98	Fail
39 K	4,915.	ppb	1.54	5,000	98.3	
43 Ca	4,846.	ppb	1.82	5,000	96.92	
44 Ca	5,001.	ppb	2.08	5,000	100.02	
51 V	25.25	ppb	1.15	25	101	
52 Cr	25.34	ppb	1.21	25	101.36	
53 Cr	21.76	ppb	1.49	25	87.04	
55 Mn	25.26	ppb	0.38	25	101.04	
56 Fe	4,995.	ppb	0.60	5,000	99.9	
57 Fe	5,085.	ppb	1.29	5,000	101.7	
59 Co	25.24	ppb	1.08	25	100.96	
60 Ni	25.26	ppb	0.37	25	101.04	
63 Cu	25.54	ppb	0.62	25	102.16	
65 Cu	25.59	ppb	1.49	25	102.36	
66 Zn	25.13	ppb	1.62	25	100.52	
68 Zn	25.55	ppb	0.55	25	102.2	
75 As	25.41	ppb	1.12	25	101.64	
82 Se	25.59	ppb	0.54	25	102.36	
88 Sr	24.3	ppb	0.92	25	97.2	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.9	ppb	0.83	25	99.6	
107 Ag	25.05	ppb	0.35	25	100.2	
109 Ag	25.11	ppb	0.53	25	100.44	
111 Cd	24.99	ppb	1.50	25	99.96	
114 Cd	25.14	ppb	1.16	25	100.56	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.38	ppb	1.70	25	97.52	
120 Sn	24.53	ppb	0.85	25	98.12	
121 Sb	24.76	ppb	1.05	25	99.04	
123 Sb	24.95	ppb	1.50	25	99.8	
135 Ba	25.24	ppb	2.31	25	100.96	
137 Ba	25.21	ppb	1.31	25	100.84	
182 W	24.48	ppb	1.33	25	97.92	
203 Tl	24.73	ppb	2.82	25	98.92	
205 Tl	24.93	ppb	2.91	25	99.72	
208 Pb	25.03	ppb	2.64	25	100.12	
232 Th	24.33	ppb	2.96	25	97.32	
238 U	26.32	ppb	2.97	25	105.28	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2588402.30	2.14	2844110.50	91.0	80 - 120.4	
45 Sc	2616328.00	2.36	2809797.00	93.1	80 - 120.4	
72 Ge	564314.50	1.46	642252.38	87.9	80 - 120.4	
159 Tb	6394668.00	1.33	7051087.50	90.7	80 - 120.4	
209 Bi	3275175.50	2.17	3594227.50	91.1	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000937

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\089_CCB.D\089_CCB.D#
Date Acquired: May 11 2018 11:22 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0049	ppb	130.27	1.00	
11 B	2.024	ppb	4.05	1.00	
23 Na	1.178	ppb	127.25	1.00	
25 Mg	1.043	ppb	154.36	1.00	
27 Al	0.1197	ppb	168.34	1.00	
28 Si	46.75	ppb	18.58	1.00	
29 Si	-0.1206	ppb	9195.70	1.00	
39 K	4.841	ppb	32.66	1.00	
43 Ca	2.183	ppb	89.51	1.00	
44 Ca	1.591	ppb	120.36	1.00	
51 V	-0.0019	ppb	1404.40	1.00	
52 Cr	0.2347	ppb	10.44	1.00	
53 Cr	-5.092	ppb	2.87	1.00	
55 Mn	0.0247	ppb	42.35	1.00	
56 Fe	25.57	ppb	9.30	1.00	
57 Fe	5.585	ppb	54.22	1.00	
59 Co	0.0065	ppb	123.64	1.00	
60 Ni	0.0172	ppb	62.43	1.00	
63 Cu	0.02	ppb	61.94	1.00	
65 Cu	0.0084	ppb	256.88	1.00	
66 Zn	0.0095	ppb	168.55	1.00	
68 Zn	0.1522	ppb	34.22	1.00	
75 As	0.1351	ppb	55.43	1.00	
82 Se	0.0542	ppb	325.16	1.00	
88 Sr	0.0031	ppb	165.41	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0407	ppb	15.72	1.00	
107 Ag	0.01	ppb	96.49	1.00	
109 Ag	0.0117	ppb	54.39	1.00	
111 Cd	-0.0215	ppb	17.00	1.00	
114 Cd	0.0031	ppb	235.42	1.00	
115 In	--------	---	--------	---	
118 Sn	0.063	ppb	31.02	1.00	
120 Sn	0.0577	ppb	12.61	1.00	
121 Sb	0.0128	ppb	23.17	1.00	
123 Sb	0.0113	ppb	74.11	1.00	
135 Ba	0.0069	ppb	200.61	1.00	
137 Ba	0.0138	ppb	40.27	1.00	
182 W	0.0568	ppb	7.15	1.00	
203 Tl	0.0099	ppb	140.60	1.00	
205 Tl	0.0078	ppb	170.49	1.00	
208 Pb	0.0807	ppb	9.20	1.00	
232 Th	0.1055	ppb	25.56	1.00	
238 U	0.0082	ppb	86.61	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2439259.80	1.26	2844110.50	85.8	79.5 - 120	
45 Sc	2447228.00	2.44	2809797.00	87.1	79.5 - 120	
72 Ge	542697.94	1.25	642252.38	84.5	79.5 - 120	
159 Tb	6109323.00	0.38	7051087.50	86.6	79.5 - 120	
209 Bi	3198836.00	1.10	3594227.50	89.0	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\090SMPL.D\090SMPL.D#
Date Acquired: May 11 2018 11:26 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-030
Misc Info:
Vial Number: 2503
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0072	0.0014	ppb	66.74	100.	
11 B	7.535	1.507	ppb	6.61	1000.	
23 Na	20,325.	4,065.	ppb	1.15	200000.	
25 Mg	4,322.5	864.5	ppb	1.11	200000.	
27 Al	267.45	53.49	ppb	1.00	200000.	
28 Si	236.6	47.32	ppb	25.32	#VALUE!	
29 Si	97.05	19.41	ppb	25.03	10000.	
39 K	69,300.	13,860.	ppb	1.11	200000.	
43 Ca	1,029.5	205.9	ppb	5.87	#VALUE!	
44 Ca	1,076.5	215.3	ppb	2.16	200000.	
51 V	3.2045	0.6409	ppb	5.99	1000.	
52 Cr	3.658	0.7316	ppb	6.73	2000.	
53 Cr	-20.92	-4.184	ppb	2.96	#VALUE!	
55 Mn	34.645	6.929	ppb	1.06	2000.	
56 Fe	12,900.	2,580.	ppb	2.83	#VALUE!	
57 Fe	12,815.	2,563.	ppb	1.64	100000.	
59 Co	0.8875	0.1775	ppb	1.54	1000.	
60 Ni	0.738	0.1476	ppb	2.07	1000.	
63 Cu	486.9	97.38	ppb	0.85	#VALUE!	
65 Cu	488.6	97.72	ppb	1.30	2000.	
66 Zn	842.	168.4	ppb	0.62	2000.	
68 Zn	818.	163.6	ppb	0.23	#VALUE!	
75 As	2.6315	0.5263	ppb	31.92	1000.	
82 Se	33.06	6.612	ppb	1.51	1000.	
88 Sr	2.228	0.4456	ppb	2.11	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.2345	0.8469	ppb	3.22	1000.	
107 Ag	1.0165	0.2033	ppb	2.34	100.	
109 Ag	1.033	0.2066	ppb	4.16	#VALUE!	
111 Cd	0.1981	0.0396	ppb	28.75	#VALUE!	
114 Cd	0.3541	0.0708	ppb	8.12	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	43.04	8.608	ppb	1.80	1000.	
120 Sn	42.785	8.557	ppb	1.37	#VALUE!	
121 Sb	0.0668	0.0134	ppb	22.18	#VALUE!	
123 Sb	0.0633	0.0127	ppb	4.73	1000.	
135 Ba	0.346	0.0692	ppb	12.56	2000.	
137 Ba	0.2918	0.0584	ppb	19.21	#VALUE!	
182 W	0.1118	0.0224	ppb	17.30	1000.	
203 Tl	0.2148	0.043	ppb	34.18	1000.	
205 Tl	0.1859	0.0372	ppb	27.63	#VALUE!	
208 Pb	0.659	0.1318	ppb	10.68	2000.	
232 Th	0.7435	0.1487	ppb	18.81	1000.	
238 U	0.093	0.0186	ppb	7.95	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2837965.50	3.15	2844110.50	99.8	69.5 - 120	
45 Sc	2746780.50	3.17	2809797.00	97.8	69.5 - 120	
72 Ge	582370.94	2.12	642252.38	90.7	69.5 - 120	
159 Tb	6324863.00	1.12	7051087.50	89.7	69.5 - 120	
209 Bi	3225353.30	0.71	3594227.50	89.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000939

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\091SMPL.D\091SMPL.D#
Date Acquired: May 11 2018 11:31 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2504
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0012	0.0012	ppb	194.44	100.	
11 B	0.7928	0.7928	ppb	2.73	1000.	
23 Na	0.7494	0.7494	ppb	33.56	200000.	
25 Mg	0.2357	0.2357	ppb	14.26	200000.	
27 Al	1.07	1.07	ppb	0.82	200000.	
28 Si	8.945	8.945	ppb	144.77	#VALUE!	
29 Si	-41.43	-41.43	ppb	40.50	10000.	
39 K	-2.134	-2.134	ppb	160.03	200000.	
43 Ca	1.649	1.649	ppb	168.83	#VALUE!	
44 Ca	0.0782	0.0782	ppb	800.10	200000.	
51 V	-0.0586	-0.0586	ppb	55.20	1000.	
52 Cr	-0.0126	-0.0126	ppb	161.35	2000.	
53 Cr	-5.735	-5.735	ppb	1.09	#VALUE!	
55 Mn	0.5925	0.5925	ppb	3.03	2000.	
56 Fe	8.059	8.059	ppb	38.17	#VALUE!	
57 Fe	4.827	4.827	ppb	38.39	100000.	
59 Co	0.0013	0.0013	ppb	162.81	1000.	
60 Ni	0.0033	0.0033	ppb	214.86	1000.	
63 Cu	0.1715	0.1715	ppb	12.27	#VALUE!	
65 Cu	0.1442	0.1442	ppb	13.05	2000.	
66 Zn	0.1573	0.1573	ppb	19.44	2000.	
68 Zn	0.3149	0.3149	ppb	3.61	#VALUE!	
75 As	0.0805	0.0805	ppb	23.08	1000.	
82 Se	0.0922	0.0922	ppb	173.75	1000.	
88 Sr	-0.0013	-0.0013	ppb	188.84	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0094	0.0094	ppb	13.20	1000.	
107 Ag	0.0006	0.0006	ppb	267.07	100.	
109 Ag	0.0019	0.0019	ppb	59.20	#VALUE!	
111 Cd	-0.047	-0.047	ppb	32.61	#VALUE!	
114 Cd	0.0006	0.0006	ppb	614.35	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.6498	0.6498	ppb	1.95	1000.	
120 Sn	0.65	0.65	ppb	1.59	#VALUE!	
121 Sb	0.001	0.001	ppb	522.75	#VALUE!	
123 Sb	0.0001	0.0001	ppb	3371.00	1000.	
135 Ba	0.0147	0.0147	ppb	84.33	2000.	
137 Ba	0.006	0.006	ppb	135.29	#VALUE!	
182 W	0.004	0.004	ppb	44.10	1000.	
203 Tl	-0.0028	-0.0028	ppb	189.92	1000.	
205 Tl	-0.0116	-0.0116	ppb	31.85	#VALUE!	
208 Pb	0.1873	0.1873	ppb	2.68	2000.	
232 Th	0.0016	0.0016	ppb	158.89	1000.	
238 U	0.0003	0.0003	ppb	70.58	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2981459.50	3.25	2844110.50	104.8	69.5 - 120	
45 Sc	2850937.80	2.80	2809797.00	101.5	69.5 - 120	
72 Ge	631260.81	0.72	642252.38	98.3	69.5 - 120	
159 Tb	6738382.00	0.56	7051087.50	95.6	69.5 - 120	
209 Bi	3425449.00	0.78	3594227.50	95.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000940

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\092SMPL.D\092SMPL.D#
Date Acquired: May 11 2018 11:35 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE09IMS1
Misc Info:
Vial Number: 2505
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0076	0.0015	ppb	41.13	100.	
11 B	4.801	0.9602	ppb	13.96	1000.	
23 Na	26.57	5.314	ppb	2.03	200000.	
25 Mg	22.555	4.511	ppb	7.86	200000.	
27 Al	15.175	3.035	ppb	5.71	200000.	
28 Si	-23.07	-4.614	ppb	140.75	#VALUE!	
29 Si	-165.35	-33.07	ppb	7.80	10000.	
39 K	25.58	5.116	ppb	43.04	200000.	
43 Ca	91.85	18.37	ppb	8.22	#VALUE!	
44 Ca	96.9	19.38	ppb	4.26	200000.	
51 V	0.2332	0.0466	ppb	208.69	1000.	
52 Cr	2.792	0.5584	ppb	17.44	2000.	
53 Cr	11.265	2.253	ppb	21.52	#VALUE!	
55 Mn	0.509	0.1018	ppb	4.20	2000.	
56 Fe	94.8	18.96	ppb	23.78	#VALUE!	
57 Fe	23.19	4.638	ppb	24.99	100000.	
59 Co	0.0223	0.0045	ppb	14.04	1000.	
60 Ni	0.3735	0.0747	ppb	5.26	1000.	
63 Cu	0.4122	0.0824	ppb	24.27	#VALUE!	
65 Cu	0.2649	0.053	ppb	13.11	2000.	
66 Zn	0.4658	0.0932	ppb	36.67	2000.	
68 Zn	1.1185	0.2237	ppb	33.73	#VALUE!	
75 As	0.6315	0.1263	ppb	12.29	1000.	
82 Se	0.65	0.13	ppb	111.85	1000.	
88 Sr	0.2761	0.0552	ppb	15.74	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0674	0.0135	ppb	21.43	1000.	
107 Ag	0.0616	0.0123	ppb	13.15	100.	
109 Ag	0.0796	0.0159	ppb	17.60	#VALUE!	
111 Cd	-0.1088	-0.0218	ppb	5.30	#VALUE!	
114 Cd	-0.0313	-0.0063	ppb	167.86	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.63	8.926	ppb	2.97	1000.	
120 Sn	44.845	8.969	ppb	0.76	#VALUE!	
121 Sb	0.0556	0.0111	ppb	51.88	#VALUE!	
123 Sb	0.0585	0.0117	ppb	53.64	1000.	
135 Ba	0.4579	0.0916	ppb	24.72	2000.	
137 Ba	0.56	0.112	ppb	13.41	#VALUE!	
182 W	0.0245	0.0049	ppb	20.16	1000.	
203 Tl	-0.0222	-0.0044	ppb	230.67	1000.	
205 Tl	-0.0133	-0.0027	ppb	212.70	#VALUE!	
208 Pb	-0.0099	-0.002	ppb	473.09	2000.	
232 Th	0.0579	0.0116	ppb	43.36	1000.	
238 U	0.0044	0.0009	ppb	74.16	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2781118.30	3.02	2844110.50	97.8	69.5 - 120	
45 Sc	2723210.50	0.95	2809797.00	96.9	69.5 - 120	
72 Ge	598028.31	0.73	642252.38	93.1	69.5 - 120	
159 Tb	6664821.50	1.29	7051087.50	94.5	69.5 - 120	
209 Bi	3438965.50	0.77	3594227.50	95.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000941

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\093SMPL.D\093SMPL.D#
Date Acquired: May 11 2018 11:39 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE09IMS1
Misc Info:
Vial Number: 2506
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	50.25	10.05	ppb	0.76	100.	
11 B	479.3	95.86	ppb	1.79	1000.	
23 Na	7,800.	1,560.	ppb	3.07	200000.	
25 Mg	5,190.	1,038.	ppb	4.86	200000.	
27 Al	2,132.5	426.5	ppb	1.61	200000.	
28 Si	958.5	191.7	ppb	5.34	#VALUE!	
29 Si	798.	159.6	ppb	12.06	10000.	
39 K	10,185.	2,037.	ppb	0.27	200000.	
43 Ca	2,757.5	551.5	ppb	3.38	#VALUE!	
44 Ca	2,479.	495.8	ppb	0.47	200000.	
51 V	530.	106.	ppb	0.25	1000.	
52 Cr	205.95	41.19	ppb	0.42	2000.	
53 Cr	237.15	47.43	ppb	1.90	#VALUE!	
55 Mn	524.	104.8	ppb	0.95	2000.	
56 Fe	1,147.5	229.5	ppb	2.05	#VALUE!	
57 Fe	1,071.5	214.3	ppb	0.38	100000.	
59 Co	537.	107.4	ppb	1.15	1000.	
60 Ni	523.5	104.7	ppb	1.25	1000.	
63 Cu	260.95	52.19	ppb	1.01	#VALUE!	
65 Cu	261.4	52.28	ppb	0.29	2000.	
66 Zn	502.	100.4	ppb	1.19	2000.	
68 Zn	561.5	112.3	ppb	0.78	#VALUE!	
75 As	102.35	20.47	ppb	0.88	1000.	
82 Se	100.4	20.08	ppb	1.79	1000.	
88 Sr	501.	100.2	ppb	0.05	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	103.9	20.78	ppb	0.72	1000.	
107 Ag	52.	10.4	ppb	0.31	100.	
109 Ag	51.8	10.36	ppb	0.34	#VALUE!	
111 Cd	254.65	50.93	ppb	0.45	#VALUE!	
114 Cd	254.45	50.89	ppb	0.41	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	550.	110.	ppb	1.41	1000.	
120 Sn	549.	109.8	ppb	1.89	#VALUE!	
121 Sb	101.5	20.3	ppb	1.91	#VALUE!	
123 Sb	102.2	20.44	ppb	0.72	1000.	
135 Ba	2,080.	416.	ppb	1.26	2000.	
137 Ba	2,104.5	420.9	ppb	1.46	#VALUE!	
182 W	104.25	20.85	ppb	1.58	1000.	
203 Tl	104.45	20.89	ppb	1.37	1000.	
205 Tl	104.9	20.98	ppb	1.29	#VALUE!	
208 Pb	104.7	20.94	ppb	1.05	2000.	
232 Th	104.1	20.82	ppb	1.03	1000.	
238 U	111.2	22.24	ppb	0.84	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2820788.30	1.71	2844110.50	99.2	69.5 - 120	
45 Sc	2655386.80	2.16	2809797.00	94.5	69.5 - 120	
72 Ge	576102.94	0.90	642252.38	89.7	69.5 - 120	
159 Tb	6572870.50	1.55	7051087.50	93.2	69.5 - 120	
209 Bi	3405639.50	0.85	3594227.50	94.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000942

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\094SMPL.D\094SMPL.D#
Date Acquired: May 11 2018 11:43 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-049
Misc Info:
Vial Number: 2507
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.65	1.73	ppb	3.08	100.	
11 B	188.3	37.66	ppb	3.01	1000.	
23 Na	6,465.	1,293.	ppb	2.30	200000.	
25 Mg	89,950.	17,990.	ppb	3.11	200000.	
27 Al	196,600.	39,320.	ppb	1.08	200000.	
28 Si	3,313.	662.6	ppb	1.58	#VALUE!	
29 Si	3,054.5	610.9	ppb	3.26	10000.	
39 K	54,400.	10,880.	ppb	1.71	200000.	
43 Ca	459,300.	91,860.	ppb	1.10	#VALUE!	
44 Ca	432,550.	86,510.	ppb	0.51	200000.	
51 V	384.9	76.98	ppb	1.79	1000.	
52 Cr	177.45	35.49	ppb	1.62	2000.	
53 Cr	185.5	37.1	ppb	2.40	#VALUE!	
55 Mn	2,687.5	537.5	ppb	0.70	2000.	
56 Fe	167,950.	33,590.	ppb	0.56	#VALUE!	
57 Fe	164,650.	32,930.	ppb	0.95	100000.	
59 Co	61.	12.2	ppb	1.17	1000.	
60 Ni	142.85	28.57	ppb	0.42	1000.	
63 Cu	152.35	30.47	ppb	1.14	#VALUE!	
65 Cu	154.25	30.85	ppb	0.71	2000.	
66 Zn	523.	104.6	ppb	1.18	2000.	
68 Zn	591.5	118.3	ppb	1.42	#VALUE!	
75 As	56.45	11.29	ppb	2.01	1000.	
82 Se	4.4335	0.8867	ppb	12.65	1000.	
88 Sr	1,592.	318.4	ppb	1.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.0585	0.8117	ppb	3.50	1000.	
107 Ag	0.854	0.1708	ppb	8.56	100.	
109 Ag	0.7115	0.1423	ppb	7.02	#VALUE!	
111 Cd	3.718	0.7436	ppb	3.88	#VALUE!	
114 Cd	1.4125	0.2825	ppb	2.13	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.5	10.1	ppb	2.11	1000.	
120 Sn	50.75	10.15	ppb	0.78	#VALUE!	
121 Sb	2.253	0.4506	ppb	1.49	#VALUE!	
123 Sb	2.3245	0.4649	ppb	4.68	1000.	
135 Ba	2,605.5	521.1	ppb	0.50	2000.	
137 Ba	2,616.	523.2	ppb	1.32	#VALUE!	
182 W	1.0085	0.2017	ppb	6.34	1000.	
203 Tl	3.079	0.6158	ppb	6.23	1000.	
205 Tl	3.1185	0.6237	ppb	0.59	#VALUE!	
208 Pb	145.45	29.09	ppb	1.54	2000.	
232 Th	84.7	16.94	ppb	1.61	1000.	
238 U	13.8	2.76	ppb	1.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2527945.00	1.53	2844110.50	88.9	69.5 - 120	
45 Sc	2519059.30	1.97	2809797.00	89.7	69.5 - 120	
72 Ge	541912.13	1.90	642252.38	84.4	69.5 - 120	
159 Tb	6589773.00	0.71	7051087.50	93.5	69.5 - 120	
209 Bi	3310681.00	3.43	3594227.50	92.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000943

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\095SMPL.D\095SMPL.D#
Date Acquired: May 11 2018 11:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-050
Misc Info:
Vial Number: 2508
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.175	1.835	ppb	3.34	100.	
11 B	159.8	31.96	ppb	2.69	1000.	
23 Na	4,789.	957.8	ppb	2.75	200000.	
25 Mg	108,500.	21,700.	ppb	2.62	200000.	
27 Al	194,600.	38,920.	ppb	3.57	200000.	
28 Si	2,915.	583.	ppb	4.19	#VALUE!	
29 Si	2,631.5	526.3	ppb	3.13	10000.	
39 K	51,200.	10,240.	ppb	1.66	200000.	
43 Ca	754,000.	150,800.	ppb	1.84	#VALUE!	
44 Ca	726,000.	145,200.	ppb	1.28	200000.	
51 V	414.	82.8	ppb	1.58	1000.	
52 Cr	191.5	38.3	ppb	0.37	2000.	
53 Cr	201.95	40.39	ppb	3.32	#VALUE!	
55 Mn	3,231.5	646.3	ppb	0.40	2000.	
56 Fe	180,000.	36,000.	ppb	0.48	#VALUE!	
57 Fe	176,250.	35,250.	ppb	0.60	100000.	
59 Co	69.65	13.93	ppb	3.01	1000.	
60 Ni	163.2	32.64	ppb	2.32	1000.	
63 Cu	116.65	23.33	ppb	1.53	#VALUE!	
65 Cu	118.7	23.74	ppb	2.10	2000.	
66 Zn	451.65	90.33	ppb	0.79	2000.	
68 Zn	512.	102.4	ppb	1.03	#VALUE!	
75 As	58.25	11.65	ppb	2.14	1000.	
82 Se	4.9455	0.9891	ppb	14.87	1000.	
88 Sr	2,121.5	424.3	ppb	1.38	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.5175	0.9035	ppb	0.80	1000.	
107 Ag	0.818	0.1636	ppb	2.81	100.	
109 Ag	0.711	0.1422	ppb	6.16	#VALUE!	
111 Cd	3.296	0.6592	ppb	3.65	#VALUE!	
114 Cd	0.803	0.1606	ppb	1.12	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.63	9.726	ppb	2.77	1000.	
120 Sn	49.265	9.853	ppb	3.22	#VALUE!	
121 Sb	2.252	0.4504	ppb	2.27	#VALUE!	
123 Sb	2.2185	0.4437	ppb	5.08	1000.	
135 Ba	2,351.5	470.3	ppb	3.23	2000.	
137 Ba	2,362.	472.4	ppb	1.86	#VALUE!	
182 W	0.7095	0.1419	ppb	7.27	1000.	
203 Tl	3.6845	0.7369	ppb	0.63	1000.	
205 Tl	3.6125	0.7225	ppb	1.15	#VALUE!	
208 Pb	122.	24.4	ppb	1.72	2000.	
232 Th	93.15	18.63	ppb	2.24	1000.	
238 U	16.915	3.383	ppb	2.13	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2368176.80	6.40	2844110.50	83.3	69.5 - 120	
45 Sc	2464803.80	4.12	2809797.00	87.7	69.5 - 120	
72 Ge	531304.31	3.13	642252.38	82.7	69.5 - 120	
159 Tb	6500507.50	1.27	7051087.50	92.2	69.5 - 120	
209 Bi	3261436.80	3.06	3594227.50	90.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000944

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\096SMPL.D\096SMPL.D#
Date Acquired: May 11 2018 11:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-051
Misc Info:
Vial Number: 2509
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.445	1.689	ppb	7.40	100.	
11 B	146.65	29.33	ppb	4.34	1000.	
23 Na	4,958.5	991.7	ppb	3.84	200000.	
25 Mg	86,850.	17,370.	ppb	3.64	200000.	
27 Al	182,000.	36,400.	ppb	2.61	200000.	
28 Si	3,230.	646.	ppb	0.87	#VALUE!	
29 Si	2,972.5	594.5	ppb	4.80	10000.	
39 K	46,310.	9,262.	ppb	1.28	200000.	
43 Ca	427,750.	85,550.	ppb	3.80	#VALUE!	
44 Ca	408,300.	81,660.	ppb	0.57	200000.	
51 V	368.25	73.65	ppb	1.10	1000.	
52 Cr	183.9	36.78	ppb	1.00	2000.	
53 Cr	188.35	37.67	ppb	2.10	#VALUE!	
55 Mn	2,928.	585.6	ppb	1.91	2000.	
56 Fe	172,350.	34,470.	ppb	2.20	#VALUE!	
57 Fe	168,850.	33,770.	ppb	0.55	100000.	
59 Co	57.25	11.45	ppb	2.56	1000.	
60 Ni	136.9	27.38	ppb	2.25	1000.	
63 Cu	123.1	24.62	ppb	0.57	#VALUE!	
65 Cu	123.05	24.61	ppb	0.42	2000.	
66 Zn	452.55	90.51	ppb	1.90	2000.	
68 Zn	506.	101.2	ppb	0.65	#VALUE!	
75 As	36.745	7.349	ppb	0.07	1000.	
82 Se	3.6675	0.7335	ppb	36.63	1000.	
88 Sr	1,306.5	261.3	ppb	1.87	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.175	1.035	ppb	2.89	1000.	
107 Ag	0.8565	0.1713	ppb	4.48	100.	
109 Ag	0.7	0.14	ppb	1.26	#VALUE!	
111 Cd	3.16	0.632	ppb	5.51	#VALUE!	
114 Cd	0.8205	0.1641	ppb	6.93	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	98.75	19.75	ppb	1.44	1000.	
120 Sn	99.25	19.85	ppb	1.90	#VALUE!	
121 Sb	1.8905	0.3781	ppb	2.87	#VALUE!	
123 Sb	1.9565	0.3913	ppb	9.85	1000.	
135 Ba	1,938.	387.6	ppb	2.19	2000.	
137 Ba	1,948.	389.6	ppb	2.09	#VALUE!	
182 W	0.6005	0.1201	ppb	10.88	1000.	
203 Tl	3.1025	0.6205	ppb	4.69	1000.	
205 Tl	3.1345	0.6269	ppb	1.70	#VALUE!	
208 Pb	114.5	22.9	ppb	1.66	2000.	
232 Th	91.55	18.31	ppb	1.68	1000.	
238 U	13.715	2.743	ppb	1.80	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2419373.00	2.28	2844110.50	85.1	69.5 - 120	
45 Sc	2479331.80	4.24	2809797.00	88.2	69.5 - 120	
72 Ge	532539.00	1.59	642252.38	82.9	69.5 - 120	
159 Tb	6587088.00	2.10	7051087.50	93.4	69.5 - 120	
209 Bi	3351504.50	2.22	3594227.50	93.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000945

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\097SMPL.D\097SMPL.D#
Date Acquired: May 11 2018 11:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-052
Misc Info:
Vial Number: 2510
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.005	1.801	ppb	0.34	100.	
11 B	159.05	31.81	ppb	2.75	1000.	
23 Na	4,397.5	879.5	ppb	1.99	200000.	
25 Mg	99,100.	19,820.	ppb	1.50	200000.	
27 Al	197,150.	39,430.	ppb	1.37	200000.	
28 Si	2,509.5	501.9	ppb	4.15	#VALUE!	
29 Si	2,249.5	449.9	ppb	5.53	10000.	
39 K	52,800.	10,560.	ppb	0.73	200000.	
43 Ca	649,500.	129,900.	ppb	0.93	#VALUE!	
44 Ca	630,500.	126,100.	ppb	0.09	200000.	
51 V	402.25	80.45	ppb	2.18	1000.	
52 Cr	179.75	35.95	ppb	0.64	2000.	
53 Cr	180.7	36.14	ppb	2.97	#VALUE!	
55 Mn	3,375.5	675.1	ppb	0.99	2000.	
56 Fe	189,750.	37,950.	ppb	0.33	#VALUE!	
57 Fe	183,400.	36,680.	ppb	0.95	100000.	
59 Co	56.75	11.35	ppb	1.48	1000.	
60 Ni	146.7	29.34	ppb	1.20	1000.	
63 Cu	110.6	22.12	ppb	0.54	#VALUE!	
65 Cu	113.25	22.65	ppb	1.81	2000.	
66 Zn	436.	87.2	ppb	1.46	2000.	
68 Zn	512.5	102.5	ppb	0.34	#VALUE!	
75 As	64.	12.8	ppb	2.23	1000.	
82 Se	4.8305	0.9661	ppb	17.10	1000.	
88 Sr	2,019.	403.8	ppb	0.12	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.02	1.004	ppb	2.98	1000.	
107 Ag	0.8685	0.1737	ppb	2.97	100.	
109 Ag	0.723	0.1446	ppb	7.43	#VALUE!	
111 Cd	3.8045	0.7609	ppb	2.99	#VALUE!	
114 Cd	1.246	0.2492	ppb	11.92	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.635	9.727	ppb	0.64	1000.	
120 Sn	49.13	9.826	ppb	0.71	#VALUE!	
121 Sb	2.2095	0.4419	ppb	3.33	#VALUE!	
123 Sb	2.2615	0.4523	ppb	2.46	1000.	
135 Ba	2,606.	521.2	ppb	0.79	2000.	
137 Ba	2,621.	524.2	ppb	0.34	#VALUE!	
182 W	0.792	0.1584	ppb	5.45	1000.	
203 Tl	3.1865	0.6373	ppb	2.61	1000.	
205 Tl	3.2045	0.6409	ppb	2.43	#VALUE!	
208 Pb	115.05	23.01	ppb	0.78	2000.	
232 Th	89.25	17.85	ppb	1.40	1000.	
238 U	16.215	3.243	ppb	1.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2569564.00	2.47	2844110.50	90.3	69.5 - 120	
45 Sc	2548150.50	1.14	2809797.00	90.7	69.5 - 120	
72 Ge	546074.50	1.23	642252.38	85.0	69.5 - 120	
159 Tb	6750760.50	1.23	7051087.50	95.7	69.5 - 120	
209 Bi	3395684.80	1.29	3594227.50	94.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000946

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\098SMPL.D\098SMPL.D#
Date Acquired: May 12 2018 12:01 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-053
Misc Info:
Vial Number: 2511
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.14	1.628	ppb	6.34	100.	
11 B	176.7	35.34	ppb	5.79	1000.	
23 Na	6,670.	1,334.	ppb	4.35	200000.	
25 Mg	93,000.	18,600.	ppb	3.07	200000.	
27 Al	182,650.	36,530.	ppb	2.43	200000.	
28 Si	3,206.	641.2	ppb	3.80	#VALUE!	
29 Si	2,734.5	546.9	ppb	1.86	10000.	
39 K	48,335.	9,667.	ppb	1.24	200000.	
43 Ca	502,000.	100,400.	ppb	1.72	#VALUE!	
44 Ca	490,400.	98,080.	ppb	0.56	200000.	
51 V	397.5	79.5	ppb	1.11	1000.	
52 Cr	168.8	33.76	ppb	0.50	2000.	
53 Cr	174.05	34.81	ppb	2.47	#VALUE!	
55 Mn	4,326.	865.2	ppb	0.56	2000.	
56 Fe	169,250.	33,850.	ppb	1.61	#VALUE!	
57 Fe	163,000.	32,600.	ppb	0.85	100000.	
59 Co	64.55	12.91	ppb	0.94	1000.	
60 Ni	147.	29.4	ppb	2.26	1000.	
63 Cu	110.15	22.03	ppb	1.70	#VALUE!	
65 Cu	113.25	22.65	ppb	1.12	2000.	
66 Zn	420.	84.	ppb	1.04	2000.	
68 Zn	502.	100.4	ppb	0.42	#VALUE!	
75 As	67.6	13.52	ppb	0.43	1000.	
82 Se	3.8715	0.7743	ppb	18.97	1000.	
88 Sr	1,900.	380.	ppb	0.55	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.06	1.212	ppb	2.61	1000.	
107 Ag	0.8135	0.1627	ppb	5.35	100.	
109 Ag	0.642	0.1284	ppb	1.74	#VALUE!	
111 Cd	3.1995	0.6399	ppb	4.70	#VALUE!	
114 Cd	1.135	0.227	ppb	4.24	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	57.1	11.42	ppb	1.53	1000.	
120 Sn	57.85	11.57	ppb	1.71	#VALUE!	
121 Sb	2.2325	0.4465	ppb	2.30	#VALUE!	
123 Sb	2.1855	0.4371	ppb	3.67	1000.	
135 Ba	2,853.	570.6	ppb	0.73	2000.	
137 Ba	2,857.5	571.5	ppb	0.77	#VALUE!	
182 W	0.8815	0.1763	ppb	1.49	1000.	
203 Tl	3.206	0.6412	ppb	2.30	1000.	
205 Tl	3.1725	0.6345	ppb	0.14	#VALUE!	
208 Pb	112.45	22.49	ppb	0.44	2000.	
232 Th	79.85	15.97	ppb	0.92	1000.	
238 U	15.135	3.027	ppb	1.94	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2529424.00	3.46	2844110.50	88.9	69.5 - 120	
45 Sc	2546666.50	1.26	2809797.00	90.6	69.5 - 120	
72 Ge	542762.19	0.45	642252.38	84.5	69.5 - 120	
159 Tb	6683430.50	0.71	7051087.50	94.8	69.5 - 120	
209 Bi	3400228.30	1.51	3594227.50	94.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000947

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\099SMPL.D\099SMPL.D#
Date Acquired: May 12 2018 12:05 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2512
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0002	-0.0002	ppb	527.07	100.	
11 B	2.403	2.403	ppb	7.87	1000.	
23 Na	-0.6792	-0.6792	ppb	29.09	200000.	
25 Mg	0.342	0.342	ppb	67.28	200000.	
27 Al	0.794	0.794	ppb	21.12	200000.	
28 Si	18.17	18.17	ppb	109.58	#VALUE!	
29 Si	-49.82	-49.82	ppb	18.04	10000.	
39 K	-9.315	-9.315	ppb	21.52	200000.	
43 Ca	-2.384	-2.384	ppb	17.80	#VALUE!	
44 Ca	0.069	0.069	ppb	1472.70	200000.	
51 V	-0.0338	-0.0338	ppb	130.17	1000.	
52 Cr	0.0553	0.0553	ppb	71.62	2000.	
53 Cr	-6.302	-6.302	ppb	2.81	#VALUE!	
55 Mn	0.0096	0.0096	ppb	110.02	2000.	
56 Fe	15.53	15.53	ppb	32.00	#VALUE!	
57 Fe	3.246	3.246	ppb	60.32	100000.	
59 Co	0.0037	0.0037	ppb	29.95	1000.	
60 Ni	0.0102	0.0102	ppb	33.77	1000.	
63 Cu	0.1372	0.1372	ppb	4.62	#VALUE!	
65 Cu	0.1229	0.1229	ppb	8.91	2000.	
66 Zn	0.0094	0.0094	ppb	780.65	2000.	
68 Zn	0.1216	0.1216	ppb	9.64	#VALUE!	
75 As	0.073	0.073	ppb	209.05	1000.	
82 Se	0.0679	0.0679	ppb	291.99	1000.	
88 Sr	0.0021	0.0021	ppb	66.22	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	-0.0017	-0.0017	ppb	93.23	1000.	
107 Ag	-0.0003	-0.0003	ppb	369.55	100.	
109 Ag	0.0008	0.0008	ppb	240.73	#VALUE!	
111 Cd	-0.0805	-0.0805	ppb	26.28	#VALUE!	
114 Cd	-0.0016	-0.0016	ppb	230.91	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0158	0.0158	ppb	93.54	1000.	
120 Sn	0.0124	0.0124	ppb	62.22	#VALUE!	
121 Sb	-0.0019	-0.0019	ppb	67.54	#VALUE!	
123 Sb	0.0005	0.0005	ppb	625.85	1000.	
135 Ba	0.0061	0.0061	ppb	113.89	2000.	
137 Ba	0.0042	0.0042	ppb	188.89	#VALUE!	
182 W	0.0035	0.0035	ppb	111.71	1000.	
203 Tl	-0.0001	-0.0001	ppb	11837.00	1000.	
205 Tl	-0.0036	-0.0036	ppb	11.04	#VALUE!	
208 Pb	0.1669	0.1669	ppb	3.44	2000.	
232 Th	0.0114	0.0114	ppb	32.18	1000.	
238 U	0.0007	0.0007	ppb	57.42	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2540907.00	1.30	2844110.50	89.3	69.5 - 120	
45 Sc	2562599.50	1.22	2809797.00	91.2	69.5 - 120	
72 Ge	575602.44	1.62	642252.38	89.6	69.5 - 120	
159 Tb	6582088.00	1.41	7051087.50	93.3	69.5 - 120	
209 Bi	3435069.30	2.93	3594227.50	95.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000948

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\100_CCV.D\100_CCV.D#
Date Acquired: May 12 2018 12:09 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.02	ppb	3.90	25	96.08	
11 B	23.89	ppb	3.58	25	95.56	
23 Na	4,553.	ppb	0.77	5,000	91.06	
25 Mg	4,732.	ppb	0.81	5,000	94.64	
27 Al	480.8	ppb	0.61	500	96.16	
28 Si	495.5	ppb	4.05	500	99.1	
29 Si	419.7	ppb	3.14	500	83.94	Fail
39 K	4,849.	ppb	2.14	5,000	96.98	
43 Ca	4,702.	ppb	2.43	5,000	94.04	
44 Ca	4,948.	ppb	0.81	5,000	98.96	
51 V	24.93	ppb	1.35	25	99.72	
52 Cr	24.96	ppb	0.77	25	99.84	
53 Cr	21.34	ppb	1.46	25	85.36	
55 Mn	25.19	ppb	0.31	25	100.76	
56 Fe	4,938.	ppb	1.04	5,000	98.76	
57 Fe	4,952.	ppb	1.75	5,000	99.04	
59 Co	24.79	ppb	2.49	25	99.16	
60 Ni	24.85	ppb	1.46	25	99.4	
63 Cu	25.38	ppb	1.36	25	101.52	
65 Cu	25.52	ppb	0.47	25	102.08	
66 Zn	24.58	ppb	2.32	25	98.32	
68 Zn	25.27	ppb	0.06	25	101.08	
75 As	25.58	ppb	0.90	25	102.32	
82 Se	25.69	ppb	0.84	25	102.76	
88 Sr	24.64	ppb	1.44	25	98.56	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.58	ppb	1.87	25	102.32	
107 Ag	25.76	ppb	1.28	25	103.04	
109 Ag	25.68	ppb	1.33	25	102.72	
111 Cd	25.71	ppb	1.14	25	102.84	
114 Cd	25.77	ppb	1.46	25	103.08	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.03	ppb	1.98	25	96.12	
120 Sn	24.18	ppb	1.40	25	96.72	
121 Sb	24.71	ppb	1.72	25	98.84	
123 Sb	24.6	ppb	1.59	25	98.4	
135 Ba	25.28	ppb	0.63	25	101.12	
137 Ba	25.25	ppb	1.02	25	101	
182 W	25.07	ppb	0.42	25	100.28	
203 Tl	25.15	ppb	0.61	25	100.6	
205 Tl	25.27	ppb	0.65	25	101.08	
208 Pb	25.4	ppb	0.09	25	101.6	
232 Th	25.36	ppb	0.82	25	101.44	
238 U	26.66	ppb	0.27	25	106.64	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2445089.80	6.53	2844110.50	86.0	80 - 120.4	
45 Sc	2497479.50	4.78	2809797.00	88.9	80 - 120.4	
72 Ge	550464.00	3.92	642252.38	85.7	80 - 120.4	
159 Tb	6504261.50	1.59	7051087.50	92.2	80 - 120.4	
209 Bi	3354655.30	0.79	3594227.50	93.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\101_CCB.D\101_CCB.D#
Date Acquired: May 12 2018 12:13 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.001	ppb	115.43	1.00	
11 B	1.931	ppb	5.57	1.00	
23 Na	-1.124	ppb	22.59	1.00	
25 Mg	0.095	ppb	63.58	1.00	
27 Al	0.0705	ppb	123.19	1.00	
28 Si	12.18	ppb	64.35	1.00	
29 Si	-50.09	ppb	29.93	1.00	
39 K	-6.353	ppb	33.61	1.00	
43 Ca	2.4	ppb	256.37	1.00	
44 Ca	0.0787	ppb	245.27	1.00	
51 V	-0.0327	ppb	75.54	1.00	
52 Cr	0.0724	ppb	50.23	1.00	
53 Cr	-5.686	ppb	2.54	1.00	
55 Mn	0.0195	ppb	26.04	1.00	
56 Fe	12.08	ppb	30.44	1.00	
57 Fe	3.233	ppb	35.42	1.00	
59 Co	-0.0008	ppb	272.23	1.00	
60 Ni	0.001	ppb	417.76	1.00	
63 Cu	0.0218	ppb	9.95	1.00	
65 Cu	0.0035	ppb	192.17	1.00	
66 Zn	0.1307	ppb	9.28	1.00	
68 Zn	0.2414	ppb	9.83	1.00	
75 As	-0.0199	ppb	589.36	1.00	
82 Se	0.1727	ppb	68.67	1.00	
88 Sr	0.0009	ppb	236.54	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0266	ppb	47.55	1.00	
107 Ag	0.0069	ppb	19.87	1.00	
109 Ag	0.0079	ppb	10.91	1.00	
111 Cd	-0.0631	ppb	34.61	1.00	
114 Cd	-0.0008	ppb	230.52	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0375	ppb	24.24	1.00	
120 Sn	0.0337	ppb	22.72	1.00	
121 Sb	0.002	ppb	101.83	1.00	
123 Sb	0.0091	ppb	79.30	1.00	
135 Ba	0.0041	ppb	53.68	1.00	
137 Ba	0.0006	ppb	678.50	1.00	
182 W	0.0409	ppb	42.53	1.00	
203 Tl	-0.0058	ppb	76.71	1.00	
205 Tl	-0.0016	ppb	508.09	1.00	
208 Pb	0.0285	ppb	28.49	1.00	
232 Th	0.0744	ppb	29.27	1.00	
238 U	0.0028	ppb	41.84	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2652636.80	1.91	2844110.50	93.3	79.5 - 120	
45 Sc	2669680.50	2.57	2809797.00	95.0	79.5 - 120	
72 Ge	592446.31	1.48	642252.38	92.2	79.5 - 120	
159 Tb	6696369.00	1.57	7051087.50	95.0	79.5 - 120	
209 Bi	3474705.00	1.46	3594227.50	96.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\102SMPL.D\102SMPL.D#
Date Acquired: May 12 2018 12:18 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-054
Misc Info:
Vial Number: 3101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.815	1.763	ppb	4.16	100.	
11 B	175.55	35.11	ppb	6.90	1000.	
23 Na	7,655.	1,531.	ppb	3.55	200000.	
25 Mg	102,350.	20,470.	ppb	4.81	200000.	
27 Al	200,400.	40,080.	ppb	1.94	200000.	
28 Si	3,295.5	659.1	ppb	6.76	#VALUE!	
29 Si	2,879.5	575.9	ppb	6.08	10000.	
39 K	46,145.	9,229.	ppb	0.73	200000.	
43 Ca	870,000.	174,000.	ppb	2.25	#VALUE!	
44 Ca	849,500.	169,900.	ppb	1.93	200000.	
51 V	433.1	86.62	ppb	1.14	1000.	
52 Cr	189.65	37.93	ppb	0.96	2000.	
53 Cr	196.7	39.34	ppb	0.61	#VALUE!	
55 Mn	2,733.	546.6	ppb	0.50	2000.	
56 Fe	183,850.	36,770.	ppb	1.83	#VALUE!	
57 Fe	179,150.	35,830.	ppb	1.15	100000.	
59 Co	56.65	11.33	ppb	0.51	1000.	
60 Ni	124.55	24.91	ppb	0.40	1000.	
63 Cu	102.5	20.5	ppb	1.33	#VALUE!	
65 Cu	102.35	20.47	ppb	1.56	2000.	
66 Zn	408.2	81.64	ppb	1.19	2000.	
68 Zn	482.25	96.45	ppb	1.31	#VALUE!	
75 As	38.75	7.75	ppb	3.59	1000.	
82 Se	6.505	1.301	ppb	6.42	1000.	
88 Sr	2,181.5	436.3	ppb	0.91	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.154	0.6308	ppb	1.81	1000.	
107 Ag	0.894	0.1788	ppb	4.96	100.	
109 Ag	0.6935	0.1387	ppb	3.08	#VALUE!	
111 Cd	3.8055	0.7611	ppb	3.17	#VALUE!	
114 Cd	1.1675	0.2335	ppb	6.76	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.74	9.948	ppb	2.52	1000.	
120 Sn	49.975	9.995	ppb	1.91	#VALUE!	
121 Sb	2.5195	0.5039	ppb	2.98	#VALUE!	
123 Sb	2.513	0.5026	ppb	6.07	1000.	
135 Ba	2,621.	524.2	ppb	1.94	2000.	
137 Ba	2,615.5	523.1	ppb	1.60	#VALUE!	
182 W	0.846	0.1692	ppb	7.23	1000.	
203 Tl	3.3035	0.6607	ppb	7.32	1000.	
205 Tl	3.41	0.682	ppb	0.83	#VALUE!	
208 Pb	123.05	24.61	ppb	1.58	2000.	
232 Th	90.65	18.13	ppb	2.70	1000.	
238 U	18.335	3.667	ppb	1.44	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2556100.50	3.30	2844110.50	89.9	69.5 - 120	
45 Sc	2579025.50	0.82	2809797.00	91.8	69.5 - 120	
72 Ge	539366.81	0.86	642252.38	84.0	69.5 - 120	
159 Tb	6637806.50	1.96	7051087.50	94.1	69.5 - 120	
209 Bi	3286967.80	2.13	3594227.50	91.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000951

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\103SMPL.D\103SMPL.D#
Date Acquired: May 12 2018 12:22 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-055
Misc Info:
Vial Number: 3102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.77	1.554	ppb	7.37	100.	
11 B	132.75	26.55	ppb	11.16	1000.	
23 Na	2,339.5	467.9	ppb	3.95	200000.	
25 Mg	61,400.	12,280.	ppb	5.75	200000.	
27 Al	163,300.	32,660.	ppb	0.37	200000.	
28 Si	3,318.5	663.7	ppb	1.26	#VALUE!	
29 Si	3,016.	603.2	ppb	2.77	10000.	
39 K	37,425.	7,485.	ppb	2.31	200000.	
43 Ca	332,550.	66,510.	ppb	3.42	#VALUE!	
44 Ca	319,200.	63,840.	ppb	1.34	200000.	
51 V	308.35	61.67	ppb	1.11	1000.	
52 Cr	154.55	30.91	ppb	1.45	2000.	
53 Cr	156.45	31.29	ppb	2.99	#VALUE!	
55 Mn	4,103.	820.6	ppb	1.45	2000.	
56 Fe	151,400.	30,280.	ppb	2.17	#VALUE!	
57 Fe	145,550.	29,110.	ppb	1.86	100000.	
59 Co	54.55	10.91	ppb	0.27	1000.	
60 Ni	140.55	28.11	ppb	0.64	1000.	
63 Cu	113.3	22.66	ppb	0.89	#VALUE!	
65 Cu	116.05	23.21	ppb	0.40	2000.	
66 Zn	399.85	79.97	ppb	0.98	2000.	
68 Zn	442.6	88.52	ppb	1.89	#VALUE!	
75 As	16.735	3.347	ppb	7.48	1000.	
82 Se	2.535	0.507	ppb	33.25	1000.	
88 Sr	923.5	184.7	ppb	0.65	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.5555	0.9111	ppb	2.03	1000.	
107 Ag	0.7435	0.1487	ppb	7.03	100.	
109 Ag	0.6145	0.1229	ppb	8.93	#VALUE!	
111 Cd	2.4615	0.4923	ppb	3.79	#VALUE!	
114 Cd	0.753	0.1506	ppb	11.77	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.63	9.526	ppb	0.37	1000.	
120 Sn	48.4	9.68	ppb	0.44	#VALUE!	
121 Sb	1.8815	0.3763	ppb	3.95	#VALUE!	
123 Sb	1.8135	0.3627	ppb	7.32	1000.	
135 Ba	1,578.5	315.7	ppb	0.88	2000.	
137 Ba	1,570.	314.	ppb	0.86	#VALUE!	
182 W	0.8335	0.1667	ppb	7.31	1000.	
203 Tl	2.4465	0.4893	ppb	4.94	1000.	
205 Tl	2.67	0.534	ppb	2.25	#VALUE!	
208 Pb	109.8	21.96	ppb	0.74	2000.	
232 Th	73.45	14.69	ppb	1.28	1000.	
238 U	9.76	1.952	ppb	0.66	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2432520.80	6.96	2844110.50	85.5	69.5 - 120	
45 Sc	2483166.00	0.59	2809797.00	88.4	69.5 - 120	
72 Ge	536165.44	0.57	642252.38	83.5	69.5 - 120	
159 Tb	6627166.00	1.53	7051087.50	94.0	69.5 - 120	
209 Bi	3443167.80	0.81	3594227.50	95.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000952

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\104SMPL.D\104SMPL.D#
Date Acquired: May 12 2018 12:26 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3951-001
Misc Info:
Vial Number: 3103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	15.06	3.012	ppb	1.50	100.	
11 B	40.585	8.117	ppb	6.73	1000.	
23 Na	907.5	181.5	ppb	1.29	200000.	
25 Mg	17,050.	3,410.	ppb	2.88	200000.	
27 Al	303,700.	60,740.	ppb	2.88	200000.	
28 Si	3,833.	766.6	ppb	1.86	#VALUE!	
29 Si	3,395.	679.	ppb	0.81	10000.	
39 K	5,150.	1,030.	ppb	1.89	200000.	
43 Ca	31,555.	6,311.	ppb	1.72	#VALUE!	
44 Ca	31,740.	6,348.	ppb	1.14	200000.	
51 V	894.	178.8	ppb	1.32	1000.	
52 Cr	508.	101.6	ppb	0.20	2000.	
53 Cr	529.5	105.9	ppb	2.05	#VALUE!	
55 Mn	2,494.5	498.9	ppb	1.00	2000.	
56 Fe	461,900.	92,380.	ppb	1.03	#VALUE!	
57 Fe	446,800.	89,360.	ppb	0.55	100000.	
59 Co	69.65	13.93	ppb	1.83	1000.	
60 Ni	152.75	30.55	ppb	0.51	1000.	
63 Cu	111.2	22.24	ppb	1.18	#VALUE!	
65 Cu	113.95	22.79	ppb	1.87	2000.	
66 Zn	498.5	99.7	ppb	2.00	2000.	
68 Zn	523.	104.6	ppb	1.35	#VALUE!	
75 As	159.35	31.87	ppb	0.32	1000.	
82 Se	7.33	1.466	ppb	2.85	1000.	
88 Sr	354.9	70.98	ppb	0.12	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.275	1.055	ppb	1.52	1000.	
107 Ag	0.4647	0.0929	ppb	2.03	100.	
109 Ag	0.4163	0.0833	ppb	19.23	#VALUE!	
111 Cd	2.292	0.4584	ppb	6.29	#VALUE!	
114 Cd	1.268	0.2536	ppb	3.43	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	63.95	12.79	ppb	0.83	1000.	
120 Sn	63.85	12.77	ppb	2.86	#VALUE!	
121 Sb	3.7085	0.7417	ppb	1.50	#VALUE!	
123 Sb	3.653	0.7306	ppb	2.83	1000.	
135 Ba	1,218.	243.6	ppb	1.70	2000.	
137 Ba	1,223.5	244.7	ppb	1.81	#VALUE!	
182 W	45.155	9.031	ppb	0.21	1000.	
203 Tl	2.7195	0.5439	ppb	1.61	1000.	
205 Tl	2.6985	0.5397	ppb	0.45	#VALUE!	
208 Pb	198.75	39.75	ppb	2.05	2000.	
232 Th	77.55	15.51	ppb	1.89	1000.	
238 U	27.845	5.569	ppb	0.81	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2530892.30	5.28	2844110.50	89.0	69.5 - 120	
45 Sc	2689813.80	3.75	2809797.00	95.7	69.5 - 120	
72 Ge	573771.19	3.05	642252.38	89.3	69.5 - 120	
159 Tb	6570892.00	1.19	7051087.50	93.2	69.5 - 120	
209 Bi	3201531.80	1.62	3594227.50	89.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000953

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\105SMPL.D\105SMPL.D#
Date Acquired: May 12 2018 12:31 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3951-001L
Misc Info:
Vial Number: 3104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	15.1875	0.6075	ppb	2.74	100.	
11 B	68.525	2.741	ppb	2.46	1000.	
23 Na	916.25	36.65	ppb	4.67	200000.	
25 Mg	17,105.	684.2	ppb	1.46	200000.	
27 Al	314,750.	12,590.	ppb	1.16	200000.	
28 Si	5,025.	201.	ppb	4.20	#VALUE!	
29 Si	2,762.5	110.5	ppb	8.89	10000.	
39 K	5,650.	226.	ppb	0.90	200000.	
43 Ca	33,275.	1,331.	ppb	4.23	#VALUE!	
44 Ca	32,350.	1,294.	ppb	1.23	200000.	
51 V	891.5	35.66	ppb	1.78	1000.	
52 Cr	517.25	20.69	ppb	0.74	2000.	
53 Cr	433.5	17.34	ppb	0.87	#VALUE!	
55 Mn	2,690.	107.6	ppb	0.46	2000.	
56 Fe	483,000.	19,320.	ppb	0.74	#VALUE!	
57 Fe	467,500.	18,700.	ppb	0.19	100000.	
59 Co	72.8	2.912	ppb	0.93	1000.	
60 Ni	154.25	6.17	ppb	1.12	1000.	
63 Cu	119.05	4.762	ppb	1.14	#VALUE!	
65 Cu	122.175	4.887	ppb	1.33	2000.	
66 Zn	534.5	21.38	ppb	0.46	2000.	
68 Zn	581.25	23.25	ppb	0.52	#VALUE!	
75 As	175.275	7.011	ppb	2.00	1000.	
82 Se	8.8875	0.3555	ppb	16.26	1000.	
88 Sr	359.	14.36	ppb	1.52	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.085	0.2034	ppb	2.19	1000.	
107 Ag	0.5073	0.0203	ppb	23.13	100.	
109 Ag	0.4613	0.0185	ppb	14.10	#VALUE!	
111 Cd	0.859	0.0344	ppb	100.49	#VALUE!	
114 Cd	1.448	0.0579	ppb	25.62	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	67.9	2.716	ppb	1.06	1000.	
120 Sn	67.025	2.681	ppb	0.61	#VALUE!	
121 Sb	3.745	0.1498	ppb	11.45	#VALUE!	
123 Sb	3.855	0.1542	ppb	11.10	1000.	
135 Ba	1,241.25	49.65	ppb	0.60	2000.	
137 Ba	1,238.	49.52	ppb	1.03	#VALUE!	
182 W	44.35	1.774	ppb	0.54	1000.	
203 Tl	2.5525	0.1021	ppb	18.52	1000.	
205 Tl	2.5225	0.1009	ppb	6.35	#VALUE!	
208 Pb	195.175	7.807	ppb	1.19	2000.	
232 Th	72.825	2.913	ppb	0.85	1000.	
238 U	26.175	1.047	ppb	1.37	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2676276.80	0.97	2844110.50	94.1	69.5 - 120	
45 Sc	2718473.80	0.31	2809797.00	96.7	69.5 - 120	
72 Ge	599334.38	0.85	642252.38	93.3	69.5 - 120	
159 Tb	6679885.50	0.21	7051087.50	94.7	69.5 - 120	
209 Bi	3308535.30	0.18	3594227.50	92.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000954

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\106SMPL.D\106SMPL.D#
Date Acquired: May 12 2018 12:35 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3951-001A
Misc Info:
Vial Number: 3105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	24.545	4.909	ppb	1.88	100.	
11 B	233.85	46.77	ppb	3.13	1000.	
23 Na	10,590.	2,118.	ppb	3.80	200000.	
25 Mg	18,010.	3,602.	ppb	2.75	200000.	
27 Al	305,050.	61,010.	ppb	1.50	200000.	
28 Si	8,780.	1,756.	ppb	1.59	#VALUE!	
29 Si	8,245.	1,649.	ppb	1.62	10000.	
39 K	14,955.	2,991.	ppb	2.08	200000.	
43 Ca	32,405.	6,481.	ppb	1.72	#VALUE!	
44 Ca	32,570.	6,514.	ppb	1.57	200000.	
51 V	950.5	190.1	ppb	0.58	1000.	
52 Cr	562.	112.4	ppb	0.70	2000.	
53 Cr	583.	116.6	ppb	0.88	#VALUE!	
55 Mn	2,503.5	500.7	ppb	1.29	2000.	
56 Fe	466,550.	93,310.	ppb	1.36	#VALUE!	
57 Fe	447,700.	89,540.	ppb	0.30	100000.	
59 Co	79.05	15.81	ppb	2.64	1000.	
60 Ni	173.45	34.69	ppb	1.38	1000.	
63 Cu	143.85	28.77	ppb	0.26	#VALUE!	
65 Cu	143.9	28.78	ppb	1.51	2000.	
66 Zn	585.5	117.1	ppb	0.12	2000.	
68 Zn	615.	123.	ppb	1.58	#VALUE!	
75 As	207.1	41.42	ppb	1.10	1000.	
82 Se	53.55	10.71	ppb	1.79	1000.	
88 Sr	399.45	79.89	ppb	1.87	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	55.35	11.07	ppb	0.20	1000.	
107 Ag	10.345	2.069	ppb	1.14	100.	
109 Ag	10.27	2.054	ppb	0.60	#VALUE!	
111 Cd	11.96	2.392	ppb	3.22	#VALUE!	
114 Cd	10.945	2.189	ppb	3.54	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	114.55	22.91	ppb	1.38	1000.	
120 Sn	115.05	23.01	ppb	2.01	#VALUE!	
121 Sb	13.8	2.76	ppb	0.53	#VALUE!	
123 Sb	13.725	2.745	ppb	2.46	1000.	
135 Ba	1,240.	248.	ppb	1.09	2000.	
137 Ba	1,237.	247.4	ppb	1.24	#VALUE!	
182 W	94.95	18.99	ppb	0.57	1000.	
203 Tl	12.935	2.587	ppb	1.01	1000.	
205 Tl	13.21	2.642	ppb	1.66	#VALUE!	
208 Pb	204.6	40.92	ppb	0.97	2000.	
232 Th	86.5	17.3	ppb	0.79	1000.	
238 U	38.2	7.64	ppb	1.96	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2761549.50	2.49	2844110.50	97.1	69.5 - 120	
45 Sc	2805731.80	1.88	2809797.00	99.9	69.5 - 120	
72 Ge	587983.31	0.95	642252.38	91.6	69.5 - 120	
159 Tb	6509545.00	1.21	7051087.50	92.3	69.5 - 120	
209 Bi	3154088.50	2.06	3594227.50	87.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000955

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\107SMPL.D\107SMPL.D#
Date Acquired: May 12 2018 12:39 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3951-001S
Misc Info:
Vial Number: 3106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	67.95	13.59	ppb	3.97	100.	
11 B	406.75	81.35	ppb	4.64	1000.	
23 Na	8,170.	1,634.	ppb	3.72	200000.	
25 Mg	24,235.	4,847.	ppb	3.55	200000.	
27 Al	363,250.	72,650.	ppb	2.02	200000.	
28 Si	3,496.	699.2	ppb	1.05	#VALUE!	
29 Si	3,021.	604.2	ppb	4.69	10000.	
39 K	15,595.	3,119.	ppb	0.74	200000.	
43 Ca	37,575.	7,515.	ppb	2.26	#VALUE!	
44 Ca	37,110.	7,422.	ppb	1.94	200000.	
51 V	1,653.5	330.7	ppb	0.72	1000.	
52 Cr	813.5	162.7	ppb	0.84	2000.	
53 Cr	859.5	171.9	ppb	0.92	#VALUE!	
55 Mn	3,242.5	648.5	ppb	0.89	2000.	
56 Fe	636,000.	127,200.	ppb	0.56	#VALUE!	
57 Fe	613,500.	122,700.	ppb	0.24	100000.	>LDR
59 Co	591.	118.2	ppb	0.36	1000.	
60 Ni	669.5	133.9	ppb	0.15	1000.	
63 Cu	365.2	73.04	ppb	0.48	#VALUE!	
65 Cu	367.05	73.41	ppb	1.00	2000.	
66 Zn	1,011.5	202.3	ppb	1.06	2000.	
68 Zn	1,102.5	220.5	ppb	0.64	#VALUE!	
75 As	336.	67.2	ppb	0.81	1000.	
82 Se	93.7	18.74	ppb	2.25	1000.	
88 Sr	876.5	175.3	ppb	0.83	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	102.	20.4	ppb	0.65	1000.	
107 Ag	49.135	9.827	ppb	1.70	100.	
109 Ag	48.92	9.784	ppb	0.52	#VALUE!	
111 Cd	240.45	48.09	ppb	1.29	#VALUE!	
114 Cd	239.2	47.84	ppb	0.82	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	529.	105.8	ppb	1.65	1000.	
120 Sn	529.5	105.9	ppb	1.36	#VALUE!	
121 Sb	54.95	10.99	ppb	0.31	#VALUE!	
123 Sb	55.05	11.01	ppb	1.51	1000.	
135 Ba	3,476.5	695.3	ppb	2.76	2000.	
137 Ba	3,409.5	681.9	ppb	0.57	#VALUE!	
182 W	102.1	20.42	ppb	2.20	1000.	
203 Tl	107.5	21.5	ppb	0.78	1000.	
205 Tl	108.4	21.68	ppb	1.51	#VALUE!	
208 Pb	339.95	67.99	ppb	1.33	2000.	
232 Th	192.	38.4	ppb	1.01	1000.	
238 U	146.35	29.27	ppb	0.82	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2631872.00	4.41	2844110.50	92.5	69.5 - 120	
45 Sc	2726458.00	1.94	2809797.00	97.0	69.5 - 120	
72 Ge	569324.69	1.97	642252.38	88.6	69.5 - 120	
159 Tb	6436620.00	1.87	7051087.50	91.3	69.5 - 120	
209 Bi	3106419.00	1.63	3594227.50	86.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000956

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\108SMPL.D\108SMPL.D#
Date Acquired: May 12 2018 12:43 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3951-001P
Misc Info:
Vial Number: 3107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	60.3	12.06	ppb	2.30	100.	
11 B	409.1	81.82	ppb	2.17	1000.	
23 Na	7,600.	1,520.	ppb	1.95	200000.	
25 Mg	22,395.	4,479.	ppb	2.44	200000.	
27 Al	337,750.	67,550.	ppb	4.08	200000.	
28 Si	3,440.	688.	ppb	10.69	#VALUE!	
29 Si	2,768.	553.6	ppb	6.95	10000.	
39 K	14,905.	2,981.	ppb	3.29	200000.	
43 Ca	34,120.	6,824.	ppb	1.96	#VALUE!	
44 Ca	33,915.	6,783.	ppb	0.61	200000.	
51 V	1,386.5	277.3	ppb	1.26	1000.	
52 Cr	719.	143.8	ppb	0.66	2000.	
53 Cr	743.	148.6	ppb	1.49	#VALUE!	
55 Mn	2,574.5	514.9	ppb	0.46	2000.	
56 Fe	444,900.	88,980.	ppb	1.14	#VALUE!	
57 Fe	433,200.	86,640.	ppb	1.63	100000.	
59 Co	572.5	114.5	ppb	0.95	1000.	
60 Ni	630.5	126.1	ppb	0.07	1000.	
63 Cu	347.4	69.48	ppb	0.79	#VALUE!	
65 Cu	352.75	70.55	ppb	0.38	2000.	
66 Zn	907.	181.4	ppb	0.44	2000.	
68 Zn	996.	199.2	ppb	0.54	#VALUE!	
75 As	251.2	50.24	ppb	0.68	1000.	
82 Se	89.05	17.81	ppb	1.60	1000.	
88 Sr	825.	165.	ppb	0.30	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	95.1	19.02	ppb	0.27	1000.	
107 Ag	48.56	9.712	ppb	0.59	100.	
109 Ag	48.105	9.621	ppb	1.26	#VALUE!	
111 Cd	235.85	47.17	ppb	0.40	#VALUE!	
114 Cd	233.1	46.62	ppb	0.33	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	504.	100.8	ppb	0.62	1000.	
120 Sn	506.	101.2	ppb	0.78	#VALUE!	
121 Sb	49.495	9.899	ppb	0.98	#VALUE!	
123 Sb	49.155	9.831	ppb	1.15	1000.	
135 Ba	3,172.	634.4	ppb	1.45	2000.	
137 Ba	3,204.	640.8	ppb	1.14	#VALUE!	
182 W	95.15	19.03	ppb	0.55	1000.	
203 Tl	103.95	20.79	ppb	0.95	1000.	
205 Tl	104.75	20.95	ppb	1.86	#VALUE!	
208 Pb	288.95	57.79	ppb	0.95	2000.	
232 Th	177.6	35.52	ppb	0.61	1000.	
238 U	133.65	26.73	ppb	1.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2611462.00	2.47	2844110.50	91.8	69.5 - 120	
45 Sc	2642408.80	2.33	2809797.00	94.0	69.5 - 120	
72 Ge	557238.50	0.74	642252.38	86.8	69.5 - 120	
159 Tb	6408397.50	0.80	7051087.50	90.9	69.5 - 120	
209 Bi	3143767.80	1.14	3594227.50	87.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000957

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\109SMPL.D\109SMPL.D#
Date Acquired: May 12 2018 12:48 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3951-002
Misc Info:
Vial Number: 3108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.98	2.196	ppb	1.72	100.	
11 B	50.65	10.13	ppb	6.58	1000.	
23 Na	767.5	153.5	ppb	3.00	200000.	
25 Mg	12,505.	2,501.	ppb	4.78	200000.	
27 Al	225,750.	45,150.	ppb	4.33	200000.	
28 Si	3,886.5	777.3	ppb	11.39	#VALUE!	
29 Si	3,203.	640.6	ppb	2.03	10000.	
39 K	3,954.	790.8	ppb	1.58	200000.	
43 Ca	23,425.	4,685.	ppb	3.08	#VALUE!	
44 Ca	23,605.	4,721.	ppb	1.94	200000.	
51 V	636.	127.2	ppb	0.60	1000.	
52 Cr	360.6	72.12	ppb	0.21	2000.	
53 Cr	395.3	79.06	ppb	2.14	#VALUE!	
55 Mn	1,180.5	236.1	ppb	0.48	2000.	
56 Fe	293,000.	58,600.	ppb	0.84	#VALUE!	
57 Fe	283,450.	56,690.	ppb	1.09	100000.	
59 Co	45.455	9.091	ppb	1.64	1000.	
60 Ni	112.15	22.43	ppb	2.11	1000.	
63 Cu	72.2	14.44	ppb	1.11	#VALUE!	
65 Cu	74.8	14.96	ppb	0.70	2000.	
66 Zn	280.85	56.17	ppb	0.73	2000.	
68 Zn	302.35	60.47	ppb	2.90	#VALUE!	
75 As	107.95	21.59	ppb	1.64	1000.	
82 Se	5.38	1.076	ppb	5.97	1000.	
88 Sr	265.15	53.03	ppb	1.39	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.4955	0.6991	ppb	5.50	1000.	
107 Ag	0.4041	0.0808	ppb	8.64	100.	
109 Ag	0.3623	0.0725	ppb	16.30	#VALUE!	
111 Cd	1.1395	0.2279	ppb	6.44	#VALUE!	
114 Cd	0.632	0.1264	ppb	2.65	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	60.55	12.11	ppb	1.30	1000.	
120 Sn	60.8	12.16	ppb	0.85	#VALUE!	
121 Sb	2.486	0.4972	ppb	4.32	#VALUE!	
123 Sb	2.383	0.4766	ppb	3.75	1000.	
135 Ba	923.5	184.7	ppb	0.85	2000.	
137 Ba	913.	182.6	ppb	0.71	#VALUE!	
182 W	27.785	5.557	ppb	1.42	1000.	
203 Tl	1.829	0.3658	ppb	1.99	1000.	
205 Tl	1.8615	0.3723	ppb	1.51	#VALUE!	
208 Pb	131.3	26.26	ppb	0.57	2000.	
232 Th	55.15	11.03	ppb	1.71	1000.	
238 U	18.565	3.713	ppb	1.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2571927.00	2.79	2844110.50	90.4	69.5 - 120	
45 Sc	2693768.50	2.38	2809797.00	95.9	69.5 - 120	
72 Ge	572034.94	0.62	642252.38	89.1	69.5 - 120	
159 Tb	6453696.00	0.52	7051087.50	91.5	69.5 - 120	
209 Bi	3177058.00	0.82	3594227.50	88.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000958

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\110SMPL.D\110SMPL.D#
Date Acquired: May 12 2018 12:52 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 3109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0014	0.0014	ppb	47.12	100.	
11 B	2.509	2.509	ppb	8.47	1000.	
23 Na	-0.7673	-0.7673	ppb	18.49	200000.	
25 Mg	0.5054	0.5054	ppb	91.63	200000.	
27 Al	3.722	3.722	ppb	153.84	200000.	
28 Si	66.28	66.28	ppb	21.65	#VALUE!	
29 Si	-20.67	-20.67	ppb	78.42	10000.	
39 K	0.0286	0.0286	ppb	3917.60	200000.	
43 Ca	1.142	1.142	ppb	260.33	#VALUE!	
44 Ca	1.838	1.838	ppb	79.87	200000.	
51 V	-0.0703	-0.0703	ppb	45.86	1000.	
52 Cr	0.1653	0.1653	ppb	8.38	2000.	
53 Cr	-4.781	-4.781	ppb	2.43	#VALUE!	
55 Mn	0.0429	0.0429	ppb	124.42	2000.	
56 Fe	26.74	26.74	ppb	44.65	#VALUE!	
57 Fe	13.83	13.83	ppb	63.67	100000.	
59 Co	0.0058	0.0058	ppb	100.91	1000.	
60 Ni	0.0011	0.0011	ppb	782.35	1000.	
63 Cu	0.0203	0.0203	ppb	15.09	#VALUE!	
65 Cu	0.0076	0.0076	ppb	224.11	2000.	
66 Zn	-0.0185	-0.0185	ppb	165.85	2000.	
68 Zn	0.1697	0.1697	ppb	27.88	#VALUE!	
75 As	0.0741	0.0741	ppb	105.92	1000.	
82 Se	0.0688	0.0688	ppb	431.15	1000.	
88 Sr	0.0069	0.0069	ppb	113.18	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0002	0.0002	ppb	1392.60	1000.	
107 Ag	-0.0001	-0.0001	ppb	1820.90	100.	
109 Ag	0.0011	0.0011	ppb	172.70	#VALUE!	
111 Cd	-0.0771	-0.0771	ppb	25.66	#VALUE!	
114 Cd	0.0021	0.0021	ppb	75.38	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0339	0.0339	ppb	38.57	1000.	
120 Sn	0.0266	0.0266	ppb	53.25	#VALUE!	
121 Sb	0.0011	0.0011	ppb	183.56	#VALUE!	
123 Sb	0.0048	0.0048	ppb	54.40	1000.	
135 Ba	0.0275	0.0275	ppb	191.26	2000.	
137 Ba	0.0259	0.0259	ppb	194.51	#VALUE!	
182 W	0.0119	0.0119	ppb	21.19	1000.	
203 Tl	-0.0052	-0.0052	ppb	178.45	1000.	
205 Tl	-0.0011	-0.0011	ppb	393.85	#VALUE!	
208 Pb	0.0633	0.0633	ppb	14.87	2000.	
232 Th	0.0151	0.0151	ppb	10.06	1000.	
238 U	0.0014	0.0014	ppb	87.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2495692.80	0.96	2844110.50	87.7	69.5 - 120	
45 Sc	2564799.80	1.57	2809797.00	91.3	69.5 - 120	
72 Ge	566837.25	1.14	642252.38	88.3	69.5 - 120	
159 Tb	6166641.50	0.56	7051087.50	87.5	69.5 - 120	
209 Bi	3140628.80	0.57	3594227.50	87.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000959

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\111SMPL.D\111SMPL.D#
Date Acquired: May 12 2018 12:56 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE08IMS1
Misc Info:
Vial Number: 3110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0019	-0.0004	ppb	86.92	100.	
11 B	8.535	1.707	ppb	14.03	1000.	
23 Na	25.37	5.074	ppb	2.91	200000.	
25 Mg	17.025	3.405	ppb	2.36	200000.	
27 Al	10.015	2.003	ppb	4.02	200000.	
28 Si	207.2	41.44	ppb	26.23	#VALUE!	
29 Si	-138.25	-27.65	ppb	40.36	10000.	
39 K	22.92	4.584	ppb	17.07	200000.	
43 Ca	58.6	11.72	ppb	29.54	#VALUE!	
44 Ca	55.15	11.03	ppb	8.75	200000.	
51 V	0.0262	0.0052	ppb	632.62	1000.	
52 Cr	3.3995	0.6799	ppb	14.56	2000.	
53 Cr	9.01	1.802	ppb	19.35	#VALUE!	
55 Mn	0.336	0.0672	ppb	17.90	2000.	
56 Fe	119.	23.8	ppb	5.26	#VALUE!	
57 Fe	49.035	9.807	ppb	9.60	100000.	
59 Co	0.059	0.0118	ppb	41.55	1000.	
60 Ni	0.3311	0.0662	ppb	23.24	1000.	
63 Cu	0.4956	0.0991	ppb	11.26	#VALUE!	
65 Cu	0.4663	0.0933	ppb	13.49	2000.	
66 Zn	0.557	0.1114	ppb	53.61	2000.	
68 Zn	1.3925	0.2785	ppb	11.82	#VALUE!	
75 As	0.2472	0.0494	ppb	454.78	1000.	
82 Se	-0.0618	-0.0124	ppb	1065.50	1000.	
88 Sr	0.1735	0.0347	ppb	19.77	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0578	0.0116	ppb	30.28	1000.	
107 Ag	0.0094	0.0019	ppb	21.85	100.	
109 Ag	0.0127	0.0025	ppb	76.01	#VALUE!	
111 Cd	-0.412	-0.0824	ppb	17.82	#VALUE!	
114 Cd	-0.0677	-0.0135	ppb	119.57	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	37.46	7.492	ppb	0.98	1000.	
120 Sn	37.815	7.563	ppb	0.49	#VALUE!	
121 Sb	0.0328	0.0066	ppb	65.46	#VALUE!	
123 Sb	0.0473	0.0095	ppb	40.90	1000.	
135 Ba	0.2788	0.0558	ppb	20.72	2000.	
137 Ba	0.2646	0.0529	ppb	25.49	#VALUE!	
182 W	0.031	0.0062	ppb	18.43	1000.	
203 Tl	0.0227	0.0045	ppb	55.99	1000.	
205 Tl	-0.0264	-0.0053	ppb	57.08	#VALUE!	
208 Pb	0.0348	0.007	ppb	141.42	2000.	
232 Th	0.0911	0.0182	ppb	26.10	1000.	
238 U	0.005	0.001	ppb	62.36	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2663602.80	2.95	2844110.50	93.7	69.5 - 120	
45 Sc	2593620.30	0.99	2809797.00	92.3	69.5 - 120	
72 Ge	571951.38	0.83	642252.38	89.1	69.5 - 120	
159 Tb	6269430.00	1.92	7051087.50	88.9	69.5 - 120	
209 Bi	3192779.00	2.52	3594227.50	88.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000960

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\112_CCV.D\112_CCV.D#
Date Acquired: May 12 2018 01:00 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.79	ppb	5.47	25	103.16	
11 B	24.94	ppb	4.27	25	99.76	
23 Na	4,820.	ppb	4.11	5,000	96.4	
25 Mg	4,968.	ppb	0.26	5,000	99.36	
27 Al	503.6	ppb	0.76	500	100.72	
28 Si	518.8	ppb	2.90	500	103.76	
29 Si	436.2	ppb	5.04	500	87.24	Fail
39 K	4,965.	ppb	2.03	5,000	99.3	
43 Ca	4,844.	ppb	1.39	5,000	96.88	
44 Ca	4,989.	ppb	1.79	5,000	99.78	
51 V	25.46	ppb	0.81	25	101.84	
52 Cr	25.54	ppb	0.31	25	102.16	
53 Cr	24.21	ppb	2.32	25	96.84	
55 Mn	25.26	ppb	0.81	25	101.04	
56 Fe	4,997.	ppb	1.77	5,000	99.94	
57 Fe	5,056.	ppb	2.47	5,000	101.12	
59 Co	25.44	ppb	0.77	25	101.76	
60 Ni	25.4	ppb	0.70	25	101.6	
63 Cu	25.54	ppb	1.45	25	102.16	
65 Cu	25.58	ppb	0.72	25	102.32	
66 Zn	24.93	ppb	0.71	25	99.72	
68 Zn	25.17	ppb	2.66	25	100.68	
75 As	25.11	ppb	0.28	25	100.44	
82 Se	25.53	ppb	0.97	25	102.12	
88 Sr	24.12	ppb	1.36	25	96.48	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.02	ppb	0.09	25	100.08	
107 Ag	25.11	ppb	1.16	25	100.44	
109 Ag	25.14	ppb	0.20	25	100.56	
111 Cd	24.91	ppb	0.33	25	99.64	
114 Cd	24.91	ppb	0.13	25	99.64	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.51	ppb	2.42	25	98.04	
120 Sn	24.41	ppb	1.56	25	97.64	
121 Sb	24.55	ppb	1.75	25	98.2	
123 Sb	24.72	ppb	1.88	25	98.88	
135 Ba	25.33	ppb	2.04	25	101.32	
137 Ba	25.3	ppb	1.73	25	101.2	
182 W	24.17	ppb	0.88	25	96.68	
203 Tl	24.81	ppb	2.39	25	99.24	
205 Tl	24.83	ppb	2.04	25	99.32	
208 Pb	24.89	ppb	0.85	25	99.56	
232 Th	24.45	ppb	1.63	25	97.8	
238 U	26.1	ppb	1.55	25	104.4	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2636779.00	5.45	2844110.50	92.7	80 - 120.4	
45 Sc	2684457.80	2.01	2809797.00	95.5	80 - 120.4	
72 Ge	578519.50	1.40	642252.38	90.1	80 - 120.4	
159 Tb	6507058.50	0.88	7051087.50	92.3	80 - 120.4	
209 Bi	3278973.30	0.97	3594227.50	91.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000961

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\113_CCB.D\113_CCB.D#
Date Acquired: May 12 2018 01:04 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0015	ppb	76.46	1.00	
11 B	1.936	ppb	8.32	1.00	
23 Na	-0.879	ppb	21.22	1.00	
25 Mg	0.0129	ppb	80.82	1.00	
27 Al	0.0769	ppb	27.27	1.00	
28 Si	49.32	ppb	25.83	1.00	
29 Si	-12.34	ppb	103.48	1.00	
39 K	1.312	ppb	245.81	1.00	
43 Ca	0.6718	ppb	343.85	1.00	
44 Ca	-0.0309	ppb	682.63	1.00	
51 V	-0.0138	ppb	275.00	1.00	
52 Cr	0.1797	ppb	22.04	1.00	
53 Cr	-3.113	ppb	12.48	1.00	
55 Mn	0.021	ppb	34.01	1.00	
56 Fe	22.43	ppb	5.27	1.00	
57 Fe	4.787	ppb	32.07	1.00	
59 Co	0.0038	ppb	80.12	1.00	
60 Ni	0.0006	ppb	871.59	1.00	
63 Cu	0.0144	ppb	37.56	1.00	
65 Cu	-0.0065	ppb	56.86	1.00	
66 Zn	0.1469	ppb	43.19	1.00	
68 Zn	0.2938	ppb	15.09	1.00	
75 As	0.1258	ppb	32.59	1.00	
82 Se	-0.0307	ppb	479.79	1.00	
88 Sr	-0.0007	ppb	358.53	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0264	ppb	38.65	1.00	
107 Ag	0.005	ppb	25.93	1.00	
109 Ag	0.0073	ppb	39.42	1.00	
111 Cd	-0.0659	ppb	36.28	1.00	
114 Cd	-0.0009	ppb	243.09	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0523	ppb	14.59	1.00	
120 Sn	0.0447	ppb	9.68	1.00	
121 Sb	0.003	ppb	209.20	1.00	
123 Sb	0.0099	ppb	45.37	1.00	
135 Ba	0.0088	ppb	95.58	1.00	
137 Ba	0.0057	ppb	72.06	1.00	
182 W	0.045	ppb	35.27	1.00	
203 Tl	0.0074	ppb	60.74	1.00	
205 Tl	-0.0036	ppb	77.46	1.00	
208 Pb	0.0525	ppb	16.44	1.00	
232 Th	0.0776	ppb	23.56	1.00	
238 U	0.003	ppb	64.79	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2671969.00	5.29	2844110.50	93.9	79.5 - 120	
45 Sc	2609655.80	1.90	2809797.00	92.9	79.5 - 120	
72 Ge	579133.13	1.20	642252.38	90.2	79.5 - 120	
159 Tb	6308331.50	0.87	7051087.50	89.5	79.5 - 120	
209 Bi	3235919.00	1.08	3594227.50	90.0	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000962

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\114SMPL.D\114SMPL.D#
Date Acquired: May 12 2018 01:08 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE08IMS1
Misc Info:
Vial Number: 3111
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	45.395	9.079	ppb	1.57	100.	
11 B	443.5	88.7	ppb	6.76	1000.	
23 Na	7,300.	1,460.	ppb	5.94	200000.	
25 Mg	4,798.5	959.7	ppb	1.42	200000.	
27 Al	2,001.	400.2	ppb	1.12	200000.	
28 Si	1,006.	201.2	ppb	3.02	#VALUE!	
29 Si	692.	138.4	ppb	2.31	10000.	
39 K	9,555.	1,911.	ppb	1.27	200000.	
43 Ca	2,619.	523.8	ppb	7.70	#VALUE!	
44 Ca	2,364.5	472.9	ppb	1.07	200000.	
51 V	507.5	101.5	ppb	0.59	1000.	
52 Cr	198.75	39.75	ppb	0.13	2000.	
53 Cr	244.3	48.86	ppb	0.92	#VALUE!	
55 Mn	503.5	100.7	ppb	1.58	2000.	
56 Fe	1,113.5	222.7	ppb	2.41	#VALUE!	
57 Fe	1,031.5	206.3	ppb	0.34	100000.	
59 Co	507.	101.4	ppb	1.10	1000.	
60 Ni	498.55	99.71	ppb	1.26	1000.	
63 Cu	248.6	49.72	ppb	1.31	#VALUE!	
65 Cu	247.65	49.53	ppb	1.91	2000.	
66 Zn	472.	94.4	ppb	0.79	2000.	
68 Zn	531.5	106.3	ppb	0.42	#VALUE!	
75 As	98.1	19.62	ppb	1.93	1000.	
82 Se	95.3	19.06	ppb	0.93	1000.	
88 Sr	475.1	95.02	ppb	1.56	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	98.	19.6	ppb	0.85	1000.	
107 Ag	49.495	9.899	ppb	0.63	100.	
109 Ag	49.15	9.83	ppb	1.04	#VALUE!	
111 Cd	240.2	48.04	ppb	0.23	#VALUE!	
114 Cd	238.	47.6	ppb	0.42	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	523.5	104.7	ppb	1.86	1000.	
120 Sn	528.	105.6	ppb	1.74	#VALUE!	
121 Sb	97.6	19.52	ppb	2.06	#VALUE!	
123 Sb	99.35	19.87	ppb	2.07	1000.	
135 Ba	2,005.	401.	ppb	1.28	2000.	
137 Ba	2,049.	409.8	ppb	0.45	#VALUE!	
182 W	98.9	19.78	ppb	1.75	1000.	
203 Tl	100.95	20.19	ppb	0.74	1000.	
205 Tl	101.	20.2	ppb	1.52	#VALUE!	
208 Pb	101.15	20.23	ppb	1.97	2000.	
232 Th	100.85	20.17	ppb	1.65	1000.	
238 U	105.6	21.12	ppb	1.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3018316.80	1.14	2844110.50	106.1	69.5 - 120	
45 Sc	2731488.80	0.77	2809797.00	97.2	69.5 - 120	
72 Ge	582840.69	0.22	642252.38	90.7	69.5 - 120	
159 Tb	6417897.50	1.49	7051087.50	91.0	69.5 - 120	
209 Bi	3210184.00	2.22	3594227.50	89.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000963

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\115SMPL.D\115SMPL.D#
Date Acquired: May 12 2018 01:13 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-016
Misc Info:
Vial Number: 3112
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.865	1.573	ppb	2.70	100.	
11 B	142.25	28.45	ppb	1.89	1000.	
23 Na	3,756.	751.2	ppb	4.07	200000.	
25 Mg	91,700.	18,340.	ppb	1.70	200000.	
27 Al	167,550.	33,510.	ppb	2.47	200000.	
28 Si	2,396.	479.2	ppb	6.94	#VALUE!	
29 Si	1,971.5	394.3	ppb	1.58	10000.	
39 K	45,985.	9,197.	ppb	2.03	200000.	
43 Ca	645,000.	129,000.	ppb	2.48	#VALUE!	
44 Ca	615,000.	123,000.	ppb	1.84	200000.	
51 V	337.7	67.54	ppb	1.28	1000.	
52 Cr	156.3	31.26	ppb	1.21	2000.	
53 Cr	156.95	31.39	ppb	1.29	#VALUE!	
55 Mn	2,481.5	496.3	ppb	0.07	2000.	
56 Fe	158,100.	31,620.	ppb	1.57	#VALUE!	
57 Fe	155,100.	31,020.	ppb	0.91	100000.	
59 Co	59.8	11.96	ppb	1.56	1000.	
60 Ni	123.1	24.62	ppb	2.15	1000.	
63 Cu	102.05	20.41	ppb	1.79	#VALUE!	
65 Cu	106.05	21.21	ppb	0.56	2000.	
66 Zn	375.25	75.05	ppb	0.60	2000.	
68 Zn	488.7	97.74	ppb	1.84	#VALUE!	
75 As	50.2	10.04	ppb	3.76	1000.	
82 Se	3.594	0.7188	ppb	24.17	1000.	
88 Sr	1,771.	354.2	ppb	1.80	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.305	0.661	ppb	4.77	1000.	
107 Ag	0.842	0.1684	ppb	13.27	100.	
109 Ag	0.748	0.1496	ppb	4.55	#VALUE!	
111 Cd	2.402	0.4804	ppb	11.14	#VALUE!	
114 Cd	0.622	0.1244	ppb	9.04	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.17	8.834	ppb	2.11	1000.	
120 Sn	45.04	9.008	ppb	1.69	#VALUE!	
121 Sb	1.692	0.3384	ppb	2.68	#VALUE!	
123 Sb	1.766	0.3532	ppb	6.97	1000.	
135 Ba	3,840.	768.	ppb	0.96	2000.	
137 Ba	3,781.5	756.3	ppb	0.94	#VALUE!	
182 W	0.7655	0.1531	ppb	5.72	1000.	
203 Tl	2.8845	0.5769	ppb	3.00	1000.	
205 Tl	2.837	0.5674	ppb	3.82	#VALUE!	
208 Pb	105.8	21.16	ppb	0.52	2000.	
232 Th	80.05	16.01	ppb	1.60	1000.	
238 U	14.75	2.95	ppb	1.84	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2550212.00	4.45	2844110.50	89.7	69.5 - 120	
45 Sc	2525268.30	2.83	2809797.00	89.9	69.5 - 120	
72 Ge	531772.00	1.88	642252.38	82.8	69.5 - 120	
159 Tb	6454696.50	0.72	7051087.50	91.5	69.5 - 120	
209 Bi	3254716.50	2.31	3594227.50	90.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000964

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\116SMPL.D\116SMPL.D#
Date Acquired: May 12 2018 01:17 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-016L
Misc Info:
Vial Number: 3201
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.615	0.3046	ppb	3.19	100.	
11 B	177.95	7.118	ppb	8.71	1000.	
23 Na	3,980.	159.2	ppb	4.74	200000.	
25 Mg	97,100.	3,884.	ppb	2.28	200000.	
27 Al	166,300.	6,652.	ppb	1.83	200000.	
28 Si	2,525.	101.	ppb	9.48	#VALUE!	
29 Si	821.25	32.85	ppb	41.74	10000.	
39 K	45,250.	1,810.	ppb	5.77	200000.	
43 Ca	625,750.	25,030.	ppb	2.96	#VALUE!	
44 Ca	615,500.	24,620.	ppb	1.51	200000.	
51 V	325.5	13.02	ppb	2.57	1000.	
52 Cr	152.325	6.093	ppb	1.08	2000.	
53 Cr	24.315	0.9726	ppb	32.74	#VALUE!	
55 Mn	2,476.75	99.07	ppb	1.43	2000.	
56 Fe	153,525.	6,141.	ppb	0.37	#VALUE!	
57 Fe	155,575.	6,223.	ppb	2.14	100000.	
59 Co	58.475	2.339	ppb	1.14	1000.	
60 Ni	124.85	4.994	ppb	2.33	1000.	
63 Cu	103.8	4.152	ppb	0.84	#VALUE!	
65 Cu	104.925	4.197	ppb	1.55	2000.	
66 Zn	400.	16.	ppb	1.53	2000.	
68 Zn	510.25	20.41	ppb	1.30	#VALUE!	
75 As	53.65	2.146	ppb	10.22	1000.	
82 Se	8.3525	0.3341	ppb	65.40	1000.	
88 Sr	1,767.25	70.69	ppb	0.60	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.	0.12	ppb	2.47	1000.	
107 Ag	0.815	0.0326	ppb	12.35	100.	
109 Ag	0.75	0.03	ppb	3.15	#VALUE!	
111 Cd	0.5255	0.021	ppb	152.62	#VALUE!	
114 Cd	0.5413	0.0217	ppb	15.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.925	1.797	ppb	1.46	1000.	
120 Sn	44.9	1.796	ppb	2.83	#VALUE!	
121 Sb	1.8193	0.0728	ppb	16.45	#VALUE!	
123 Sb	1.9245	0.077	ppb	14.52	1000.	
135 Ba	3,710.	148.4	ppb	1.33	2000.	
137 Ba	3,725.	149.	ppb	0.87	#VALUE!	
182 W	0.6638	0.0266	ppb	10.46	1000.	
203 Tl	2.7225	0.1089	ppb	6.40	1000.	
205 Tl	2.62	0.1048	ppb	7.75	#VALUE!	
208 Pb	100.825	4.033	ppb	1.06	2000.	
232 Th	72.5	2.9	ppb	1.83	1000.	
238 U	13.4275	0.5371	ppb	2.41	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2588006.50	2.48	2844110.50	91.0	69.5 - 120	
45 Sc	2468501.80	1.77	2809797.00	87.9	69.5 - 120	
72 Ge	543736.06	1.08	642252.38	84.7	69.5 - 120	
159 Tb	6517784.00	0.61	7051087.50	92.4	69.5 - 120	
209 Bi	3457065.30	0.75	3594227.50	96.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000965

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\117SMPL.D\117SMPL.D#
Date Acquired: May 12 2018 01:21 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-016A
Misc Info:
Vial Number: 3202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	17.13	3.426	ppb	0.83	100.	
11 B	310.	62.	ppb	2.78	1000.	
23 Na	13,055.	2,611.	ppb	2.80	200000.	
25 Mg	92,300.	18,460.	ppb	1.95	200000.	
27 Al	165,250.	33,050.	ppb	1.10	200000.	
28 Si	6,880.	1,376.	ppb	2.23	#VALUE!	
29 Si	6,705.	1,341.	ppb	2.37	10000.	
39 K	55,150.	11,030.	ppb	2.65	200000.	
43 Ca	636,000.	127,200.	ppb	3.00	#VALUE!	
44 Ca	609,500.	121,900.	ppb	2.56	200000.	
51 V	393.5	78.7	ppb	5.10	1000.	
52 Cr	204.55	40.91	ppb	1.48	2000.	
53 Cr	209.8	41.96	ppb	2.02	#VALUE!	
55 Mn	2,472.5	494.5	ppb	0.69	2000.	
56 Fe	157,450.	31,490.	ppb	0.69	#VALUE!	
57 Fe	152,150.	30,430.	ppb	1.14	100000.	
59 Co	68.7	13.74	ppb	0.25	1000.	
60 Ni	142.95	28.59	ppb	1.23	1000.	
63 Cu	129.55	25.91	ppb	1.32	#VALUE!	
65 Cu	132.6	26.52	ppb	0.50	2000.	
66 Zn	464.75	92.95	ppb	1.41	2000.	
68 Zn	575.	115.	ppb	2.56	#VALUE!	
75 As	100.15	20.03	ppb	1.29	1000.	
82 Se	54.3	10.86	ppb	1.37	1000.	
88 Sr	1,803.5	360.7	ppb	0.69	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	55.9	11.18	ppb	0.78	1000.	
107 Ag	11.01	2.202	ppb	2.61	100.	
109 Ag	10.855	2.171	ppb	0.95	#VALUE!	
111 Cd	12.38	2.476	ppb	2.72	#VALUE!	
114 Cd	10.515	2.103	ppb	2.22	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	89.8	17.96	ppb	0.33	1000.	
120 Sn	89.95	17.99	ppb	1.61	#VALUE!	
121 Sb	11.09	2.218	ppb	1.97	#VALUE!	
123 Sb	11.085	2.217	ppb	2.27	1000.	
135 Ba	3,775.5	755.1	ppb	0.90	2000.	
137 Ba	3,713.	742.6	ppb	0.52	#VALUE!	
182 W	52.75	10.55	ppb	1.51	1000.	
203 Tl	13.1	2.62	ppb	1.32	1000.	
205 Tl	13.395	2.679	ppb	1.78	#VALUE!	
208 Pb	112.95	22.59	ppb	0.64	2000.	
232 Th	89.	17.8	ppb	0.86	1000.	
238 U	26.045	5.209	ppb	0.57	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2601027.80	2.54	2844110.50	91.5	69.5 - 120	
45 Sc	2509462.00	2.44	2809797.00	89.3	69.5 - 120	
72 Ge	527362.50	0.73	642252.38	82.1	69.5 - 120	
159 Tb	6536324.50	0.89	7051087.50	92.7	69.5 - 120	
209 Bi	3325235.30	1.00	3594227.50	92.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000966

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\118SMPL.D\118SMPL.D#
Date Acquired: May 12 2018 01:25 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-016S
Misc Info:
Vial Number: 3203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	49.78	9.956	ppb	1.70	100.	
11 B	553.	110.6	ppb	6.12	1000.	
23 Na	10,865.	2,173.	ppb	4.32	200000.	
25 Mg	102,550.	20,510.	ppb	2.02	200000.	
27 Al	182,600.	36,520.	ppb	1.30	200000.	
28 Si	2,884.	576.8	ppb	5.56	#VALUE!	
29 Si	2,497.5	499.5	ppb	5.12	10000.	
39 K	55,750.	11,150.	ppb	4.89	200000.	
43 Ca	746,000.	149,200.	ppb	3.52	#VALUE!	
44 Ca	725,500.	145,100.	ppb	2.22	200000.	
51 V	901.	180.2	ppb	1.07	1000.	
52 Cr	359.35	71.87	ppb	0.99	2000.	
53 Cr	378.05	75.61	ppb	1.08	#VALUE!	
55 Mn	3,332.5	666.5	ppb	2.35	2000.	
56 Fe	165,500.	33,100.	ppb	1.90	#VALUE!	
57 Fe	159,300.	31,860.	ppb	2.02	100000.	
59 Co	548.5	109.7	ppb	1.23	1000.	
60 Ni	587.5	117.5	ppb	0.70	1000.	
63 Cu	331.95	66.39	ppb	0.28	#VALUE!	
65 Cu	339.3	67.86	ppb	0.60	2000.	
66 Zn	797.	159.4	ppb	0.38	2000.	
68 Zn	919.5	183.9	ppb	0.86	#VALUE!	
75 As	142.95	28.59	ppb	0.57	1000.	
82 Se	91.4	18.28	ppb	2.42	1000.	
88 Sr	2,396.	479.2	ppb	0.23	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	94.35	18.87	ppb	0.88	1000.	
107 Ag	47.605	9.521	ppb	0.85	100.	
109 Ag	47.145	9.429	ppb	0.16	#VALUE!	
111 Cd	234.3	46.86	ppb	0.45	#VALUE!	
114 Cd	231.1	46.22	ppb	0.47	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	472.35	94.47	ppb	2.00	1000.	
120 Sn	472.75	94.55	ppb	1.59	#VALUE!	
121 Sb	29.18	5.836	ppb	1.64	#VALUE!	
123 Sb	29.095	5.819	ppb	2.79	1000.	
135 Ba	4,466.	893.2	ppb	1.31	2000.	
137 Ba	4,362.5	872.5	ppb	1.16	#VALUE!	
182 W	45.345	9.069	ppb	1.47	1000.	
203 Tl	101.05	20.21	ppb	1.75	1000.	
205 Tl	103.65	20.73	ppb	1.93	#VALUE!	
208 Pb	209.5	41.9	ppb	1.75	2000.	
232 Th	185.3	37.06	ppb	1.95	1000.	
238 U	125.7	25.14	ppb	1.72	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2636682.00	3.60	2844110.50	92.7	69.5 - 120	
45 Sc	2513140.30	3.27	2809797.00	89.4	69.5 - 120	
72 Ge	518528.66	0.04	642252.38	80.7	69.5 - 120	
159 Tb	6458206.50	2.05	7051087.50	91.6	69.5 - 120	
209 Bi	3271689.30	3.08	3594227.50	91.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000967

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\119SMPL.D\119SMPL.D#
Date Acquired: May 12 2018 01:30 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-016P
Misc Info:
Vial Number: 3204
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	51.35	10.27	ppb	4.57	100.	
11 B	572.5	114.5	ppb	0.47	1000.	
23 Na	11,355.	2,271.	ppb	3.77	200000.	
25 Mg	105,400.	21,080.	ppb	3.70	200000.	
27 Al	212,550.	42,510.	ppb	3.98	200000.	
28 Si	3,376.5	675.3	ppb	12.32	#VALUE!	
29 Si	2,744.	548.8	ppb	1.28	10000.	
39 K	62,950.	12,590.	ppb	3.20	200000.	
43 Ca	492,650.	98,530.	ppb	1.98	#VALUE!	
44 Ca	469,950.	93,990.	ppb	0.82	200000.	
51 V	884.5	176.9	ppb	1.64	1000.	
52 Cr	381.15	76.23	ppb	0.87	2000.	
53 Cr	405.6	81.12	ppb	1.07	#VALUE!	
55 Mn	3,704.5	740.9	ppb	0.94	2000.	
56 Fe	183,000.	36,600.	ppb	0.25	#VALUE!	
57 Fe	176,450.	35,290.	ppb	1.16	100000.	
59 Co	550.	110.	ppb	2.36	1000.	
60 Ni	607.	121.4	ppb	1.51	1000.	
63 Cu	335.05	67.01	ppb	2.87	#VALUE!	
65 Cu	342.05	68.41	ppb	1.10	2000.	
66 Zn	852.	170.4	ppb	0.82	2000.	
68 Zn	967.	193.4	ppb	0.24	#VALUE!	
75 As	125.4	25.08	ppb	0.62	1000.	
82 Se	88.05	17.61	ppb	1.85	1000.	
88 Sr	1,975.	395.	ppb	0.73	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	93.4	18.68	ppb	0.29	1000.	
107 Ag	47.455	9.491	ppb	0.08	100.	
109 Ag	47.255	9.451	ppb	0.71	#VALUE!	
111 Cd	230.2	46.04	ppb	0.50	#VALUE!	
114 Cd	225.6	45.12	ppb	0.57	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	456.95	91.39	ppb	0.09	1000.	
120 Sn	460.35	92.07	ppb	0.96	#VALUE!	
121 Sb	29.905	5.981	ppb	0.38	#VALUE!	
123 Sb	30.16	6.032	ppb	0.61	1000.	
135 Ba	4,351.5	870.3	ppb	0.68	2000.	
137 Ba	4,242.5	848.5	ppb	0.09	#VALUE!	
182 W	41.48	8.296	ppb	1.10	1000.	
203 Tl	100.5	20.1	ppb	1.83	1000.	
205 Tl	100.85	20.17	ppb	0.14	#VALUE!	
208 Pb	215.8	43.16	ppb	0.47	2000.	
232 Th	195.4	39.08	ppb	0.52	1000.	
238 U	124.3	24.86	ppb	0.75	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2576452.50	0.96	2844110.50	90.6	69.5 - 120	
45 Sc	2488833.00	2.09	2809797.00	88.6	69.5 - 120	
72 Ge	519886.38	0.71	642252.38	80.9	69.5 - 120	
159 Tb	6495374.00	0.33	7051087.50	92.1	69.5 - 120	
209 Bi	3291905.80	1.17	3594227.50	91.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000968

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\120SMPL.D\120SMPL.D#
Date Acquired: May 12 2018 01:34 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-021
Misc Info:
Vial Number: 3205
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.525	1.705	ppb	4.06	100.	
11 B	183.4	36.68	ppb	1.25	1000.	
23 Na	2,513.5	502.7	ppb	4.49	200000.	
25 Mg	64,350.	12,870.	ppb	4.68	200000.	
27 Al	219,700.	43,940.	ppb	2.91	200000.	
28 Si	2,647.5	529.5	ppb	3.59	#VALUE!	
29 Si	2,248.	449.6	ppb	7.15	10000.	
39 K	59,600.	11,920.	ppb	1.31	200000.	
43 Ca	195,350.	39,070.	ppb	2.64	#VALUE!	
44 Ca	194,400.	38,880.	ppb	2.12	200000.	
51 V	382.	76.4	ppb	0.72	1000.	
52 Cr	167.	33.4	ppb	0.49	2000.	
53 Cr	191.2	38.24	ppb	2.36	#VALUE!	
55 Mn	3,279.5	655.9	ppb	0.68	2000.	
56 Fe	168,100.	33,620.	ppb	1.94	#VALUE!	
57 Fe	163,650.	32,730.	ppb	2.04	100000.	
59 Co	77.8	15.56	ppb	1.59	1000.	
60 Ni	141.9	28.38	ppb	0.29	1000.	
63 Cu	123.1	24.62	ppb	1.11	#VALUE!	
65 Cu	123.7	24.74	ppb	1.30	2000.	
66 Zn	474.9	94.98	ppb	0.81	2000.	
68 Zn	557.	111.4	ppb	0.70	#VALUE!	
75 As	93.8	18.76	ppb	1.72	1000.	
82 Se	3.5215	0.7043	ppb	29.83	1000.	
88 Sr	985.5	197.1	ppb	1.14	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.545	1.309	ppb	3.99	1000.	
107 Ag	0.885	0.177	ppb	4.05	100.	
109 Ag	0.741	0.1482	ppb	4.74	#VALUE!	
111 Cd	2.9415	0.5883	ppb	1.82	#VALUE!	
114 Cd	0.9205	0.1841	ppb	6.44	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	43.775	8.755	ppb	3.14	1000.	
120 Sn	44.195	8.839	ppb	1.76	#VALUE!	
121 Sb	2.072	0.4144	ppb	2.41	#VALUE!	
123 Sb	1.9675	0.3935	ppb	6.21	1000.	
135 Ba	2,788.5	557.7	ppb	2.13	2000.	
137 Ba	2,806.	561.2	ppb	1.22	#VALUE!	
182 W	0.8605	0.1721	ppb	5.83	1000.	
203 Tl	3.0315	0.6063	ppb	4.33	1000.	
205 Tl	2.873	0.5746	ppb	0.98	#VALUE!	
208 Pb	146.75	29.35	ppb	1.52	2000.	
232 Th	88.45	17.69	ppb	2.51	1000.	
238 U	10.41	2.082	ppb	2.41	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2611376.80	4.04	2844110.50	91.8	69.5 - 120	
45 Sc	2586460.30	1.89	2809797.00	92.1	69.5 - 120	
72 Ge	542342.81	1.36	642252.38	84.4	69.5 - 120	
159 Tb	6536318.00	1.01	7051087.50	92.7	69.5 - 120	
209 Bi	3280376.80	1.57	3594227.50	91.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000969

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\121SMPL.D\121SMPL.D#
Date Acquired: May 12 2018 01:38 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-022
Misc Info:
Vial Number: 3206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.855	1.971	ppb	2.73	100.	
11 B	146.85	29.37	ppb	0.92	1000.	
23 Na	3,153.	630.6	ppb	2.96	200000.	
25 Mg	93,300.	18,660.	ppb	1.71	200000.	
27 Al	211,300.	42,260.	ppb	0.25	200000.	
28 Si	2,943.5	588.7	ppb	2.41	#VALUE!	
29 Si	2,539.	507.8	ppb	1.28	10000.	
39 K	53,250.	10,650.	ppb	3.12	200000.	
43 Ca	535,500.	107,100.	ppb	3.46	#VALUE!	
44 Ca	517,500.	103,500.	ppb	0.75	200000.	
51 V	437.05	87.41	ppb	1.11	1000.	
52 Cr	206.05	41.21	ppb	0.31	2000.	
53 Cr	211.	42.2	ppb	1.95	#VALUE!	
55 Mn	6,340.	1,268.	ppb	0.88	2000.	
56 Fe	211,300.	42,260.	ppb	1.31	#VALUE!	
57 Fe	202,950.	40,590.	ppb	1.53	100000.	
59 Co	75.8	15.16	ppb	2.00	1000.	
60 Ni	215.2	43.04	ppb	1.29	1000.	
63 Cu	139.9	27.98	ppb	1.42	#VALUE!	
65 Cu	143.2	28.64	ppb	2.01	2000.	
66 Zn	547.	109.4	ppb	1.51	2000.	
68 Zn	658.	131.6	ppb	1.16	#VALUE!	
75 As	67.45	13.49	ppb	2.10	1000.	
82 Se	4.404	0.8808	ppb	25.68	1000.	
88 Sr	1,570.	314.	ppb	0.91	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.82	1.364	ppb	3.75	1000.	
107 Ag	0.897	0.1794	ppb	5.59	100.	
109 Ag	0.7795	0.1559	ppb	2.39	#VALUE!	
111 Cd	4.187	0.8374	ppb	4.49	#VALUE!	
114 Cd	1.701	0.3402	ppb	3.39	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	43.725	8.745	ppb	1.26	1000.	
120 Sn	44.215	8.843	ppb	0.80	#VALUE!	
121 Sb	3.256	0.6512	ppb	3.18	#VALUE!	
123 Sb	3.249	0.6498	ppb	1.94	1000.	
135 Ba	3,761.5	752.3	ppb	0.47	2000.	
137 Ba	3,710.5	742.1	ppb	0.86	#VALUE!	
182 W	0.7905	0.1581	ppb	2.75	1000.	
203 Tl	3.852	0.7704	ppb	4.01	1000.	
205 Tl	3.892	0.7784	ppb	1.98	#VALUE!	
208 Pb	146.7	29.34	ppb	0.70	2000.	
232 Th	104.35	20.87	ppb	0.78	1000.	
238 U	15.25	3.05	ppb	0.61	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2466728.30	1.24	2844110.50	86.7	69.5 - 120	
45 Sc	2421375.80	3.52	2809797.00	86.2	69.5 - 120	
72 Ge	512300.47	1.09	642252.38	79.8	69.5 - 120	
159 Tb	6442675.00	1.25	7051087.50	91.4	69.5 - 120	
209 Bi	3304303.30	1.39	3594227.50	91.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000970

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\122SMPL.D\122SMPL.D#
Date Acquired: May 12 2018 01:43 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-023
Misc Info:
Vial Number: 3207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	12.94	2.588	ppb	4.95	100.	
11 B	207.6	41.52	ppb	0.64	1000.	
23 Na	6,740.	1,348.	ppb	5.08	200000.	
25 Mg	129,500.	25,900.	ppb	0.79	200000.	
27 Al	272,950.	54,590.	ppb	3.07	200000.	
28 Si	3,274.5	654.9	ppb	3.10	#VALUE!	
29 Si	2,905.	581.	ppb	6.37	10000.	
39 K	70,250.	14,050.	ppb	3.74	200000.	
43 Ca	282,150.	56,430.	ppb	2.53	#VALUE!	
44 Ca	269,200.	53,840.	ppb	1.73	200000.	
51 V	595.5	119.1	ppb	1.56	1000.	
52 Cr	266.2	53.24	ppb	0.68	2000.	
53 Cr	300.1	60.02	ppb	3.43	#VALUE!	
55 Mn	2,349.	469.8	ppb	1.99	2000.	
56 Fe	268,850.	53,770.	ppb	1.48	#VALUE!	
57 Fe	260,150.	52,030.	ppb	2.38	100000.	
59 Co	70.45	14.09	ppb	0.89	1000.	
60 Ni	187.75	37.55	ppb	0.33	1000.	
63 Cu	160.1	32.02	ppb	0.22	#VALUE!	
65 Cu	163.25	32.65	ppb	2.09	2000.	
66 Zn	651.5	130.3	ppb	0.61	2000.	
68 Zn	735.	147.	ppb	1.84	#VALUE!	
75 As	68.65	13.73	ppb	0.50	1000.	
82 Se	4.0365	0.8073	ppb	6.38	1000.	
88 Sr	1,451.	290.2	ppb	1.58	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	2.932	0.5864	ppb	0.88	1000.	
107 Ag	1.3295	0.2659	ppb	0.51	100.	
109 Ag	1.114	0.2228	ppb	4.37	#VALUE!	
111 Cd	3.33	0.666	ppb	4.63	#VALUE!	
114 Cd	-0.0806	-0.0161	ppb	168.72	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.595	9.919	ppb	0.71	1000.	
120 Sn	49.93	9.986	ppb	0.95	#VALUE!	
121 Sb	2.5865	0.5173	ppb	3.68	#VALUE!	
123 Sb	2.696	0.5392	ppb	5.17	1000.	
135 Ba	3,339.	667.8	ppb	2.19	2000.	
137 Ba	3,337.5	667.5	ppb	0.92	#VALUE!	
182 W	0.6755	0.1351	ppb	4.08	1000.	
203 Tl	4.2335	0.8467	ppb	3.84	1000.	
205 Tl	4.3305	0.8661	ppb	2.11	#VALUE!	
208 Pb	193.8	38.76	ppb	0.28	2000.	
232 Th	135.85	27.17	ppb	1.18	1000.	
238 U	16.155	3.231	ppb	1.42	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2502930.50	2.23	2844110.50	88.0	69.5 - 120	
45 Sc	2564437.80	2.16	2809797.00	91.3	69.5 - 120	
72 Ge	537889.88	0.60	642252.38	83.8	69.5 - 120	
159 Tb	6477098.00	0.47	7051087.50	91.9	69.5 - 120	
209 Bi	3195519.00	0.28	3594227.50	88.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000971

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\123SMPL.D\123SMPL.D#
Date Acquired: May 12 2018 01:47 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 3208
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0003	-0.0003	ppb	122.82	100.	
11 B	3.295	3.295	ppb	7.43	1000.	
23 Na	-0.9824	-0.9824	ppb	9.65	200000.	
25 Mg	0.3353	0.3353	ppb	21.32	200000.	
27 Al	0.7574	0.7574	ppb	33.30	200000.	
28 Si	40.43	40.43	ppb	13.76	#VALUE!	
29 Si	-58.63	-58.63	ppb	4.54	10000.	
39 K	-7.907	-7.907	ppb	25.41	200000.	
43 Ca	1.04	1.04	ppb	125.19	#VALUE!	
44 Ca	-0.7719	-0.7719	ppb	78.90	200000.	
51 V	-0.0339	-0.0339	ppb	97.76	1000.	
52 Cr	0.1264	0.1264	ppb	29.32	2000.	
53 Cr	-2.649	-2.649	ppb	8.05	#VALUE!	
55 Mn	0.012	0.012	ppb	18.09	2000.	
56 Fe	20.97	20.97	ppb	2.38	#VALUE!	
57 Fe	6.788	6.788	ppb	33.19	100000.	
59 Co	0.0012	0.0012	ppb	65.85	1000.	
60 Ni	0.0184	0.0184	ppb	35.10	1000.	
63 Cu	0.1123	0.1123	ppb	12.98	#VALUE!	
65 Cu	0.121	0.121	ppb	1.46	2000.	
66 Zn	0.0022	0.0022	ppb	3043.30	2000.	
68 Zn	0.1818	0.1818	ppb	13.69	#VALUE!	
75 As	0.145	0.145	ppb	67.94	1000.	
82 Se	0.054	0.054	ppb	126.52	1000.	
88 Sr	0.0012	0.0012	ppb	292.20	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	-0.0002	-0.0002	ppb	216.33	1000.	
107 Ag	-0.0004	-0.0004	ppb	401.46	100.	
109 Ag	0.0013	0.0013	ppb	57.85	#VALUE!	
111 Cd	-0.0889	-0.0889	ppb	8.22	#VALUE!	
114 Cd	-0.0013	-0.0013	ppb	233.56	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0093	0.0093	ppb	75.81	1000.	
120 Sn	0.0156	0.0156	ppb	87.34	#VALUE!	
121 Sb	-0.0011	-0.0011	ppb	439.57	#VALUE!	
123 Sb	0.0024	0.0024	ppb	69.77	1000.	
135 Ba	0.0146	0.0146	ppb	88.79	2000.	
137 Ba	0.0044	0.0044	ppb	104.94	#VALUE!	
182 W	0.0016	0.0016	ppb	175.74	1000.	
203 Tl	-0.0028	-0.0028	ppb	616.02	1000.	
205 Tl	-0.0044	-0.0044	ppb	75.64	#VALUE!	
208 Pb	0.1802	0.1802	ppb	8.96	2000.	
232 Th	0.0115	0.0115	ppb	22.55	1000.	
238 U	0.0003	0.0003	ppb	65.61	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2545702.00	4.74	2844110.50	89.5	69.5 - 120	
45 Sc	2585401.00	0.96	2809797.00	92.0	69.5 - 120	
72 Ge	571455.38	0.21	642252.38	89.0	69.5 - 120	
159 Tb	6380840.00	0.84	7051087.50	90.5	69.5 - 120	
209 Bi	3290470.30	1.70	3594227.50	91.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000972

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\124_CCV.D\124_CCV.D#
Date Acquired: May 12 2018 01:51 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.54	ppb	2.30	25	98.16	
11 B	24.65	ppb	5.89	25	98.6	
23 Na	4,744.	ppb	2.44	5,000	94.88	
25 Mg	4,957.	ppb	2.45	5,000	99.14	
27 Al	501.8	ppb	1.00	500	100.36	
28 Si	500.3	ppb	1.92	500	100.06	
29 Si	406.6	ppb	1.80	500	81.32	Fail
39 K	4,967.	ppb	2.30	5,000	99.34	
43 Ca	4,832.	ppb	4.79	5,000	96.64	
44 Ca	4,987.	ppb	1.25	5,000	99.74	
51 V	25.51	ppb	1.31	25	102.04	
52 Cr	25.52	ppb	0.12	25	102.08	
53 Cr	22.39	ppb	3.32	25	89.56	
55 Mn	25.23	ppb	0.52	25	100.92	
56 Fe	5,020.	ppb	0.79	5,000	100.4	
57 Fe	5,034.	ppb	1.54	5,000	100.68	
59 Co	25.18	ppb	2.09	25	100.72	
60 Ni	25.39	ppb	0.31	25	101.56	
63 Cu	25.35	ppb	0.94	25	101.4	
65 Cu	25.37	ppb	1.00	25	101.48	
66 Zn	25.19	ppb	0.64	25	100.76	
68 Zn	25.14	ppb	0.86	25	100.56	
75 As	25.32	ppb	1.04	25	101.28	
82 Se	25.79	ppb	2.03	25	103.16	
88 Sr	24.62	ppb	0.78	25	98.48	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.34	ppb	0.62	25	101.36	
107 Ag	25.46	ppb	0.18	25	101.84	
109 Ag	25.28	ppb	0.54	25	101.12	
111 Cd	25.25	ppb	1.18	25	101	
114 Cd	25.38	ppb	0.61	25	101.52	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.32	ppb	1.05	25	97.28	
120 Sn	24.18	ppb	1.03	25	96.72	
121 Sb	24.48	ppb	1.42	25	97.92	
123 Sb	24.73	ppb	1.06	25	98.92	
135 Ba	25.65	ppb	1.67	25	102.6	
137 Ba	25.3	ppb	0.76	25	101.2	
182 W	25.11	ppb	2.22	25	100.44	
203 Tl	25.09	ppb	0.64	25	100.36	
205 Tl	25.29	ppb	1.23	25	101.16	
208 Pb	25.25	ppb	1.49	25	101	
232 Th	25.55	ppb	1.13	25	102.2	
238 U	26.89	ppb	1.22	25	107.56	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2621313.00	1.62	2844110.50	92.2	80 - 120.4	
45 Sc	2586343.50	0.84	2809797.00	92.0	80 - 120.4	
72 Ge	559584.00	0.32	642252.38	87.1	80 - 120.4	
159 Tb	6452539.50	1.05	7051087.50	91.5	80 - 120.4	
209 Bi	3336046.50	1.08	3594227.50	92.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000973

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\125_CCB.D\125_CCB.D#
Date Acquired: May 12 2018 01:55 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0001	ppb	733.19	1.00	
11 B	2.621	ppb	9.97	1.00	
23 Na	-1.201	ppb	11.62	1.00	
25 Mg	0.1034	ppb	50.77	1.00	
27 Al	0.0464	ppb	84.37	1.00	
28 Si	32.79	ppb	49.62	1.00	
29 Si	-40.69	ppb	37.41	1.00	
39 K	-2.418	ppb	109.43	1.00	
43 Ca	3.055	ppb	81.38	1.00	
44 Ca	0.1688	ppb	488.74	1.00	
51 V	-0.0313	ppb	189.48	1.00	
52 Cr	0.1786	ppb	13.77	1.00	
53 Cr	-3.178	ppb	10.53	1.00	
55 Mn	0.0248	ppb	20.96	1.00	
56 Fe	21.98	ppb	12.90	1.00	
57 Fe	3.927	ppb	34.15	1.00	
59 Co	0.0028	ppb	231.35	1.00	
60 Ni	0.0088	ppb	28.28	1.00	
63 Cu	0.0205	ppb	24.93	1.00	
65 Cu	-0.0012	ppb	1146.60	1.00	
66 Zn	0.0865	ppb	51.64	1.00	
68 Zn	0.2434	ppb	25.45	1.00	
75 As	0.0535	ppb	252.76	1.00	
82 Se	0.069	ppb	190.37	1.00	
88 Sr	0.0024	ppb	29.60	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0196	ppb	47.45	1.00	
107 Ag	0.0068	ppb	32.86	1.00	
109 Ag	0.0063	ppb	48.79	1.00	
111 Cd	-0.076	ppb	38.80	1.00	
114 Cd	-0.0014	ppb	156.95	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0438	ppb	10.35	1.00	
120 Sn	0.0351	ppb	20.60	1.00	
121 Sb	0.0061	ppb	22.75	1.00	
123 Sb	0.0107	ppb	35.80	1.00	
135 Ba	0.0053	ppb	98.74	1.00	
137 Ba	-0.0008	ppb	570.35	1.00	
182 W	0.0475	ppb	39.29	1.00	
203 Tl	0.0022	ppb	262.00	1.00	
205 Tl	-0.0032	ppb	85.64	1.00	
208 Pb	0.0509	ppb	3.41	1.00	
232 Th	0.0733	ppb	21.59	1.00	
238 U	0.0026	ppb	46.46	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2626839.80	2.03	2844110.50	92.4	79.5 - 120	
45 Sc	2496046.30	2.56	2809797.00	88.8	79.5 - 120	
72 Ge	554475.31	0.95	642252.38	86.3	79.5 - 120	
159 Tb	6314328.00	0.38	7051087.50	89.6	79.5 - 120	
209 Bi	3344244.00	0.35	3594227.50	93.0	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\126SMPL.D\126SMPL.D#
Date Acquired: May 12 2018 02:00 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-025
Misc Info:
Vial Number: 3209
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.81	1.762	ppb	5.89	100.	
11 B	146.8	29.36	ppb	3.94	1000.	
23 Na	3,860.5	772.1	ppb	3.61	200000.	
25 Mg	119,750.	23,950.	ppb	2.34	200000.	
27 Al	193,400.	38,680.	ppb	1.54	200000.	
28 Si	2,774.5	554.9	ppb	3.17	#VALUE!	
29 Si	2,344.	468.8	ppb	1.38	10000.	
39 K	50,000.	10,000.	ppb	2.03	200000.	
43 Ca	906,000.	181,200.	ppb	1.46	#VALUE!	
44 Ca	884,000.	176,800.	ppb	1.58	200000.	
51 V	419.1	83.82	ppb	2.52	1000.	
52 Cr	179.5	35.9	ppb	0.25	2000.	
53 Cr	181.4	36.28	ppb	0.65	#VALUE!	
55 Mn	3,679.5	735.9	ppb	0.73	2000.	
56 Fe	188,900.	37,780.	ppb	0.48	#VALUE!	
57 Fe	184,150.	36,830.	ppb	1.08	100000.	
59 Co	72.25	14.45	ppb	1.18	1000.	
60 Ni	147.65	29.53	ppb	2.45	1000.	
63 Cu	114.8	22.96	ppb	0.64	#VALUE!	
65 Cu	118.	23.6	ppb	0.37	2000.	
66 Zn	436.	87.2	ppb	0.82	2000.	
68 Zn	546.	109.2	ppb	1.35	#VALUE!	
75 As	93.35	18.67	ppb	1.67	1000.	
82 Se	5.44	1.088	ppb	18.09	1000.	
88 Sr	3,082.	616.4	ppb	1.01	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.15	1.03	ppb	2.67	1000.	
107 Ag	0.843	0.1686	ppb	4.71	100.	
109 Ag	0.7085	0.1417	ppb	4.33	#VALUE!	
111 Cd	3.556	0.7112	ppb	2.24	#VALUE!	
114 Cd	1.1495	0.2299	ppb	8.49	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	43.905	8.781	ppb	1.40	1000.	
120 Sn	43.77	8.754	ppb	0.91	#VALUE!	
121 Sb	2.2635	0.4527	ppb	7.62	#VALUE!	
123 Sb	2.1445	0.4289	ppb	3.60	1000.	
135 Ba	3,603.5	720.7	ppb	1.43	2000.	
137 Ba	3,554.5	710.9	ppb	0.52	#VALUE!	
182 W	0.9355	0.1871	ppb	8.32	1000.	
203 Tl	3.399	0.6798	ppb	2.11	1000.	
205 Tl	3.3345	0.6669	ppb	2.38	#VALUE!	
208 Pb	127.15	25.43	ppb	1.22	2000.	
232 Th	90.15	18.03	ppb	0.82	1000.	
238 U	17.645	3.529	ppb	1.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2452303.80	0.53	2844110.50	86.2	69.5 - 120	
45 Sc	2427515.00	3.25	2809797.00	86.4	69.5 - 120	
72 Ge	509659.84	1.38	642252.38	79.4	69.5 - 120	
159 Tb	6386868.50	0.64	7051087.50	90.6	69.5 - 120	
209 Bi	3225336.50	1.24	3594227.50	89.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000975

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\127SMPL.D\127SMPL.D#
Date Acquired: May 12 2018 02:04 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-026
Misc Info:
Vial Number: 3210
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.025	1.205	ppb	3.52	100.	
11 B	92.05	18.41	ppb	5.60	1000.	
23 Na	1,154.5	230.9	ppb	5.96	200000.	
25 Mg	32,635.	6,527.	ppb	2.98	200000.	
27 Al	124,500.	24,900.	ppb	2.94	200000.	
28 Si	3,010.5	602.1	ppb	10.82	#VALUE!	
29 Si	2,484.	496.8	ppb	1.08	10000.	
39 K	38,210.	7,642.	ppb	2.03	200000.	
43 Ca	29,215.	5,843.	ppb	1.09	#VALUE!	
44 Ca	29,775.	5,955.	ppb	2.14	200000.	
51 V	216.25	43.25	ppb	1.46	1000.	
52 Cr	128.	25.6	ppb	0.31	2000.	
53 Cr	148.9	29.78	ppb	0.61	#VALUE!	
55 Mn	3,515.	703.	ppb	1.59	2000.	
56 Fe	121,850.	24,370.	ppb	0.98	#VALUE!	
57 Fe	117,050.	23,410.	ppb	0.57	100000.	
59 Co	53.65	10.73	ppb	0.90	1000.	
60 Ni	110.65	22.13	ppb	0.42	1000.	
63 Cu	101.6	20.32	ppb	1.22	#VALUE!	
65 Cu	102.45	20.49	ppb	1.43	2000.	
66 Zn	418.55	83.71	ppb	1.05	2000.	
68 Zn	465.55	93.11	ppb	0.66	#VALUE!	
75 As	18.48	3.696	ppb	4.88	1000.	
82 Se	4.88	0.976	ppb	15.04	1000.	
88 Sr	344.3	68.86	ppb	0.81	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.95	1.19	ppb	0.47	1000.	
107 Ag	0.7745	0.1549	ppb	7.00	100.	
109 Ag	0.6985	0.1397	ppb	5.67	#VALUE!	
111 Cd	4.203	0.8406	ppb	2.60	#VALUE!	
114 Cd	2.698	0.5396	ppb	5.61	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	42.99	8.598	ppb	0.84	1000.	
120 Sn	42.71	8.542	ppb	0.67	#VALUE!	
121 Sb	1.7085	0.3417	ppb	4.32	#VALUE!	
123 Sb	1.8625	0.3725	ppb	3.97	1000.	
135 Ba	1,618.5	323.7	ppb	0.48	2000.	
137 Ba	1,615.	323.	ppb	0.15	#VALUE!	
182 W	0.7705	0.1541	ppb	11.42	1000.	
203 Tl	2.3975	0.4795	ppb	0.48	1000.	
205 Tl	2.2335	0.4467	ppb	1.26	#VALUE!	
208 Pb	285.65	57.13	ppb	0.51	2000.	
232 Th	79.95	15.99	ppb	1.24	1000.	
238 U	10.135	2.027	ppb	0.59	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2604270.80	0.79	2844110.50	91.6	69.5 - 120	
45 Sc	2549103.00	1.74	2809797.00	90.7	69.5 - 120	
72 Ge	545579.88	0.46	642252.38	84.9	69.5 - 120	
159 Tb	6546483.00	0.16	7051087.50	92.8	69.5 - 120	
209 Bi	3385091.30	0.55	3594227.50	94.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000976

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\128SMPL.D\128SMPL.D#
Date Acquired: May 12 2018 02:08 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-027
Misc Info:
Vial Number: 3211
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	12.515	2.503	ppb	3.17	100.	
11 B	237.5	47.5	ppb	1.91	1000.	
23 Na	1,950.	390.	ppb	2.92	200000.	
25 Mg	109,550.	21,910.	ppb	1.82	200000.	
27 Al	286,900.	57,380.	ppb	0.64	200000.	
28 Si	2,885.	577.	ppb	0.42	#VALUE!	
29 Si	2,523.	504.6	ppb	2.09	10000.	
39 K	82,650.	16,530.	ppb	2.28	200000.	
43 Ca	350,200.	70,040.	ppb	3.19	#VALUE!	
44 Ca	337,050.	67,410.	ppb	1.49	200000.	
51 V	683.	136.6	ppb	0.10	1000.	
52 Cr	245.55	49.11	ppb	0.70	2000.	
53 Cr	268.35	53.67	ppb	2.24	#VALUE!	
55 Mn	5,055.	1,011.	ppb	1.37	2000.	
56 Fe	248,150.	49,630.	ppb	0.53	#VALUE!	
57 Fe	239,150.	47,830.	ppb	0.47	100000.	
59 Co	113.45	22.69	ppb	1.08	1000.	
60 Ni	213.05	42.61	ppb	1.22	1000.	
63 Cu	151.25	30.25	ppb	0.81	#VALUE!	
65 Cu	154.6	30.92	ppb	0.48	2000.	
66 Zn	608.	121.6	ppb	1.09	2000.	
68 Zn	730.5	146.1	ppb	0.75	#VALUE!	
75 As	175.45	35.09	ppb	0.71	1000.	
82 Se	5.87	1.174	ppb	23.54	1000.	
88 Sr	2,294.	458.8	ppb	1.04	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	9.61	1.922	ppb	0.91	1000.	
107 Ag	1.0285	0.2057	ppb	6.91	100.	
109 Ag	0.907	0.1814	ppb	5.80	#VALUE!	
111 Cd	4.433	0.8866	ppb	4.17	#VALUE!	
114 Cd	1.33	0.266	ppb	10.90	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.87	9.174	ppb	0.37	1000.	
120 Sn	46.33	9.266	ppb	1.36	#VALUE!	
121 Sb	2.6845	0.5369	ppb	3.57	#VALUE!	
123 Sb	2.8385	0.5677	ppb	3.29	1000.	
135 Ba	4,096.	819.2	ppb	1.05	2000.	
137 Ba	4,000.5	800.1	ppb	0.12	#VALUE!	
182 W	1.228	0.2456	ppb	3.16	1000.	
203 Tl	4.377	0.8754	ppb	0.87	1000.	
205 Tl	4.559	0.9118	ppb	1.01	#VALUE!	
208 Pb	187.	37.4	ppb	0.44	2000.	
232 Th	122.05	24.41	ppb	0.07	1000.	
238 U	14.33	2.866	ppb	0.52	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2465981.30	0.64	2844110.50	86.7	69.5 - 120	
45 Sc	2501730.00	1.44	2809797.00	89.0	69.5 - 120	
72 Ge	525774.06	0.20	642252.38	81.9	69.5 - 120	
159 Tb	6439774.50	1.26	7051087.50	91.3	69.5 - 120	
209 Bi	3236125.30	1.30	3594227.50	90.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000977

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\129SMPL.D\129SMPL.D#
Date Acquired: May 12 2018 02:13 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-028
Misc Info:
Vial Number: 3212
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.035	1.607	ppb	4.61	100.	
11 B	163.55	32.71	ppb	2.32	1000.	
23 Na	7,745.	1,549.	ppb	5.45	200000.	
25 Mg	91,450.	18,290.	ppb	2.68	200000.	
27 Al	194,250.	38,850.	ppb	0.93	200000.	
28 Si	3,597.	719.4	ppb	3.44	#VALUE!	
29 Si	3,067.5	613.5	ppb	2.71	10000.	
39 K	47,575.	9,515.	ppb	2.57	200000.	
43 Ca	739,500.	147,900.	ppb	1.14	#VALUE!	
44 Ca	710,000.	142,000.	ppb	1.87	200000.	
51 V	389.25	77.85	ppb	2.88	1000.	
52 Cr	182.35	36.47	ppb	1.37	2000.	
53 Cr	185.55	37.11	ppb	0.68	#VALUE!	
55 Mn	10,695.	2,139.	ppb	2.21	2000.	>LDR
56 Fe	163,900.	32,780.	ppb	1.77	#VALUE!	
57 Fe	158,900.	31,780.	ppb	2.68	100000.	
59 Co	82.2	16.44	ppb	0.44	1000.	
60 Ni	191.	38.2	ppb	2.16	1000.	
63 Cu	111.7	22.34	ppb	1.09	#VALUE!	
65 Cu	113.85	22.77	ppb	0.51	2000.	
66 Zn	404.95	80.99	ppb	0.58	2000.	
68 Zn	523.5	104.7	ppb	1.27	#VALUE!	
75 As	33.975	6.795	ppb	3.57	1000.	
82 Se	5.025	1.005	ppb	5.15	1000.	
88 Sr	1,762.5	352.5	ppb	1.66	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	18.16	3.632	ppb	0.19	1000.	
107 Ag	0.824	0.1648	ppb	1.87	100.	
109 Ag	0.6865	0.1373	ppb	5.51	#VALUE!	
111 Cd	3.556	0.7112	ppb	12.49	#VALUE!	
114 Cd	1.151	0.2302	ppb	19.49	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.86	8.972	ppb	1.64	1000.	
120 Sn	45.155	9.031	ppb	1.16	#VALUE!	
121 Sb	2.1475	0.4295	ppb	4.02	#VALUE!	
123 Sb	2.078	0.4156	ppb	7.83	1000.	
135 Ba	4,048.5	809.7	ppb	1.22	2000.	
137 Ba	3,937.5	787.5	ppb	0.72	#VALUE!	
182 W	1.02	0.204	ppb	9.14	1000.	
203 Tl	3.3445	0.6689	ppb	6.07	1000.	
205 Tl	3.3035	0.6607	ppb	2.68	#VALUE!	
208 Pb	123.35	24.67	ppb	0.90	2000.	
232 Th	92.55	18.51	ppb	0.15	1000.	
238 U	15.13	3.026	ppb	0.66	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2580393.00	2.57	2844110.50	90.7	69.5 - 120	
45 Sc	2442845.00	0.98	2809797.00	86.9	69.5 - 120	
72 Ge	515589.53	1.03	642252.38	80.3	69.5 - 120	
159 Tb	6341325.50	0.42	7051087.50	89.9	69.5 - 120	
209 Bi	3222109.00	1.49	3594227.50	89.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000978

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\130SMPL.D\130SMPL.D#
Date Acquired: May 12 2018 02:17 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-028
Misc Info:
Vial Number: 3301
Current Method: C:\ICPCHEM\1\DATA\JLE11B.B\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\DATA\JLE11B.B\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.016	0.9016	ppb	3.04	100.	
11 B	186.7	18.67	ppb	2.66	1000.	
23 Na	8,839.	883.9	ppb	2.31	200000.	
25 Mg	102,400.	10,240.	ppb	3.03	200000.	
27 Al	213,100.	21,310.	ppb	1.90	200000.	
28 Si	3,810.	381.	ppb	1.32	#VALUE!	
29 Si	3,093.	309.3	ppb	4.99	10000.	
39 K	53,020.	5,302.	ppb	1.72	200000.	
43 Ca	837,300.	83,730.	ppb	2.77	#VALUE!	
44 Ca	789,300.	78,930.	ppb	2.58	200000.	
51 V	419.9	41.99	ppb	1.36	1000.	
52 Cr	201.5	20.15	ppb	0.96	2000.	
53 Cr	176.7	17.67	ppb	1.70	#VALUE!	
55 Mn	11,890.	1,189.	ppb	0.67	2000.	
56 Fe	182,600.	18,260.	ppb	1.36	#VALUE!	
57 Fe	177,900.	17,790.	ppb	1.56	100000.	
59 Co	92.85	9.285	ppb	0.98	1000.	
60 Ni	217.	21.7	ppb	1.44	1000.	
63 Cu	124.2	12.42	ppb	0.29	#VALUE!	
65 Cu	127.4	12.74	ppb	1.78	2000.	
66 Zn	462.5	46.25	ppb	1.58	2000.	
68 Zn	604.5	60.45	ppb	0.32	#VALUE!	
75 As	38.95	3.895	ppb	1.26	1000.	
82 Se	3.281	0.3281	ppb	82.02	1000.	
88 Sr	1,964.	196.4	ppb	1.41	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	20.2	2.02	ppb	2.57	1000.	
107 Ag	0.9062	0.0906	ppb	3.76	100.	
109 Ag	0.7558	0.0756	ppb	5.58	#VALUE!	
111 Cd	3.488	0.3488	ppb	1.76	#VALUE!	
114 Cd	1.468	0.1468	ppb	6.61	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.17	4.917	ppb	2.80	1000.	
120 Sn	49.64	4.964	ppb	1.69	#VALUE!	
121 Sb	2.371	0.2371	ppb	3.23	#VALUE!	
123 Sb	2.288	0.2288	ppb	2.75	1000.	
135 Ba	4,295.	429.5	ppb	1.00	2000.	
137 Ba	4,322.	432.2	ppb	0.70	#VALUE!	
182 W	1.03	0.103	ppb	6.20	1000.	
203 Tl	3.576	0.3576	ppb	3.67	1000.	
205 Tl	3.506	0.3506	ppb	0.88	#VALUE!	
208 Pb	132.7	13.27	ppb	0.68	2000.	
232 Th	97.42	9.742	ppb	0.50	1000.	
238 U	15.89	1.589	ppb	2.36	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2655859.30	2.43	2844110.50	93.4	69.5 - 120	
45 Sc	2483055.80	1.08	2809797.00	88.4	69.5 - 120	
72 Ge	525950.81	0.28	642252.38	81.9	69.5 - 120	
159 Tb	6527802.50	1.19	7051087.50	92.6	69.5 - 120	
209 Bi	3368282.00	0.96	3594227.50	93.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000979

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\131SMPL.D\131SMPL.D#
Date Acquired: May 12 2018 02:21 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-029
Misc Info:
Vial Number: 3302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.175	1.835	ppb	2.03	100.	
11 B	157.6	31.52	ppb	5.18	1000.	
23 Na	3,291.5	658.3	ppb	2.53	200000.	
25 Mg	94,800.	18,960.	ppb	2.82	200000.	
27 Al	208,450.	41,690.	ppb	0.64	200000.	
28 Si	2,660.	532.	ppb	1.94	#VALUE!	
29 Si	2,239.	447.8	ppb	3.09	10000.	
39 K	58,800.	11,760.	ppb	1.90	200000.	
43 Ca	765,500.	153,100.	ppb	1.11	#VALUE!	
44 Ca	736,500.	147,300.	ppb	1.60	200000.	
51 V	404.25	80.85	ppb	1.97	1000.	
52 Cr	187.05	37.41	ppb	1.01	2000.	
53 Cr	182.45	36.49	ppb	3.42	#VALUE!	
55 Mn	5,300.	1,060.	ppb	0.94	2000.	
56 Fe	196,650.	39,330.	ppb	0.70	#VALUE!	
57 Fe	191,750.	38,350.	ppb	0.48	100000.	
59 Co	88.5	17.7	ppb	1.86	1000.	
60 Ni	169.	33.8	ppb	0.28	1000.	
63 Cu	121.25	24.25	ppb	0.70	#VALUE!	
65 Cu	123.2	24.64	ppb	0.92	2000.	
66 Zn	474.45	94.89	ppb	0.58	2000.	
68 Zn	559.5	111.9	ppb	0.87	#VALUE!	
75 As	57.55	11.51	ppb	2.08	1000.	
82 Se	6.145	1.229	ppb	8.02	1000.	
88 Sr	2,240.	448.	ppb	0.22	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.955	1.591	ppb	0.13	1000.	
107 Ag	0.9095	0.1819	ppb	5.72	100.	
109 Ag	0.75	0.15	ppb	4.08	#VALUE!	
111 Cd	4.0405	0.8081	ppb	7.31	#VALUE!	
114 Cd	1.643	0.3286	ppb	6.87	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.465	9.093	ppb	0.07	1000.	
120 Sn	45.395	9.079	ppb	0.68	#VALUE!	
121 Sb	2.1295	0.4259	ppb	3.50	#VALUE!	
123 Sb	2.1365	0.4273	ppb	3.78	1000.	
135 Ba	3,170.	634.	ppb	1.39	2000.	
137 Ba	3,181.	636.2	ppb	0.18	#VALUE!	
182 W	0.9485	0.1897	ppb	2.83	1000.	
203 Tl	3.3285	0.6657	ppb	6.15	1000.	
205 Tl	3.454	0.6908	ppb	2.53	#VALUE!	
208 Pb	146.25	29.25	ppb	0.83	2000.	
232 Th	94.85	18.97	ppb	0.84	1000.	
238 U	17.52	3.504	ppb	1.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2421809.30	2.63	2844110.50	85.2	69.5 - 120	
45 Sc	2387783.50	2.12	2809797.00	85.0	69.5 - 120	
72 Ge	503921.41	1.42	642252.38	78.5	69.5 - 120	
159 Tb	6347847.50	1.09	7051087.50	90.0	69.5 - 120	
209 Bi	3230122.30	1.39	3594227.50	89.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000980

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\132SMPL.D\132SMPL.D#
Date Acquired: May 12 2018 02:25 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-030
Misc Info:
Vial Number: 3303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.51	1.702	ppb	4.70	100.	
11 B	171.05	34.21	ppb	4.53	1000.	
23 Na	3,070.5	614.1	ppb	2.57	200000.	
25 Mg	83,000.	16,600.	ppb	1.59	200000.	
27 Al	203,050.	40,610.	ppb	1.90	200000.	
28 Si	3,195.	639.	ppb	4.80	#VALUE!	
29 Si	2,600.	520.	ppb	3.61	10000.	
39 K	58,050.	11,610.	ppb	3.17	200000.	
43 Ca	526,500.	105,300.	ppb	4.12	#VALUE!	
44 Ca	511,500.	102,300.	ppb	3.39	200000.	
51 V	409.75	81.95	ppb	0.69	1000.	
52 Cr	184.85	36.97	ppb	0.34	2000.	
53 Cr	184.1	36.82	ppb	1.51	#VALUE!	
55 Mn	5,235.	1,047.	ppb	0.96	2000.	
56 Fe	181,450.	36,290.	ppb	0.95	#VALUE!	
57 Fe	174,700.	34,940.	ppb	0.79	100000.	
59 Co	86.4	17.28	ppb	1.76	1000.	
60 Ni	160.65	32.13	ppb	1.08	1000.	
63 Cu	116.1	23.22	ppb	0.33	#VALUE!	
65 Cu	120.3	24.06	ppb	1.35	2000.	
66 Zn	443.9	88.78	ppb	2.15	2000.	
68 Zn	522.	104.4	ppb	1.95	#VALUE!	
75 As	50.5	10.1	ppb	4.17	1000.	
82 Se	5.13	1.026	ppb	2.46	1000.	
88 Sr	1,835.	367.	ppb	0.45	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	9.475	1.895	ppb	1.87	1000.	
107 Ag	0.8065	0.1613	ppb	2.29	100.	
109 Ag	0.7025	0.1405	ppb	9.04	#VALUE!	
111 Cd	3.317	0.6634	ppb	6.08	#VALUE!	
114 Cd	1.0655	0.2131	ppb	1.55	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.585	9.117	ppb	0.65	1000.	
120 Sn	45.53	9.106	ppb	1.44	#VALUE!	
121 Sb	1.9925	0.3985	ppb	3.85	#VALUE!	
123 Sb	2.006	0.4012	ppb	9.96	1000.	
135 Ba	2,653.	530.6	ppb	0.57	2000.	
137 Ba	2,681.	536.2	ppb	1.05	#VALUE!	
182 W	1.02	0.204	ppb	1.27	1000.	
203 Tl	3.871	0.7742	ppb	0.89	1000.	
205 Tl	3.9265	0.7853	ppb	1.02	#VALUE!	
208 Pb	153.4	30.68	ppb	1.55	2000.	
232 Th	92.2	18.44	ppb	1.68	1000.	
238 U	13.355	2.671	ppb	3.28	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2470625.50	2.74	2844110.50	86.9	69.5 - 120	
45 Sc	2405184.30	2.23	2809797.00	85.6	69.5 - 120	
72 Ge	501210.69	0.21	642252.38	78.0	69.5 - 120	
159 Tb	6251432.00	0.79	7051087.50	88.7	69.5 - 120	
209 Bi	3247203.50	2.88	3594227.50	90.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000981

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\133SMPL.D\133SMPL.D#
Date Acquired: May 12 2018 02:30 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-031
Misc Info:
Vial Number: 3304
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.29	1.458	ppb	9.12	100.	
11 B	154.25	30.85	ppb	5.75	1000.	
23 Na	6,010.	1,202.	ppb	1.44	200000.	
25 Mg	94,650.	18,930.	ppb	5.80	200000.	
27 Al	178,700.	35,740.	ppb	2.17	200000.	
28 Si	3,054.5	610.9	ppb	3.27	#VALUE!	
29 Si	2,709.	541.8	ppb	2.98	10000.	
39 K	45,340.	9,068.	ppb	1.15	200000.	
43 Ca	652,500.	130,500.	ppb	2.47	#VALUE!	
44 Ca	622,500.	124,500.	ppb	0.61	200000.	
51 V	388.25	77.65	ppb	0.71	1000.	
52 Cr	167.65	33.53	ppb	1.41	2000.	
53 Cr	165.25	33.05	ppb	2.10	#VALUE!	
55 Mn	9,880.	1,976.	ppb	1.03	2000.	
56 Fe	168,100.	33,620.	ppb	0.72	#VALUE!	
57 Fe	162,550.	32,510.	ppb	1.63	100000.	
59 Co	71.1	14.22	ppb	1.48	1000.	
60 Ni	219.05	43.81	ppb	0.71	1000.	
63 Cu	116.1	23.22	ppb	1.53	#VALUE!	
65 Cu	119.15	23.83	ppb	1.22	2000.	
66 Zn	351.5	70.3	ppb	0.59	2000.	
68 Zn	436.	87.2	ppb	0.53	#VALUE!	
75 As	79.9	15.98	ppb	1.82	1000.	
82 Se	4.946	0.9892	ppb	20.07	1000.	
88 Sr	1,898.	379.6	ppb	0.99	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.805	3.561	ppb	1.19	1000.	
107 Ag	0.7585	0.1517	ppb	7.96	100.	
109 Ag	0.5855	0.1171	ppb	8.01	#VALUE!	
111 Cd	2.683	0.5366	ppb	4.27	#VALUE!	
114 Cd	0.5135	0.1027	ppb	26.95	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	43.08	8.616	ppb	1.85	1000.	
120 Sn	43.375	8.675	ppb	0.57	#VALUE!	
121 Sb	2.16	0.432	ppb	2.03	#VALUE!	
123 Sb	2.167	0.4334	ppb	6.15	1000.	
135 Ba	2,852.5	570.5	ppb	1.21	2000.	
137 Ba	2,856.5	571.3	ppb	1.20	#VALUE!	
182 W	1.019	0.2038	ppb	5.26	1000.	
203 Tl	3.2035	0.6407	ppb	6.32	1000.	
205 Tl	3.3055	0.6611	ppb	1.95	#VALUE!	
208 Pb	105.6	21.12	ppb	1.58	2000.	
232 Th	80.	16.	ppb	1.90	1000.	
238 U	14.715	2.943	ppb	0.54	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2636322.80	4.57	2844110.50	92.7	69.5 - 120	
45 Sc	2427815.30	1.94	2809797.00	86.4	69.5 - 120	
72 Ge	515879.84	0.25	642252.38	80.3	69.5 - 120	
159 Tb	6334003.00	1.10	7051087.50	89.8	69.5 - 120	
209 Bi	3245901.50	1.09	3594227.50	90.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000982

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\134SMPL.D\134SMPL.D#
Date Acquired: May 12 2018 02:34 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-032
Misc Info:
Vial Number: 3305
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	12.66	1.266	ppb	2.99	100.	
11 B	274.9	27.49	ppb	2.55	1000.	
23 Na	8,015.	801.5	ppb	3.83	200000.	
25 Mg	169,200.	16,920.	ppb	0.57	200000.	
27 Al	288,700.	28,870.	ppb	0.96	200000.	
28 Si	3,121.	312.1	ppb	1.58	#VALUE!	
29 Si	2,493.	249.3	ppb	6.04	10000.	
39 K	76,660.	7,666.	ppb	2.48	200000.	
43 Ca	1,280,000.	128,000.	ppb	4.97	#VALUE!	
44 Ca	1,251,000.	125,100.	ppb	3.02	200000.	
51 V	607.8	60.78	ppb	0.76	1000.	
52 Cr	275.1	27.51	ppb	0.78	2000.	
53 Cr	255.1	25.51	ppb	1.02	#VALUE!	
55 Mn	4,542.	454.2	ppb	0.70	2000.	
56 Fe	270,700.	27,070.	ppb	1.47	#VALUE!	
57 Fe	258,500.	25,850.	ppb	1.59	100000.	
59 Co	90.72	9.072	ppb	0.41	1000.	
60 Ni	198.9	19.89	ppb	1.03	1000.	
63 Cu	158.1	15.81	ppb	0.50	#VALUE!	
65 Cu	160.6	16.06	ppb	0.21	2000.	
66 Zn	597.2	59.72	ppb	1.40	2000.	
68 Zn	792.7	79.27	ppb	2.27	#VALUE!	
75 As	110.7	11.07	ppb	1.40	1000.	
82 Se	9.872	0.9872	ppb	26.46	1000.	
88 Sr	4,002.	400.2	ppb	0.63	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.961	0.7961	ppb	2.82	1000.	
107 Ag	1.175	0.1175	ppb	4.57	100.	
109 Ag	0.9061	0.0906	ppb	6.44	#VALUE!	
111 Cd	4.394	0.4394	ppb	1.57	#VALUE!	
114 Cd	1.229	0.1229	ppb	10.66	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.63	4.763	ppb	1.57	1000.	
120 Sn	48.38	4.838	ppb	1.22	#VALUE!	
121 Sb	2.821	0.2821	ppb	1.60	#VALUE!	
123 Sb	2.726	0.2726	ppb	1.77	1000.	
135 Ba	6,450.	645.	ppb	0.13	2000.	
137 Ba	6,541.	654.1	ppb	1.00	#VALUE!	
182 W	0.8537	0.0854	ppb	3.94	1000.	
203 Tl	4.772	0.4772	ppb	4.76	1000.	
205 Tl	4.896	0.4896	ppb	3.40	#VALUE!	
208 Pb	163.5	16.35	ppb	1.00	2000.	
232 Th	121.6	12.16	ppb	1.55	1000.	
238 U	30.79	3.079	ppb	2.36	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2444278.80	2.85	2844110.50	85.9	69.5 - 120	
45 Sc	2456226.50	1.25	2809797.00	87.4	69.5 - 120	
72 Ge	512709.03	0.38	642252.38	79.8	69.5 - 120	
159 Tb	6397664.00	0.86	7051087.50	90.7	69.5 - 120	
209 Bi	3300109.80	1.62	3594227.50	91.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000983

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\135SMPL.D\135SMPL.D#
Date Acquired: May 12 2018 02:38 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 3306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0003	0.0003	ppb	447.57	100.	
11 B	2.568	2.568	ppb	12.98	1000.	
23 Na	0.125	0.125	ppb	189.44	200000.	
25 Mg	0.6986	0.6986	ppb	71.51	200000.	
27 Al	1.306	1.306	ppb	54.55	200000.	
28 Si	30.65	30.65	ppb	37.85	#VALUE!	
29 Si	-60.33	-60.33	ppb	20.92	10000.	
39 K	-7.22	-7.22	ppb	38.59	200000.	
43 Ca	5.696	5.696	ppb	72.24	#VALUE!	
44 Ca	3.443	3.443	ppb	100.76	200000.	
51 V	-0.0573	-0.0573	ppb	117.88	1000.	
52 Cr	0.1154	0.1154	ppb	17.15	2000.	
53 Cr	-6.369	-6.369	ppb	3.19	#VALUE!	
55 Mn	0.0183	0.0183	ppb	32.78	2000.	
56 Fe	26.29	26.29	ppb	12.21	#VALUE!	
57 Fe	6.387	6.387	ppb	24.13	100000.	
59 Co	0.0058	0.0058	ppb	54.69	1000.	
60 Ni	0.0144	0.0144	ppb	42.59	1000.	
63 Cu	0.1498	0.1498	ppb	1.97	#VALUE!	
65 Cu	0.155	0.155	ppb	10.56	2000.	
66 Zn	0.0213	0.0213	ppb	208.63	2000.	
68 Zn	0.1444	0.1444	ppb	72.99	#VALUE!	
75 As	0.1585	0.1585	ppb	106.44	1000.	
82 Se	-0.1369	-0.1369	ppb	156.46	1000.	
88 Sr	0.0135	0.0135	ppb	117.87	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0443	0.0443	ppb	17.07	1000.	
107 Ag	-0.0007	-0.0007	ppb	75.19	100.	
109 Ag	0.0008	0.0008	ppb	201.69	#VALUE!	
111 Cd	-0.095	-0.095	ppb	23.53	#VALUE!	
114 Cd	-0.0017	-0.0017	ppb	192.39	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0183	0.0183	ppb	9.88	1000.	
120 Sn	0.0179	0.0179	ppb	19.80	#VALUE!	
121 Sb	0.0012	0.0012	ppb	234.49	#VALUE!	
123 Sb	0.0014	0.0014	ppb	264.47	1000.	
135 Ba	0.0293	0.0293	ppb	78.95	2000.	
137 Ba	0.0225	0.0225	ppb	76.75	#VALUE!	
182 W	0.0034	0.0034	ppb	96.23	1000.	
203 Tl	0.0012	0.0012	ppb	535.91	1000.	
205 Tl	0.0019	0.0019	ppb	119.60	#VALUE!	
208 Pb	0.1873	0.1873	ppb	4.26	2000.	
232 Th	0.0082	0.0082	ppb	34.64	1000.	
238 U	0.0009	0.0009	ppb	73.63	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2553008.50	2.40	2844110.50	89.8	69.5 - 120	
45 Sc	2480322.80	1.73	2809797.00	88.3	69.5 - 120	
72 Ge	544206.63	1.35	642252.38	84.7	69.5 - 120	
159 Tb	6293676.50	0.84	7051087.50	89.3	69.5 - 120	
209 Bi	3355233.50	0.57	3594227.50	93.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000984

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\136_CCV.D\136_CCV.D#
Date Acquired: May 12 2018 02:43 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.1	ppb	2.23	25	96.4	
11 B	23.84	ppb	2.60	25	95.36	
23 Na	4,887.	ppb	1.61	5,000	97.74	
25 Mg	4,978.	ppb	0.98	5,000	99.56	
27 Al	494.7	ppb	0.99	500	98.94	
28 Si	500.4	ppb	1.72	500	100.08	
29 Si	409.4	ppb	2.14	500	81.88	Fail
39 K	5,047.	ppb	0.98	5,000	100.94	
43 Ca	4,810.	ppb	3.06	5,000	96.2	
44 Ca	5,045.	ppb	1.72	5,000	100.9	
51 V	25.34	ppb	1.29	25	101.36	
52 Cr	25.48	ppb	1.04	25	101.92	
53 Cr	21.67	ppb	1.29	25	86.68	
55 Mn	25.18	ppb	0.94	25	100.72	
56 Fe	5,005.	ppb	1.54	5,000	100.1	
57 Fe	5,072.	ppb	1.23	5,000	101.44	
59 Co	25.15	ppb	1.05	25	100.6	
60 Ni	25.2	ppb	1.34	25	100.8	
63 Cu	25.72	ppb	0.89	25	102.88	
65 Cu	25.53	ppb	0.58	25	102.12	
66 Zn	25.01	ppb	0.46	25	100.04	
68 Zn	25.41	ppb	0.54	25	101.64	
75 As	25.29	ppb	0.73	25	101.16	
82 Se	26.12	ppb	0.97	25	104.48	
88 Sr	24.49	ppb	0.67	25	97.96	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.29	ppb	0.56	25	101.16	
107 Ag	25.48	ppb	0.56	25	101.92	
109 Ag	25.29	ppb	0.21	25	101.16	
111 Cd	25.17	ppb	0.61	25	100.68	
114 Cd	25.19	ppb	0.47	25	100.76	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.8	ppb	1.05	25	95.2	
120 Sn	23.87	ppb	0.75	25	95.48	
121 Sb	24.26	ppb	0.35	25	97.04	
123 Sb	24.37	ppb	2.24	25	97.48	
135 Ba	24.96	ppb	2.09	25	99.84	
137 Ba	24.78	ppb	1.99	25	99.12	
182 W	24.92	ppb	1.46	25	99.68	
203 Tl	24.79	ppb	1.03	25	99.16	
205 Tl	25.08	ppb	0.66	25	100.32	
208 Pb	25.17	ppb	0.29	25	100.68	
232 Th	25.27	ppb	0.79	25	101.08	
238 U	26.82	ppb	0.24	25	107.28	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2654187.00	1.70	2844110.50	93.3	80 - 120.4	
45 Sc	2535033.00	0.84	2809797.00	90.2	80 - 120.4	
72 Ge	546617.38	0.90	642252.38	85.1	80 - 120.4	
159 Tb	6423804.50	0.33	7051087.50	91.1	80 - 120.4	
209 Bi	3354395.30	0.10	3594227.50	93.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000985

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\137_CCB.D\137_CCB.D#
Date Acquired: May 12 2018 02:47 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0014	ppb	61.97	1.00	
11 B	2.175	ppb	12.13	1.00	
23 Na	-1.101	ppb	16.60	1.00	
25 Mg	0.1116	ppb	48.40	1.00	
27 Al	0.0056	ppb	189.28	1.00	
28 Si	38.2	ppb	28.04	1.00	
29 Si	-38.18	ppb	23.09	1.00	
39 K	-2.78	ppb	153.42	1.00	
43 Ca	1.097	ppb	113.76	1.00	
44 Ca	-0.6031	ppb	223.01	1.00	
51 V	-0.0219	ppb	286.92	1.00	
52 Cr	0.116	ppb	9.03	1.00	
53 Cr	-5.815	ppb	2.32	1.00	
55 Mn	0.0227	ppb	15.79	1.00	
56 Fe	28.8	ppb	13.47	1.00	
57 Fe	5.382	ppb	54.14	1.00	
59 Co	0.0061	ppb	47.24	1.00	
60 Ni	0.005	ppb	140.99	1.00	
63 Cu	0.0394	ppb	18.25	1.00	
65 Cu	0.0274	ppb	52.08	1.00	
66 Zn	0.0891	ppb	89.50	1.00	
68 Zn	0.2894	ppb	26.33	1.00	
75 As	-0.0628	ppb	199.01	1.00	
82 Se	0.0372	ppb	373.99	1.00	
88 Sr	0.0022	ppb	116.56	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0243	ppb	23.17	1.00	
107 Ag	0.0085	ppb	12.25	1.00	
109 Ag	0.0063	ppb	49.88	1.00	
111 Cd	-0.0738	ppb	31.48	1.00	
114 Cd	-0.0008	ppb	200.68	1.00	
115 In	--------	---	--------	---	
118 Sn	0.037	ppb	13.12	1.00	
120 Sn	0.035	ppb	11.11	1.00	
121 Sb	0.0073	ppb	26.43	1.00	
123 Sb	0.0065	ppb	28.22	1.00	
135 Ba	-0.0004	ppb	1389.50	1.00	
137 Ba	0.0037	ppb	158.42	1.00	
182 W	0.0391	ppb	19.05	1.00	
203 Tl	-0.0019	ppb	320.08	1.00	
205 Tl	-0.0029	ppb	245.46	1.00	
208 Pb	0.0558	ppb	19.44	1.00	
232 Th	0.0669	ppb	23.20	1.00	
238 U	0.0028	ppb	33.29	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2515410.80	2.27	2844110.50	88.4	79.5 - 120	
45 Sc	2428499.50	1.49	2809797.00	86.4	79.5 - 120	
72 Ge	534589.50	0.89	642252.38	83.2	79.5 - 120	
159 Tb	6159863.50	0.54	7051087.50	87.4	79.5 - 120	
209 Bi	3295345.00	0.36	3594227.50	91.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000986

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\138SMPL.D\138SMPL.D#
Date Acquired: May 12 2018 02:51 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-033
Misc Info:
Vial Number: 3307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.498	0.7498	ppb	6.48	100.	
11 B	125.6	12.56	ppb	0.26	1000.	
23 Na	7,627.	762.7	ppb	1.99	200000.	
25 Mg	100,600.	10,060.	ppb	2.43	200000.	
27 Al	157,500.	15,750.	ppb	3.48	200000.	
28 Si	3,234.	323.4	ppb	8.44	#VALUE!	
29 Si	2,387.	238.7	ppb	7.96	10000.	
39 K	37,090.	3,709.	ppb	3.68	200000.	
43 Ca	1,315,000.	131,500.	ppb	1.49	#VALUE!	
44 Ca	1,272,000.	127,200.	ppb	1.62	200000.	
51 V	295.8	29.58	ppb	0.21	1000.	
52 Cr	148.1	14.81	ppb	0.18	2000.	
53 Cr	105.9	10.59	ppb	0.69	#VALUE!	
55 Mn	4,212.	421.2	ppb	1.33	2000.	
56 Fe	144,400.	14,440.	ppb	1.54	#VALUE!	
57 Fe	143,100.	14,310.	ppb	0.64	100000.	
59 Co	64.41	6.441	ppb	1.64	1000.	
60 Ni	112.9	11.29	ppb	1.36	1000.	
63 Cu	91.	9.1	ppb	1.63	#VALUE!	
65 Cu	93.47	9.347	ppb	0.84	2000.	
66 Zn	357.3	35.73	ppb	1.22	2000.	
68 Zn	432.9	43.29	ppb	2.27	#VALUE!	
75 As	33.09	3.309	ppb	9.63	1000.	
82 Se	7.307	0.7307	ppb	60.16	1000.	
88 Sr	2,495.	249.5	ppb	1.00	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.275	0.6275	ppb	2.36	1000.	
107 Ag	0.7621	0.0762	ppb	4.58	100.	
109 Ag	0.6725	0.0673	ppb	9.52	#VALUE!	
111 Cd	3.473	0.3473	ppb	8.54	#VALUE!	
114 Cd	1.749	0.1749	ppb	5.53	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	43.97	4.397	ppb	1.21	1000.	
120 Sn	44.04	4.404	ppb	2.36	#VALUE!	
121 Sb	1.703	0.1703	ppb	7.28	#VALUE!	
123 Sb	1.797	0.1797	ppb	10.68	1000.	
135 Ba	2,666.	266.6	ppb	1.24	2000.	
137 Ba	2,653.	265.3	ppb	1.52	#VALUE!	
182 W	0.8037	0.0804	ppb	9.16	1000.	
203 Tl	2.825	0.2825	ppb	6.76	1000.	
205 Tl	2.855	0.2855	ppb	4.85	#VALUE!	
208 Pb	104.8	10.48	ppb	1.50	2000.	
232 Th	73.19	7.319	ppb	1.50	1000.	
238 U	15.77	1.577	ppb	3.39	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2477348.80	1.20	2844110.50	87.1	69.5 - 120	
45 Sc	2426373.50	1.21	2809797.00	86.4	69.5 - 120	
72 Ge	511163.91	1.11	642252.38	79.6	69.5 - 120	
159 Tb	6342597.50	0.65	7051087.50	90.0	69.5 - 120	
209 Bi	3286630.80	1.40	3594227.50	91.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000987

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\139SMPL.D\139SMPL.D#
Date Acquired: May 12 2018 02:55 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-034
Misc Info:
Vial Number: 3308
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.32	1.032	ppb	0.60	100.	
11 B	219.9	21.99	ppb	8.22	1000.	
23 Na	9,595.	959.5	ppb	2.55	200000.	
25 Mg	149,500.	14,950.	ppb	2.76	200000.	
27 Al	234,000.	23,400.	ppb	2.13	200000.	
28 Si	3,721.	372.1	ppb	1.81	#VALUE!	
29 Si	2,835.	283.5	ppb	4.03	10000.	
39 K	56,410.	5,641.	ppb	0.50	200000.	
43 Ca	1,758,000.	175,800.	ppb	1.35	#VALUE!	
44 Ca	1,701,000.	170,100.	ppb	0.20	200000.	
51 V	543.4	54.34	ppb	0.67	1000.	
52 Cr	212.8	21.28	ppb	1.95	2000.	
53 Cr	187.2	18.72	ppb	1.57	#VALUE!	
55 Mn	2,962.	296.2	ppb	1.05	2000.	
56 Fe	209,500.	20,950.	ppb	1.36	#VALUE!	
57 Fe	203,200.	20,320.	ppb	1.06	100000.	
59 Co	67.68	6.768	ppb	1.11	1000.	
60 Ni	149.9	14.99	ppb	2.26	1000.	
63 Cu	125.1	12.51	ppb	1.67	#VALUE!	
65 Cu	128.3	12.83	ppb	2.29	2000.	
66 Zn	506.7	50.67	ppb	0.81	2000.	
68 Zn	766.4	76.64	ppb	0.78	#VALUE!	
75 As	114.	11.4	ppb	1.36	1000.	
82 Se	10.01	1.001	ppb	11.02	1000.	
88 Sr	4,801.	480.1	ppb	0.39	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.459	0.4459	ppb	3.65	1000.	
107 Ag	0.8972	0.0897	ppb	5.83	100.	
109 Ag	0.8532	0.0853	ppb	7.02	#VALUE!	
111 Cd	4.355	0.4355	ppb	4.33	#VALUE!	
114 Cd	1.447	0.1447	ppb	16.54	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.76	4.776	ppb	0.81	1000.	
120 Sn	46.96	4.696	ppb	1.09	#VALUE!	
121 Sb	2.316	0.2316	ppb	0.55	#VALUE!	
123 Sb	2.353	0.2353	ppb	2.94	1000.	
135 Ba	8,593.	859.3	ppb	0.52	2000.	
137 Ba	8,437.	843.7	ppb	1.22	#VALUE!	
182 W	1.051	0.1051	ppb	9.70	1000.	
203 Tl	4.414	0.4414	ppb	3.58	1000.	
205 Tl	4.313	0.4313	ppb	0.50	#VALUE!	
208 Pb	142.9	14.29	ppb	1.68	2000.	
232 Th	99.3	9.93	ppb	1.41	1000.	
238 U	25.51	2.551	ppb	1.33	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2541585.00	2.05	2844110.50	89.4	69.5 - 120	
45 Sc	2511288.00	0.45	2809797.00	89.4	69.5 - 120	
72 Ge	521664.47	0.10	642252.38	81.2	69.5 - 120	
159 Tb	6360613.50	1.00	7051087.50	90.2	69.5 - 120	
209 Bi	3188458.00	1.48	3594227.50	88.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000988

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\140SMPL.D\140SMPL.D#
Date Acquired: May 12 2018 03:00 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-035
Misc Info:
Vial Number: 3309
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.93	1.186	ppb	0.27	100.	
11 B	125.65	25.13	ppb	2.05	1000.	
23 Na	2,647.5	529.5	ppb	1.94	200000.	
25 Mg	70,750.	14,150.	ppb	1.50	200000.	
27 Al	147,500.	29,500.	ppb	2.01	200000.	
28 Si	3,352.5	670.5	ppb	1.56	#VALUE!	
29 Si	2,986.	597.2	ppb	4.02	10000.	
39 K	38,615.	7,723.	ppb	3.00	200000.	
43 Ca	660,500.	132,100.	ppb	1.55	#VALUE!	
44 Ca	639,000.	127,800.	ppb	0.91	200000.	
51 V	306.8	61.36	ppb	0.62	1000.	
52 Cr	132.65	26.53	ppb	0.46	2000.	
53 Cr	131.75	26.35	ppb	1.68	#VALUE!	
55 Mn	3,624.5	724.9	ppb	1.07	2000.	
56 Fe	152,550.	30,510.	ppb	1.45	#VALUE!	
57 Fe	147,650.	29,530.	ppb	1.39	100000.	
59 Co	52.	10.4	ppb	1.11	1000.	
60 Ni	106.4	21.28	ppb	1.04	1000.	
63 Cu	77.65	15.53	ppb	1.41	#VALUE!	
65 Cu	79.8	15.96	ppb	2.21	2000.	
66 Zn	301.45	60.29	ppb	1.12	2000.	
68 Zn	402.4	80.48	ppb	0.26	#VALUE!	
75 As	93.8	18.76	ppb	1.71	1000.	
82 Se	4.5255	0.9051	ppb	7.77	1000.	
88 Sr	1,714.	342.8	ppb	0.79	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.75	1.55	ppb	0.59	1000.	
107 Ag	0.5775	0.1155	ppb	12.68	100.	
109 Ag	0.4408	0.0882	ppb	3.58	#VALUE!	
111 Cd	2.5215	0.5043	ppb	8.94	#VALUE!	
114 Cd	0.714	0.1428	ppb	8.91	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	40.31	8.062	ppb	1.94	1000.	
120 Sn	40.465	8.093	ppb	0.96	#VALUE!	
121 Sb	1.5285	0.3057	ppb	5.41	#VALUE!	
123 Sb	1.445	0.289	ppb	5.00	1000.	
135 Ba	3,109.	621.8	ppb	0.79	2000.	
137 Ba	3,116.	623.2	ppb	0.69	#VALUE!	
182 W	0.64	0.128	ppb	14.25	1000.	
203 Tl	2.225	0.445	ppb	3.39	1000.	
205 Tl	2.3265	0.4653	ppb	2.74	#VALUE!	
208 Pb	83.15	16.63	ppb	0.93	2000.	
232 Th	62.4	12.48	ppb	1.15	1000.	
238 U	13.425	2.685	ppb	0.67	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2643535.50	2.44	2844110.50	92.9	69.5 - 120	
45 Sc	2462605.80	1.71	2809797.00	87.6	69.5 - 120	
72 Ge	517380.13	0.24	642252.38	80.6	69.5 - 120	
159 Tb	6315183.50	1.16	7051087.50	89.6	69.5 - 120	
209 Bi	3246215.30	1.40	3594227.50	90.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000989

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\141SMPL.D\141SMPL.D#
Date Acquired: May 12 2018 03:04 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-036
Misc Info:
Vial Number: 3310
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.92	1.384	ppb	4.28	100.	
11 B	144.25	28.85	ppb	3.90	1000.	
23 Na	5,265.	1,053.	ppb	4.31	200000.	
25 Mg	84,250.	16,850.	ppb	0.94	200000.	
27 Al	157,750.	31,550.	ppb	4.20	200000.	
28 Si	3,030.	606.	ppb	4.43	#VALUE!	
29 Si	2,561.5	512.3	ppb	1.75	10000.	
39 K	44,910.	8,982.	ppb	3.30	200000.	
43 Ca	688,500.	137,700.	ppb	0.26	#VALUE!	
44 Ca	670,000.	134,000.	ppb	0.96	200000.	
51 V	387.	77.4	ppb	0.71	1000.	
52 Cr	152.5	30.5	ppb	0.57	2000.	
53 Cr	152.65	30.53	ppb	3.91	#VALUE!	
55 Mn	5,145.	1,029.	ppb	2.10	2000.	
56 Fe	148,400.	29,680.	ppb	1.96	#VALUE!	
57 Fe	143,250.	28,650.	ppb	0.80	100000.	
59 Co	91.65	18.33	ppb	0.94	1000.	
60 Ni	149.9	29.98	ppb	1.54	1000.	
63 Cu	92.35	18.47	ppb	1.14	#VALUE!	
65 Cu	94.5	18.9	ppb	2.08	2000.	
66 Zn	348.9	69.78	ppb	0.56	2000.	
68 Zn	433.5	86.7	ppb	1.16	#VALUE!	
75 As	96.65	19.33	ppb	0.85	1000.	
82 Se	4.884	0.9768	ppb	5.63	1000.	
88 Sr	1,782.	356.4	ppb	0.55	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.655	1.531	ppb	1.89	1000.	
107 Ag	0.665	0.133	ppb	5.73	100.	
109 Ag	0.519	0.1038	ppb	6.64	#VALUE!	
111 Cd	3.6785	0.7357	ppb	6.16	#VALUE!	
114 Cd	1.761	0.3522	ppb	3.79	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	40.78	8.156	ppb	1.06	1000.	
120 Sn	41.695	8.339	ppb	0.98	#VALUE!	
121 Sb	1.737	0.3474	ppb	4.05	#VALUE!	
123 Sb	1.8735	0.3747	ppb	3.44	1000.	
135 Ba	2,934.	586.8	ppb	0.34	2000.	
137 Ba	2,958.	591.6	ppb	1.12	#VALUE!	
182 W	0.82	0.164	ppb	2.87	1000.	
203 Tl	2.8045	0.5609	ppb	5.84	1000.	
205 Tl	2.7685	0.5537	ppb	1.56	#VALUE!	
208 Pb	128.4	25.68	ppb	0.75	2000.	
232 Th	71.7	14.34	ppb	1.44	1000.	
238 U	16.175	3.235	ppb	1.58	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2587519.30	3.37	2844110.50	91.0	69.5 - 120	
45 Sc	2468628.80	0.94	2809797.00	87.9	69.5 - 120	
72 Ge	511879.47	0.59	642252.38	79.7	69.5 - 120	
159 Tb	6299152.00	0.51	7051087.50	89.3	69.5 - 120	
209 Bi	3243678.50	0.17	3594227.50	90.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000990

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\142SMPL.D\142SMPL.D#
Date Acquired: May 12 2018 03:09 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-037
Misc Info:
Vial Number: 3311
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	12.135	2.427	ppb	3.13	100.	
11 B	254.1	50.82	ppb	4.41	1000.	
23 Na	4,852.	970.4	ppb	2.20	200000.	
25 Mg	136,000.	27,200.	ppb	1.32	200000.	
27 Al	296,300.	59,260.	ppb	1.67	200000.	
28 Si	2,884.5	576.9	ppb	1.58	#VALUE!	
29 Si	2,513.	502.6	ppb	1.94	10000.	
39 K	90,250.	18,050.	ppb	0.66	200000.	
43 Ca	604,000.	120,800.	ppb	1.60	#VALUE!	
44 Ca	576,000.	115,200.	ppb	1.61	200000.	
51 V	638.	127.6	ppb	1.55	1000.	
52 Cr	263.7	52.74	ppb	1.40	2000.	
53 Cr	273.4	54.68	ppb	1.42	#VALUE!	
55 Mn	3,777.	755.4	ppb	0.53	2000.	
56 Fe	276,500.	55,300.	ppb	1.42	#VALUE!	
57 Fe	267,700.	53,540.	ppb	0.96	100000.	
59 Co	96.65	19.33	ppb	0.80	1000.	
60 Ni	209.95	41.99	ppb	0.17	1000.	
63 Cu	168.95	33.79	ppb	1.03	#VALUE!	
65 Cu	172.1	34.42	ppb	0.57	2000.	
66 Zn	655.	131.	ppb	1.47	2000.	
68 Zn	768.	153.6	ppb	0.46	#VALUE!	
75 As	103.6	20.72	ppb	1.08	1000.	
82 Se	7.445	1.489	ppb	10.18	1000.	
88 Sr	3,077.	615.4	ppb	0.87	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.865	1.173	ppb	3.37	1000.	
107 Ag	1.224	0.2448	ppb	4.92	100.	
109 Ag	0.9355	0.1871	ppb	7.51	#VALUE!	
111 Cd	5.2	1.04	ppb	7.45	#VALUE!	
114 Cd	1.5855	0.3171	ppb	4.85	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.48	9.096	ppb	2.37	1000.	
120 Sn	45.975	9.195	ppb	0.61	#VALUE!	
121 Sb	2.6445	0.5289	ppb	7.94	#VALUE!	
123 Sb	2.6445	0.5289	ppb	2.10	1000.	
135 Ba	4,051.	810.2	ppb	1.69	2000.	
137 Ba	3,952.5	790.5	ppb	0.93	#VALUE!	
182 W	1.0085	0.2017	ppb	2.27	1000.	
203 Tl	4.423	0.8846	ppb	1.04	1000.	
205 Tl	4.46	0.892	ppb	1.72	#VALUE!	
208 Pb	170.7	34.14	ppb	1.14	2000.	
232 Th	120.7	24.14	ppb	1.19	1000.	
238 U	18.055	3.611	ppb	1.76	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2599498.30	3.16	2844110.50	91.4	69.5 - 120	
45 Sc	2485577.80	1.45	2809797.00	88.5	69.5 - 120	
72 Ge	513087.75	0.64	642252.38	79.9	69.5 - 120	
159 Tb	6320976.50	0.66	7051087.50	89.6	69.5 - 120	
209 Bi	3194549.00	1.63	3594227.50	88.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000991

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\143SMPL.D\143SMPL.D#
Date Acquired: May 12 2018 03:13 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-038
Misc Info:
Vial Number: 3312
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	11.305	2.261	ppb	3.31	100.	
11 B	177.3	35.46	ppb	4.08	1000.	
23 Na	7,395.	1,479.	ppb	1.26	200000.	
25 Mg	108,250.	21,650.	ppb	2.69	200000.	
27 Al	245,350.	49,070.	ppb	1.53	200000.	
28 Si	3,044.5	608.9	ppb	3.43	#VALUE!	
29 Si	2,702.5	540.5	ppb	6.12	10000.	
39 K	59,200.	11,840.	ppb	0.85	200000.	
43 Ca	575,500.	115,100.	ppb	2.02	#VALUE!	
44 Ca	545,000.	109,000.	ppb	1.10	200000.	
51 V	481.6	96.32	ppb	1.74	1000.	
52 Cr	238.05	47.61	ppb	0.67	2000.	
53 Cr	244.05	48.81	ppb	0.30	#VALUE!	
55 Mn	6,870.	1,374.	ppb	1.27	2000.	
56 Fe	262,950.	52,590.	ppb	1.66	#VALUE!	
57 Fe	255,650.	51,130.	ppb	0.64	100000.	
59 Co	71.75	14.35	ppb	2.01	1000.	
60 Ni	184.3	36.86	ppb	1.99	1000.	
63 Cu	151.65	30.33	ppb	2.22	#VALUE!	
65 Cu	155.85	31.17	ppb	1.82	2000.	
66 Zn	606.5	121.3	ppb	0.87	2000.	
68 Zn	724.5	144.9	ppb	0.59	#VALUE!	
75 As	30.345	6.069	ppb	2.33	1000.	
82 Se	4.308	0.8616	ppb	10.35	1000.	
88 Sr	1,513.5	302.7	ppb	1.02	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.575	1.315	ppb	2.04	1000.	
107 Ag	1.0955	0.2191	ppb	0.89	100.	
109 Ag	0.8005	0.1601	ppb	2.29	#VALUE!	
111 Cd	4.1505	0.8301	ppb	2.99	#VALUE!	
114 Cd	1.232	0.2464	ppb	5.09	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.285	9.257	ppb	0.27	1000.	
120 Sn	46.39	9.278	ppb	1.44	#VALUE!	
121 Sb	1.942	0.3884	ppb	1.91	#VALUE!	
123 Sb	1.96	0.392	ppb	2.43	1000.	
135 Ba	4,134.	826.8	ppb	0.59	2000.	
137 Ba	4,064.	812.8	ppb	0.41	#VALUE!	
182 W	0.5415	0.1083	ppb	12.92	1000.	
203 Tl	3.9475	0.7895	ppb	1.55	1000.	
205 Tl	4.0205	0.8041	ppb	3.45	#VALUE!	
208 Pb	188.1	37.62	ppb	1.19	2000.	
232 Th	118.2	23.64	ppb	1.10	1000.	
238 U	15.775	3.155	ppb	1.04	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2621095.50	1.82	2844110.50	92.2	69.5 - 120	
45 Sc	2513718.00	1.32	2809797.00	89.5	69.5 - 120	
72 Ge	519994.34	0.16	642252.38	81.0	69.5 - 120	
159 Tb	6361823.50	0.64	7051087.50	90.2	69.5 - 120	
209 Bi	3245638.80	0.84	3594227.50	90.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000992

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\144SMPL.D\144SMPL.D#
Date Acquired: May 12 2018 03:17 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-039
Misc Info:
Vial Number: 3401
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.79	1.758	ppb	1.14	100.	
11 B	160.9	32.18	ppb	3.67	1000.	
23 Na	2,237.	447.4	ppb	1.93	200000.	
25 Mg	70,150.	14,030.	ppb	2.46	200000.	
27 Al	207,600.	41,520.	ppb	3.28	200000.	
28 Si	2,861.5	572.3	ppb	3.92	#VALUE!	
29 Si	2,369.	473.8	ppb	6.52	10000.	
39 K	65,600.	13,120.	ppb	0.51	200000.	
43 Ca	126,400.	25,280.	ppb	2.22	#VALUE!	
44 Ca	125,950.	25,190.	ppb	2.28	200000.	
51 V	357.25	71.45	ppb	2.10	1000.	
52 Cr	176.5	35.3	ppb	0.88	2000.	
53 Cr	214.15	42.83	ppb	3.11	#VALUE!	
55 Mn	2,979.5	595.9	ppb	2.64	2000.	
56 Fe	179,700.	35,940.	ppb	1.98	#VALUE!	
57 Fe	175,450.	35,090.	ppb	1.88	100000.	
59 Co	62.95	12.59	ppb	0.84	1000.	
60 Ni	168.05	33.61	ppb	1.54	1000.	
63 Cu	112.5	22.5	ppb	1.89	#VALUE!	
65 Cu	116.15	23.23	ppb	0.68	2000.	
66 Zn	458.05	91.61	ppb	0.92	2000.	
68 Zn	501.	100.2	ppb	1.39	#VALUE!	
75 As	57.7	11.54	ppb	1.66	1000.	
82 Se	3.558	0.7116	ppb	8.25	1000.	
88 Sr	875.	175.	ppb	1.59	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.126	0.6252	ppb	3.57	1000.	
107 Ag	0.772	0.1544	ppb	4.34	100.	
109 Ag	0.706	0.1412	ppb	3.48	#VALUE!	
111 Cd	2.2215	0.4443	ppb	16.51	#VALUE!	
114 Cd	0.548	0.1096	ppb	10.37	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.905	8.981	ppb	1.25	1000.	
120 Sn	45.025	9.005	ppb	1.97	#VALUE!	
121 Sb	1.7595	0.3519	ppb	5.49	#VALUE!	
123 Sb	1.7965	0.3593	ppb	4.50	1000.	
135 Ba	1,751.5	350.3	ppb	0.50	2000.	
137 Ba	1,743.5	348.7	ppb	0.83	#VALUE!	
182 W	0.679	0.1358	ppb	3.22	1000.	
203 Tl	2.95	0.59	ppb	2.01	1000.	
205 Tl	2.948	0.5896	ppb	1.94	#VALUE!	
208 Pb	109.8	21.96	ppb	0.88	2000.	
232 Th	72.8	14.56	ppb	1.66	1000.	
238 U	7.17	1.434	ppb	1.57	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2512304.30	1.62	2844110.50	88.3	69.5 - 120	
45 Sc	2483443.00	0.78	2809797.00	88.4	69.5 - 120	
72 Ge	519885.91	0.87	642252.38	80.9	69.5 - 120	
159 Tb	6207436.00	0.62	7051087.50	88.0	69.5 - 120	
209 Bi	3188873.00	0.76	3594227.50	88.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000993

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\145SMPL.D\145SMPL.D#
Date Acquired: May 12 2018 03:22 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-040
Misc Info:
Vial Number: 3402
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.68	1.736	ppb	4.09	100.	
11 B	205.45	41.09	ppb	4.68	1000.	
23 Na	10,535.	2,107.	ppb	4.23	200000.	
25 Mg	104,350.	20,870.	ppb	2.51	200000.	
27 Al	203,600.	40,720.	ppb	2.61	200000.	
28 Si	3,675.	735.	ppb	1.36	#VALUE!	
29 Si	3,130.5	626.1	ppb	2.17	10000.	
39 K	59,750.	11,950.	ppb	1.46	200000.	
43 Ca	803,500.	160,700.	ppb	3.75	#VALUE!	
44 Ca	776,000.	155,200.	ppb	0.94	200000.	
51 V	816.5	163.3	ppb	0.55	1000.	
52 Cr	184.2	36.84	ppb	0.36	2000.	
53 Cr	187.7	37.54	ppb	0.11	#VALUE!	
55 Mn	3,370.	674.	ppb	0.85	2000.	
56 Fe	185,100.	37,020.	ppb	0.52	#VALUE!	
57 Fe	178,950.	35,790.	ppb	0.30	100000.	
59 Co	97.9	19.58	ppb	0.33	1000.	
60 Ni	175.4	35.08	ppb	1.07	1000.	
63 Cu	117.5	23.5	ppb	0.81	#VALUE!	
65 Cu	120.05	24.01	ppb	0.25	2000.	
66 Zn	406.4	81.28	ppb	0.58	2000.	
68 Zn	582.5	116.5	ppb	0.83	#VALUE!	
75 As	284.3	56.86	ppb	1.25	1000.	
82 Se	6.445	1.289	ppb	4.87	1000.	
88 Sr	3,260.	652.	ppb	0.27	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.935	1.787	ppb	1.57	1000.	
107 Ag	0.8005	0.1601	ppb	5.50	100.	
109 Ag	0.6355	0.1271	ppb	12.47	#VALUE!	
111 Cd	3.212	0.6424	ppb	9.58	#VALUE!	
114 Cd	0.7	0.14	ppb	15.49	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	42.735	8.547	ppb	1.90	1000.	
120 Sn	42.92	8.584	ppb	1.09	#VALUE!	
121 Sb	2.802	0.5604	ppb	3.19	#VALUE!	
123 Sb	2.8175	0.5635	ppb	3.25	1000.	
135 Ba	5,850.	1,170.	ppb	0.50	2000.	
137 Ba	5,725.	1,145.	ppb	0.55	#VALUE!	
182 W	1.573	0.3146	ppb	1.63	1000.	
203 Tl	3.551	0.7102	ppb	1.10	1000.	
205 Tl	3.6815	0.7363	ppb	3.62	#VALUE!	
208 Pb	124.25	24.85	ppb	0.63	2000.	
232 Th	82.65	16.53	ppb	0.78	1000.	
238 U	17.905	3.581	ppb	1.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2572577.80	3.74	2844110.50	90.5	69.5 - 120	
45 Sc	2458348.00	3.36	2809797.00	87.5	69.5 - 120	
72 Ge	510338.50	1.61	642252.38	79.5	69.5 - 120	
159 Tb	6222098.00	1.87	7051087.50	88.2	69.5 - 120	
209 Bi	3162632.00	1.07	3594227.50	88.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000994

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\146SMPL.D\146SMPL.D#
Date Acquired: May 12 2018 03:26 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-048
Misc Info:
Vial Number: 3403
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.715	1.543	ppb	6.84	100.	
11 B	128.8	25.76	ppb	7.08	1000.	
23 Na	5,330.	1,066.	ppb	5.37	200000.	
25 Mg	120,400.	24,080.	ppb	1.30	200000.	
27 Al	159,700.	31,940.	ppb	2.18	200000.	
28 Si	2,352.	470.4	ppb	4.90	#VALUE!	
29 Si	1,850.5	370.1	ppb	6.58	10000.	
39 K	44,385.	8,877.	ppb	4.40	200000.	
43 Ca	1,408,500.	281,700.	ppb	2.97	#VALUE!	
44 Ca	1,397,500.	279,500.	ppb	1.57	200000.	>LDR
51 V	367.05	73.41	ppb	0.77	1000.	
52 Cr	157.1	31.42	ppb	1.29	2000.	
53 Cr	158.6	31.72	ppb	1.99	#VALUE!	
55 Mn	5,760.	1,152.	ppb	0.82	2000.	
56 Fe	151,500.	30,300.	ppb	0.99	#VALUE!	
57 Fe	147,650.	29,530.	ppb	0.84	100000.	
59 Co	85.35	17.07	ppb	2.32	1000.	
60 Ni	158.95	31.79	ppb	0.57	1000.	
63 Cu	108.65	21.73	ppb	0.21	#VALUE!	
65 Cu	111.8	22.36	ppb	1.25	2000.	
66 Zn	369.	73.8	ppb	1.80	2000.	
68 Zn	726.5	145.3	ppb	0.31	#VALUE!	
75 As	74.75	14.95	ppb	1.92	1000.	
82 Se	7.675	1.535	ppb	4.35	1000.	
88 Sr	4,119.5	823.9	ppb	1.16	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	9.39	1.878	ppb	2.68	1000.	
107 Ag	0.716	0.1432	ppb	4.19	100.	
109 Ag	0.602	0.1204	ppb	3.61	#VALUE!	
111 Cd	3.808	0.7616	ppb	9.05	#VALUE!	
114 Cd	1.699	0.3398	ppb	10.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.295	9.459	ppb	1.31	1000.	
120 Sn	48.045	9.609	ppb	1.17	#VALUE!	
121 Sb	1.82	0.364	ppb	1.85	#VALUE!	
123 Sb	1.875	0.375	ppb	10.10	1000.	
135 Ba	11,295.	2,259.	ppb	1.17	2000.	>LDR
137 Ba	10,980.	2,196.	ppb	0.90	#VALUE!	
182 W	1.2665	0.2533	ppb	3.11	1000.	
203 Tl	4.091	0.8182	ppb	2.64	1000.	
205 Tl	4.2245	0.8449	ppb	2.17	#VALUE!	
208 Pb	114.55	22.91	ppb	0.84	2000.	
232 Th	74.65	14.93	ppb	1.41	1000.	
238 U	20.855	4.171	ppb	1.83	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2538655.80	4.78	2844110.50	89.3	69.5 - 120	
45 Sc	2441747.80	1.17	2809797.00	86.9	69.5 - 120	
72 Ge	500533.81	0.76	642252.38	77.9	69.5 - 120	
159 Tb	6201052.50	0.36	7051087.50	87.9	69.5 - 120	
209 Bi	3098128.30	1.05	3594227.50	86.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000995

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\147SMPL.D\147SMPL.D#
Date Acquired: May 12 2018 03:30 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 3404
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0002	-0.0002	ppb	584.64	100.	
11 B	2.325	2.325	ppb	9.17	1000.	
23 Na	-1.193	-1.193	ppb	10.88	200000.	
25 Mg	0.2693	0.2693	ppb	13.77	200000.	
27 Al	0.8106	0.8106	ppb	14.79	200000.	
28 Si	41.23	41.23	ppb	16.93	#VALUE!	
29 Si	-45.13	-45.13	ppb	19.47	10000.	
39 K	-3.527	-3.527	ppb	13.43	200000.	
43 Ca	1.114	1.114	ppb	358.53	#VALUE!	
44 Ca	-0.2801	-0.2801	ppb	276.62	200000.	
51 V	-0.0439	-0.0439	ppb	70.16	1000.	
52 Cr	0.1101	0.1101	ppb	19.27	2000.	
53 Cr	-5.892	-5.892	ppb	0.92	#VALUE!	
55 Mn	0.0197	0.0197	ppb	9.61	2000.	
56 Fe	26.48	26.48	ppb	6.65	#VALUE!	
57 Fe	7.723	7.723	ppb	12.08	100000.	
59 Co	0.0037	0.0037	ppb	38.97	1000.	
60 Ni	0.0136	0.0136	ppb	49.17	1000.	
63 Cu	0.1557	0.1557	ppb	7.67	#VALUE!	
65 Cu	0.1395	0.1395	ppb	2.25	2000.	
66 Zn	-0.0309	-0.0309	ppb	60.01	2000.	
68 Zn	0.0595	0.0595	ppb	17.42	#VALUE!	
75 As	0.0211	0.0211	ppb	384.85	1000.	
82 Se	0.0461	0.0461	ppb	317.27	1000.	
88 Sr	-0.002	-0.002	ppb	23.43	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	-0.002	-0.002	ppb	5.39	1000.	
107 Ag	0.0021	0.0021	ppb	21.79	100.	
109 Ag	0.0012	0.0012	ppb	83.17	#VALUE!	
111 Cd	-0.1026	-0.1026	ppb	16.10	#VALUE!	
114 Cd	-0.0033	-0.0033	ppb	99.12	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0111	0.0111	ppb	48.10	1000.	
120 Sn	0.0124	0.0124	ppb	64.47	#VALUE!	
121 Sb	-0.0009	-0.0009	ppb	114.01	#VALUE!	
123 Sb	0.0003	0.0003	ppb	496.50	1000.	
135 Ba	0.0055	0.0055	ppb	245.51	2000.	
137 Ba	-0.0022	-0.0022	ppb	352.04	#VALUE!	
182 W	0.0016	0.0016	ppb	33.85	1000.	
203 Tl	-0.0057	-0.0057	ppb	71.93	1000.	
205 Tl	-0.0013	-0.0013	ppb	244.67	#VALUE!	
208 Pb	0.1688	0.1688	ppb	6.12	2000.	
232 Th	0.0075	0.0075	ppb	26.54	1000.	
238 U	0.0008	0.0008	ppb	127.80	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2664583.30	3.17	2844110.50	93.7	69.5 - 120	
45 Sc	2500659.00	0.74	2809797.00	89.0	69.5 - 120	
72 Ge	547799.31	0.19	642252.38	85.3	69.5 - 120	
159 Tb	6229027.00	1.25	7051087.50	88.3	69.5 - 120	
209 Bi	3331595.30	1.56	3594227.50	92.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000996

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\148_CCV.D\148_CCV.D#
Date Acquired: May 12 2018 03:35 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.8	ppb	4.12	25	95.2	
11 B	22.91	ppb	4.48	25	91.64	
23 Na	5,108.	ppb	2.54	5,000	102.16	
25 Mg	5,139.	ppb	1.76	5,000	102.78	
27 Al	501.4	ppb	0.47	500	100.28	
28 Si	530.	ppb	0.92	500	106	
29 Si	437.1	ppb	2.26	500	87.42	Fail
39 K	5,007.	ppb	0.48	5,000	100.14	
43 Ca	4,859.	ppb	2.33	5,000	97.18	
44 Ca	5,029.	ppb	1.41	5,000	100.58	
51 V	25.78	ppb	1.81	25	103.12	
52 Cr	25.56	ppb	0.48	25	102.24	
53 Cr	21.81	ppb	2.31	25	87.24	
55 Mn	25.34	ppb	1.11	25	101.36	
56 Fe	5,078.	ppb	1.67	5,000	101.56	
57 Fe	5,176.	ppb	1.16	5,000	103.52	
59 Co	25.5	ppb	0.74	25	102	
60 Ni	25.42	ppb	0.79	25	101.68	
63 Cu	25.9	ppb	1.42	25	103.6	
65 Cu	25.71	ppb	2.07	25	102.84	
66 Zn	25.13	ppb	1.14	25	100.52	
68 Zn	25.56	ppb	2.41	25	102.24	
75 As	25.29	ppb	0.25	25	101.16	
82 Se	25.72	ppb	2.09	25	102.88	
88 Sr	24.29	ppb	1.46	25	97.16	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.02	ppb	0.38	25	100.08	
107 Ag	25.12	ppb	0.75	25	100.48	
109 Ag	25.16	ppb	0.83	25	100.64	
111 Cd	25.01	ppb	0.16	25	100.04	
114 Cd	24.83	ppb	0.55	25	99.32	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.77	ppb	0.60	25	95.08	
120 Sn	23.8	ppb	1.49	25	95.2	
121 Sb	24.23	ppb	1.08	25	96.92	
123 Sb	24.36	ppb	1.46	25	97.44	
135 Ba	25.22	ppb	1.59	25	100.88	
137 Ba	25.17	ppb	1.50	25	100.68	
182 W	24.88	ppb	0.83	25	99.52	
203 Tl	24.47	ppb	1.39	25	97.88	
205 Tl	25.2	ppb	1.06	25	100.8	
208 Pb	25.09	ppb	1.42	25	100.36	
232 Th	25.18	ppb	2.12	25	100.72	
238 U	26.78	ppb	1.77	25	107.12	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2854087.80	2.28	2844110.50	100.4	80 - 120.4	
45 Sc	2569975.30	0.22	2809797.00	91.5	80 - 120.4	
72 Ge	549550.06	1.36	642252.38	85.6	80 - 120.4	
159 Tb	6346563.50	0.83	7051087.50	90.0	80 - 120.4	
209 Bi	3320891.50	1.12	3594227.50	92.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000997

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE11B.B\149_CCB.D\149_CCB.D#
Date Acquired: May 12 2018 03:39 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 11 2018 06:24 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0024	ppb	39.06	1.00	
11 B	2.176	ppb	17.98	1.00	
23 Na	-1.215	ppb	19.84	1.00	
25 Mg	0.1765	ppb	143.17	1.00	
27 Al	0.0719	ppb	118.29	1.00	
28 Si	37.51	ppb	14.20	1.00	
29 Si	-49.34	ppb	17.02	1.00	
39 K	-2.121	ppb	174.82	1.00	
43 Ca	0.9384	ppb	109.97	1.00	
44 Ca	-0.3966	ppb	278.87	1.00	
51 V	-0.0425	ppb	114.20	1.00	
52 Cr	0.1258	ppb	16.98	1.00	
53 Cr	-5.807	ppb	1.97	1.00	
55 Mn	0.0314	ppb	13.65	1.00	
56 Fe	23.41	ppb	12.73	1.00	
57 Fe	4.218	ppb	32.88	1.00	
59 Co	0.0032	ppb	154.61	1.00	
60 Ni	-0.0035	ppb	241.80	1.00	
63 Cu	0.0429	ppb	5.04	1.00	
65 Cu	0.0101	ppb	83.55	1.00	
66 Zn	0.0902	ppb	48.27	1.00	
68 Zn	0.2954	ppb	17.17	1.00	
75 As	0.1218	ppb	116.42	1.00	
82 Se	0.1078	ppb	193.32	1.00	
88 Sr	0.0014	ppb	253.50	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0262	ppb	36.97	1.00	
107 Ag	0.0082	ppb	55.24	1.00	
109 Ag	0.0062	ppb	52.90	1.00	
111 Cd	-0.0885	ppb	14.52	1.00	
114 Cd	0.0013	ppb	156.29	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0353	ppb	34.40	1.00	
120 Sn	0.0469	ppb	20.20	1.00	
121 Sb	0.005	ppb	99.08	1.00	
123 Sb	0.0084	ppb	29.00	1.00	
135 Ba	0.0066	ppb	62.42	1.00	
137 Ba	0.0021	ppb	195.06	1.00	
182 W	0.0452	ppb	47.54	1.00	
203 Tl	-0.0027	ppb	348.17	1.00	
205 Tl	-0.004	ppb	47.01	1.00	
208 Pb	0.0541	ppb	6.27	1.00	
232 Th	0.0696	ppb	19.76	1.00	
238 U	0.0035	ppb	41.56	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2802982.50	2.04	2844110.50	98.6	79.5 - 120	
45 Sc	2544099.80	1.27	2809797.00	90.5	79.5 - 120	
72 Ge	549390.88	0.44	642252.38	85.5	79.5 - 120	
159 Tb	6197769.50	0.95	7051087.50	87.9	79.5 - 120	
209 Bi	3309151.30	0.92	3594227.50	92.1	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE11B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000998

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500)

ANALYST: JS

ANALYSIS DATE: 05/14/2018

REVIEWED
MD 5/25/18
KATAHDIN ANALYTICAL
METALS SECTION

FILE NAME: JLE14A

METHOD: ICP-MS
- ☑ 200.8
- ☑ 6020
- ☑ DOD

The pHs of all samples that were tested by direct analysis in this analytical run were checked just prior to analysis and confirmed to be <2. The time of preservation of these samples was checked in the "Measured Turbidity and Preservation of Incoming Samples" logbook to verify that they had been preserved at least 16 hours prior to analysis. These verifications were performed by SS (initals) on 05.14.18 (date).
05.14.18

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17761	05/14/2018	05/14/2019	0 ug/L
Standard 1	MW17738	05/11/2018	06/21/2018	Varies by Element
ICV	MW17701	04/24/2018	07/24/2018	Varies by Element
PQL	MW17755	05/10/2018	07/13/2018	Varies by Element
LRS1	MW17735	05/04/2018	08/04/2018	Varies by Element
LRS2	MW17704	04/25/2018	07/25/2018	Varies by Element
ICSA	MW17763	05/14/2018	05/20/2018	Varies by Element
ICSAB	MW17764	05/14/2018	05/20/2018	Varies by Element
CCV	MW17759	05/11/2018	06/21/2018	Varies by Element
Internal Standard	MW17762	05/14/2018	08/142018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

10x diln. Post Spike: 0.1mL of MW17698 (pipet M16) into 10x diln. of sample (pipet M18)

Pb failed in final PQL due to sample carryover; accepted Pb results for all non-DW samples analyzed prior to CCV/CCB for analyte at 20:49/20:53.

MD 5/25/18

Dilutions: Some samples were diluted based on history or due to interfering element concentrations. Dilution preparations are as follows:

25x serial diln.: 1.6mL of 10x diln. of sample(pipet M18) + 6.4mL of MW17761 (pipet M18)

10x diln.: 1.0mL of sample (pipet M19) + 9.0mL of MW17761 (pipet M18)

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17761 (pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL of MW17761 (pipet M18)

Post Spike: 0.08mL of MW17698 (pipet M16) into 5x diln. of sample (pipet M18)

(Unless otherwise specified)

ME-019 – Revision 1 – 01/20/2016

INSTRUMENT RUNLOG

Instrument: AGILENT 7500

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
6020 TUNE	1	JLE14A	5/14/2018	3:12:00 14:23	JS
200.8 TUNE	1	JLE14A	5/14/2018	3:12:00 14:26	JS
Cal Blank	1	JLE14A	5/14/2018	3:12:00 15:12	JS
Cal Std	1	JLE14A	5/14/2018	3:16:00 15:16	JS
ICV	1	JLE14A	5/14/2018	3:20:00 15:20	JS
ICB	1	JLE14A	5/14/2018	3:23:00 15:23	JS
PQL	1	JLE14A	5/14/2018	3:26:00 15:26	JS
RINSE	1	JLE14A	5/14/2018	3:30:00 15:30	JS
ICSA	1	JLE14A	5/14/2018	3:34:00 15:34	JS
ICSAB	1	JLE14A	5/14/2018	3:38:00 15:38	JS
RINSE	1	JLE14A	5/14/2018	3:41:00 15:41	JS
LRS1	1	JLE14A	5/14/2018	3:45:00 15:45	JS
LRS2	1	JLE14A	5/14/2018	3:48:00 15:48	JS
RINSE	1	JLE14A	5/14/2018	3:52:00 15:52	JS
RINSE	1	JLE14A	5/14/2018	3:56:00 15:56	JS
CCV	1	JLE14A	5/14/2018	4:00:00 16:00	JS
CCB	1	JLE14A	5/14/2018	4:03:00 16:03	JS
SL4088-001	1	JLE14A	5/14/2018	4:07:00 16:07	JS
SL4104-001	1	JLE14A	5/14/2018	4:11:00 16:11	JS
PBWLE11IMW1	1	JLE14A	5/14/2018	4:14:00 16:14	JS
LCSWLE11IMW1	5	JLE14A	5/14/2018	4:18:00 16:18	JS
SL4028-001	1	JLE14A	5/14/2018	4:22:00 16:22	JS
SL4027-001	25	JLE14A	5/14/2018	4:26:00 16:26	JS
RINSE	1	JLE14A	5/14/2018	4:30:00 16:30	JS
RISNE	1	JLE14A	5/14/2018	4:33:00 16:33	JS
PBSLE04IMS1	5	JLE14A	5/14/2018	4:37:00 16:37	JS
LCSOLE04IMS1	5	JLE14A	5/14/2018	4:41:00 16:41	JS
CCV	1	JLE14A	5/14/2018	4:45:00 16:45	JS
CCB	1	JLE14A	5/14/2018	4:49:00 16:49	JS
SL3708-007	10	JLE14A	5/14/2018	4:52:00 16:52	JS
SL3708-019	10	JLE14A	5/14/2018	4:56:00 16:56	JS
SL3708-020	10	JLE14A	5/14/2018	5:00:00 17:00	JS
SL3708-021	10	JLE14A	5/14/2018	5:04:00 17:04	JS
SL3807-001	10	JLE14A	5/14/2018	5:08:00 17:08	JS
SL3807-002	10	JLE14A	5/14/2018	5:12:00 17:12	JS
RINSE	1	JLE14A	5/14/2018	5:16:00 17:16	JS
PBSLE11IMS2	5	JLE14A	5/14/2018	5:20:00 17:20	JS
LCSOLE11IMS2	5	JLE14A	5/14/2018	5:24:00 17:24	JS
LC2OLE11IMS2	5	JLE14A	5/14/2018	5:28:00 17:28	JS
CCV	1	JLE14A	5/14/2018	5:32:00 17:32	JS
CCB	1	JLE14A	5/14/2018	5:36:00 17:36	JS
SL3756-001	5	JLE14A	5/14/2018	5:40:00 17:40	JS
SL3756-003	5	JLE14A	5/14/2018	5:44:00 17:44	JS
SL3756-004	5	JLE14A	5/14/2018	5:48:00 17:48	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3756-005	5	JLE14A	5/14/2018	5:52:00 17:52	JS
PBSLE09IMS1	5	JLE14A	5/14/2018	5:56:00 17:56	JS
LCSOLE09IMS1	5	JLE14A	5/14/2018	6:00:00 18:00	JS
SL3809-048	10	JLE14A	5/14/2018	6:04:00 18:04	JS
SL3951-001	10	JLE14A	5/14/2018	6:08:00 18:08	JS
SL3951-001L	50	JLE14A	5/14/2018	6:12:00 18:12	JS
SL3951-001A	10	JLE14A	5/14/2018	6:16:00 18:16	JS
CCV	1	JLE14A	5/14/2018	6:20:00 18:20	JS
CCB	1	JLE14A	5/14/2018	6:24:00 18:24	JS
SL3951-001S	10	JLE14A	5/14/2018	6:28:00 18:28	JS
SL3951-001P	10	JLE14A	5/14/2018	6:32:00 18:32	JS
SL3809-020	10	JLE14A	5/14/2018	6:37:00 18:37	JS
RINSE	1	JLE14A	5/14/2018	6:41:00 18:41	JS
PBWLE14IMW1	1	JLE14A	5/14/2018	6:45:00 18:45	JS
LCSWLE14IMW1	5	JLE14A	5/14/2018	6:49:00 18:49	JS
SL4085-001	1	JLE14A	5/14/2018	6:53:00 18:53	JS
SL4085-002	1	JLE14A	5/14/2018	6:57:00 18:57	JS
SL4096-002	1	JLE14A	5/14/2018	7:01:00 19:01	JS
SL4105-001	1	JLE14A	5/14/2018	7:05:00 19:05	JS
CCV	1	JLE14A	5/14/2018	7:09:00 19:09	JS
CCB	1	JLE14A	5/14/2018	7:13:00 19:13	JS
SL4105-003	1	JLE14A	5/14/2018	7:17:00 19:17	JS
SL4096-001	1	JLE14A	5/14/2018	7:22:00 19:22	JS
PBWLE07IMW1	5	JLE14A	5/14/2018	7:26:00 19:26	JS
LCSWLE07IMW1	5	JLE14A	5/14/2018	7:30:00 19:30	JS
SL3808-002	5	JLE14A	5/14/2018	7:34:00 19:34	JS
SL3808-003	5	JLE14A	5/14/2018	7:38:00 19:38	JS
SL3808-004	5	JLE14A	5/14/2018	7:42:00 19:42	JS
SL3808-004L	25	JLE14A	5/14/2018	7:47:00 19:47	JS
SL3808-004A	5	JLE14A	5/14/2018	7:51:00 19:51	JS
SL3808-004S	5	JLE14A	5/14/2018	7:55:00 19:55	JS
CCV	1	JLE14A	5/14/2018	7:59:00 19:59	JS
CCB	1	JLE14A	5/14/2018	8:03:00 20:03	JS
SL3808-004P	5	JLE14A	5/14/2018	8:07:00 20:07	JS
SL3808-005	5	JLE14A	5/14/2018	8:11:00 20:11	JS
SL3808-005L	25	JLE14A	5/14/2018	8:16:00 20:16	JS
SL3808-005A	5	JLE14A	5/14/2018	8:20:00 20:20	JS
SL3808-005S	5	JLE14A	5/14/2018	8:24:00 20:24	JS
SL3808-005P	5	JLE14A	5/14/2018	8:28:00 20:28	JS
SL3808-006	5	JLE14A	5/14/2018	8:33:00 20:33	JS
SL3808-007	5	JLE14A	5/14/2018	8:37:00 20:37	JS
SL3808-008	5	JLE14A	5/14/2018	8:41:00 20:41	JS
SL3808-009	5	JLE14A	5/14/2018	8:45:00 20:45	JS
CCV	1	JLE14A	5/14/2018	8:49:00 20:49	JS
CCB	1	JLE14A	5/14/2018	8:53:00 20:53	JS
SL3808-010	5	JLE14A	5/14/2018	8:58:00 20:58	JS
SL3808-011	5	JLE14A	5/14/2018	9:02:00 21:02	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3808-012	5	JLE14A	5/14/2018	9:06:00 21:06	JS
SL3808-013	5	JLE14A	5/14/2018	9:10:00 21:10	JS
SL3808-014	5	JLE14A	5/14/2018	9:14:00 21:14	JS
SL3808-015	5	JLE14A	5/14/2018	9:19:00 21:19	JS
SL3808-016	5	JLE14A	5/14/2018	9:23:00 21:23	JS
SL3808-017	5	JLE14A	5/14/2018	9:27:00 21:27	JS
SL3808-018	5	JLE14A	5/14/2018	9:31:00 21:31	JS
RINSE	1	JLE14A	5/14/2018	9:36:00 21:36	JS
CCV	1	JLE14A	5/14/2018	9:40:00 21:40	JS
CCB	1	JLE14A	5/14/2018	9:44:00 21:44	JS
PBSLE08IMS2	5	JLE14A	5/14/2018	9:48:00 21:48	JS
LCSOLE08IMS2	5	JLE14A	5/14/2018	9:52:00 21:52	JS
SL3809-024	5	JLE14A	5/14/2018	9:56:00 21:56	JS
SL3809-024L	25	JLE14A	5/14/2018	10:01:0 22:01	JS
SL3809-024A	5	JLE14A	5/14/2018	10:05:0 22:05	JS
SL3809-024S	5	JLE14A	5/14/2018	10:09:0 22:09	JS
SL3809-024P	5	JLE14A	5/14/2018	10:13:0 22:13	JS
SL3809-041	5	JLE14A	5/14/2018	10:18:0 22:18	JS
SL3809-042	5	JLE14A	5/14/2018	10:22:0 22:22	JS
RINSE	1	JLE14A	5/14/2018	10:26:0 22:26	JS
CCV	1	JLE14A	5/14/2018	10:31:0 22:31	JS
CCB	1	JLE14A	5/14/2018	10:35:0 22:35	JS
SL3809-043	5	JLE14A	5/14/2018	10:39:0 22:39	JS
SL3809-044	5	JLE14A	5/14/2018	10:43:0 22:43	JS
SL3809-046	5	JLE14A	5/14/2018	10:48:0 22:48	JS
SL3809-047	5	JLE14A	5/14/2018	10:52:0 22:52	JS
RINSE	1	JLE14A	5/14/2018	10:56:0 22:56	JS
PBWLE07IMW2	5	JLE14A	5/14/2018	11:00:0 23:00	JS
LCSWLE07IMW2	5	JLE14A	5/14/2018	11:04:0 23:04	JS
SL3841-002	5	JLE14A	5/14/2018	11:09:0 23:09	JS
SL3841-003	5	JLE14A	5/14/2018	11:13:0 23:13	JS
SL3841-004	5	JLE14A	5/14/2018	11:17:0 23:17	JS
CCV	1	JLE14A	5/14/2018	11:21:0 23:21	JS
CCB	1	JLE14A	5/14/2018	11:25:0 23:25	JS
SL3841-005	5	JLE14A	5/14/2018	11:30:0 23:30	JS
SL3841-006	5	JLE14A	5/14/2018	11:34:0 23:34	JS
SL3841-010	5	JLE14A	5/14/2018	11:38:0 23:38	JS
SL3841-011	5	JLE14A	5/14/2018	11:42:0 23:42	JS
SL3841-011L	25	JLE14A	5/14/2018	11:47:0 23:47	JS
SL3841-011A	5	JLE14A	5/14/2018	11:51:0 23:51	JS
SL3841-011S	5	JLE14A	5/14/2018	11:55:0 23:55	JS
SL3841-011P	5	JLE14A	5/14/2018	11:59:0 23:59	JS
SL3841-012	5	JLE14A	5/15/2018	12:04:0 0:04	JS
SL3841-013	5	JLE14A	5/15/2018	12:08:0 0:08	JS
CCV	1	JLE14A	5/15/2018	12:12:0 0:12	JS
CCB	1	JLE14A	5/15/2018	12:16:0 0:16	JS
SL3841-014	5	JLE14A	5/15/2018	12:21:0 0:21	JS

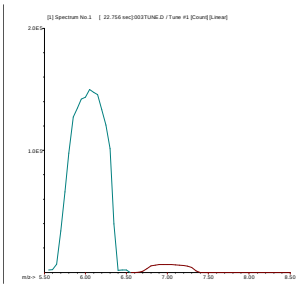
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3841-015	5	JLE14A	5/15/2018	12:25:0 0:25	JS
SL3841-016	5	JLE14A	5/15/2018	12:29:0 0:29	JS
SL3841-018	5	JLE14A	5/15/2018	12:33:0 0:33	JS
SL3841-019	5	JLE14A	5/15/2018	12:38:0 0:38	JS
SL3841-020	5	JLE14A	5/15/2018	12:42:0 0:42	JS
SL3841-008	5	JLE14A	5/15/2018	12:46:0 0:46	JS
SL3841-009	5	JLE14A	5/15/2018	12:50:0 0:50	JS
SL3841-017	5	JLE14A	5/15/2018	12:55:0 0:55	JS
RINSE	1	JLE14A	5/15/2018	12:59:0 0:59	JS
CCV	1	JLE14A	5/15/2018	1:03:00 1:03	JS
CCB	1	JLE14A	5/15/2018	1:07:00 1:07	JS
PQL	1	JLE14A	5/15/2018	1:11:00 1:11	JS
CCV	1	JLE14A	5/15/2018	1:16:00 1:16	JS
CCB	1	JLE14A	5/15/2018	1:20:00 1:20	JS

6020 QC Tune Report

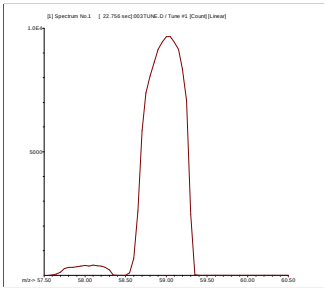
Data File: C:\ICPCHEM\1\DATA\JLE14A.B\003TUNE.D
Date Acquired: May 14 2018 02:23 pm
Acq. Method: TN6020E.M
Operator: JS
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

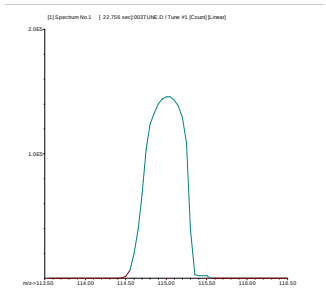
Element	Actual	Required	Flag
7 Li	2.74	5.00	
59 Co	2.02	5.00	
115 In	1.00	5.00	
205 Tl	0.68	5.00	



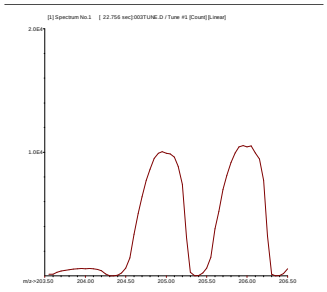
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 0.90
Flag:



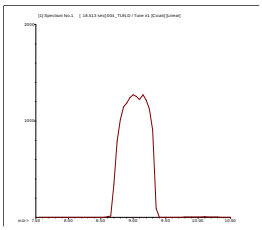
205 Tl
Mass Calib.
Actual: 205.00
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

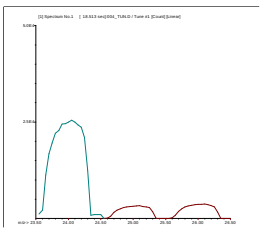
Data File: C:\ICPCHEM\1\DATA\JLE14A.B\004_TUN.D
Date Acquired: May 14 2018 02:26 pm
Acq. Method: TN200_8E.M
Operator: JS
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

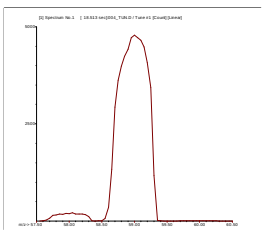
Element	Actual	Required	Flag
9 Be	1.13	5.00	
24 Mg	4.09	5.00	
59 Co	1.47	5.00	
115 In	1.15	5.00	
208 Pb	1.25	5.00	



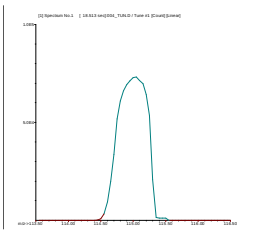
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



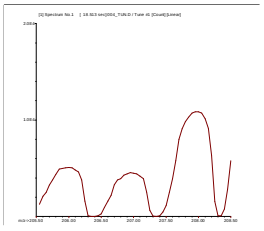
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.05
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:

Tune Result: Pass

Katahdin Analytical Services 4001005

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.I
Date Acquired: May 14 2018 03:12 pm
Operator: JS
Sample Name: Cal Blank
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: May 14 2018 03:14 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	4492941.00	A	63100.00	1.40
9	Be	8.52	P	3.39	39.84
11	B	363.35	P	23.33	6.42
23	Na	27923.40	P	1151.00	4.12
25	Mg	235.57	P	10.19	4.33
27	Al	2790.18	P	467.30	16.75
28	Si	1028041.00	A	9654.00	0.94
29	Si	87162.95	P	378.00	0.43
39	K	869563.19	A	7103.00	0.82
43	Ca	196.32	P	55.93	28.49
44	Ca	3096.37	P	46.37	1.50
45	Sc	3094961.00	A	25110.00	0.81
51	V	3827.64	P	97.58	2.55
52	Cr	9817.96	P	77.09	0.79
53	Cr	7332.00	P	146.30	2.00
55	Mn	1281.21	P	102.80	8.02
56	Fe	1940419.00	A	6890.00	0.36
57	Fe	9757.58	P	524.30	5.37
59	Co	126.68	P	13.33	10.52
60	Ni	57.42	P	15.40	26.82
63	Cu	493.36	P	50.45	10.23
65	Cu	236.67	P	24.04	10.16
66	Zn	951.17	P	86.57	9.10
68	Zn	1210.09	P	76.24	6.30
72	Ge	631723.63	P	4177.00	0.66
75	As	-79.20	P	79.24	100.05
82	Se	-8.77	P	41.39	471.73
88	Sr	81.49	P	16.97	20.83
89	Y	4547444.00	A	48600.00	1.07
98	Mo	22.20	P	1.96	8.81
107	Ag	33.33	P	8.82	26.46
109	Ag	24.45	P	12.62	51.63
111	Cd	941.05	P	13.84	1.47
114	Cd	10.19	P	20.58	202.01
115	In	4449646.00	A	16060.00	0.36
118	Sn	480.02	P	23.33	4.86
120	Sn	734.49	P	30.25	4.12
121	Sb	35.56	P	3.85	10.83
123	Sb	33.33	P	20.82	62.46
135	Ba	16.67	P	8.82	52.91
137	Ba	36.67	P	5.77	15.75
159	Tb	6220065.00	A	6427.00	0.10
182	W	33.33	P	5.77	17.32
203	Tl	280.01	P	44.10	15.75
205	Tl	720.04	P	45.10	6.26
208	Pb	2367.94	P	207.20	8.75
209	Bi	3318257.00	A	46850.00	1.41
232	Th	17.78	P	7.70	43.30
238	U	8.89	P	5.09	57.28

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\018CALI.D\018CALI.D#
Date Acquired: May 14 2018 03:16 pm
Operator: JS
Sample Name: Cal Std
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: May 14 2018 03:15 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	4392296.00	A	175800.00	4.00
9 Be	155583.41	P	3385.00	2.18
11 B	78512.41	P	4006.00	5.10
23 Na	87351000.00	A	3325000.00	3.81
25 Mg	7282041.00	A	107400.00	1.47
27 Al	6936554.00	A	372500.00	5.37
28 Si	4907787.00	A	166600.00	3.39
29 Si	297128.00	P	4726.00	1.59
39 K	97162120.00	A	1541000.00	1.59
43 Ca	173829.09	P	3799.00	2.19
44 Ca	2787016.00	A	27020.00	0.97
45 Sc	3192133.00	A	13830.00	0.43
51 V	537061.69	P	11930.00	2.22
52 Cr	473225.50	P	4999.00	1.06
53 Cr	61469.20	P	1430.00	2.33
55 Mn	600436.38	P	5586.00	0.93
56 Fe	98280152.00	A	1630000.00	1.66
57 Fe	2402100.00	A	33670.00	1.40
59 Co	526513.63	P	3691.00	0.70
60 Ni	120150.60	P	2336.00	1.94
63 Cu	285760.41	P	394.70	0.14
65 Cu	132106.20	P	1202.00	0.91
66 Zn	67576.40	P	847.30	1.25
68 Zn	49902.06	P	100.30	0.20
72 Ge	614107.69	P	3683.00	0.60
75 As	66479.13	P	1104.00	1.66
82 Se	5359.70	P	46.96	0.88
88 Sr	727325.00	P	2674.00	0.37
89 Y	4523317.00	A	45600.00	1.01
98 Mo	225425.09	P	869.60	0.39
107 Ag	365532.31	P	1726.00	0.47
109 Ag	347452.41	P	1654.00	0.48
111 Cd	72763.38	P	725.70	1.00
114 Cd	160262.80	P	1032.00	0.64
115 In	4357767.00	A	51820.00	1.19
118 Sn	217639.41	P	1337.00	0.61
120 Sn	299108.00	P	2144.00	0.72
121 Sb	254592.59	P	442.80	0.17
123 Sb	193107.09	P	1885.00	0.98
135 Ba	65242.41	P	142.10	0.22
137 Ba	114025.60	P	749.70	0.66
159 Tb	6276308.00	A	43250.00	0.69
182 W	283551.31	P	2614.00	0.92
203 Tl	237673.80	P	1898.00	0.80
205 Tl	563718.38	P	6126.00	1.09
208 Pb	771226.19	P	5415.00	0.70
209 Bi	3189297.00	A	6814.00	0.21
232 Th	792938.38	M	906.20	0.11
238 U	753721.63	P	14960.00	1.98

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4392296.00	4.00	4492941.00	97.8	79.5 - 120.4	
45 Sc	3192133.50	0.43	3094960.50	103.1	79.5 - 120.4	
72 Ge	614107.75	0.60	631723.63	97.2	79.5 - 120.4	
159 Tb	6276308.00	0.69	6220065.50	100.9	79.5 - 120.4	
209 Bi	3189297.50	0.21	3318256.50	96.1	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001007

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\019_ICV.D\019_ICV.D#
Date Acquired: May 14 2018 03:20 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: ICV
Misc Info:
Vial Number: 1202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.07	ppb	2.37	20	95.35	
11 B	21.69	ppb	1.86	20	108.45	
23 Na	4,031.	ppb	1.06	4,000	100.775	
25 Mg	4,031.	ppb	2.23	4,000	100.775	
27 Al	412.6	ppb	1.43	400	103.15	
28 Si	388.7	ppb	5.27	400	97.175	
29 Si	373.9	ppb	3.98	400	93.475	
39 K	3,962.	ppb	1.32	4,000	99.05	
43 Ca	3,896.	ppb	1.89	4,000	97.4	
44 Ca	3,999.	ppb	0.40	4,000	99.975	
51 V	19.56	ppb	1.01	20	97.8	
52 Cr	19.14	ppb	0.86	20	95.7	
53 Cr	16.39	ppb	3.43	20	81.95	
55 Mn	19.33	ppb	0.84	20	96.65	
56 Fe	3,920.	ppb	0.32	4,000	98	
57 Fe	3,963.	ppb	1.52	4,000	99.075	
59 Co	19.7	ppb	1.34	20	98.5	
60 Ni	19.36	ppb	2.27	20	96.8	
63 Cu	19.53	ppb	1.36	20	97.65	
65 Cu	19.99	ppb	1.35	20	99.95	
66 Zn	20.57	ppb	1.51	20	102.85	
68 Zn	20.19	ppb	0.43	20	100.95	
75 As	19.33	ppb	1.13	20	96.65	
82 Se	20.14	ppb	2.10	20	100.7	
88 Sr	19.35	ppb	0.51	20	96.75	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	37.59	ppb	0.47	40	93.975	
107 Ag	19.39	ppb	0.94	20	96.95	
109 Ag	19.53	ppb	0.47	20	97.65	
111 Cd	19.55	ppb	0.17	20	97.75	
114 Cd	19.6	ppb	0.25	20	98	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	19.83	ppb	1.26	20	99.15	
120 Sn	20.15	ppb	1.25	20	100.75	
121 Sb	20.01	ppb	0.97	20	100.05	
123 Sb	19.92	ppb	0.55	20	99.6	
135 Ba	19.88	ppb	0.74	20	99.4	
137 Ba	19.9	ppb	0.47	20	99.5	
182 W	19.44	ppb	1.81	20	97.2	
203 Tl	19.76	ppb	1.16	20	98.8	
205 Tl	19.79	ppb	0.59	20	98.95	
208 Pb	19.34	ppb	1.19	20	96.7	
232 Th	19.15	ppb	1.38	20	95.75	
238 U	19.17	ppb	2.33	20	95.85	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4554242.00	2.43	4492941.00	101.4	80 - 120.4	
45 Sc	3280234.30	0.99	3094960.50	106.0	80 - 120.4	
72 Ge	646170.63	0.77	631723.63	102.3	80 - 120.4	
159 Tb	6296521.00	0.37	6220065.50	101.2	80 - 120.4	
209 Bi	3282468.30	1.21	3318256.50	98.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001008

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\020_ICB.D\020_ICB.D#
Date Acquired: May 14 2018 03:23 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: ICB
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0024	ppb	203.14	1.00	
11 B	1.625	ppb	21.03	1.00	
23 Na	0.4833	ppb	128.20	1.00	
25 Mg	0.3642	ppb	185.28	1.00	
27 Al	0.0388	ppb	267.78	1.00	
28 Si	0.4705	ppb	1145.80	1.00	
29 Si	-12.3	ppb	72.41	1.00	
39 K	-0.4823	ppb	405.56	1.00	
43 Ca	0.4224	ppb	175.83	1.00	
44 Ca	1.092	ppb	121.52	1.00	
51 V	-0.1244	ppb	39.87	1.00	
52 Cr	-0.0797	ppb	32.14	1.00	
53 Cr	-1.143	ppb	27.94	1.00	
55 Mn	0.0099	ppb	42.69	1.00	
56 Fe	-6.95	ppb	44.73	1.00	
57 Fe	0.6893	ppb	106.86	1.00	
59 Co	0.0012	ppb	255.72	1.00	
60 Ni	0.0018	ppb	262.78	1.00	
63 Cu	-0.0053	ppb	73.02	1.00	
65 Cu	-0.0111	ppb	172.65	1.00	
66 Zn	0.0008	ppb	4280.90	1.00	
68 Zn	0.0718	ppb	116.03	1.00	
75 As	-0.074	ppb	72.76	1.00	
82 Se	0.1465	ppb	172.08	1.00	
88 Sr	0.0017	ppb	63.36	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0746	ppb	30.42	1.00	
107 Ag	0.0062	ppb	69.51	1.00	
109 Ag	0.0045	ppb	73.59	1.00	
111 Cd	-0.0299	ppb	32.39	1.00	
114 Cd	-0.0009	ppb	254.81	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0363	ppb	20.14	1.00	
120 Sn	0.0206	ppb	14.13	1.00	
121 Sb	0.005	ppb	48.38	1.00	
123 Sb	0.0025	ppb	141.07	1.00	
135 Ba	0.0042	ppb	89.05	1.00	
137 Ba	0.0043	ppb	164.01	1.00	
182 W	0.0606	ppb	26.73	1.00	
203 Tl	0.0088	ppb	126.55	1.00	
205 Tl	0.0054	ppb	107.50	1.00	
208 Pb	-0.0174	ppb	30.95	1.00	
232 Th	0.0573	ppb	11.13	1.00	
238 U	0.0064	ppb	24.96	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4481757.00	3.35	4492941.00	99.8	79.5 - 120	
45 Sc	3096233.80	1.70	3094960.50	100.0	79.5 - 120	
72 Ge	631557.81	0.62	631723.63	100.0	79.5 - 120	
159 Tb	6238624.50	1.48	6220065.50	100.3	79.5 - 120	
209 Bi	3309879.00	1.87	3318256.50	99.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001009

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\021_PQL.D\021_PQL.D#
Date Acquired: May 14 2018 03:26 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PQL
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.1904	ppb	3.58	0.20	95.2	
11 B	4.479	ppb	2.96	4.00	111.975	
23 Na	211.1	ppb	3.65	200.00	105.55	
25 Mg	20.57	ppb	3.21	20.00	102.85	
27 Al	20.37	ppb	1.79	20.00	101.85	
28 Si	107.4	ppb	3.22	100.00	107.4	
29 Si	90.32	ppb	7.79	100.00	90.32	
39 K	198.1	ppb	2.73	200.00	99.05	
43 Ca	14.45	ppb	15.68	20.00	72.25	
44 Ca	20.4	ppb	6.09	20.00	102	
51 V	0.9234	ppb	3.39	1.00	92.34	
52 Cr	0.8888	ppb	4.56	1.00	88.88	
53 Cr	-0.9714	ppb	9.47	---	#VALUE!	
55 Mn	0.4067	ppb	4.84	0.40	101.675	
56 Fe	15.81	ppb	22.02	20.00	79.05	
57 Fe	19.66	ppb	12.74	20.00	98.3	
59 Co	0.1998	ppb	5.49	0.20	99.9	
60 Ni	0.3995	ppb	2.10	0.40	99.875	
63 Cu	0.6149	ppb	8.58	0.60	102.483	
65 Cu	0.5779	ppb	5.29	0.60	96.3167	
66 Zn	2.082	ppb	4.59	2.00	104.1	
68 Zn	1.961	ppb	6.74	2.00	98.05	
75 As	0.9836	ppb	28.33	1.00	98.36	
82 Se	0.9533	ppb	34.25	1.00	95.33	
88 Sr	0.9733	ppb	6.85	1.00	97.33	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	0.9958	ppb	1.59	1.00	99.58	
107 Ag	0.1996	ppb	1.54	0.20	99.8	
109 Ag	0.2023	ppb	4.06	0.20	101.15	
111 Cd	0.1522	ppb	19.26	0.20	76.1	
114 Cd	0.2013	ppb	5.68	0.20	100.65	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	1.01	ppb	4.66	1.00	101	
120 Sn	1.028	ppb	4.57	1.00	102.8	
121 Sb	0.2139	ppb	1.88	0.20	106.95	
123 Sb	0.2206	ppb	6.49	0.20	110.3	
135 Ba	0.4154	ppb	4.29	0.40	103.85	
137 Ba	0.4108	ppb	4.25	0.40	102.7	
182 W	0.9916	ppb	1.89	1.00	99.16	
203 Tl	0.2199	ppb	5.96	0.20	109.95	
205 Tl	0.2031	ppb	6.07	0.20	101.55	
208 Pb	0.2184	ppb	7.78	0.20	109.2	
232 Th	0.2097	ppb	5.51	0.20	104.85	
238 U	0.2019	ppb	3.11	0.20	100.95	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4444047.50	1.03	4492941.00	98.9	80 - 120.4	
45 Sc	3077699.80	1.28	3094960.50	99.4	80 - 120.4	
72 Ge	629745.25	1.20	631723.63	99.7	80 - 120.4	
159 Tb	6219506.00	1.88	6220065.50	100.0	80 - 120.4	
209 Bi	3244998.80	1.68	3318256.50	97.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001010

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\022SMPL.D\022SMPL.D#
Date Acquired: May 14 2018 03:30 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0005	0.0005	ppb	137.77	100.	
11 B	0.436	0.436	ppb	18.90	1000.	
23 Na	0.7888	0.7888	ppb	32.44	200000.	
25 Mg	0.0542	0.0542	ppb	190.30	200000.	
27 Al	0.4346	0.4346	ppb	23.72	200000.	
28 Si	1.401	1.401	ppb	356.46	#VALUE!	
29 Si	-11.54	-11.54	ppb	9.58	10000.	
39 K	-0.8045	-0.8045	ppb	117.92	200000.	
43 Ca	-2.125	-2.125	ppb	183.53	#VALUE!	
44 Ca	1.18	1.18	ppb	33.25	200000.	
51 V	-0.0835	-0.0835	ppb	66.90	1000.	
52 Cr	-0.0481	-0.0481	ppb	23.69	2000.	
53 Cr	-1.862	-1.862	ppb	4.98	#VALUE!	
55 Mn	-0.0058	-0.0058	ppb	18.09	2000.	
56 Fe	-0.139	-0.139	ppb	3915.10	#VALUE!	
57 Fe	0.8098	0.8098	ppb	124.10	100000.	
59 Co	-0.0014	-0.0014	ppb	122.85	1000.	
60 Ni	0.0139	0.0139	ppb	129.62	1000.	
63 Cu	0.1345	0.1345	ppb	8.17	#VALUE!	
65 Cu	0.1353	0.1353	ppb	10.85	2000.	
66 Zn	0.0079	0.0079	ppb	406.56	2000.	
68 Zn	0.0125	0.0125	ppb	657.67	#VALUE!	
75 As	0.0086	0.0086	ppb	1671.70	1000.	
82 Se	0.1142	0.1142	ppb	105.34	1000.	
88 Sr	-0.0008	-0.0008	ppb	64.71	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0104	0.0104	ppb	43.62	1000.	
107 Ag	0.0019	0.0019	ppb	88.65	100.	
109 Ag	0.001	0.001	ppb	18.07	#VALUE!	
111 Cd	-0.0329	-0.0329	ppb	30.45	#VALUE!	
114 Cd	-0.0021	-0.0021	ppb	39.34	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0033	-0.0033	ppb	179.33	1000.	
120 Sn	-0.014	-0.014	ppb	70.57	#VALUE!	
121 Sb	-0.0008	-0.0008	ppb	128.72	#VALUE!	
123 Sb	0.001	0.001	ppb	451.61	1000.	
135 Ba	0.0134	0.0134	ppb	60.19	2000.	
137 Ba	0.0033	0.0033	ppb	45.96	#VALUE!	
182 W	0.0088	0.0088	ppb	17.26	1000.	
203 Tl	0.0046	0.0046	ppb	34.34	1000.	
205 Tl	-0.0047	-0.0047	ppb	55.81	#VALUE!	
208 Pb	0.1539	0.1539	ppb	7.46	2000.	
232 Th	0.0085	0.0085	ppb	28.43	1000.	
238 U	0.001	0.001	ppb	97.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4664009.00	4.81	4492941.00	103.8	69.5 - 120	
45 Sc	3153090.30	2.15	3094960.50	101.9	69.5 - 120	
72 Ge	638596.25	1.79	631723.63	101.1	69.5 - 120	
159 Tb	6112078.50	0.70	6220065.50	98.3	69.5 - 120	
209 Bi	3190041.30	1.55	3318256.50	96.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001011

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\023ICSA.D\023ICSA.D#
Date Acquired: May 14 2018 03:34 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: ICSA
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0018	ppb	78.58		
11 B	0.6987	ppb	12.46		
23 Na	102,200.	ppb	1.42		
25 Mg	99,940.	ppb	3.06		
27 Al	99,860.	ppb	3.13		
28 Si	20.08	ppb	6.03		
29 Si	54.59	ppb	8.16		
39 K	99,380.	ppb	1.26		
43 Ca	101,500.	ppb	1.80		
44 Ca	97,280.	ppb	1.99		
51 V	0.1946	ppb	38.18		
52 Cr	1.129	ppb	3.48		
53 Cr	0.434	ppb	116.18		
55 Mn	0.3535	ppb	3.80		
56 Fe	96,200.	ppb	2.31		
57 Fe	92,940.	ppb	0.97		
59 Co	0.0926	ppb	8.26		
60 Ni	-0.2361	ppb	5.15		
63 Cu	4.21	ppb	2.84		
65 Cu	1.045	ppb	3.45		
66 Zn	2.543	ppb	6.28		
68 Zn	0.4309	ppb	15.97		
75 As	0.0733	ppb	175.10		
82 Se	0.1863	ppb	114.06		
88 Sr	0.9453	ppb	3.25		
89 Y	--------	---	--------		
98 Mo	1,890.	ppb	1.29		
107 Ag	0.0248	ppb	24.67		
109 Ag	0.0172	ppb	15.52		
111 Cd	0.0345	ppb	32.33		
114 Cd	0.017	ppb	103.35		
115 In	--------	---	--------		
118 Sn	0.0491	ppb	18.29		
120 Sn	0.0273	ppb	62.33		
121 Sb	0.0373	ppb	5.28		
123 Sb	0.045	ppb	9.56		
135 Ba	0.0925	ppb	7.74		
137 Ba	0.0878	ppb	13.09		
182 W	0.2336	ppb	1.86		
203 Tl	0.0088	ppb	3.85		
205 Tl	-0.0024	ppb	154.03		
208 Pb	0.0625	ppb	19.23		
232 Th	0.0469	ppb	13.67		
238 U	0.0013	ppb	50.10		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4353064.00	1.58	4492941.00	96.9	69.5 - 120.4	
45 Sc	3237120.30	3.31	3094960.50	104.6	69.5 - 120.4	
72 Ge	639350.69	1.73	631723.63	101.2	69.5 - 120.4	
159 Tb	6088915.50	0.18	6220065.50	97.9	69.5 - 120.4	
209 Bi	2721698.50	0.92	3318256.50	82.0	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001012

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\024ICSB.D\024ICSB.D#
Date Acquired: May 14 2018 03:38 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: ICSAB
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	19.25	ppb	5.62	20.00	79.5 - 120	
11 B	22.54	ppb	4.29	20.00	79.5 - 120	
23 Na	105,400.	ppb	1.28	#########	79.5 - 120	
25 Mg	101,300.	ppb	1.35	#########	79.5 - 120	
27 Al	100,600.	ppb	1.78	#########	79.5 - 120	
28 Si	532.8	ppb	1.77	---	##### - #####	
29 Si	557.7	ppb	2.74	---	##### - #####	
39 K	98,850.	ppb	0.87	#########	79.5 - 120	
43 Ca	101,400.	ppb	1.51	#########	79.5 - 120	
44 Ca	96,790.	ppb	0.63	#########	79.5 - 120	
51 V	20.78	ppb	1.14	20.00	79.5 - 120	
52 Cr	20.93	ppb	1.68	20.00	79.5 - 120	
53 Cr	21.48	ppb	1.61	---	##### - #####	
55 Mn	19.71	ppb	0.89	20.00	79.5 - 120	
56 Fe	96,320.	ppb	0.83	#########	79.5 - 120	
57 Fe	93,950.	ppb	0.96	#########	79.5 - 120	
59 Co	19.52	ppb	2.01	20.00	79.5 - 120	
60 Ni	18.27	ppb	1.76	20.00	79.5 - 120	
63 Cu	22.58	ppb	1.15	20.00	79.5 - 120	
65 Cu	19.98	ppb	1.71	20.00	79.5 - 120	
66 Zn	19.69	ppb	0.24	20.00	79.5 - 120	
68 Zn	17.97	ppb	2.46	20.00	79.5 - 120	
75 As	19.69	ppb	0.59	20.00	79.5 - 120	
82 Se	19.38	ppb	2.06	20.00	79.5 - 120	
88 Sr	21.04	ppb	0.92	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,912.	ppb	1.01	2000.00	79.5 - 120	
107 Ag	17.84	ppb	2.04	20.00	79.5 - 120	
109 Ag	18.	ppb	1.71	20.00	79.5 - 120	
111 Cd	18.08	ppb	1.66	20.00	79.5 - 120	
114 Cd	18.01	ppb	1.07	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	21.12	ppb	1.37	20.00	79.5 - 120	
120 Sn	21.19	ppb	1.03	20.00	79.5 - 120	
121 Sb	20.82	ppb	0.90	20.00	79.5 - 120	
123 Sb	21.	ppb	0.69	20.00	79.5 - 120	
135 Ba	21.12	ppb	1.60	20.00	79.5 - 120	
137 Ba	20.93	ppb	0.48	20.00	79.5 - 120	
182 W	20.21	ppb	1.42	20.00	79.5 - 120	
203 Tl	21.27	ppb	0.95	20.00	79.5 - 120	
205 Tl	21.31	ppb	2.14	20.00	79.5 - 120	
208 Pb	21.15	ppb	1.50	20.00	79.5 - 120	
232 Th	22.13	ppb	1.43	20.00	79.5 - 120	
238 U	21.82	ppb	1.98	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4469143.00	4.45	4492941.00	99.5	69.5 - 120	
45 Sc	3342195.80	1.59	3094960.50	108.0	69.5 - 120	
72 Ge	656262.25	1.58	631723.63	103.9	69.5 - 120	
159 Tb	6200078.50	1.32	6220065.50	99.7	69.5 - 120	
209 Bi	2746144.30	1.36	3318256.50	82.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001013

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\025SMPL.D\025SMPL.D#
Date Acquired: May 14 2018 03:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0013	0.0013	ppb	141.83	100.	
11 B	0.382	0.382	ppb	15.94	1000.	
23 Na	8.213	8.213	ppb	75.02	200000.	
25 Mg	6.045	6.045	ppb	95.60	200000.	
27 Al	7.325	7.325	ppb	91.90	200000.	
28 Si	5.261	5.261	ppb	74.40	#VALUE!	
29 Si	-28.5	-28.5	ppb	17.73	10000.	
39 K	1.954	1.954	ppb	276.97	200000.	
43 Ca	4.073	4.073	ppb	73.39	#VALUE!	
44 Ca	5.841	5.841	ppb	83.19	200000.	
51 V	-0.0922	-0.0922	ppb	40.17	1000.	
52 Cr	-0.0064	-0.0064	ppb	162.19	2000.	
53 Cr	1.336	1.336	ppb	10.42	#VALUE!	
55 Mn	0.0023	0.0023	ppb	272.38	2000.	
56 Fe	3.359	3.359	ppb	74.96	#VALUE!	
57 Fe	8.593	8.593	ppb	28.02	100000.	
59 Co	-0.0001	-0.0001	ppb	2888.70	1000.	
60 Ni	0.0223	0.0223	ppb	32.26	1000.	
63 Cu	0.1581	0.1581	ppb	7.33	#VALUE!	
65 Cu	0.1542	0.1542	ppb	5.98	2000.	
66 Zn	0.1394	0.1394	ppb	66.61	2000.	
68 Zn	0.12	0.12	ppb	52.58	#VALUE!	
75 As	0.0177	0.0177	ppb	1054.70	1000.	
82 Se	-0.0035	-0.0035	ppb	2385.10	1000.	
88 Sr	0.0009	0.0009	ppb	220.73	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.214	1.214	ppb	34.62	1000.	
107 Ag	0.0055	0.0055	ppb	76.14	100.	
109 Ag	0.0046	0.0046	ppb	54.44	#VALUE!	
111 Cd	-0.0689	-0.0689	ppb	29.71	#VALUE!	
114 Cd	-0.0003	-0.0003	ppb	869.80	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0071	0.0071	ppb	83.16	1000.	
120 Sn	0.0003	0.0003	ppb	1882.80	#VALUE!	
121 Sb	0.0066	0.0066	ppb	54.91	#VALUE!	
123 Sb	0.	0.	ppb	18969.00	1000.	
135 Ba	0.0284	0.0284	ppb	47.20	2000.	
137 Ba	0.0404	0.0404	ppb	22.28	#VALUE!	
182 W	0.0115	0.0115	ppb	42.11	1000.	
203 Tl	0.0107	0.0107	ppb	46.22	1000.	
205 Tl	-0.0026	-0.0026	ppb	78.42	#VALUE!	
208 Pb	0.1394	0.1394	ppb	5.86	2000.	
232 Th	0.0109	0.0109	ppb	17.75	1000.	
238 U	0.0029	0.0029	ppb	12.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4698673.50	1.50	4492941.00	104.6	69.5 - 120	
45 Sc	3332540.80	0.94	3094960.50	107.7	69.5 - 120	
72 Ge	670699.69	0.52	631723.63	106.2	69.5 - 120	
159 Tb	6211803.50	0.10	6220065.50	99.9	69.5 - 120	
209 Bi	3211532.50	0.71	3318256.50	96.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001014

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\026SMPL.D\026SMPL.D#
Date Acquired: May 14 2018 03:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LRS1
Misc Info:
Vial Number: 3511
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	95.75	95.75	ppb	1.77	100.	
11 B	0.175	0.175	ppb	8.77	1000.	
23 Na	3.2	3.2	ppb	10.04	200000.	
25 Mg	1.057	1.057	ppb	3.53	200000.	
27 Al	3.751	3.751	ppb	4.63	200000.	
28 Si	-1.858	-1.858	ppb	250.54	#VALUE!	
29 Si	-6.36	-6.36	ppb	38.52	10000.	
39 K	0.6925	0.6925	ppb	195.81	200000.	
43 Ca	1,593.	1,593.	ppb	0.51	#VALUE!	
44 Ca	124.7	124.7	ppb	5.32	200000.	
51 V	1,078.	1,078.	ppb	1.16	1000.	>LDR
52 Cr	2,077.	2,077.	ppb	1.39	2000.	>LDR
53 Cr	2,120.	2,120.	ppb	0.82	#VALUE!	
55 Mn	2,032.	2,032.	ppb	1.22	2000.	>LDR
56 Fe	-0.0508	-0.0508	ppb	4049.60	#VALUE!	
57 Fe	0.1191	0.1191	ppb	359.78	100000.	
59 Co	1,039.	1,039.	ppb	0.61	1000.	>LDR
60 Ni	1,024.	1,024.	ppb	1.53	1000.	>LDR
63 Cu	2,000.	2,000.	ppb	1.87	#VALUE!	
65 Cu	2,058.	2,058.	ppb	1.60	2000.	>LDR
66 Zn	2,093.	2,093.	ppb	1.70	2000.	>LDR
68 Zn	2,096.	2,096.	ppb	1.45	#VALUE!	
75 As	1,059.	1,059.	ppb	1.27	1000.	>LDR
82 Se	1,095.	1,095.	ppb	0.44	1000.	>LDR
88 Sr	1,972.	1,972.	ppb	0.44	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1,002.	1,002.	ppb	0.85	1000.	>LDR
107 Ag	107.2	107.2	ppb	0.35	100.	>LDR
109 Ag	107.5	107.5	ppb	0.42	#VALUE!	
111 Cd	1,050.	1,050.	ppb	2.14	#VALUE!	
114 Cd	1,014.	1,014.	ppb	0.93	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,038.	1,038.	ppb	1.19	1000.	>LDR
120 Sn	1,039.	1,039.	ppb	0.51	#VALUE!	
121 Sb	1,050.	1,050.	ppb	1.03	#VALUE!	
123 Sb	1,065.	1,065.	ppb	0.70	1000.	>LDR
135 Ba	2,124.	2,124.	ppb	1.24	2000.	>LDR
137 Ba	2,091.	2,091.	ppb	1.79	#VALUE!	
182 W	1,008.	1,008.	ppb	1.62	1000.	>LDR
203 Tl	1,013.	1,013.	ppb	1.22	1000.	>LDR
205 Tl	993.6	993.6	ppb	1.44	#VALUE!	
208 Pb	1,981.	1,981.	ppb	1.72	2000.	
232 Th	980.6	980.6	ppb	2.04	1000.	
238 U	964.8	964.8	ppb	0.92	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4737063.50	1.51	4492941.00	105.4	69.5 - 120	
45 Sc	3138263.00	0.98	3094960.50	101.4	69.5 - 120	
72 Ge	617598.38	1.73	631723.63	97.8	69.5 - 120	
159 Tb	6094814.50	1.26	6220065.50	98.0	69.5 - 120	
209 Bi	3233750.00	0.83	3318256.50	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

17 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4001015

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\027SMPL.D\027SMPL.D#
Date Acquired: May 14 2018 03:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LRS2
Misc Info:
Vial Number: 3512
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0075	0.0075	ppb	17.13	100.	
11 B	0.5894	0.5894	ppb	7.38	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	204,300.	204,300.	ppb	2.12	200000.	>LDR
27 Al	203,300.	203,300.	ppb	0.75	200000.	>LDR
28 Si	10,460.	10,460.	ppb	2.09	#VALUE!	
29 Si	10,650.	10,650.	ppb	2.02	10000.	>LDR
39 K	194,500.	194,500.	ppb	2.89	200000.	
43 Ca	196,100.	196,100.	ppb	1.72	#VALUE!	
44 Ca	192,800.	192,800.	ppb	0.82	200000.	
51 V	0.1165	0.1165	ppb	63.26	1000.	
52 Cr	3.045	3.045	ppb	2.51	2000.	
53 Cr	1.139	1.139	ppb	13.92	#VALUE!	
55 Mn	7.572	7.572	ppb	0.51	2000.	
56 Fe	98,020.	98,020.	ppb	0.62	#VALUE!	
57 Fe	94,840.	94,840.	ppb	0.63	100000.	
59 Co	2.848	2.848	ppb	0.73	1000.	
60 Ni	3.123	3.123	ppb	4.92	1000.	
63 Cu	10.14	10.14	ppb	1.18	#VALUE!	
65 Cu	3.067	3.067	ppb	2.95	2000.	
66 Zn	3.9	3.9	ppb	1.40	2000.	
68 Zn	1.192	1.192	ppb	3.20	#VALUE!	
75 As	0.2336	0.2336	ppb	28.20	1000.	
82 Se	0.4522	0.4522	ppb	1.83	1000.	
88 Sr	6.963	6.963	ppb	0.99	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.52	1.52	ppb	41.95	1000.	
107 Ag	0.3507	0.3507	ppb	3.43	100.	
109 Ag	0.361	0.361	ppb	4.13	#VALUE!	
111 Cd	0.0216	0.0216	ppb	80.42	#VALUE!	
114 Cd	-0.0068	-0.0068	ppb	68.05	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.5872	0.5872	ppb	17.00	1000.	
120 Sn	0.5519	0.5519	ppb	14.27	#VALUE!	
121 Sb	0.173	0.173	ppb	15.17	#VALUE!	
123 Sb	0.1852	0.1852	ppb	6.51	1000.	
135 Ba	0.2458	0.2458	ppb	8.38	2000.	
137 Ba	0.2546	0.2546	ppb	7.39	#VALUE!	
182 W	1.228	1.228	ppb	36.19	1000.	
203 Tl	0.0425	0.0425	ppb	22.16	1000.	
205 Tl	0.046	0.046	ppb	11.64	#VALUE!	
208 Pb	0.4767	0.4767	ppb	3.33	2000.	
232 Th	1.034	1.034	ppb	22.76	1000.	
238 U	0.1286	0.1286	ppb	19.08	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4356302.50	4.05	4492941.00	97.0	69.5 - 120	
45 Sc	3386027.50	5.69	3094960.50	109.4	69.5 - 120	
72 Ge	633735.94	3.61	631723.63	100.3	69.5 - 120	
159 Tb	5556815.00	1.03	6220065.50	89.3	69.5 - 120	
209 Bi	2277712.30	1.60	3318256.50	68.6	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

4 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4001016

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\028SMPL.D\028SMPL.D#
Date Acquired: May 14 2018 03:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.002	0.002	ppb	44.51	100.	
11 B	0.1114	0.1114	ppb	33.73	1000.	
23 Na	15.13	15.13	ppb	65.08	200000.	
25 Mg	6.106	6.106	ppb	106.06	200000.	
27 Al	6.494	6.494	ppb	112.26	200000.	
28 Si	19.67	19.67	ppb	8.81	#VALUE!	
29 Si	-24.68	-24.68	ppb	27.35	10000.	
39 K	5.93	5.93	ppb	136.17	200000.	
43 Ca	4.335	4.335	ppb	115.89	#VALUE!	
44 Ca	6.913	6.913	ppb	78.88	200000.	
51 V	0.012	0.012	ppb	621.75	1000.	
52 Cr	0.0059	0.0059	ppb	83.39	2000.	
53 Cr	3.468	3.468	ppb	10.12	#VALUE!	
55 Mn	-0.0026	-0.0026	ppb	201.16	2000.	
56 Fe	8.523	8.523	ppb	84.65	#VALUE!	
57 Fe	7.524	7.524	ppb	46.48	100000.	
59 Co	0.0017	0.0017	ppb	114.89	1000.	
60 Ni	0.0248	0.0248	ppb	16.62	1000.	
63 Cu	0.193	0.193	ppb	11.24	#VALUE!	
65 Cu	0.1661	0.1661	ppb	2.58	2000.	
66 Zn	0.1708	0.1708	ppb	23.37	2000.	
68 Zn	0.2252	0.2252	ppb	32.61	#VALUE!	
75 As	-0.0605	-0.0605	ppb	158.49	1000.	
82 Se	-0.0989	-0.0989	ppb	299.71	1000.	
88 Sr	0.0027	0.0027	ppb	47.28	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.2214	0.2214	ppb	48.51	1000.	
107 Ag	0.0019	0.0019	ppb	95.69	100.	
109 Ag	0.0027	0.0027	ppb	105.00	#VALUE!	
111 Cd	-0.0817	-0.0817	ppb	3.81	#VALUE!	
114 Cd	-0.0008	-0.0008	ppb	367.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0741	0.0741	ppb	31.44	1000.	
120 Sn	0.0713	0.0713	ppb	15.16	#VALUE!	
121 Sb	0.0211	0.0211	ppb	26.27	#VALUE!	
123 Sb	0.0243	0.0243	ppb	24.59	1000.	
135 Ba	0.0428	0.0428	ppb	27.66	2000.	
137 Ba	0.0433	0.0433	ppb	59.15	#VALUE!	
182 W	0.2225	0.2225	ppb	38.54	1000.	
203 Tl	0.0061	0.0061	ppb	49.96	1000.	
205 Tl	0.0043	0.0043	ppb	84.25	#VALUE!	
208 Pb	0.1451	0.1451	ppb	7.34	2000.	
232 Th	0.0378	0.0378	ppb	56.06	1000.	
238 U	0.0056	0.0056	ppb	20.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4675134.00	0.31	4492941.00	104.1	69.5 - 120	
45 Sc	3493044.50	1.14	3094960.50	112.9	69.5 - 120	
72 Ge	694221.38	1.26	631723.63	109.9	69.5 - 120	
159 Tb	6229378.00	0.52	6220065.50	100.1	69.5 - 120	
209 Bi	3102786.50	1.17	3318256.50	93.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001017

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\029SMPL.D\029SMPL.D#
Date Acquired: May 14 2018 03:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0001	-0.0001	ppb	555.95	100.	
11 B	0.1167	0.1167	ppb	8.58	1000.	
23 Na	4.542	4.542	ppb	9.13	200000.	
25 Mg	1.038	1.038	ppb	9.53	200000.	
27 Al	1.248	1.248	ppb	8.46	200000.	
28 Si	15.76	15.76	ppb	39.66	#VALUE!	
29 Si	-17.75	-17.75	ppb	13.71	10000.	
39 K	-0.7393	-0.7393	ppb	244.29	200000.	
43 Ca	-2.352	-2.352	ppb	108.55	#VALUE!	
44 Ca	1.545	1.545	ppb	60.63	200000.	
51 V	-0.0589	-0.0589	ppb	136.21	1000.	
52 Cr	0.0041	0.0041	ppb	552.64	2000.	
53 Cr	4.153	4.153	ppb	5.69	#VALUE!	
55 Mn	0.0009	0.0009	ppb	56.62	2000.	
56 Fe	-3.143	-3.143	ppb	59.66	#VALUE!	
57 Fe	2.474	2.474	ppb	58.04	100000.	
59 Co	-0.003	-0.003	ppb	89.84	1000.	
60 Ni	0.0169	0.0169	ppb	80.76	1000.	
63 Cu	0.183	0.183	ppb	10.08	#VALUE!	
65 Cu	0.159	0.159	ppb	1.77	2000.	
66 Zn	0.125	0.125	ppb	9.12	2000.	
68 Zn	0.1245	0.1245	ppb	75.23	#VALUE!	
75 As	0.123	0.123	ppb	78.81	1000.	
82 Se	-0.0321	-0.0321	ppb	97.66	1000.	
88 Sr	0.0009	0.0009	ppb	133.55	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0997	0.0997	ppb	43.55	1000.	
107 Ag	0.0014	0.0014	ppb	126.29	100.	
109 Ag	0.0004	0.0004	ppb	165.19	#VALUE!	
111 Cd	-0.0852	-0.0852	ppb	21.00	#VALUE!	
114 Cd	-0.0038	-0.0038	ppb	17.55	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0279	0.0279	ppb	10.55	1000.	
120 Sn	0.0178	0.0178	ppb	35.91	#VALUE!	
121 Sb	0.0106	0.0106	ppb	32.13	#VALUE!	
123 Sb	0.0082	0.0082	ppb	13.76	1000.	
135 Ba	0.0389	0.0389	ppb	28.69	2000.	
137 Ba	0.0362	0.0362	ppb	46.25	#VALUE!	
182 W	0.0977	0.0977	ppb	23.18	1000.	
203 Tl	0.0014	0.0014	ppb	390.83	1000.	
205 Tl	-0.002	-0.002	ppb	116.99	#VALUE!	
208 Pb	0.1315	0.1315	ppb	5.38	2000.	
232 Th	0.0262	0.0262	ppb	63.84	1000.	
238 U	0.0026	0.0026	ppb	17.63	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4631282.00	2.10	4492941.00	103.1	69.5 - 120	
45 Sc	3366437.80	1.56	3094960.50	108.8	69.5 - 120	
72 Ge	667159.63	1.04	631723.63	105.6	69.5 - 120	
159 Tb	6194958.00	1.25	6220065.50	99.6	69.5 - 120	
209 Bi	3183284.00	0.98	3318256.50	95.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001018

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\030_CCV.D\030_CCV.D#
Date Acquired: May 14 2018 04:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.14	ppb	3.55	25	92.56	
11 B	24.09	ppb	5.13	25	96.36	
23 Na	5,302.	ppb	3.99	5,000	106.04	
25 Mg	5,259.	ppb	1.70	5,000	105.18	
27 Al	507.1	ppb	1.73	500	101.42	
28 Si	510.4	ppb	3.60	500	102.08	
29 Si	475.5	ppb	5.01	500	95.1	
39 K	4,848.	ppb	1.05	5,000	96.96	
43 Ca	4,937.	ppb	2.37	5,000	98.74	
44 Ca	5,012.	ppb	0.17	5,000	100.24	
51 V	25.17	ppb	2.31	25	100.68	
52 Cr	24.55	ppb	1.37	25	98.2	
53 Cr	25.08	ppb	3.43	25	100.32	
55 Mn	24.45	ppb	0.38	25	97.8	
56 Fe	4,872.	ppb	1.05	5,000	97.44	
57 Fe	4,950.	ppb	1.41	5,000	99	
59 Co	24.75	ppb	0.55	25	99	
60 Ni	24.2	ppb	1.31	25	96.8	
63 Cu	24.74	ppb	1.21	25	98.96	
65 Cu	24.9	ppb	0.84	25	99.6	
66 Zn	24.98	ppb	0.42	25	99.92	
68 Zn	24.58	ppb	0.94	25	98.32	
75 As	24.37	ppb	1.42	25	97.48	
82 Se	24.52	ppb	0.47	25	98.08	
88 Sr	24.07	ppb	1.57	25	96.28	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.94	ppb	0.82	25	95.76	
107 Ag	24.29	ppb	1.00	25	97.16	
109 Ag	24.38	ppb	0.50	25	97.52	
111 Cd	24.38	ppb	0.59	25	97.52	
114 Cd	24.37	ppb	0.40	25	97.48	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.11	ppb	0.41	25	100.44	
120 Sn	25.29	ppb	1.06	25	101.16	
121 Sb	25.67	ppb	1.42	25	102.68	
123 Sb	25.82	ppb	1.29	25	103.28	
135 Ba	25.39	ppb	2.94	25	101.56	
137 Ba	25.26	ppb	1.51	25	101.04	
182 W	24.11	ppb	0.96	25	96.44	
203 Tl	24.42	ppb	0.87	25	97.68	
205 Tl	24.41	ppb	1.63	25	97.64	
208 Pb	24.55	ppb	1.56	25	98.2	
232 Th	23.91	ppb	0.96	25	95.64	
238 U	23.76	ppb	1.86	25	95.04	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4779091.00	2.93	4492941.00	106.4	80 - 120.4	
45 Sc	3299230.00	1.20	3094960.50	106.6	80 - 120.4	
72 Ge	642495.13	1.01	631723.63	101.7	80 - 120.4	
159 Tb	6194052.50	0.76	6220065.50	99.6	80 - 120.4	
209 Bi	3159346.30	0.63	3318256.50	95.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001019

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\031_CCB.D\031_CCB.D#
Date Acquired: May 14 2018 04:03 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0014	ppb	82.34	1.00	
11 B	0.9984	ppb	17.72	1.00	
23 Na	2.923	ppb	22.36	1.00	
25 Mg	0.9045	ppb	69.93	1.00	
27 Al	0.5653	ppb	91.53	1.00	
28 Si	9.482	ppb	32.21	1.00	
29 Si	-7.587	ppb	107.46	1.00	
39 K	1.493	ppb	111.19	1.00	
43 Ca	-1.615	ppb	99.38	1.00	
44 Ca	1.587	ppb	61.22	1.00	
51 V	-0.0448	ppb	284.02	1.00	
52 Cr	-0.0665	ppb	48.82	1.00	
53 Cr	1.351	ppb	26.80	1.00	
55 Mn	0.0035	ppb	265.35	1.00	
56 Fe	-7.403	ppb	18.97	1.00	
57 Fe	-0.6607	ppb	172.24	1.00	
59 Co	0.0004	ppb	612.17	1.00	
60 Ni	0.0009	ppb	864.46	1.00	
63 Cu	0.0158	ppb	45.58	1.00	
65 Cu	0.0148	ppb	45.24	1.00	
66 Zn	0.0134	ppb	185.36	1.00	
68 Zn	-0.0111	ppb	259.04	1.00	
75 As	0.0498	ppb	163.80	1.00	
82 Se	0.1398	ppb	102.36	1.00	
88 Sr	0.0036	ppb	78.30	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0664	ppb	28.45	1.00	
107 Ag	0.0059	ppb	42.48	1.00	
109 Ag	0.0038	ppb	87.51	1.00	
111 Cd	-0.0311	ppb	72.58	1.00	
114 Cd	-0.0004	ppb	622.65	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0411	ppb	10.96	1.00	
120 Sn	0.038	ppb	6.52	1.00	
121 Sb	0.007	ppb	87.78	1.00	
123 Sb	0.0116	ppb	89.66	1.00	
135 Ba	0.0128	ppb	73.91	1.00	
137 Ba	0.0015	ppb	109.77	1.00	
182 W	0.0789	ppb	41.16	1.00	
203 Tl	0.0015	ppb	648.05	1.00	
205 Tl	0.0004	ppb	2219.10	1.00	
208 Pb	-0.0389	ppb	10.84	1.00	
232 Th	0.0825	ppb	10.85	1.00	
238 U	0.0039	ppb	81.62	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4777584.00	0.61	4492941.00	106.3	79.5 - 120	
45 Sc	3181318.30	0.72	3094960.50	102.8	79.5 - 120	
72 Ge	641312.81	0.76	631723.63	101.5	79.5 - 120	
159 Tb	6051368.00	0.87	6220065.50	97.3	79.5 - 120	
209 Bi	3203150.30	1.83	3318256.50	96.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\032SMPL.D\032SMPL.D#
Date Acquired: May 14 2018 04:07 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4088-001
Misc Info: DW
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.3216	0.3216	ppb	4.29	100.	
11 B	5.6	5.6	ppb	3.36	1000.	
23 Na	145,100.	145,100.	ppb	1.21	200000.	
25 Mg	1,500.	1,500.	ppb	1.50	200000.	
27 Al	676.1	676.1	ppb	1.42	200000.	
28 Si	2,520.	2,520.	ppb	0.37	#VALUE!	
29 Si	2,541.	2,541.	ppb	0.88	10000.	
39 K	2,537.	2,537.	ppb	2.41	200000.	
43 Ca	27,600.	27,600.	ppb	1.58	#VALUE!	
44 Ca	27,060.	27,060.	ppb	0.44	200000.	
51 V	0.1489	0.1489	ppb	39.07	1000.	
52 Cr	0.7271	0.7271	ppb	3.40	2000.	
53 Cr	-1.31	-1.31	ppb	41.38	#VALUE!	
55 Mn	110.2	110.2	ppb	0.80	2000.	
56 Fe	25.5	25.5	ppb	17.24	#VALUE!	
57 Fe	45.32	45.32	ppb	13.92	100000.	
59 Co	0.2846	0.2846	ppb	3.84	1000.	
60 Ni	4.26	4.26	ppb	1.31	1000.	
63 Cu	42.7	42.7	ppb	0.61	#VALUE!	
65 Cu	38.14	38.14	ppb	1.34	2000.	
66 Zn	9.262	9.262	ppb	1.63	2000.	
68 Zn	12.81	12.81	ppb	3.85	#VALUE!	
75 As	0.1692	0.1692	ppb	21.84	1000.	
82 Se	0.4385	0.4385	ppb	12.97	1000.	
88 Sr	102.3	102.3	ppb	1.22	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0514	0.0514	ppb	28.99	1000.	
107 Ag	0.0857	0.0857	ppb	30.50	100.	
109 Ag	0.0985	0.0985	ppb	31.47	#VALUE!	
111 Cd	0.3008	0.3008	ppb	5.49	#VALUE!	
114 Cd	0.2808	0.2808	ppb	1.22	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.012	0.012	ppb	66.62	1000.	
120 Sn	-0.0025	-0.0025	ppb	348.39	#VALUE!	
121 Sb	0.0173	0.0173	ppb	17.88	#VALUE!	
123 Sb	0.0173	0.0173	ppb	12.30	1000.	
135 Ba	103.4	103.4	ppb	1.42	2000.	
137 Ba	102.7	102.7	ppb	1.11	#VALUE!	
182 W	0.0442	0.0442	ppb	35.36	1000.	
203 Tl	0.0286	0.0286	ppb	33.65	1000.	
205 Tl	0.0228	0.0228	ppb	12.23	#VALUE!	
208 Pb	0.7485	0.7485	ppb	1.61	2000.	
232 Th	0.0609	0.0609	ppb	23.39	1000.	
238 U	0.0337	0.0337	ppb	11.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4617807.50	5.03	4492941.00	102.8	69.5 - 120	
45 Sc	3355415.30	2.28	3094960.50	108.4	69.5 - 120	
72 Ge	640903.63	0.87	631723.63	101.5	69.5 - 120	
159 Tb	5966605.50	1.34	6220065.50	95.9	69.5 - 120	
209 Bi	2855604.30	1.36	3318256.50	86.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001021

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\033SMPL.D\033SMPL.D#
Date Acquired: May 14 2018 04:11 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4104-001
Misc Info: DW
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0019	0.0019	ppb	43.78	100.	
11 B	3.64	3.64	ppb	7.88	1000.	
23 Na	3,835.	3,835.	ppb	2.60	200000.	
25 Mg	1,086.	1,086.	ppb	2.13	200000.	
27 Al	2.171	2.171	ppb	4.59	200000.	
28 Si	6,355.	6,355.	ppb	2.81	#VALUE!	
29 Si	6,681.	6,681.	ppb	4.03	10000.	
39 K	642.	642.	ppb	4.31	200000.	
43 Ca	4,776.	4,776.	ppb	1.87	#VALUE!	
44 Ca	4,891.	4,891.	ppb	2.01	200000.	
51 V	0.1554	0.1554	ppb	20.36	1000.	
52 Cr	0.7197	0.7197	ppb	2.78	2000.	
53 Cr	12.12	12.12	ppb	20.41	#VALUE!	
55 Mn	0.2532	0.2532	ppb	3.47	2000.	
56 Fe	-4.797	-4.797	ppb	73.96	#VALUE!	
57 Fe	2.634	2.634	ppb	113.21	100000.	
59 Co	0.0054	0.0054	ppb	79.04	1000.	
60 Ni	0.0363	0.0363	ppb	27.72	1000.	
63 Cu	0.2341	0.2341	ppb	2.10	#VALUE!	
65 Cu	0.1398	0.1398	ppb	7.70	2000.	
66 Zn	0.2374	0.2374	ppb	35.02	2000.	
68 Zn	0.3812	0.3812	ppb	18.95	#VALUE!	
75 As	0.3111	0.3111	ppb	83.48	1000.	
82 Se	0.2328	0.2328	ppb	117.78	1000.	
88 Sr	33.35	33.35	ppb	1.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.5272	0.5272	ppb	2.73	1000.	
107 Ag	0.0057	0.0057	ppb	6.97	100.	
109 Ag	0.0027	0.0027	ppb	42.66	#VALUE!	
111 Cd	-0.084	-0.084	ppb	25.74	#VALUE!	
114 Cd	-0.0011	-0.0011	ppb	480.12	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0079	-0.0079	ppb	103.61	1000.	
120 Sn	-0.0155	-0.0155	ppb	68.26	#VALUE!	
121 Sb	0.0061	0.0061	ppb	26.39	#VALUE!	
123 Sb	0.0071	0.0071	ppb	39.30	1000.	
135 Ba	0.8492	0.8492	ppb	6.68	2000.	
137 Ba	0.8386	0.8386	ppb	1.23	#VALUE!	
182 W	0.0261	0.0261	ppb	27.19	1000.	
203 Tl	0.0023	0.0023	ppb	410.98	1000.	
205 Tl	0.0031	0.0031	ppb	97.65	#VALUE!	
208 Pb	0.0159	0.0159	ppb	84.42	2000.	
232 Th	0.0421	0.0421	ppb	31.64	1000.	
238 U	0.0023	0.0023	ppb	1.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4686413.50	5.12	4492941.00	104.3	69.5 - 120	
45 Sc	3264231.80	3.84	3094960.50	105.5	69.5 - 120	
72 Ge	645425.00	1.56	631723.63	102.2	69.5 - 120	
159 Tb	6166778.00	1.86	6220065.50	99.1	69.5 - 120	
209 Bi	3249049.30	1.03	3318256.50	97.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001022

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\034SMPL.D\034SMPL.D#
Date Acquired: May 14 2018 04:14 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE11IMW1
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0001	0.0001	ppb	1184.50	100.	
11 B	0.3897	0.3897	ppb	5.43	1000.	
23 Na	12.14	12.14	ppb	2.07	200000.	
25 Mg	8.983	8.983	ppb	3.89	200000.	
27 Al	5.288	5.288	ppb	3.53	200000.	
28 Si	-5.42	-5.42	ppb	133.95	#VALUE!	
29 Si	-9.229	-9.229	ppb	201.65	10000.	
39 K	-2.116	-2.116	ppb	161.67	200000.	
43 Ca	-0.4333	-0.4333	ppb	707.82	#VALUE!	
44 Ca	3.	3.	ppb	1.80	200000.	
51 V	0.0311	0.0311	ppb	84.20	1000.	
52 Cr	0.0818	0.0818	ppb	34.03	2000.	
53 Cr	10.41	10.41	ppb	2.71	#VALUE!	
55 Mn	0.0901	0.0901	ppb	9.33	2000.	
56 Fe	0.9356	0.9356	ppb	234.18	#VALUE!	
57 Fe	4.645	4.645	ppb	43.42	100000.	
59 Co	-0.003	-0.003	ppb	32.99	1000.	
60 Ni	0.0239	0.0239	ppb	61.62	1000.	
63 Cu	0.0368	0.0368	ppb	24.77	#VALUE!	
65 Cu	0.0305	0.0305	ppb	37.44	2000.	
66 Zn	0.642	0.642	ppb	9.73	2000.	
68 Zn	0.6056	0.6056	ppb	2.76	#VALUE!	
75 As	-0.0715	-0.0715	ppb	135.62	1000.	
82 Se	-0.1396	-0.1396	ppb	148.28	1000.	
88 Sr	0.0092	0.0092	ppb	61.90	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0176	0.0176	ppb	43.24	1000.	
107 Ag	-0.0008	-0.0008	ppb	122.39	100.	
109 Ag	-0.0017	-0.0017	ppb	28.38	#VALUE!	
111 Cd	-0.0113	-0.0113	ppb	109.88	#VALUE!	
114 Cd	-0.0022	-0.0022	ppb	190.62	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.1388	0.1388	ppb	5.46	1000.	
120 Sn	0.1244	0.1244	ppb	5.28	#VALUE!	
121 Sb	0.003	0.003	ppb	119.01	#VALUE!	
123 Sb	0.0013	0.0013	ppb	115.84	1000.	
135 Ba	0.0367	0.0367	ppb	12.83	2000.	
137 Ba	0.0341	0.0341	ppb	21.62	#VALUE!	
182 W	0.0183	0.0183	ppb	30.28	1000.	
203 Tl	0.0014	0.0014	ppb	380.58	1000.	
205 Tl	-0.0007	-0.0007	ppb	763.95	#VALUE!	
208 Pb	0.0058	0.0058	ppb	92.57	2000.	
232 Th	0.0129	0.0129	ppb	48.41	1000.	
238 U	0.0002	0.0002	ppb	146.57	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4954067.00	4.51	4492941.00	110.3	69.5 - 120	
45 Sc	3286522.50	3.34	3094960.50	106.2	69.5 - 120	
72 Ge	641809.88	1.93	631723.63	101.6	69.5 - 120	
159 Tb	6141080.50	1.72	6220065.50	98.7	69.5 - 120	
209 Bi	3253345.30	1.22	3318256.50	98.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001023

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\035SMPL.D\035SMPL.D#
Date Acquired: May 14 2018 04:18 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE11IMW1
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	47.585	9.517	ppb	8.22	100.	
11 B	490.9	98.18	ppb	1.06	1000.	
23 Na	8,335.	1,667.	ppb	0.08	200000.	
25 Mg	5,665.	1,133.	ppb	3.57	200000.	
27 Al	2,166.5	433.3	ppb	2.79	200000.	
28 Si	1,066.5	213.3	ppb	3.31	#VALUE!	
29 Si	950.5	190.1	ppb	6.98	10000.	
39 K	10,090.	2,018.	ppb	3.48	200000.	
43 Ca	2,841.	568.2	ppb	6.83	#VALUE!	
44 Ca	2,580.	516.	ppb	3.58	200000.	
51 V	541.	108.2	ppb	1.38	1000.	
52 Cr	205.5	41.1	ppb	2.31	2000.	
53 Cr	235.25	47.05	ppb	3.16	#VALUE!	
55 Mn	521.5	104.3	ppb	0.88	2000.	
56 Fe	1,041.	208.2	ppb	3.51	#VALUE!	
57 Fe	1,070.	214.	ppb	4.04	100000.	
59 Co	532.	106.4	ppb	2.25	1000.	
60 Ni	518.5	103.7	ppb	2.31	1000.	
63 Cu	259.5	51.9	ppb	2.21	#VALUE!	
65 Cu	265.4	53.08	ppb	2.12	2000.	
66 Zn	542.5	108.5	ppb	2.10	2000.	
68 Zn	603.	120.6	ppb	2.72	#VALUE!	
75 As	106.75	21.35	ppb	3.01	1000.	
82 Se	108.05	21.61	ppb	3.77	1000.	
88 Sr	503.5	100.7	ppb	1.48	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.2	20.24	ppb	3.84	1000.	
107 Ag	52.2	10.44	ppb	3.05	100.	
109 Ag	52.4	10.48	ppb	2.66	#VALUE!	
111 Cd	261.3	52.26	ppb	3.18	#VALUE!	
114 Cd	262.2	52.44	ppb	3.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	521.	104.2	ppb	3.94	1000.	
120 Sn	524.	104.8	ppb	4.13	#VALUE!	
121 Sb	108.5	21.7	ppb	4.12	#VALUE!	
123 Sb	108.95	21.79	ppb	3.93	1000.	
135 Ba	2,139.5	427.9	ppb	4.21	2000.	
137 Ba	2,158.	431.6	ppb	4.03	#VALUE!	
182 W	103.2	20.64	ppb	5.81	1000.	
203 Tl	104.45	20.89	ppb	2.35	1000.	
205 Tl	104.25	20.85	ppb	3.59	#VALUE!	
208 Pb	105.45	21.09	ppb	3.28	2000.	
232 Th	98.55	19.71	ppb	2.17	1000.	
238 U	101.6	20.32	ppb	3.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4804903.00	10.29	4492941.00	106.9	69.5 - 120	
45 Sc	3145366.30	3.68	3094960.50	101.6	69.5 - 120	
72 Ge	608951.25	2.61	631723.63	96.4	69.5 - 120	
159 Tb	6037850.50	2.98	6220065.50	97.1	69.5 - 120	
209 Bi	3200861.80	1.22	3318256.50	96.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001024

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\036SMPL.D\036SMPL.D#
Date Acquired: May 14 2018 04:22 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4028-001
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0035	0.0035	ppb	55.70	100.	
11 B	563.8	563.8	ppb	2.27	1000.	
23 Na	150,700.	150,700.	ppb	0.50	200000.	
25 Mg	195.1	195.1	ppb	0.72	200000.	
27 Al	295.7	295.7	ppb	1.68	200000.	
28 Si	24,680.	24,680.	ppb	0.60	#VALUE!	
29 Si	24,620.	24,620.	ppb	2.99	10000.	>LDR
39 K	48,120.	48,120.	ppb	3.96	200000.	
43 Ca	1,051.	1,051.	ppb	0.29	#VALUE!	
44 Ca	1,098.	1,098.	ppb	0.98	200000.	
51 V	0.7133	0.7133	ppb	13.54	1000.	
52 Cr	6.615	6.615	ppb	8.53	2000.	
53 Cr	16.38	16.38	ppb	5.43	#VALUE!	
55 Mn	7.324	7.324	ppb	0.86	2000.	
56 Fe	61.91	61.91	ppb	13.21	#VALUE!	
57 Fe	55.46	55.46	ppb	1.42	100000.	
59 Co	8.197	8.197	ppb	1.95	1000.	
60 Ni	40.16	40.16	ppb	0.60	1000.	
63 Cu	131.3	131.3	ppb	2.56	#VALUE!	
65 Cu	132.5	132.5	ppb	0.52	2000.	
66 Zn	21.37	21.37	ppb	0.26	2000.	
68 Zn	21.1	21.1	ppb	0.84	#VALUE!	
75 As	0.3353	0.3353	ppb	52.43	1000.	
82 Se	0.0612	0.0612	ppb	102.01	1000.	
88 Sr	2.529	2.529	ppb	0.85	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	2.139	2.139	ppb	1.63	1000.	
107 Ag	0.0132	0.0132	ppb	5.37	100.	
109 Ag	0.011	0.011	ppb	19.90	#VALUE!	
111 Cd	-0.0373	-0.0373	ppb	117.29	#VALUE!	
114 Cd	-0.0025	-0.0025	ppb	80.33	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.9024	0.9024	ppb	4.48	1000.	
120 Sn	0.8946	0.8946	ppb	7.66	#VALUE!	
121 Sb	2.505	2.505	ppb	1.14	#VALUE!	
123 Sb	2.519	2.519	ppb	1.77	1000.	
135 Ba	1.653	1.653	ppb	3.87	2000.	
137 Ba	1.596	1.596	ppb	3.34	#VALUE!	
182 W	5.192	5.192	ppb	0.30	1000.	
203 Tl	0.0117	0.0117	ppb	36.96	1000.	
205 Tl	0.0022	0.0022	ppb	87.51	#VALUE!	
208 Pb	7.193	7.193	ppb	0.25	2000.	
232 Th	0.2086	0.2086	ppb	31.49	1000.	
238 U	0.0975	0.0975	ppb	5.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4497600.50	2.67	4492941.00	100.1	69.5 - 120	
45 Sc	3241483.50	0.37	3094960.50	104.7	69.5 - 120	
72 Ge	628529.13	1.41	631723.63	99.5	69.5 - 120	
159 Tb	5964664.00	0.82	6220065.50	95.9	69.5 - 120	
209 Bi	2812955.30	1.78	3318256.50	84.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4001025

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\037SMPL.D\037SMPL.D#
Date Acquired: May 14 2018 04:26 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4027-001
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0127	0.0005	ppb	164.87	100.	
11 B	3,732.5	149.3	ppb	1.83	1000.	
23 Na	1,408,000.	56,320.	ppb	2.36	200000.	
25 Mg	844.25	33.77	ppb	1.56	200000.	
27 Al	871.5	34.86	ppb	2.06	200000.	
28 Si	81,200.	3,248.	ppb	2.64	#VALUE!	
29 Si	86,925.	3,477.	ppb	2.07	10000.	
39 K	431,500.	17,260.	ppb	1.67	200000.	
43 Ca	10,230.	409.2	ppb	1.98	#VALUE!	
44 Ca	10,295.	411.8	ppb	1.68	200000.	
51 V	4.5075	0.1803	ppb	9.12	1000.	
52 Cr	21.29	0.8516	ppb	4.38	2000.	
53 Cr	232.2	9.288	ppb	2.41	#VALUE!	
55 Mn	6.55	0.262	ppb	1.86	2000.	
56 Fe	158.4	6.336	ppb	45.64	#VALUE!	
57 Fe	125.375	5.015	ppb	24.73	100000.	
59 Co	19.7475	0.7899	ppb	5.13	1000.	
60 Ni	57.15	2.286	ppb	8.03	1000.	
63 Cu	191.85	7.674	ppb	0.31	#VALUE!	
65 Cu	151.675	6.067	ppb	1.65	2000.	
66 Zn	49.25	1.97	ppb	1.31	2000.	
68 Zn	52.575	2.103	ppb	3.18	#VALUE!	
75 As	0.8568	0.0343	ppb	222.12	1000.	
82 Se	4.5425	0.1817	ppb	93.34	1000.	
88 Sr	68.6	2.744	ppb	2.40	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.115	0.3246	ppb	3.33	1000.	
107 Ag	0.0206	0.0008	ppb	109.12	100.	
109 Ag	0.0384	0.0015	ppb	30.81	#VALUE!	
111 Cd	-1.3383	-0.0535	ppb	18.27	#VALUE!	
114 Cd	0.0195	0.0008	ppb	269.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	4.06	0.1624	ppb	15.67	1000.	
120 Sn	3.09	0.1236	ppb	9.92	#VALUE!	
121 Sb	4.3275	0.1731	ppb	2.88	#VALUE!	
123 Sb	4.295	0.1718	ppb	3.20	1000.	
135 Ba	6.16	0.2464	ppb	3.91	2000.	
137 Ba	6.0575	0.2423	ppb	16.05	#VALUE!	
182 W	21.945	0.8778	ppb	1.48	1000.	
203 Tl	0.1601	0.0064	ppb	66.85	1000.	
205 Tl	0.0252	0.001	ppb	248.26	#VALUE!	
208 Pb	16.825	0.673	ppb	1.74	2000.	
232 Th	0.5393	0.0216	ppb	35.81	1000.	
238 U	0.526	0.021	ppb	9.99	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4764936.00	3.55	4492941.00	106.1	69.5 - 120	
45 Sc	3362311.80	1.74	3094960.50	108.6	69.5 - 120	
72 Ge	655194.25	1.51	631723.63	103.7	69.5 - 120	
159 Tb	6082687.00	0.65	6220065.50	97.8	69.5 - 120	
209 Bi	2980553.30	0.17	3318256.50	89.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001026

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\038SMPL.D\038SMPL.D#
Date Acquired: May 14 2018 04:30 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0003	0.0003	ppb	66.65	100.	
11 B	4.519	4.519	ppb	14.00	1000.	
23 Na	15.12	15.12	ppb	10.98	200000.	
25 Mg	0.7485	0.7485	ppb	19.60	200000.	
27 Al	1.042	1.042	ppb	7.84	200000.	
28 Si	4.427	4.427	ppb	88.46	#VALUE!	
29 Si	-13.2	-13.2	ppb	62.88	10000.	
39 K	-0.624	-0.624	ppb	382.85	200000.	
43 Ca	24.82	24.82	ppb	11.97	#VALUE!	
44 Ca	28.8	28.8	ppb	3.46	200000.	
51 V	0.0319	0.0319	ppb	129.70	1000.	
52 Cr	0.1511	0.1511	ppb	18.77	2000.	
53 Cr	7.956	7.956	ppb	1.33	#VALUE!	
55 Mn	0.0384	0.0384	ppb	5.55	2000.	
56 Fe	3.574	3.574	ppb	86.40	#VALUE!	
57 Fe	3.326	3.326	ppb	34.73	100000.	
59 Co	0.0026	0.0026	ppb	47.98	1000.	
60 Ni	0.0124	0.0124	ppb	16.69	1000.	
63 Cu	0.1841	0.1841	ppb	3.19	#VALUE!	
65 Cu	0.1805	0.1805	ppb	1.91	2000.	
66 Zn	0.1586	0.1586	ppb	15.56	2000.	
68 Zn	0.168	0.168	ppb	23.55	#VALUE!	
75 As	0.0962	0.0962	ppb	14.77	1000.	
82 Se	0.1686	0.1686	ppb	91.87	1000.	
88 Sr	0.0168	0.0168	ppb	31.07	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0375	0.0375	ppb	12.34	1000.	
107 Ag	-0.0004	-0.0004	ppb	143.16	100.	
109 Ag	-0.0012	-0.0012	ppb	68.42	#VALUE!	
111 Cd	-0.03	-0.03	ppb	49.97	#VALUE!	
114 Cd	-0.0034	-0.0034	ppb	96.39	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0112	0.0112	ppb	116.77	1000.	
120 Sn	0.0034	0.0034	ppb	219.38	#VALUE!	
121 Sb	0.0008	0.0008	ppb	156.28	#VALUE!	
123 Sb	-0.0012	-0.0012	ppb	227.02	1000.	
135 Ba	0.0717	0.0717	ppb	18.88	2000.	
137 Ba	0.0587	0.0587	ppb	22.77	#VALUE!	
182 W	0.0155	0.0155	ppb	22.02	1000.	
203 Tl	-0.0018	-0.0018	ppb	123.68	1000.	
205 Tl	-0.0004	-0.0004	ppb	514.25	#VALUE!	
208 Pb	0.1331	0.1331	ppb	5.79	2000.	
232 Th	0.0118	0.0118	ppb	19.77	1000.	
238 U	0.	0.	ppb	2899.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5020043.00	2.40	4492941.00	111.7	69.5 - 120	
45 Sc	3318592.50	1.83	3094960.50	107.2	69.5 - 120	
72 Ge	654051.75	0.66	631723.63	103.5	69.5 - 120	
159 Tb	6254588.00	1.18	6220065.50	100.6	69.5 - 120	
209 Bi	3238309.80	1.34	3318256.50	97.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001027

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\039SMPL.D\039SMPL.D#
Date Acquired: May 14 2018 04:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RISNE
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0004	-0.0004	ppb	252.44	100.	
11 B	2.42	2.42	ppb	10.42	1000.	
23 Na	5.05	5.05	ppb	7.56	200000.	
25 Mg	0.4762	0.4762	ppb	11.29	200000.	
27 Al	0.8725	0.8725	ppb	2.01	200000.	
28 Si	4.279	4.279	ppb	119.19	#VALUE!	
29 Si	-2.942	-2.942	ppb	148.61	10000.	
39 K	1.716	1.716	ppb	44.18	200000.	
43 Ca	12.35	12.35	ppb	45.25	#VALUE!	
44 Ca	17.3	17.3	ppb	12.74	200000.	
51 V	0.044	0.044	ppb	27.38	1000.	
52 Cr	0.0557	0.0557	ppb	66.25	2000.	
53 Cr	7.444	7.444	ppb	5.62	#VALUE!	
55 Mn	0.0272	0.0272	ppb	34.09	2000.	
56 Fe	-1.589	-1.589	ppb	271.68	#VALUE!	
57 Fe	3.982	3.982	ppb	21.38	100000.	
59 Co	-0.0027	-0.0027	ppb	16.01	1000.	
60 Ni	0.0113	0.0113	ppb	59.88	1000.	
63 Cu	0.1612	0.1612	ppb	11.84	#VALUE!	
65 Cu	0.1965	0.1965	ppb	17.87	2000.	
66 Zn	0.3958	0.3958	ppb	6.24	2000.	
68 Zn	0.4182	0.4182	ppb	12.21	#VALUE!	
75 As	0.0431	0.0431	ppb	569.07	1000.	
82 Se	-0.0846	-0.0846	ppb	221.97	1000.	
88 Sr	0.0123	0.0123	ppb	41.17	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0109	0.0109	ppb	55.91	1000.	
107 Ag	0.0017	0.0017	ppb	49.61	100.	
109 Ag	-0.0012	-0.0012	ppb	41.45	#VALUE!	
111 Cd	-0.0218	-0.0218	ppb	179.87	#VALUE!	
114 Cd	-0.0017	-0.0017	ppb	198.68	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0052	0.0052	ppb	119.82	1000.	
120 Sn	-0.0123	-0.0123	ppb	53.27	#VALUE!	
121 Sb	0.0014	0.0014	ppb	156.72	#VALUE!	
123 Sb	0.0016	0.0016	ppb	193.43	1000.	
135 Ba	0.0177	0.0177	ppb	38.67	2000.	
137 Ba	0.0048	0.0048	ppb	83.59	#VALUE!	
182 W	0.008	0.008	ppb	35.34	1000.	
203 Tl	-0.0015	-0.0015	ppb	562.90	1000.	
205 Tl	0.0017	0.0017	ppb	210.20	#VALUE!	
208 Pb	0.1397	0.1397	ppb	7.44	2000.	
232 Th	0.0079	0.0079	ppb	35.63	1000.	
238 U	0.0002	0.0002	ppb	47.05	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4855947.50	2.03	4492941.00	108.1	69.5 - 120	
45 Sc	3177009.80	0.83	3094960.50	102.7	69.5 - 120	
72 Ge	634195.00	1.19	631723.63	100.4	69.5 - 120	
159 Tb	6122523.00	1.33	6220065.50	98.4	69.5 - 120	
209 Bi	3234714.30	2.38	3318256.50	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001028

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\040SMPL.D\040SMPL.D#
Date Acquired: May 14 2018 04:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE04IMS1
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0007	-0.0001	ppb	124.74	100.	
11 B	10.07	2.014	ppb	2.04	1000.	
23 Na	69.05	13.81	ppb	4.52	200000.	
25 Mg	23.485	4.697	ppb	3.61	200000.	
27 Al	9.92	1.984	ppb	6.95	200000.	
28 Si	-60.3	-12.06	ppb	33.07	#VALUE!	
29 Si	-49.615	-9.923	ppb	25.13	10000.	
39 K	31.315	6.263	ppb	25.48	200000.	
43 Ca	51.8	10.36	ppb	33.02	#VALUE!	
44 Ca	56.8	11.36	ppb	12.03	200000.	
51 V	0.631	0.1262	ppb	45.84	1000.	
52 Cr	2.706	0.5412	ppb	5.90	2000.	
53 Cr	107.4	21.48	ppb	2.18	#VALUE!	
55 Mn	1.3275	0.2655	ppb	6.10	2000.	
56 Fe	30.185	6.037	ppb	11.41	#VALUE!	
57 Fe	30.74	6.148	ppb	16.06	100000.	
59 Co	-0.0071	-0.0014	ppb	108.70	1000.	
60 Ni	0.3889	0.0778	ppb	19.16	1000.	
63 Cu	1.16	0.232	ppb	9.28	#VALUE!	
65 Cu	1.1645	0.2329	ppb	5.87	2000.	
66 Zn	0.7545	0.1509	ppb	36.69	2000.	
68 Zn	0.901	0.1802	ppb	22.14	#VALUE!	
75 As	0.9225	0.1845	ppb	100.54	1000.	
82 Se	-0.1373	-0.0275	ppb	322.00	1000.	
88 Sr	0.1742	0.0348	ppb	14.58	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.1315	0.0263	ppb	21.89	1000.	
107 Ag	0.0331	0.0066	ppb	36.56	100.	
109 Ag	0.0203	0.0041	ppb	17.07	#VALUE!	
111 Cd	0.034	0.0068	ppb	418.34	#VALUE!	
114 Cd	-0.0821	-0.0164	ppb	15.32	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	43.14	8.628	ppb	0.68	1000.	
120 Sn	43.93	8.786	ppb	1.98	#VALUE!	
121 Sb	0.0464	0.0093	ppb	60.85	#VALUE!	
123 Sb	0.0243	0.0049	ppb	76.79	1000.	
135 Ba	0.2755	0.0551	ppb	13.68	2000.	
137 Ba	0.2984	0.0597	ppb	33.69	#VALUE!	
182 W	0.0546	0.0109	ppb	43.37	1000.	
203 Tl	0.0063	0.0013	ppb	567.23	1000.	
205 Tl	-0.0076	-0.0015	ppb	182.45	#VALUE!	
208 Pb	0.1783	0.0357	ppb	44.34	2000.	
232 Th	0.2306	0.0461	ppb	11.66	1000.	
238 U	0.0018	0.0004	ppb	34.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4747934.00	0.82	4492941.00	105.7	69.5 - 120	
45 Sc	3122076.30	0.30	3094960.50	100.9	69.5 - 120	
72 Ge	617412.69	0.78	631723.63	97.7	69.5 - 120	
159 Tb	6130698.00	0.55	6220065.50	98.6	69.5 - 120	
209 Bi	3269302.80	1.00	3318256.50	98.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001029

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\041SMPL.D\041SMPL.D#
Date Acquired: May 14 2018 04:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE04IMS1
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	47.475	9.495	ppb	2.97	100.	
11 B	521.5	104.3	ppb	1.99	1000.	
23 Na	8,640.	1,728.	ppb	1.65	200000.	
25 Mg	5,855.	1,171.	ppb	1.06	200000.	
27 Al	2,265.5	453.1	ppb	2.94	200000.	
28 Si	1,059.	211.8	ppb	3.19	#VALUE!	
29 Si	1,078.	215.6	ppb	6.15	10000.	
39 K	10,735.	2,147.	ppb	3.52	200000.	
43 Ca	2,909.	581.8	ppb	5.18	#VALUE!	
44 Ca	2,680.5	536.1	ppb	3.42	200000.	
51 V	555.	111.	ppb	2.05	1000.	
52 Cr	212.75	42.55	ppb	1.67	2000.	
53 Cr	307.8	61.56	ppb	2.89	#VALUE!	
55 Mn	534.	106.8	ppb	1.37	2000.	
56 Fe	1,121.5	224.3	ppb	3.42	#VALUE!	
57 Fe	1,123.5	224.7	ppb	3.14	100000.	
59 Co	550.5	110.1	ppb	0.17	1000.	
60 Ni	528.5	105.7	ppb	0.72	1000.	
63 Cu	264.15	52.83	ppb	2.63	#VALUE!	
65 Cu	272.15	54.43	ppb	0.79	2000.	
66 Zn	512.	102.4	ppb	1.93	2000.	
68 Zn	574.	114.8	ppb	2.77	#VALUE!	
75 As	103.4	20.68	ppb	1.16	1000.	
82 Se	101.4	20.28	ppb	1.12	1000.	
88 Sr	518.5	103.7	ppb	0.39	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	102.9	20.58	ppb	1.95	1000.	
107 Ag	53.1	10.62	ppb	1.53	100.	
109 Ag	53.	10.6	ppb	2.19	#VALUE!	
111 Cd	261.3	52.26	ppb	1.43	#VALUE!	
114 Cd	259.45	51.89	ppb	1.99	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	565.5	113.1	ppb	2.65	1000.	
120 Sn	570.	114.	ppb	3.30	#VALUE!	
121 Sb	106.4	21.28	ppb	3.02	#VALUE!	
123 Sb	107.75	21.55	ppb	2.37	1000.	
135 Ba	2,154.5	430.9	ppb	3.23	2000.	
137 Ba	2,158.	431.6	ppb	2.07	#VALUE!	
182 W	108.35	21.67	ppb	3.73	1000.	
203 Tl	107.5	21.5	ppb	2.01	1000.	
205 Tl	107.2	21.44	ppb	1.81	#VALUE!	
208 Pb	108.	21.6	ppb	1.84	2000.	
232 Th	104.45	20.89	ppb	0.69	1000.	
238 U	106.3	21.26	ppb	2.14	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4724471.50	3.73	4492941.00	105.2	69.5 - 120	
45 Sc	3018500.30	2.20	3094960.50	97.5	69.5 - 120	
72 Ge	592091.56	1.17	631723.63	93.7	69.5 - 120	
159 Tb	5988898.50	2.35	6220065.50	96.3	69.5 - 120	
209 Bi	3227712.80	1.37	3318256.50	97.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001030

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\042_CCV.D\042_CCV.D#
Date Acquired: May 14 2018 04:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.76	ppb	1.65	25	91.04	
11 B	28.54	ppb	5.19	25	114.16	Fail
23 Na	5,107.	ppb	3.98	5,000	102.14	
25 Mg	5,149.	ppb	2.15	5,000	102.98	
27 Al	503.3	ppb	2.20	500	100.66	
28 Si	492.9	ppb	3.72	500	98.58	
29 Si	468.	ppb	3.49	500	93.6	
39 K	4,878.	ppb	1.45	5,000	97.56	
43 Ca	4,790.	ppb	2.58	5,000	95.8	
44 Ca	4,893.	ppb	2.26	5,000	97.86	
51 V	25.05	ppb	0.97	25	100.2	
52 Cr	24.65	ppb	1.44	25	98.6	
53 Cr	28.25	ppb	7.25	25	113	
55 Mn	24.54	ppb	1.17	25	98.16	
56 Fe	4,895.	ppb	0.89	5,000	97.9	
57 Fe	4,931.	ppb	1.75	5,000	98.62	
59 Co	24.38	ppb	2.03	25	97.52	
60 Ni	24.47	ppb	0.97	25	97.88	
63 Cu	24.51	ppb	1.90	25	98.04	
65 Cu	24.74	ppb	1.55	25	98.96	
66 Zn	24.91	ppb	2.59	25	99.64	
68 Zn	24.28	ppb	2.19	25	97.12	
75 As	24.38	ppb	2.29	25	97.52	
82 Se	25.09	ppb	2.27	25	100.36	
88 Sr	24.44	ppb	2.11	25	97.76	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.98	ppb	1.66	25	95.92	
107 Ag	24.55	ppb	0.92	25	98.2	
109 Ag	24.63	ppb	1.59	25	98.52	
111 Cd	24.67	ppb	1.29	25	98.68	
114 Cd	24.71	ppb	2.03	25	98.84	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.34	ppb	1.16	25	97.36	
120 Sn	24.41	ppb	1.52	25	97.64	
121 Sb	24.67	ppb	1.50	25	98.68	
123 Sb	24.99	ppb	1.02	25	99.96	
135 Ba	24.76	ppb	0.83	25	99.04	
137 Ba	24.7	ppb	1.35	25	98.8	
182 W	24.5	ppb	1.13	25	98	
203 Tl	24.57	ppb	2.61	25	98.28	
205 Tl	24.45	ppb	1.88	25	97.8	
208 Pb	24.44	ppb	1.72	25	97.76	
232 Th	24.06	ppb	2.37	25	96.24	
238 U	24.3	ppb	1.82	25	97.2	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4703443.50	1.20	4492941.00	104.7	80 - 120.4	
45 Sc	3147044.50	1.61	3094960.50	101.7	80 - 120.4	
72 Ge	609165.81	1.27	631723.63	96.4	80 - 120.4	
159 Tb	6157993.00	0.95	6220065.50	99.0	80 - 120.4	
209 Bi	3260452.30	0.88	3318256.50	98.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4001031

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\043_CCB.D\043_CCB.D#
Date Acquired: May 14 2018 04:49 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0004	ppb	244.08	1.00	
11 B	3.044	ppb	11.00	1.00	
23 Na	1.96	ppb	3.69	1.00	
25 Mg	0.0625	ppb	102.15	1.00	
27 Al	0.114	ppb	28.09	1.00	
28 Si	-10.33	ppb	71.35	1.00	
29 Si	-13.34	ppb	59.72	1.00	
39 K	-1.108	ppb	96.84	1.00	
43 Ca	-0.3326	ppb	631.99	1.00	
44 Ca	0.5745	ppb	139.50	1.00	
51 V	0.0066	ppb	714.82	1.00	
52 Cr	0.035	ppb	38.66	1.00	
53 Cr	4.038	ppb	10.31	1.00	
55 Mn	0.0013	ppb	520.97	1.00	
56 Fe	-4.53	ppb	89.51	1.00	
57 Fe	0.5267	ppb	85.00	1.00	
59 Co	-0.0022	ppb	77.97	1.00	
60 Ni	-0.0003	ppb	1758.00	1.00	
63 Cu	0.0081	ppb	38.14	1.00	
65 Cu	0.0103	ppb	1.27	1.00	
66 Zn	0.0423	ppb	134.55	1.00	
68 Zn	-0.0178	ppb	189.80	1.00	
75 As	-0.0144	ppb	532.96	1.00	
82 Se	-0.0077	ppb	1015.30	1.00	
88 Sr	0.0032	ppb	112.30	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.039	ppb	43.16	1.00	
107 Ag	0.0041	ppb	16.81	1.00	
109 Ag	0.0036	ppb	73.16	1.00	
111 Cd	-0.0073	ppb	203.22	1.00	
114 Cd	-0.0031	ppb	145.24	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0353	ppb	11.09	1.00	
120 Sn	0.0304	ppb	39.93	1.00	
121 Sb	0.0021	ppb	157.07	1.00	
123 Sb	0.0057	ppb	24.27	1.00	
135 Ba	0.0124	ppb	52.17	1.00	
137 Ba	-0.0012	ppb	331.83	1.00	
182 W	0.0494	ppb	38.31	1.00	
203 Tl	0.0052	ppb	186.94	1.00	
205 Tl	-0.0025	ppb	304.84	1.00	
208 Pb	-0.0224	ppb	17.37	1.00	
232 Th	0.0829	ppb	2.47	1.00	
238 U	0.0035	ppb	60.37	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4712421.00	2.30	4492941.00	104.9	79.5 - 120	
45 Sc	3125634.50	1.29	3094960.50	101.0	79.5 - 120	
72 Ge	615452.94	0.65	631723.63	97.4	79.5 - 120	
159 Tb	6123339.00	1.02	6220065.50	98.4	79.5 - 120	
209 Bi	3309427.50	1.34	3318256.50	99.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001032

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\044SMPL.D\044SMPL.D#
Date Acquired: May 14 2018 04:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-007
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	11.72	1.172	ppb	7.25	100.	
11 B	184.3	18.43	ppb	5.26	1000.	
23 Na	21,630.	2,163.	ppb	3.49	200000.	
25 Mg	129,800.	12,980.	ppb	2.78	200000.	
27 Al	273,400.	27,340.	ppb	1.59	200000.	
28 Si	3,364.	336.4	ppb	2.04	#VALUE!	
29 Si	3,209.	320.9	ppb	4.34	10000.	
39 K	62,190.	6,219.	ppb	2.52	200000.	
43 Ca	588,100.	58,810.	ppb	2.37	#VALUE!	
44 Ca	554,600.	55,460.	ppb	0.76	200000.	
51 V	509.4	50.94	ppb	1.04	1000.	
52 Cr	260.7	26.07	ppb	1.07	2000.	
53 Cr	283.6	28.36	ppb	3.19	#VALUE!	
55 Mn	13,700.	1,370.	ppb	1.20	2000.	
56 Fe	272,200.	27,220.	ppb	0.94	#VALUE!	
57 Fe	263,500.	26,350.	ppb	1.27	100000.	
59 Co	104.2	10.42	ppb	1.70	1000.	
60 Ni	267.4	26.74	ppb	1.02	1000.	
63 Cu	177.9	17.79	ppb	1.59	#VALUE!	
65 Cu	185.3	18.53	ppb	0.36	2000.	
66 Zn	708.8	70.88	ppb	0.56	2000.	
68 Zn	816.	81.6	ppb	0.39	#VALUE!	
75 As	36.97	3.697	ppb	3.84	1000.	
82 Se	7.016	0.7016	ppb	9.97	1000.	
88 Sr	1,508.	150.8	ppb	0.78	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.95	1.795	ppb	1.77	1000.	
107 Ag	1.13	0.113	ppb	5.93	100.	
109 Ag	0.9151	0.0915	ppb	2.91	#VALUE!	
111 Cd	5.375	0.5375	ppb	5.45	#VALUE!	
114 Cd	1.491	0.1491	ppb	8.65	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	54.03	5.403	ppb	1.04	1000.	
120 Sn	54.25	5.425	ppb	2.21	#VALUE!	
121 Sb	2.916	0.2916	ppb	5.66	#VALUE!	
123 Sb	2.817	0.2817	ppb	3.81	1000.	
135 Ba	3,820.	382.	ppb	0.94	2000.	
137 Ba	3,744.	374.4	ppb	1.44	#VALUE!	
182 W	1.239	0.1239	ppb	12.07	1000.	
203 Tl	4.371	0.4371	ppb	6.53	1000.	
205 Tl	4.505	0.4505	ppb	3.66	#VALUE!	
208 Pb	158.5	15.85	ppb	1.00	2000.	
232 Th	116.	11.6	ppb	0.98	1000.	
238 U	16.73	1.673	ppb	0.91	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4596578.00	4.36	4492941.00	102.3	69.5 - 120	
45 Sc	3129128.80	1.99	3094960.50	101.1	69.5 - 120	
72 Ge	593802.00	0.28	631723.63	94.0	69.5 - 120	
159 Tb	6118795.50	0.26	6220065.50	98.4	69.5 - 120	
209 Bi	3159649.00	0.91	3318256.50	95.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001033

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\045SMPL.D\045SMPL.D#
Date Acquired: May 14 2018 04:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-019
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.98	1.398	ppb	3.53	100.	
11 B	203.4	20.34	ppb	8.40	1000.	
23 Na	5,113.	511.3	ppb	3.35	200000.	
25 Mg	122,700.	12,270.	ppb	0.72	200000.	
27 Al	338,100.	33,810.	ppb	0.87	200000.	
28 Si	4,577.	457.7	ppb	3.20	#VALUE!	
29 Si	4,327.	432.7	ppb	3.41	10000.	
39 K	78,870.	7,887.	ppb	0.95	200000.	
43 Ca	513,100.	51,310.	ppb	3.33	#VALUE!	
44 Ca	483,800.	48,380.	ppb	1.54	200000.	
51 V	670.8	67.08	ppb	0.71	1000.	
52 Cr	290.4	29.04	ppb	1.41	2000.	
53 Cr	312.5	31.25	ppb	0.97	#VALUE!	
55 Mn	11,750.	1,175.	ppb	0.62	2000.	
56 Fe	304,500.	30,450.	ppb	1.57	#VALUE!	
57 Fe	298,400.	29,840.	ppb	0.60	100000.	
59 Co	207.3	20.73	ppb	1.58	1000.	
60 Ni	334.7	33.47	ppb	3.02	1000.	
63 Cu	194.2	19.42	ppb	1.01	#VALUE!	
65 Cu	203.9	20.39	ppb	1.42	2000.	
66 Zn	783.1	78.31	ppb	1.75	2000.	
68 Zn	1,007.	100.7	ppb	0.64	#VALUE!	
75 As	139.2	13.92	ppb	0.78	1000.	
82 Se	6.313	0.6313	ppb	47.68	1000.	
88 Sr	1,765.	176.5	ppb	1.38	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	16.48	1.648	ppb	2.18	1000.	
107 Ag	1.207	0.1207	ppb	6.48	100.	
109 Ag	0.9985	0.0999	ppb	4.90	#VALUE!	
111 Cd	7.41	0.741	ppb	3.66	#VALUE!	
114 Cd	2.976	0.2976	ppb	8.79	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	56.27	5.627	ppb	1.89	1000.	
120 Sn	56.51	5.651	ppb	1.43	#VALUE!	
121 Sb	3.412	0.3412	ppb	2.24	#VALUE!	
123 Sb	3.261	0.3261	ppb	0.94	1000.	
135 Ba	6,854.	685.4	ppb	1.84	2000.	
137 Ba	6,738.	673.8	ppb	1.34	#VALUE!	
182 W	1.412	0.1412	ppb	7.49	1000.	
203 Tl	5.564	0.5564	ppb	1.76	1000.	
205 Tl	5.585	0.5585	ppb	1.41	#VALUE!	
208 Pb	248.8	24.88	ppb	0.42	2000.	
232 Th	134.4	13.44	ppb	0.42	1000.	
238 U	25.57	2.557	ppb	1.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4598611.50	4.38	4492941.00	102.4	69.5 - 120	
45 Sc	3114014.80	2.89	3094960.50	100.6	69.5 - 120	
72 Ge	595082.31	1.41	631723.63	94.2	69.5 - 120	
159 Tb	6107695.50	1.30	6220065.50	98.2	69.5 - 120	
209 Bi	3160861.00	0.34	3318256.50	95.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001034

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\046SMPL.D\046SMPL.D#
Date Acquired: May 14 2018 05:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-020
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.908	0.6908	ppb	5.35	100.	
11 B	148.2	14.82	ppb	0.41	1000.	
23 Na	3,770.	377.	ppb	0.88	200000.	
25 Mg	125,700.	12,570.	ppb	2.83	200000.	
27 Al	177,700.	17,770.	ppb	2.60	200000.	
28 Si	3,059.	305.9	ppb	3.28	#VALUE!	
29 Si	2,858.	285.8	ppb	3.67	10000.	
39 K	43,030.	4,303.	ppb	1.69	200000.	
43 Ca	1,602,000.	160,200.	ppb	1.46	#VALUE!	
44 Ca	1,562,000.	156,200.	ppb	1.61	200000.	
51 V	359.9	35.99	ppb	1.22	1000.	
52 Cr	157.3	15.73	ppb	1.91	2000.	
53 Cr	164.	16.4	ppb	1.84	#VALUE!	
55 Mn	5,292.	529.2	ppb	1.06	2000.	
56 Fe	154,100.	15,410.	ppb	0.08	#VALUE!	
57 Fe	152,100.	15,210.	ppb	1.12	100000.	
59 Co	84.11	8.411	ppb	1.19	1000.	
60 Ni	182.6	18.26	ppb	0.69	1000.	
63 Cu	99.99	9.999	ppb	1.28	#VALUE!	
65 Cu	104.4	10.44	ppb	1.21	2000.	
66 Zn	393.	39.3	ppb	1.21	2000.	
68 Zn	542.	54.2	ppb	1.03	#VALUE!	
75 As	63.74	6.374	ppb	0.75	1000.	
82 Se	5.95	0.595	ppb	13.97	1000.	
88 Sr	3,594.	359.4	ppb	1.80	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.94	1.094	ppb	1.85	1000.	
107 Ag	0.6867	0.0687	ppb	7.52	100.	
109 Ag	0.4121	0.0412	ppb	6.69	#VALUE!	
111 Cd	5.058	0.5058	ppb	1.81	#VALUE!	
114 Cd	2.035	0.2035	ppb	4.14	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.68	5.068	ppb	2.71	1000.	
120 Sn	50.71	5.071	ppb	1.06	#VALUE!	
121 Sb	2.031	0.2031	ppb	2.95	#VALUE!	
123 Sb	2.142	0.2142	ppb	7.63	1000.	
135 Ba	4,424.	442.4	ppb	1.05	2000.	
137 Ba	4,353.	435.3	ppb	1.35	#VALUE!	
182 W	1.244	0.1244	ppb	3.29	1000.	
203 Tl	3.488	0.3488	ppb	2.37	1000.	
205 Tl	3.213	0.3213	ppb	2.35	#VALUE!	
208 Pb	117.	11.7	ppb	1.12	2000.	
232 Th	67.94	6.794	ppb	1.76	1000.	
238 U	19.13	1.913	ppb	0.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4829804.00	4.18	4492941.00	107.5	69.5 - 120	
45 Sc	3120462.30	1.80	3094960.50	100.8	69.5 - 120	
72 Ge	590034.13	0.92	631723.63	93.4	69.5 - 120	
159 Tb	6066736.00	0.95	6220065.50	97.5	69.5 - 120	
209 Bi	3074171.50	0.70	3318256.50	92.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001035

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\047SMPL.D\047SMPL.D#
Date Acquired: May 14 2018 05:04 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-021
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.798	0.8798	ppb	2.39	100.	
11 B	144.6	14.46	ppb	3.46	1000.	
23 Na	5,347.	534.7	ppb	3.30	200000.	
25 Mg	92,300.	9,230.	ppb	1.89	200000.	
27 Al	212,100.	21,210.	ppb	0.74	200000.	
28 Si	3,896.	389.6	ppb	2.45	#VALUE!	
29 Si	3,575.	357.5	ppb	2.41	10000.	
39 K	48,670.	4,867.	ppb	1.37	200000.	
43 Ca	525,500.	52,550.	ppb	1.64	#VALUE!	
44 Ca	496,300.	49,630.	ppb	0.19	200000.	
51 V	388.7	38.87	ppb	1.65	1000.	
52 Cr	197.5	19.75	ppb	1.23	2000.	
53 Cr	204.4	20.44	ppb	1.05	#VALUE!	
55 Mn	2,006.	200.6	ppb	1.30	2000.	
56 Fe	236,900.	23,690.	ppb	1.03	#VALUE!	
57 Fe	232,700.	23,270.	ppb	1.95	100000.	
59 Co	50.12	5.012	ppb	2.27	1000.	
60 Ni	145.	14.5	ppb	0.75	1000.	
63 Cu	144.9	14.49	ppb	1.90	#VALUE!	
65 Cu	147.	14.7	ppb	1.46	2000.	
66 Zn	510.7	51.07	ppb	0.81	2000.	
68 Zn	553.8	55.38	ppb	1.06	#VALUE!	
75 As	33.25	3.325	ppb	1.63	1000.	
82 Se	5.18	0.518	ppb	41.37	1000.	
88 Sr	1,237.	123.7	ppb	1.18	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.349	0.4349	ppb	5.66	1000.	
107 Ag	0.8161	0.0816	ppb	11.53	100.	
109 Ag	0.6946	0.0695	ppb	4.04	#VALUE!	
111 Cd	3.761	0.3761	ppb	4.11	#VALUE!	
114 Cd	0.3952	0.0395	ppb	91.17	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	56.2	5.62	ppb	3.19	1000.	
120 Sn	56.1	5.61	ppb	1.34	#VALUE!	
121 Sb	2.179	0.2179	ppb	2.26	#VALUE!	
123 Sb	2.291	0.2291	ppb	4.28	1000.	
135 Ba	1,808.	180.8	ppb	1.59	2000.	
137 Ba	1,799.	179.9	ppb	1.15	#VALUE!	
182 W	0.6111	0.0611	ppb	5.93	1000.	
203 Tl	3.173	0.3173	ppb	6.96	1000.	
205 Tl	3.118	0.3118	ppb	2.23	#VALUE!	
208 Pb	118.2	11.82	ppb	0.74	2000.	
232 Th	90.29	9.029	ppb	0.55	1000.	
238 U	11.3	1.13	ppb	2.45	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4571476.50	1.77	4492941.00	101.7	69.5 - 120	
45 Sc	3070011.50	0.48	3094960.50	99.2	69.5 - 120	
72 Ge	594391.63	0.96	631723.63	94.1	69.5 - 120	
159 Tb	6179867.50	1.07	6220065.50	99.4	69.5 - 120	
209 Bi	3215048.80	0.28	3318256.50	96.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001036

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\048SMPL.D\048SMPL.D#
Date Acquired: May 14 2018 05:08 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-001
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.19	0.519	ppb	5.07	100.	
11 B	69.05	6.905	ppb	5.28	1000.	
23 Na	1,259.	125.9	ppb	3.87	200000.	
25 Mg	27,070.	2,707.	ppb	2.08	200000.	
27 Al	108,600.	10,860.	ppb	2.38	200000.	
28 Si	3,689.	368.9	ppb	6.04	#VALUE!	
29 Si	3,174.	317.4	ppb	5.14	10000.	
39 K	34,780.	3,478.	ppb	0.93	200000.	
43 Ca	26,630.	2,663.	ppb	1.92	#VALUE!	
44 Ca	26,310.	2,631.	ppb	0.99	200000.	
51 V	222.8	22.28	ppb	0.68	1000.	
52 Cr	113.6	11.36	ppb	0.93	2000.	
53 Cr	147.9	14.79	ppb	2.06	#VALUE!	
55 Mn	2,920.	292.	ppb	0.33	2000.	
56 Fe	97,930.	9,793.	ppb	1.09	#VALUE!	
57 Fe	97,590.	9,759.	ppb	1.89	100000.	
59 Co	55.56	5.556	ppb	2.23	1000.	
60 Ni	86.37	8.637	ppb	2.32	1000.	
63 Cu	97.5	9.75	ppb	0.63	#VALUE!	
65 Cu	101.4	10.14	ppb	1.58	2000.	
66 Zn	343.7	34.37	ppb	0.90	2000.	
68 Zn	392.9	39.29	ppb	0.46	#VALUE!	
75 As	28.14	2.814	ppb	2.83	1000.	
82 Se	4.386	0.4386	ppb	13.35	1000.	
88 Sr	348.4	34.84	ppb	0.39	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.75	1.175	ppb	0.63	1000.	
107 Ag	0.5349	0.0535	ppb	10.33	100.	
109 Ag	0.5028	0.0503	ppb	21.38	#VALUE!	
111 Cd	3.006	0.3006	ppb	4.16	#VALUE!	
114 Cd	1.939	0.1939	ppb	8.94	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.14	4.714	ppb	0.37	1000.	
120 Sn	47.6	4.76	ppb	1.22	#VALUE!	
121 Sb	1.456	0.1456	ppb	7.63	#VALUE!	
123 Sb	1.349	0.1349	ppb	6.50	1000.	
135 Ba	1,676.	167.6	ppb	0.92	2000.	
137 Ba	1,665.	166.5	ppb	0.66	#VALUE!	
182 W	0.7759	0.0776	ppb	3.35	1000.	
203 Tl	2.305	0.2305	ppb	3.80	1000.	
205 Tl	2.294	0.2294	ppb	5.93	#VALUE!	
208 Pb	132.7	13.27	ppb	2.54	2000.	
232 Th	78.45	7.845	ppb	3.02	1000.	
238 U	17.94	1.794	ppb	1.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4676636.00	3.23	4492941.00	104.1	69.5 - 120	
45 Sc	3108395.50	0.94	3094960.50	100.4	69.5 - 120	
72 Ge	612528.19	0.41	631723.63	97.0	69.5 - 120	
159 Tb	6199708.00	0.22	6220065.50	99.7	69.5 - 120	
209 Bi	3293176.30	1.47	3318256.50	99.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001037

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\049SMPL.D\049SMPL.D#
Date Acquired: May 14 2018 05:12 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-002
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.072	0.7072	ppb	4.78	100.	
11 B	146.1	14.61	ppb	5.03	1000.	
23 Na	2,241.	224.1	ppb	0.64	200000.	
25 Mg	97,100.	9,710.	ppb	1.21	200000.	
27 Al	182,900.	18,290.	ppb	3.09	200000.	
28 Si	4,335.	433.5	ppb	2.89	#VALUE!	
29 Si	4,052.	405.2	ppb	2.86	10000.	
39 K	48,210.	4,821.	ppb	0.70	200000.	
43 Ca	328,500.	32,850.	ppb	0.67	#VALUE!	
44 Ca	319,700.	31,970.	ppb	0.41	200000.	
51 V	455.1	45.51	ppb	1.30	1000.	
52 Cr	172.1	17.21	ppb	0.48	2000.	
53 Cr	184.3	18.43	ppb	0.75	#VALUE!	
55 Mn	3,056.	305.6	ppb	1.14	2000.	
56 Fe	172,500.	17,250.	ppb	0.48	#VALUE!	
57 Fe	168,200.	16,820.	ppb	1.44	100000.	
59 Co	67.84	6.784	ppb	1.22	1000.	
60 Ni	149.8	14.98	ppb	1.38	1000.	
63 Cu	114.9	11.49	ppb	0.51	#VALUE!	
65 Cu	120.2	12.02	ppb	0.44	2000.	
66 Zn	447.2	44.72	ppb	0.39	2000.	
68 Zn	510.1	51.01	ppb	0.43	#VALUE!	
75 As	115.6	11.56	ppb	1.60	1000.	
82 Se	3.431	0.3431	ppb	34.42	1000.	
88 Sr	1,418.	141.8	ppb	0.99	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.44	1.044	ppb	1.04	1000.	
107 Ag	0.744	0.0744	ppb	8.88	100.	
109 Ag	0.6254	0.0625	ppb	9.06	#VALUE!	
111 Cd	2.308	0.2308	ppb	10.79	#VALUE!	
114 Cd	-0.0201	-0.002	ppb	622.45	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.5	5.05	ppb	1.58	1000.	
120 Sn	50.89	5.089	ppb	1.03	#VALUE!	
121 Sb	2.475	0.2475	ppb	4.72	#VALUE!	
123 Sb	2.638	0.2638	ppb	7.02	1000.	
135 Ba	2,290.	229.	ppb	0.78	2000.	
137 Ba	2,287.	228.7	ppb	0.55	#VALUE!	
182 W	0.8114	0.0811	ppb	8.06	1000.	
203 Tl	2.778	0.2778	ppb	2.66	1000.	
205 Tl	2.757	0.2757	ppb	0.91	#VALUE!	
208 Pb	107.5	10.75	ppb	0.44	2000.	
232 Th	72.66	7.266	ppb	1.59	1000.	
238 U	15.62	1.562	ppb	0.36	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4726084.00	1.50	4492941.00	105.2	69.5 - 120	
45 Sc	3085480.80	0.94	3094960.50	99.7	69.5 - 120	
72 Ge	602808.56	0.69	631723.63	95.4	69.5 - 120	
159 Tb	6243403.00	0.44	6220065.50	100.4	69.5 - 120	
209 Bi	3269470.30	0.94	3318256.50	98.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001038

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\050SMPL.D\050SMPL.D#
Date Acquired: May 14 2018 05:16 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0005	-0.0005	ppb	201.45	100.	
11 B	1.225	1.225	ppb	10.15	1000.	
23 Na	26.21	26.21	ppb	4.23	200000.	
25 Mg	2.064	2.064	ppb	17.41	200000.	
27 Al	2.881	2.881	ppb	30.51	200000.	
28 Si	-1.093	-1.093	ppb	375.75	#VALUE!	
29 Si	-25.51	-25.51	ppb	33.90	10000.	
39 K	-1.136	-1.136	ppb	42.53	200000.	
43 Ca	9.212	9.212	ppb	23.14	#VALUE!	
44 Ca	15.87	15.87	ppb	11.82	200000.	
51 V	-0.1784	-0.1784	ppb	33.99	1000.	
52 Cr	-0.0966	-0.0966	ppb	27.53	2000.	
53 Cr	-1.595	-1.595	ppb	4.77	#VALUE!	
55 Mn	0.1228	0.1228	ppb	13.90	2000.	
56 Fe	1.206	1.206	ppb	317.25	#VALUE!	
57 Fe	5.609	5.609	ppb	59.41	100000.	
59 Co	0.006	0.006	ppb	24.27	1000.	
60 Ni	7.349	7.349	ppb	1.76	1000.	
63 Cu	4.345	4.345	ppb	0.86	#VALUE!	
65 Cu	4.551	4.551	ppb	1.23	2000.	
66 Zn	0.6473	0.6473	ppb	4.42	2000.	
68 Zn	0.7208	0.7208	ppb	11.44	#VALUE!	
75 As	0.0091	0.0091	ppb	425.43	1000.	
82 Se	0.0981	0.0981	ppb	124.22	1000.	
88 Sr	0.0318	0.0318	ppb	23.05	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0088	0.0088	ppb	41.83	1000.	
107 Ag	0.0012	0.0012	ppb	249.79	100.	
109 Ag	-0.0006	-0.0006	ppb	206.25	#VALUE!	
111 Cd	-0.0669	-0.0669	ppb	2.48	#VALUE!	
114 Cd	-0.0024	-0.0024	ppb	139.29	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0128	0.0128	ppb	39.69	1000.	
120 Sn	0.0122	0.0122	ppb	97.95	#VALUE!	
121 Sb	0.0025	0.0025	ppb	15.63	#VALUE!	
123 Sb	0.	0.	ppb	7059.50	1000.	
135 Ba	0.1646	0.1646	ppb	11.08	2000.	
137 Ba	0.1401	0.1401	ppb	8.29	#VALUE!	
182 W	0.0032	0.0032	ppb	76.18	1000.	
203 Tl	0.0016	0.0016	ppb	168.04	1000.	
205 Tl	-0.0058	-0.0058	ppb	72.82	#VALUE!	
208 Pb	0.1801	0.1801	ppb	4.91	2000.	
232 Th	0.0132	0.0132	ppb	33.40	1000.	
238 U	0.0035	0.0035	ppb	5.89	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4879572.50	3.71	4492941.00	108.6	69.5 - 120	
45 Sc	3131826.50	0.85	3094960.50	101.2	69.5 - 120	
72 Ge	630687.06	0.59	631723.63	99.8	69.5 - 120	
159 Tb	6201667.50	0.88	6220065.50	99.7	69.5 - 120	
209 Bi	3315243.30	0.20	3318256.50	99.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001039

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\051SMPL.D\051SMPL.D#
Date Acquired: May 14 2018 05:20 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE11IMS2
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0039	-0.0008	ppb	121.37	100.	
11 B	4.913	0.9826	ppb	16.64	1000.	
23 Na	105.8	21.16	ppb	1.26	200000.	
25 Mg	22.07	4.414	ppb	4.87	200000.	
27 Al	18.305	3.661	ppb	6.44	200000.	
28 Si	-20.18	-4.036	ppb	135.06	#VALUE!	
29 Si	-103.6	-20.72	ppb	0.41	10000.	
39 K	11.93	2.386	ppb	34.21	200000.	
43 Ca	-6.335	-1.267	ppb	352.49	#VALUE!	
44 Ca	7.375	1.475	ppb	47.40	200000.	
51 V	-0.2545	-0.0509	ppb	67.42	1000.	
52 Cr	0.5635	0.1127	ppb	21.05	2000.	
53 Cr	-6.455	-1.291	ppb	10.91	#VALUE!	
55 Mn	0.1482	0.0296	ppb	32.68	2000.	
56 Fe	13.03	2.606	ppb	115.96	#VALUE!	
57 Fe	6.47	1.294	ppb	20.05	100000.	
59 Co	-0.0094	-0.0019	ppb	112.97	1000.	
60 Ni	0.3674	0.0735	ppb	13.79	1000.	
63 Cu	0.5645	0.1129	ppb	14.13	#VALUE!	
65 Cu	0.5845	0.1169	ppb	5.94	2000.	
66 Zn	0.6765	0.1353	ppb	36.79	2000.	
68 Zn	0.5745	0.1149	ppb	61.81	#VALUE!	
75 As	0.1774	0.0355	ppb	168.51	1000.	
82 Se	0.1575	0.0315	ppb	171.86	1000.	
88 Sr	0.0456	0.0091	ppb	48.24	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0791	0.0158	ppb	8.22	1000.	
107 Ag	0.0028	0.0006	ppb	155.10	100.	
109 Ag	-0.0031	-0.0006	ppb	128.57	#VALUE!	
111 Cd	-0.2371	-0.0474	ppb	38.49	#VALUE!	
114 Cd	-0.0878	-0.0176	ppb	91.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.5	8.9	ppb	0.65	1000.	
120 Sn	44.55	8.91	ppb	1.03	#VALUE!	
121 Sb	-0.0003	-0.0001	ppb	1736.00	#VALUE!	
123 Sb	-0.0005	-0.0001	ppb	3683.90	1000.	
135 Ba	0.0763	0.0153	ppb	60.61	2000.	
137 Ba	0.0749	0.015	ppb	76.44	#VALUE!	
182 W	0.024	0.0048	ppb	51.10	1000.	
203 Tl	0.0585	0.0117	ppb	48.71	1000.	
205 Tl	0.0274	0.0055	ppb	22.29	#VALUE!	
208 Pb	0.563	0.1126	ppb	37.44	2000.	
232 Th	0.0823	0.0165	ppb	26.94	1000.	
238 U	0.0008	0.0002	ppb	328.71	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5100677.50	6.14	4492941.00	113.5	69.5 - 120	
45 Sc	3261646.00	1.46	3094960.50	105.4	69.5 - 120	
72 Ge	633628.88	0.87	631723.63	100.3	69.5 - 120	
159 Tb	6077184.00	0.11	6220065.50	97.7	69.5 - 120	
209 Bi	3185726.30	1.20	3318256.50	96.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001040

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\052SMPL.D\052SMPL.D#
Date Acquired: May 14 2018 05:24 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE11IMS2
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	45.555	9.111	ppb	3.78	100.	
11 B	492.8	98.56	ppb	3.29	1000.	
23 Na	8,730.	1,746.	ppb	0.44	200000.	
25 Mg	6,045.	1,209.	ppb	4.40	200000.	
27 Al	2,278.5	455.7	ppb	4.31	200000.	
28 Si	891.5	178.3	ppb	5.06	#VALUE!	
29 Si	780.	156.	ppb	5.60	10000.	
39 K	10,435.	2,087.	ppb	1.60	200000.	
43 Ca	3,020.	604.	ppb	4.07	#VALUE!	
44 Ca	2,636.5	527.3	ppb	2.12	200000.	
51 V	557.5	111.5	ppb	0.71	1000.	
52 Cr	213.3	42.66	ppb	0.50	2000.	
53 Cr	207.65	41.53	ppb	2.41	#VALUE!	
55 Mn	531.	106.2	ppb	0.70	2000.	
56 Fe	1,125.5	225.1	ppb	2.33	#VALUE!	
57 Fe	1,083.	216.6	ppb	0.95	100000.	
59 Co	545.	109.	ppb	1.58	1000.	
60 Ni	530.5	106.1	ppb	0.48	1000.	
63 Cu	262.65	52.53	ppb	0.35	#VALUE!	
65 Cu	271.85	54.37	ppb	0.06	2000.	
66 Zn	507.	101.4	ppb	0.49	2000.	
68 Zn	569.	113.8	ppb	1.59	#VALUE!	
75 As	102.45	20.49	ppb	1.26	1000.	
82 Se	98.15	19.63	ppb	0.16	1000.	
88 Sr	514.5	102.9	ppb	1.46	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.5	20.3	ppb	0.57	1000.	
107 Ag	51.9	10.38	ppb	0.88	100.	
109 Ag	51.95	10.39	ppb	1.00	#VALUE!	
111 Cd	252.95	50.59	ppb	0.72	#VALUE!	
114 Cd	251.6	50.32	ppb	0.40	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	583.	116.6	ppb	1.91	1000.	
120 Sn	586.5	117.3	ppb	1.68	#VALUE!	
121 Sb	108.75	21.75	ppb	2.55	#VALUE!	
123 Sb	109.25	21.85	ppb	2.92	1000.	
135 Ba	2,196.5	439.3	ppb	1.51	2000.	
137 Ba	2,187.	437.4	ppb	0.76	#VALUE!	
182 W	105.4	21.08	ppb	1.75	1000.	
203 Tl	107.05	21.41	ppb	2.47	1000.	
205 Tl	106.25	21.25	ppb	2.36	#VALUE!	
208 Pb	107.45	21.49	ppb	1.60	2000.	
232 Th	102.05	20.41	ppb	2.99	1000.	
238 U	102.35	20.47	ppb	2.26	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5171522.50	3.57	4492941.00	115.1	69.5 - 120	
45 Sc	3259848.80	2.46	3094960.50	105.3	69.5 - 120	
72 Ge	621268.13	0.61	631723.63	98.3	69.5 - 120	
159 Tb	5961187.00	1.63	6220065.50	95.8	69.5 - 120	
209 Bi	3098841.50	1.99	3318256.50	93.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001041

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\053SMPL.D\053SMPL.D#
Date Acquired: May 14 2018 05:28 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LC2OLE11IMS2
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	44.805	8.961	ppb	3.65	100.	
11 B	507.5	101.5	ppb	3.33	1000.	
23 Na	8,675.	1,735.	ppb	2.67	200000.	
25 Mg	6,015.	1,203.	ppb	0.84	200000.	
27 Al	2,321.5	464.3	ppb	2.24	200000.	
28 Si	897.	179.4	ppb	6.39	#VALUE!	
29 Si	772.	154.4	ppb	10.47	10000.	
39 K	10,965.	2,193.	ppb	3.11	200000.	
43 Ca	3,011.	602.2	ppb	4.71	#VALUE!	
44 Ca	2,691.	538.2	ppb	1.65	200000.	
51 V	550.5	110.1	ppb	3.19	1000.	
52 Cr	213.95	42.79	ppb	2.76	2000.	
53 Cr	213.65	42.73	ppb	0.62	#VALUE!	
55 Mn	540.5	108.1	ppb	1.30	2000.	
56 Fe	1,149.5	229.9	ppb	3.03	#VALUE!	
57 Fe	1,106.5	221.3	ppb	1.20	100000.	
59 Co	554.5	110.9	ppb	2.12	1000.	
60 Ni	537.	107.4	ppb	1.53	1000.	
63 Cu	265.95	53.19	ppb	1.51	#VALUE!	
65 Cu	272.1	54.42	ppb	2.63	2000.	
66 Zn	518.5	103.7	ppb	2.61	2000.	
68 Zn	586.	117.2	ppb	1.02	#VALUE!	
75 As	103.35	20.67	ppb	1.86	1000.	
82 Se	100.4	20.08	ppb	2.27	1000.	
88 Sr	519.5	103.9	ppb	1.88	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	103.95	20.79	ppb	1.79	1000.	
107 Ag	52.45	10.49	ppb	2.35	100.	
109 Ag	52.6	10.52	ppb	1.81	#VALUE!	
111 Cd	256.5	51.3	ppb	1.77	#VALUE!	
114 Cd	255.15	51.03	ppb	1.32	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	582.	116.4	ppb	1.33	1000.	
120 Sn	586.	117.2	ppb	1.02	#VALUE!	
121 Sb	108.55	21.71	ppb	0.77	#VALUE!	
123 Sb	109.8	21.96	ppb	1.71	1000.	
135 Ba	2,190.5	438.1	ppb	1.91	2000.	
137 Ba	2,188.	437.6	ppb	1.37	#VALUE!	
182 W	104.55	20.91	ppb	1.03	1000.	
203 Tl	106.85	21.37	ppb	2.56	1000.	
205 Tl	106.75	21.35	ppb	1.60	#VALUE!	
208 Pb	107.5	21.5	ppb	1.14	2000.	
232 Th	102.35	20.47	ppb	2.33	1000.	
238 U	102.7	20.54	ppb	1.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5252613.50	3.78	4492941.00	116.9	69.5 - 120	
45 Sc	3202045.50	3.34	3094960.50	103.5	69.5 - 120	
72 Ge	620392.94	1.29	631723.63	98.2	69.5 - 120	
159 Tb	6053057.00	1.06	6220065.50	97.3	69.5 - 120	
209 Bi	3123357.50	1.13	3318256.50	94.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001042

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\054_CCV.D\054_CCV.D#
Date Acquired: May 14 2018 05:32 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.08	ppb	4.57	25	92.32	
11 B	29.5	ppb	3.07	25	118	Fail
23 Na	5,166.	ppb	2.80	5,000	103.32	
25 Mg	5,154.	ppb	0.92	5,000	103.08	
27 Al	506.	ppb	2.52	500	101.2	
28 Si	500.5	ppb	1.87	500	100.1	
29 Si	473.7	ppb	4.59	500	94.74	
39 K	4,993.	ppb	2.86	5,000	99.86	
43 Ca	4,894.	ppb	2.22	5,000	97.88	
44 Ca	4,998.	ppb	0.77	5,000	99.96	
51 V	25.26	ppb	0.45	25	101.04	
52 Cr	24.84	ppb	1.16	25	99.36	
53 Cr	24.35	ppb	1.52	25	97.4	
55 Mn	24.75	ppb	1.09	25	99	
56 Fe	4,960.	ppb	1.44	5,000	99.2	
57 Fe	5,048.	ppb	2.37	5,000	100.96	
59 Co	25.15	ppb	0.69	25	100.6	
60 Ni	24.53	ppb	1.20	25	98.12	
63 Cu	24.88	ppb	1.97	25	99.52	
65 Cu	25.61	ppb	0.94	25	102.44	
66 Zn	24.81	ppb	0.75	25	99.24	
68 Zn	24.68	ppb	2.10	25	98.72	
75 As	24.56	ppb	1.85	25	98.24	
82 Se	25.35	ppb	1.65	25	101.4	
88 Sr	24.4	ppb	2.24	25	97.6	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.29	ppb	1.82	25	97.16	
107 Ag	24.69	ppb	1.03	25	98.76	
109 Ag	24.81	ppb	1.34	25	99.24	
111 Cd	24.85	ppb	0.73	25	99.4	
114 Cd	24.64	ppb	1.55	25	98.56	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.92	ppb	0.89	25	99.68	
120 Sn	24.9	ppb	0.92	25	99.6	
121 Sb	25.39	ppb	0.94	25	101.56	
123 Sb	25.34	ppb	0.80	25	101.36	
135 Ba	25.8	ppb	1.39	25	103.2	
137 Ba	25.13	ppb	1.70	25	100.52	
182 W	24.65	ppb	0.35	25	98.6	
203 Tl	24.62	ppb	1.31	25	98.48	
205 Tl	24.52	ppb	1.47	25	98.08	
208 Pb	24.62	ppb	1.84	25	98.48	
232 Th	24.04	ppb	1.53	25	96.16	
238 U	23.91	ppb	1.87	25	95.64	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4698694.50	4.18	4492941.00	104.6	80 - 120.4	
45 Sc	3158179.00	1.26	3094960.50	102.0	80 - 120.4	
72 Ge	615455.00	1.53	631723.63	97.4	80 - 120.4	
159 Tb	6124527.50	0.52	6220065.50	98.5	80 - 120.4	
209 Bi	3224862.00	0.69	3318256.50	97.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\055_CCB.D\055_CCB.D#
Date Acquired: May 14 2018 05:36 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.	ppb	2655.90	1.00	
11 B	2.938	ppb	16.87	1.00	
23 Na	1.084	ppb	47.39	1.00	
25 Mg	0.2821	ppb	69.20	1.00	
27 Al	0.109	ppb	68.24	1.00	
28 Si	-6.522	ppb	55.60	1.00	
29 Si	-24.98	ppb	11.44	1.00	
39 K	-3.412	ppb	51.64	1.00	
43 Ca	-2.088	ppb	89.90	1.00	
44 Ca	-0.2322	ppb	162.88	1.00	
51 V	-0.1629	ppb	67.59	1.00	
52 Cr	-0.0844	ppb	33.60	1.00	
53 Cr	-0.2948	ppb	107.94	1.00	
55 Mn	-0.0017	ppb	442.32	1.00	
56 Fe	-5.924	ppb	24.56	1.00	
57 Fe	0.0791	ppb	596.69	1.00	
59 Co	-0.0014	ppb	35.40	1.00	
60 Ni	0.0037	ppb	229.47	1.00	
63 Cu	0.0169	ppb	32.99	1.00	
65 Cu	-0.0046	ppb	126.60	1.00	
66 Zn	0.0273	ppb	214.83	1.00	
68 Zn	0.0461	ppb	158.68	1.00	
75 As	-0.0784	ppb	36.95	1.00	
82 Se	0.1182	ppb	166.84	1.00	
88 Sr	0.003	ppb	124.46	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0319	ppb	31.17	1.00	
107 Ag	0.0061	ppb	22.94	1.00	
109 Ag	0.0054	ppb	54.35	1.00	
111 Cd	-0.0486	ppb	34.19	1.00	
114 Cd	-0.0015	ppb	145.69	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0456	ppb	10.53	1.00	
120 Sn	0.0393	ppb	26.67	1.00	
121 Sb	0.0037	ppb	67.52	1.00	
123 Sb	0.0069	ppb	44.88	1.00	
135 Ba	0.0194	ppb	20.30	1.00	
137 Ba	0.0078	ppb	103.29	1.00	
182 W	0.0527	ppb	35.47	1.00	
203 Tl	0.0089	ppb	112.34	1.00	
205 Tl	-0.0027	ppb	69.88	1.00	
208 Pb	-0.0232	ppb	18.86	1.00	
232 Th	0.0673	ppb	8.76	1.00	
238 U	0.0036	ppb	15.84	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4846041.00	0.85	4492941.00	107.9	79.5 - 120	
45 Sc	3195603.30	1.09	3094960.50	103.3	79.5 - 120	
72 Ge	628458.88	1.38	631723.63	99.5	79.5 - 120	
159 Tb	6120629.50	0.72	6220065.50	98.4	79.5 - 120	
209 Bi	3283907.80	0.96	3318256.50	99.0	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001044

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\056SMPL.D\056SMPL.D#
Date Acquired: May 14 2018 05:40 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-001
Misc Info:
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0086	0.0017	ppb	141.14	100.	
11 B	10.33	2.066	ppb	5.83	1000.	
23 Na	14,280.	2,856.	ppb	0.69	200000.	
25 Mg	9,060.	1,812.	ppb	0.29	200000.	
27 Al	78.75	15.75	ppb	2.53	200000.	
28 Si	118.95	23.79	ppb	16.19	#VALUE!	
29 Si	181.7	36.34	ppb	14.55	10000.	
39 K	117,400.	23,480.	ppb	1.51	200000.	
43 Ca	4,201.	840.2	ppb	4.17	#VALUE!	
44 Ca	4,224.5	844.9	ppb	1.56	200000.	
51 V	0.5125	0.1025	ppb	64.57	1000.	
52 Cr	4.3895	0.8779	ppb	7.03	2000.	
53 Cr	-1.4975	-0.2995	ppb	157.66	#VALUE!	
55 Mn	7.265	1.453	ppb	1.32	2000.	
56 Fe	271.5	54.3	ppb	8.88	#VALUE!	
57 Fe	278.55	55.71	ppb	1.06	100000.	
59 Co	0.1362	0.0272	ppb	20.32	1000.	
60 Ni	0.732	0.1464	ppb	5.01	1000.	
63 Cu	26.845	5.369	ppb	1.58	#VALUE!	
65 Cu	27.15	5.43	ppb	1.38	2000.	
66 Zn	127.4	25.48	ppb	1.49	2000.	
68 Zn	120.25	24.05	ppb	2.69	#VALUE!	
75 As	0.631	0.1262	ppb	33.83	1000.	
82 Se	3.174	0.6348	ppb	29.19	1000.	
88 Sr	5.695	1.139	ppb	1.81	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1652	0.033	ppb	20.36	1000.	
107 Ag	0.0235	0.0047	ppb	22.92	100.	
109 Ag	0.0171	0.0034	ppb	81.85	#VALUE!	
111 Cd	-0.2797	-0.0559	ppb	9.24	#VALUE!	
114 Cd	-0.0575	-0.0115	ppb	40.44	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.355	9.471	ppb	1.34	1000.	
120 Sn	46.725	9.345	ppb	1.65	#VALUE!	
121 Sb	0.0207	0.0041	ppb	102.39	#VALUE!	
123 Sb	0.0185	0.0037	ppb	125.16	1000.	
135 Ba	1.02	0.204	ppb	5.74	2000.	
137 Ba	1.1125	0.2225	ppb	6.54	#VALUE!	
182 W	0.0841	0.0168	ppb	18.58	1000.	
203 Tl	0.1257	0.0251	ppb	19.26	1000.	
205 Tl	0.0553	0.0111	ppb	47.86	#VALUE!	
208 Pb	1.053	0.2106	ppb	14.42	2000.	
232 Th	0.5765	0.1153	ppb	14.57	1000.	
238 U	0.0141	0.0028	ppb	34.93	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4972476.00	1.93	4492941.00	110.7	69.5 - 120	
45 Sc	3223737.80	0.14	3094960.50	104.2	69.5 - 120	
72 Ge	632739.56	0.43	631723.63	100.2	69.5 - 120	
159 Tb	6111211.00	1.00	6220065.50	98.2	69.5 - 120	
209 Bi	3128048.80	0.20	3318256.50	94.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001045

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\057SMPL.D\057SMPL.D#
Date Acquired: May 14 2018 05:44 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-003
Misc Info:
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0034	-0.0007	ppb	108.99	100.	
11 B	7.565	1.513	ppb	5.12	1000.	
23 Na	13,280.	2,656.	ppb	1.69	200000.	
25 Mg	9,510.	1,902.	ppb	2.83	200000.	
27 Al	76.3	15.26	ppb	5.87	200000.	
28 Si	99.3	19.86	ppb	30.30	#VALUE!	
29 Si	183.6	36.72	ppb	13.31	10000.	
39 K	134,850.	26,970.	ppb	1.90	200000.	
43 Ca	10,185.	2,037.	ppb	1.05	#VALUE!	
44 Ca	10,105.	2,021.	ppb	2.78	200000.	
51 V	0.754	0.1508	ppb	18.86	1000.	
52 Cr	4.991	0.9982	ppb	5.21	2000.	
53 Cr	1.2355	0.2471	ppb	107.16	#VALUE!	
55 Mn	11.895	2.379	ppb	1.63	2000.	
56 Fe	252.65	50.53	ppb	3.82	#VALUE!	
57 Fe	216.45	43.29	ppb	5.74	100000.	
59 Co	0.1407	0.0281	ppb	22.02	1000.	
60 Ni	0.51	0.102	ppb	23.79	1000.	
63 Cu	15.335	3.067	ppb	1.96	#VALUE!	
65 Cu	15.415	3.083	ppb	0.95	2000.	
66 Zn	135.4	27.08	ppb	2.44	2000.	
68 Zn	128.4	25.68	ppb	2.91	#VALUE!	
75 As	0.5	0.1	ppb	154.00	1000.	
82 Se	3.538	0.7076	ppb	59.09	1000.	
88 Sr	15.995	3.199	ppb	2.39	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1487	0.0297	ppb	14.68	1000.	
107 Ag	0.0158	0.0032	ppb	88.90	100.	
109 Ag	0.0152	0.003	ppb	89.23	#VALUE!	
111 Cd	-0.365	-0.073	ppb	50.11	#VALUE!	
114 Cd	-0.0425	-0.0085	ppb	100.07	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.33	9.266	ppb	2.33	1000.	
120 Sn	46.605	9.321	ppb	2.12	#VALUE!	
121 Sb	0.0086	0.0017	ppb	107.83	#VALUE!	
123 Sb	0.023	0.0046	ppb	101.76	1000.	
135 Ba	1.1795	0.2359	ppb	12.25	2000.	
137 Ba	1.2905	0.2581	ppb	5.35	#VALUE!	
182 W	0.0521	0.0104	ppb	36.65	1000.	
203 Tl	0.0612	0.0122	ppb	64.22	1000.	
205 Tl	0.084	0.0168	ppb	33.26	#VALUE!	
208 Pb	0.8355	0.1671	ppb	19.59	2000.	
232 Th	0.2311	0.0462	ppb	29.60	1000.	
238 U	0.0056	0.0011	ppb	52.10	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4989537.50	1.07	4492941.00	111.1	69.5 - 120	
45 Sc	3328112.00	1.08	3094960.50	107.5	69.5 - 120	
72 Ge	637414.38	1.34	631723.63	100.9	69.5 - 120	
159 Tb	6081391.50	2.08	6220065.50	97.8	69.5 - 120	
209 Bi	3074320.80	0.44	3318256.50	92.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001046

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\058SMPL.D\058SMPL.D#
Date Acquired: May 14 2018 05:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-004
Misc Info:
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0047	0.0009	ppb	132.53	100.	
11 B	6.345	1.269	ppb	9.94	1000.	
23 Na	12,590.	2,518.	ppb	3.44	200000.	
25 Mg	10,665.	2,133.	ppb	2.09	200000.	
27 Al	66.8	13.36	ppb	2.05	200000.	
28 Si	152.45	30.49	ppb	12.82	#VALUE!	
29 Si	293.35	58.67	ppb	8.83	10000.	
39 K	158,800.	31,760.	ppb	1.91	200000.	
43 Ca	2,981.5	596.3	ppb	0.30	#VALUE!	
44 Ca	3,016.5	603.3	ppb	0.98	200000.	
51 V	0.7255	0.1451	ppb	32.85	1000.	
52 Cr	5.13	1.026	ppb	2.06	2000.	
53 Cr	14.425	2.885	ppb	33.78	#VALUE!	
55 Mn	5.44	1.088	ppb	3.05	2000.	
56 Fe	219.5	43.9	ppb	2.54	#VALUE!	
57 Fe	177.45	35.49	ppb	7.76	100000.	
59 Co	0.1572	0.0314	ppb	19.37	1000.	
60 Ni	0.514	0.1028	ppb	10.12	1000.	
63 Cu	15.36	3.072	ppb	1.89	#VALUE!	
65 Cu	15.18	3.036	ppb	2.39	2000.	
66 Zn	145.1	29.02	ppb	1.57	2000.	
68 Zn	136.25	27.25	ppb	0.73	#VALUE!	
75 As	0.976	0.1952	ppb	71.06	1000.	
82 Se	3.2855	0.6571	ppb	20.03	1000.	
88 Sr	3.0765	0.6153	ppb	3.60	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1301	0.026	ppb	26.90	1000.	
107 Ag	0.0237	0.0047	ppb	31.46	100.	
109 Ag	0.0097	0.0019	ppb	44.84	#VALUE!	
111 Cd	-0.4027	-0.0805	ppb	10.53	#VALUE!	
114 Cd	-0.0773	-0.0155	ppb	102.98	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.68	9.536	ppb	1.11	1000.	
120 Sn	47.705	9.541	ppb	1.16	#VALUE!	
121 Sb	0.0169	0.0034	ppb	9.95	#VALUE!	
123 Sb	0.0072	0.0014	ppb	230.82	1000.	
135 Ba	0.8075	0.1615	ppb	19.04	2000.	
137 Ba	0.7695	0.1539	ppb	12.46	#VALUE!	
182 W	0.0672	0.0134	ppb	24.64	1000.	
203 Tl	0.1449	0.029	ppb	20.46	1000.	
205 Tl	0.0573	0.0115	ppb	40.86	#VALUE!	
208 Pb	0.836	0.1672	ppb	4.65	2000.	
232 Th	0.143	0.0286	ppb	27.16	1000.	
238 U	0.0006	0.0001	ppb	187.38	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5040500.00	1.80	4492941.00	112.2	69.5 - 120	
45 Sc	3275311.30	2.48	3094960.50	105.8	69.5 - 120	
72 Ge	640735.75	1.71	631723.63	101.4	69.5 - 120	
159 Tb	6041418.00	1.11	6220065.50	97.1	69.5 - 120	
209 Bi	3083239.50	1.35	3318256.50	92.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001047

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\059SMPL.D\059SMPL.D#
Date Acquired: May 14 2018 05:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-005
Misc Info:
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0046	-0.0009	ppb	50.09	100.	
11 B	5.345	1.069	ppb	4.78	1000.	
23 Na	12,350.	2,470.	ppb	0.44	200000.	
25 Mg	10,295.	2,059.	ppb	1.88	200000.	
27 Al	65.6	13.12	ppb	1.50	200000.	
28 Si	123.65	24.73	ppb	31.02	#VALUE!	
29 Si	251.75	50.35	ppb	14.32	10000.	
39 K	153,150.	30,630.	ppb	2.42	200000.	
43 Ca	2,842.5	568.5	ppb	2.17	#VALUE!	
44 Ca	2,962.5	592.5	ppb	0.86	200000.	
51 V	1.1655	0.2331	ppb	30.55	1000.	
52 Cr	6.445	1.289	ppb	1.36	2000.	
53 Cr	20.78	4.156	ppb	17.82	#VALUE!	
55 Mn	8.66	1.732	ppb	1.14	2000.	
56 Fe	237.75	47.55	ppb	7.15	#VALUE!	
57 Fe	192.6	38.52	ppb	6.36	100000.	
59 Co	0.1469	0.0294	ppb	6.05	1000.	
60 Ni	0.596	0.1192	ppb	7.45	1000.	
63 Cu	12.195	2.439	ppb	1.63	#VALUE!	
65 Cu	12.185	2.437	ppb	1.77	2000.	
66 Zn	123.1	24.62	ppb	1.17	2000.	
68 Zn	116.6	23.32	ppb	1.66	#VALUE!	
75 As	0.682	0.1364	ppb	15.54	1000.	
82 Se	3.4565	0.6913	ppb	11.25	1000.	
88 Sr	3.2525	0.6505	ppb	1.74	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1351	0.027	ppb	29.42	1000.	
107 Ag	0.0098	0.002	ppb	87.96	100.	
109 Ag	0.0075	0.0015	ppb	49.49	#VALUE!	
111 Cd	-0.325	-0.065	ppb	41.06	#VALUE!	
114 Cd	-0.071	-0.0142	ppb	26.24	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.64	9.128	ppb	1.68	1000.	
120 Sn	46.105	9.221	ppb	0.87	#VALUE!	
121 Sb	0.0127	0.0025	ppb	99.73	#VALUE!	
123 Sb	0.0048	0.001	ppb	639.74	1000.	
135 Ba	0.6525	0.1305	ppb	2.58	2000.	
137 Ba	0.5915	0.1183	ppb	10.75	#VALUE!	
182 W	0.0369	0.0074	ppb	27.73	1000.	
203 Tl	0.122	0.0244	ppb	23.77	1000.	
205 Tl	0.0903	0.0181	ppb	4.52	#VALUE!	
208 Pb	0.6375	0.1275	ppb	6.08	2000.	
232 Th	0.1268	0.0254	ppb	31.64	1000.	
238 U	0.0046	0.0009	ppb	56.36	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5065483.00	4.01	4492941.00	112.7	69.5 - 120	
45 Sc	3341659.00	0.74	3094960.50	108.0	69.5 - 120	
72 Ge	640523.63	0.91	631723.63	101.4	69.5 - 120	
159 Tb	6002289.50	0.87	6220065.50	96.5	69.5 - 120	
209 Bi	3010510.00	1.68	3318256.50	90.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001048

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\060SMPL.D\060SMPL.D#
Date Acquired: May 14 2018 05:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE09IMS1
Misc Info:
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0032	0.0006	ppb	141.55	100.	
11 B	3.765	0.753	ppb	5.20	1000.	
23 Na	35.	7.	ppb	8.04	200000.	
25 Mg	23.72	4.744	ppb	4.47	200000.	
27 Al	16.925	3.385	ppb	9.08	200000.	
28 Si	-21.055	-4.211	ppb	80.91	#VALUE!	
29 Si	-145.85	-29.17	ppb	22.67	10000.	
39 K	26.965	5.393	ppb	29.93	200000.	
43 Ca	91.2	18.24	ppb	6.22	#VALUE!	
44 Ca	94.25	18.85	ppb	2.03	200000.	
51 V	-0.2115	-0.0423	ppb	222.63	1000.	
52 Cr	1.6215	0.3243	ppb	4.43	2000.	
53 Cr	46.075	9.215	ppb	8.51	#VALUE!	
55 Mn	0.4651	0.093	ppb	4.18	2000.	
56 Fe	40.085	8.017	ppb	34.49	#VALUE!	
57 Fe	20.8	4.16	ppb	53.27	100000.	
59 Co	0.0002	0.	ppb	4737.80	1000.	
60 Ni	0.4061	0.0812	ppb	9.54	1000.	
63 Cu	0.812	0.1624	ppb	2.25	#VALUE!	
65 Cu	0.839	0.1678	ppb	16.98	2000.	
66 Zn	0.908	0.1816	ppb	24.91	2000.	
68 Zn	0.599	0.1198	ppb	96.58	#VALUE!	
75 As	0.0205	0.0041	ppb	2920.20	1000.	
82 Se	0.6565	0.1313	ppb	233.82	1000.	
88 Sr	0.2948	0.059	ppb	10.67	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0956	0.0191	ppb	30.57	1000.	
107 Ag	0.009	0.0018	ppb	47.51	100.	
109 Ag	0.0064	0.0013	ppb	68.54	#VALUE!	
111 Cd	-0.1608	-0.0322	ppb	44.01	#VALUE!	
114 Cd	-0.0483	-0.0097	ppb	79.98	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.675	8.935	ppb	3.74	1000.	
120 Sn	44.965	8.993	ppb	3.60	#VALUE!	
121 Sb	0.0376	0.0075	ppb	34.60	#VALUE!	
123 Sb	0.0149	0.003	ppb	196.04	1000.	
135 Ba	0.618	0.1236	ppb	13.75	2000.	
137 Ba	0.588	0.1176	ppb	7.48	#VALUE!	
182 W	0.0286	0.0057	ppb	40.52	1000.	
203 Tl	-0.0186	-0.0037	ppb	93.14	1000.	
205 Tl	-0.0455	-0.0091	ppb	36.50	#VALUE!	
208 Pb	0.2136	0.0427	ppb	38.27	2000.	
232 Th	0.0143	0.0029	ppb	6.40	1000.	
238 U	0.0029	0.0006	ppb	79.43	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4666603.00	6.51	4492941.00	103.9	69.5 - 120	
45 Sc	3141422.50	1.40	3094960.50	101.5	69.5 - 120	
72 Ge	628539.63	1.47	631723.63	99.5	69.5 - 120	
159 Tb	6217767.00	2.22	6220065.50	100.0	69.5 - 120	
209 Bi	3298955.30	1.44	3318256.50	99.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001049

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\061SMPL.D\061SMPL.D#
Date Acquired: May 14 2018 06:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE09IMS1
Misc Info:
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	44.455	8.891	ppb	4.03	100.	
11 B	492.15	98.43	ppb	2.22	1000.	
23 Na	8,130.	1,626.	ppb	2.23	200000.	
25 Mg	5,555.	1,111.	ppb	3.25	200000.	
27 Al	2,175.5	435.1	ppb	0.84	200000.	
28 Si	1,034.	206.8	ppb	2.20	#VALUE!	
29 Si	922.5	184.5	ppb	2.21	10000.	
39 K	10,485.	2,097.	ppb	0.87	200000.	
43 Ca	3,031.	606.2	ppb	2.97	#VALUE!	
44 Ca	2,624.	524.8	ppb	1.19	200000.	
51 V	536.5	107.3	ppb	0.67	1000.	
52 Cr	208.5	41.7	ppb	1.06	2000.	
53 Cr	245.55	49.11	ppb	0.97	#VALUE!	
55 Mn	520.5	104.1	ppb	1.16	2000.	
56 Fe	1,104.	220.8	ppb	1.77	#VALUE!	
57 Fe	1,079.	215.8	ppb	0.28	100000.	
59 Co	537.5	107.5	ppb	0.84	1000.	
60 Ni	520.	104.	ppb	0.44	1000.	
63 Cu	259.4	51.88	ppb	0.02	#VALUE!	
65 Cu	265.5	53.1	ppb	0.68	2000.	
66 Zn	513.	102.6	ppb	1.01	2000.	
68 Zn	570.5	114.1	ppb	1.85	#VALUE!	
75 As	103.95	20.79	ppb	1.02	1000.	
82 Se	101.45	20.29	ppb	1.77	1000.	
88 Sr	516.	103.2	ppb	0.70	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	103.35	20.67	ppb	1.46	1000.	
107 Ag	53.	10.6	ppb	1.13	100.	
109 Ag	53.3	10.66	ppb	1.41	#VALUE!	
111 Cd	260.25	52.05	ppb	0.88	#VALUE!	
114 Cd	258.7	51.74	ppb	1.00	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	567.	113.4	ppb	1.55	1000.	
120 Sn	572.	114.4	ppb	1.50	#VALUE!	
121 Sb	105.4	21.08	ppb	1.66	#VALUE!	
123 Sb	106.3	21.26	ppb	0.99	1000.	
135 Ba	2,122.5	424.5	ppb	1.41	2000.	
137 Ba	2,127.	425.4	ppb	1.11	#VALUE!	
182 W	104.75	20.95	ppb	1.95	1000.	
203 Tl	106.1	21.22	ppb	0.35	1000.	
205 Tl	106.2	21.24	ppb	0.50	#VALUE!	
208 Pb	106.35	21.27	ppb	0.70	2000.	
232 Th	100.4	20.08	ppb	1.88	1000.	
238 U	100.6	20.12	ppb	0.78	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4745652.00	4.36	4492941.00	105.6	69.5 - 120	
45 Sc	3089190.50	0.56	3094960.50	99.8	69.5 - 120	
72 Ge	612543.19	0.49	631723.63	97.0	69.5 - 120	
159 Tb	6202784.50	1.40	6220065.50	99.7	69.5 - 120	
209 Bi	3247426.50	0.18	3318256.50	97.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001050

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\062SMPL.D\062SMPL.D#
Date Acquired: May 14 2018 06:04 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-048
Misc Info:
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.855	0.7855	ppb	9.47	100.	
11 B	166.1	16.61	ppb	8.33	1000.	
23 Na	5,834.	583.4	ppb	2.26	200000.	
25 Mg	129,100.	12,910.	ppb	2.48	200000.	
27 Al	169,600.	16,960.	ppb	2.18	200000.	
28 Si	2,586.	258.6	ppb	1.77	#VALUE!	
29 Si	2,224.	222.4	ppb	2.74	10000.	
39 K	45,950.	4,595.	ppb	1.36	200000.	
43 Ca	1,492,000.	149,200.	ppb	1.44	#VALUE!	
44 Ca	1,442,000.	144,200.	ppb	1.15	200000.	
51 V	371.6	37.16	ppb	1.36	1000.	
52 Cr	155.7	15.57	ppb	1.48	2000.	
53 Cr	162.3	16.23	ppb	1.24	#VALUE!	
55 Mn	5,608.	560.8	ppb	0.64	2000.	
56 Fe	151,700.	15,170.	ppb	1.46	#VALUE!	
57 Fe	150,800.	15,080.	ppb	2.06	100000.	
59 Co	88.08	8.808	ppb	2.29	1000.	
60 Ni	161.5	16.15	ppb	1.22	1000.	
63 Cu	111.5	11.15	ppb	1.19	#VALUE!	
65 Cu	118.9	11.89	ppb	1.30	2000.	
66 Zn	404.6	40.46	ppb	1.09	2000.	
68 Zn	822.	82.2	ppb	1.89	#VALUE!	
75 As	75.88	7.588	ppb	1.24	1000.	
82 Se	7.183	0.7183	ppb	16.92	1000.	
88 Sr	4,075.	407.5	ppb	1.22	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	9.298	0.9298	ppb	2.20	1000.	
107 Ag	0.73	0.073	ppb	3.76	100.	
109 Ag	0.5946	0.0595	ppb	6.47	#VALUE!	
111 Cd	4.202	0.4202	ppb	2.42	#VALUE!	
114 Cd	1.61	0.161	ppb	6.66	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.88	5.188	ppb	2.21	1000.	
120 Sn	51.17	5.117	ppb	0.63	#VALUE!	
121 Sb	2.083	0.2083	ppb	2.94	#VALUE!	
123 Sb	2.164	0.2164	ppb	1.78	1000.	
135 Ba	11,690.	1,169.	ppb	0.86	2000.	
137 Ba	11,340.	1,134.	ppb	0.52	#VALUE!	
182 W	1.43	0.143	ppb	5.20	1000.	
203 Tl	4.128	0.4128	ppb	5.05	1000.	
205 Tl	4.03	0.403	ppb	3.32	#VALUE!	
208 Pb	113.5	11.35	ppb	0.90	2000.	
232 Th	69.13	6.913	ppb	1.53	1000.	
238 U	17.63	1.763	ppb	1.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4436251.00	8.08	4492941.00	98.7	69.5 - 120	
45 Sc	3098032.30	1.83	3094960.50	100.1	69.5 - 120	
72 Ge	596840.63	0.78	631723.63	94.5	69.5 - 120	
159 Tb	6137460.50	0.68	6220065.50	98.7	69.5 - 120	
209 Bi	3113396.30	0.96	3318256.50	93.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001051

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\063SMPL.D\063SMPL.D#
Date Acquired: May 14 2018 06:08 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3951-001
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.96	1.396	ppb	3.80	100.	
11 B	49.62	4.962	ppb	6.18	1000.	
23 Na	1,061.	106.1	ppb	1.64	200000.	
25 Mg	19,040.	1,904.	ppb	2.32	200000.	
27 Al	321,400.	32,140.	ppb	4.58	200000.	
28 Si	4,160.	416.	ppb	3.40	#VALUE!	
29 Si	3,720.	372.	ppb	1.92	10000.	
39 K	5,540.	554.	ppb	2.95	200000.	
43 Ca	33,840.	3,384.	ppb	3.82	#VALUE!	
44 Ca	34,200.	3,420.	ppb	2.72	200000.	
51 V	943.7	94.37	ppb	3.42	1000.	
52 Cr	514.4	51.44	ppb	1.37	2000.	
53 Cr	539.4	53.94	ppb	1.53	#VALUE!	
55 Mn	2,567.	256.7	ppb	1.87	2000.	
56 Fe	481,900.	48,190.	ppb	1.86	#VALUE!	
57 Fe	463,700.	46,370.	ppb	1.02	100000.	
59 Co	72.86	7.286	ppb	1.24	1000.	
60 Ni	159.2	15.92	ppb	0.88	1000.	
63 Cu	117.8	11.78	ppb	1.94	#VALUE!	
65 Cu	121.5	12.15	ppb	1.23	2000.	
66 Zn	548.3	54.83	ppb	1.85	2000.	
68 Zn	579.5	57.95	ppb	2.50	#VALUE!	
75 As	170.7	17.07	ppb	1.01	1000.	
82 Se	7.333	0.7333	ppb	21.38	1000.	
88 Sr	368.9	36.89	ppb	1.61	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.466	0.5466	ppb	4.65	1000.	
107 Ag	0.4941	0.0494	ppb	3.53	100.	
109 Ag	0.3942	0.0394	ppb	12.06	#VALUE!	
111 Cd	2.573	0.2573	ppb	5.46	#VALUE!	
114 Cd	1.27	0.127	ppb	11.76	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	67.92	6.792	ppb	1.79	1000.	
120 Sn	69.08	6.908	ppb	0.91	#VALUE!	
121 Sb	4.047	0.4047	ppb	4.11	#VALUE!	
123 Sb	4.151	0.4151	ppb	12.34	1000.	
135 Ba	1,277.	127.7	ppb	1.09	2000.	
137 Ba	1,265.	126.5	ppb	1.13	#VALUE!	
182 W	45.79	4.579	ppb	1.39	1000.	
203 Tl	2.688	0.2688	ppb	8.29	1000.	
205 Tl	2.523	0.2523	ppb	1.83	#VALUE!	
208 Pb	200.3	20.03	ppb	0.47	2000.	
232 Th	73.62	7.362	ppb	1.71	1000.	
238 U	24.21	2.421	ppb	1.91	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4610228.00	1.68	4492941.00	102.6	69.5 - 120	
45 Sc	3233919.00	0.91	3094960.50	104.5	69.5 - 120	
72 Ge	618804.44	0.73	631723.63	98.0	69.5 - 120	
159 Tb	6119949.00	0.53	6220065.50	98.4	69.5 - 120	
209 Bi	3104354.00	1.42	3318256.50	93.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001052

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\064SMPL.D\064SMPL.D#
Date Acquired: May 14 2018 06:12 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3951-001L
Misc Info:
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 50.00
Autodil Factor: Undiluted
Final Dil Factor: 50.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	14.61	0.2922	ppb	9.09	100.	
11 B	91.25	1.825	ppb	10.00	1000.	
23 Na	1,100.	22.	ppb	1.14	200000.	
25 Mg	18,350.	367.	ppb	2.23	200000.	
27 Al	331,700.	6,634.	ppb	2.28	200000.	
28 Si	5,295.	105.9	ppb	5.67	#VALUE!	
29 Si	3,030.	60.6	ppb	10.38	10000.	
39 K	5,735.	114.7	ppb	1.12	200000.	
43 Ca	34,110.	682.2	ppb	4.02	#VALUE!	
44 Ca	33,915.	678.3	ppb	0.69	200000.	
51 V	901.5	18.03	ppb	2.36	1000.	
52 Cr	515.	10.3	ppb	1.40	2000.	
53 Cr	469.3	9.386	ppb	3.29	#VALUE!	
55 Mn	2,675.	53.5	ppb	0.93	2000.	
56 Fe	487,650.	9,753.	ppb	0.58	#VALUE!	
57 Fe	484,200.	9,684.	ppb	1.04	100000.	
59 Co	74.35	1.487	ppb	1.60	1000.	
60 Ni	160.05	3.201	ppb	2.38	1000.	
63 Cu	126.9	2.538	ppb	2.10	#VALUE!	
65 Cu	132.75	2.655	ppb	2.59	2000.	
66 Zn	583.	11.66	ppb	1.19	2000.	
68 Zn	600.	12.	ppb	0.32	#VALUE!	
75 As	175.7	3.514	ppb	3.75	1000.	
82 Se	9.815	0.1963	ppb	65.05	1000.	
88 Sr	369.8	7.396	ppb	0.70	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.93	0.1386	ppb	4.39	1000.	
107 Ag	0.4188	0.0084	ppb	40.66	100.	
109 Ag	0.4328	0.0087	ppb	20.76	#VALUE!	
111 Cd	1.0755	0.0215	ppb	59.93	#VALUE!	
114 Cd	1.3265	0.0265	ppb	8.74	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	68.3	1.366	ppb	3.91	1000.	
120 Sn	69.7	1.394	ppb	2.20	#VALUE!	
121 Sb	4.0705	0.0814	ppb	1.96	#VALUE!	
123 Sb	4.1695	0.0834	ppb	5.94	1000.	
135 Ba	1,309.	26.18	ppb	1.71	2000.	
137 Ba	1,295.	25.9	ppb	1.47	#VALUE!	
182 W	46.33	0.9266	ppb	2.23	1000.	
203 Tl	2.1065	0.0421	ppb	22.10	1000.	
205 Tl	2.114	0.0423	ppb	19.87	#VALUE!	
208 Pb	199.2	3.984	ppb	0.56	2000.	
232 Th	67.65	1.353	ppb	1.55	1000.	
238 U	23.355	0.4671	ppb	2.87	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4549312.00	5.10	4492941.00	101.3	69.5 - 120	
45 Sc	3193412.80	0.93	3094960.50	103.2	69.5 - 120	
72 Ge	634414.69	0.54	631723.63	100.4	69.5 - 120	
159 Tb	6117158.00	0.48	6220065.50	98.3	69.5 - 120	
209 Bi	3185645.30	0.80	3318256.50	96.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001053

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\065SMPL.D\065SMPL.D#
Date Acquired: May 14 2018 06:16 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3951-001A
Misc Info:
Vial Number: 2306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	32.63	3.263	ppb	5.16	100.	
11 B	450.7	45.07	ppb	1.92	1000.	
23 Na	21,170.	2,117.	ppb	0.36	200000.	
25 Mg	20,010.	2,001.	ppb	1.85	200000.	
27 Al	325,300.	32,530.	ppb	2.34	200000.	
28 Si	14,550.	1,455.	ppb	1.38	#VALUE!	
29 Si	13,850.	1,385.	ppb	1.49	10000.	
39 K	25,080.	2,508.	ppb	1.60	200000.	
43 Ca	34,980.	3,498.	ppb	1.97	#VALUE!	
44 Ca	35,300.	3,530.	ppb	1.68	200000.	
51 V	1,016.	101.6	ppb	0.91	1000.	
52 Cr	597.9	59.79	ppb	0.90	2000.	
53 Cr	620.4	62.04	ppb	0.56	#VALUE!	
55 Mn	2,549.	254.9	ppb	0.22	2000.	
56 Fe	471,400.	47,140.	ppb	1.16	#VALUE!	
57 Fe	459,400.	45,940.	ppb	0.23	100000.	
59 Co	90.65	9.065	ppb	1.24	1000.	
60 Ni	189.9	18.99	ppb	0.27	1000.	
63 Cu	176.1	17.61	ppb	1.64	#VALUE!	
65 Cu	180.1	18.01	ppb	0.38	2000.	
66 Zn	734.8	73.48	ppb	0.45	2000.	
68 Zn	744.8	74.48	ppb	1.95	#VALUE!	
75 As	264.5	26.45	ppb	0.31	1000.	
82 Se	102.9	10.29	ppb	2.93	1000.	
88 Sr	459.2	45.92	ppb	1.24	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.8	10.18	ppb	1.56	1000.	
107 Ag	20.63	2.063	ppb	2.35	100.	
109 Ag	20.3	2.03	ppb	0.35	#VALUE!	
111 Cd	21.83	2.183	ppb	1.42	#VALUE!	
114 Cd	20.9	2.09	ppb	1.76	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	169.5	16.95	ppb	2.02	1000.	
120 Sn	170.7	17.07	ppb	1.63	#VALUE!	
121 Sb	24.91	2.491	ppb	2.84	#VALUE!	
123 Sb	25.05	2.505	ppb	1.46	1000.	
135 Ba	1,301.	130.1	ppb	2.62	2000.	
137 Ba	1,287.	128.7	ppb	1.96	#VALUE!	
182 W	147.	14.7	ppb	2.58	1000.	
203 Tl	23.29	2.329	ppb	2.84	1000.	
205 Tl	23.01	2.301	ppb	1.93	#VALUE!	
208 Pb	215.8	21.58	ppb	1.70	2000.	
232 Th	91.48	9.148	ppb	1.59	1000.	
238 U	42.64	4.264	ppb	1.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4639344.50	4.07	4492941.00	103.3	69.5 - 120	
45 Sc	3232229.80	1.90	3094960.50	104.4	69.5 - 120	
72 Ge	624590.00	0.70	631723.63	98.9	69.5 - 120	
159 Tb	6073507.00	1.39	6220065.50	97.6	69.5 - 120	
209 Bi	3054589.50	0.83	3318256.50	92.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001054

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\066_CCV.D\066_CCV.D#
Date Acquired: May 14 2018 06:20 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.38	ppb	2.95	25	89.52	
11 B	25.3	ppb	2.60	25	101.2	
23 Na	5,178.	ppb	2.02	5,000	103.56	
25 Mg	5,172.	ppb	0.65	5,000	103.44	
27 Al	494.3	ppb	2.47	500	98.86	
28 Si	523.3	ppb	2.47	500	104.66	
29 Si	474.7	ppb	2.73	500	94.94	
39 K	4,926.	ppb	0.91	5,000	98.52	
43 Ca	4,923.	ppb	1.50	5,000	98.46	
44 Ca	4,984.	ppb	2.35	5,000	99.68	
51 V	25.	ppb	0.84	25	100	
52 Cr	24.54	ppb	1.32	25	98.16	
53 Cr	24.54	ppb	2.23	25	98.16	
55 Mn	24.19	ppb	0.99	25	96.76	
56 Fe	4,872.	ppb	1.09	5,000	97.44	
57 Fe	4,996.	ppb	1.07	5,000	99.92	
59 Co	24.85	ppb	1.29	25	99.4	
60 Ni	24.28	ppb	0.51	25	97.12	
63 Cu	24.54	ppb	1.39	25	98.16	
65 Cu	25.29	ppb	1.45	25	101.16	
66 Zn	24.73	ppb	1.77	25	98.92	
68 Zn	24.22	ppb	0.48	25	96.88	
75 As	24.7	ppb	1.44	25	98.8	
82 Se	24.99	ppb	1.46	25	99.96	
88 Sr	24.34	ppb	0.85	25	97.36	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.03	ppb	0.26	25	96.12	
107 Ag	24.33	ppb	0.25	25	97.32	
109 Ag	24.52	ppb	0.72	25	98.08	
111 Cd	24.25	ppb	0.80	25	97	
114 Cd	24.39	ppb	0.42	25	97.56	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.71	ppb	0.55	25	98.84	
120 Sn	24.81	ppb	1.46	25	99.24	
121 Sb	25.52	ppb	0.97	25	102.08	
123 Sb	25.61	ppb	1.46	25	102.44	
135 Ba	25.53	ppb	0.77	25	102.12	
137 Ba	25.06	ppb	2.38	25	100.24	
182 W	23.98	ppb	0.43	25	95.92	
203 Tl	24.63	ppb	1.64	25	98.52	
205 Tl	24.72	ppb	1.07	25	98.88	
208 Pb	24.71	ppb	1.32	25	98.84	
232 Th	23.4	ppb	1.25	25	93.6	
238 U	22.53	ppb	1.53	25	90.12	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4650662.00	1.68	4492941.00	103.5	80 - 120.4	
45 Sc	3151690.00	1.10	3094960.50	101.8	80 - 120.4	
72 Ge	626580.44	1.11	631723.63	99.2	80 - 120.4	
159 Tb	6128292.00	0.18	6220065.50	98.5	80 - 120.4	
209 Bi	3098257.30	0.80	3318256.50	93.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001055

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\067_CCB.D\067_CCB.D#
Date Acquired: May 14 2018 06:24 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0012	ppb	18.17	1.00	
11 B	1.828	ppb	19.63	1.00	
23 Na	0.7569	ppb	50.96	1.00	
25 Mg	0.18	ppb	159.83	1.00	
27 Al	0.6479	ppb	109.03	1.00	
28 Si	15.47	ppb	71.04	1.00	
29 Si	-17.2	ppb	70.58	1.00	
39 K	-0.2356	ppb	1279.70	1.00	
43 Ca	-3.679	ppb	56.16	1.00	
44 Ca	1.689	ppb	69.98	1.00	
51 V	-0.0509	ppb	196.58	1.00	
52 Cr	-0.0528	ppb	0.39	1.00	
53 Cr	1.131	ppb	28.13	1.00	
55 Mn	0.0101	ppb	143.18	1.00	
56 Fe	5.933	ppb	45.29	1.00	
57 Fe	3.492	ppb	90.35	1.00	
59 Co	0.0002	ppb	893.49	1.00	
60 Ni	0.0063	ppb	38.71	1.00	
63 Cu	0.0063	ppb	70.16	1.00	
65 Cu	0.0057	ppb	174.97	1.00	
66 Zn	0.0457	ppb	86.77	1.00	
68 Zn	0.0084	ppb	729.37	1.00	
75 As	-0.038	ppb	233.83	1.00	
82 Se	0.0368	ppb	481.64	1.00	
88 Sr	0.0054	ppb	126.48	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0312	ppb	29.07	1.00	
107 Ag	0.0068	ppb	25.95	1.00	
109 Ag	0.0037	ppb	51.39	1.00	
111 Cd	-0.0766	ppb	27.67	1.00	
114 Cd	-0.0005	ppb	758.58	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0348	ppb	34.57	1.00	
120 Sn	0.0229	ppb	38.38	1.00	
121 Sb	0.0014	ppb	321.56	1.00	
123 Sb	-0.0012	ppb	312.91	1.00	
135 Ba	0.0122	ppb	114.64	1.00	
137 Ba	0.0109	ppb	116.59	1.00	
182 W	0.0483	ppb	45.46	1.00	
203 Tl	0.005	ppb	94.51	1.00	
205 Tl	-0.0052	ppb	22.91	1.00	
208 Pb	-0.0216	ppb	63.63	1.00	
232 Th	0.048	ppb	9.41	1.00	
238 U	0.0032	ppb	26.98	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4589229.00	1.22	4492941.00	102.1	79.5 - 120	
45 Sc	3167953.00	3.20	3094960.50	102.4	79.5 - 120	
72 Ge	631406.25	0.78	631723.63	99.9	79.5 - 120	
159 Tb	5984270.00	1.16	6220065.50	96.2	79.5 - 120	
209 Bi	3129493.50	1.11	3318256.50	94.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001056

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\068SMPL.D\068SMPL.D#
Date Acquired: May 14 2018 06:28 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3951-001S
Misc Info:
Vial Number: 2307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	63.36	6.336	ppb	0.83	100.	
11 B	398.2	39.82	ppb	1.67	1000.	
23 Na	9,040.	904.	ppb	1.11	200000.	
25 Mg	26,910.	2,691.	ppb	2.15	200000.	
27 Al	389,500.	38,950.	ppb	0.60	200000.	
28 Si	3,768.	376.8	ppb	1.03	#VALUE!	
29 Si	3,260.	326.	ppb	2.74	10000.	
39 K	16,140.	1,614.	ppb	1.53	200000.	
43 Ca	39,960.	3,996.	ppb	1.62	#VALUE!	
44 Ca	39,840.	3,984.	ppb	1.19	200000.	
51 V	1,715.	171.5	ppb	1.89	1000.	
52 Cr	821.8	82.18	ppb	2.35	2000.	
53 Cr	818.5	81.85	ppb	0.48	#VALUE!	
55 Mn	3,235.	323.5	ppb	0.43	2000.	
56 Fe	643,700.	64,370.	ppb	1.31	#VALUE!	
57 Fe	621,900.	62,190.	ppb	0.84	100000.	
59 Co	600.5	60.05	ppb	1.48	1000.	
60 Ni	690.1	69.01	ppb	0.71	1000.	
63 Cu	370.3	37.03	ppb	0.07	#VALUE!	
65 Cu	386.4	38.64	ppb	1.27	2000.	
66 Zn	1,106.	110.6	ppb	1.02	2000.	
68 Zn	1,179.	117.9	ppb	0.65	#VALUE!	
75 As	348.5	34.85	ppb	0.58	1000.	
82 Se	98.67	9.867	ppb	4.15	1000.	
88 Sr	903.7	90.37	ppb	0.62	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	100.9	10.09	ppb	0.99	1000.	
107 Ag	49.55	4.955	ppb	0.35	100.	
109 Ag	50.43	5.043	ppb	1.86	#VALUE!	
111 Cd	251.5	25.15	ppb	0.69	#VALUE!	
114 Cd	246.1	24.61	ppb	1.27	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	564.3	56.43	ppb	1.62	1000.	
120 Sn	563.4	56.34	ppb	2.28	#VALUE!	
121 Sb	59.31	5.931	ppb	2.59	#VALUE!	
123 Sb	60.03	6.003	ppb	0.90	1000.	
135 Ba	3,535.	353.5	ppb	2.26	2000.	
137 Ba	3,504.	350.4	ppb	1.81	#VALUE!	
182 W	102.2	10.22	ppb	1.91	1000.	
203 Tl	107.3	10.73	ppb	1.16	1000.	
205 Tl	108.	10.8	ppb	1.52	#VALUE!	
208 Pb	337.5	33.75	ppb	1.42	2000.	
232 Th	176.3	17.63	ppb	1.65	1000.	
238 U	120.7	12.07	ppb	2.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4810907.50	0.92	4492941.00	107.1	69.5 - 120	
45 Sc	3289377.30	0.88	3094960.50	106.3	69.5 - 120	
72 Ge	627645.81	1.05	631723.63	99.4	69.5 - 120	
159 Tb	6071033.50	1.18	6220065.50	97.6	69.5 - 120	
209 Bi	3025366.50	1.41	3318256.50	91.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001057

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\069SMPL.D\069SMPL.D#
Date Acquired: May 14 2018 06:32 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3951-001P
Misc Info:
Vial Number: 2308
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	59.05	5.905	ppb	5.66	100.	
11 B	443.6	44.36	ppb	6.53	1000.	
23 Na	8,701.	870.1	ppb	2.31	200000.	
25 Mg	25,030.	2,503.	ppb	0.84	200000.	
27 Al	361,900.	36,190.	ppb	2.55	200000.	
28 Si	3,577.	357.7	ppb	10.06	#VALUE!	
29 Si	2,956.	295.6	ppb	5.12	10000.	
39 K	15,650.	1,565.	ppb	0.41	200000.	
43 Ca	36,290.	3,629.	ppb	3.20	#VALUE!	
44 Ca	36,390.	3,639.	ppb	3.95	200000.	
51 V	1,466.	146.6	ppb	0.50	1000.	
52 Cr	718.6	71.86	ppb	0.58	2000.	
53 Cr	749.	74.9	ppb	1.83	#VALUE!	
55 Mn	2,640.	264.	ppb	1.79	2000.	
56 Fe	464,000.	46,400.	ppb	1.08	#VALUE!	
57 Fe	448,700.	44,870.	ppb	1.62	100000.	
59 Co	572.3	57.23	ppb	1.04	1000.	
60 Ni	661.8	66.18	ppb	1.63	1000.	
63 Cu	364.6	36.46	ppb	0.19	#VALUE!	
65 Cu	373.1	37.31	ppb	0.61	2000.	
66 Zn	1,015.	101.5	ppb	0.74	2000.	
68 Zn	1,090.	109.	ppb	0.97	#VALUE!	
75 As	266.1	26.61	ppb	2.33	1000.	
82 Se	100.3	10.03	ppb	0.82	1000.	
88 Sr	861.6	86.16	ppb	0.65	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	94.48	9.448	ppb	1.24	1000.	
107 Ag	49.37	4.937	ppb	0.67	100.	
109 Ag	49.78	4.978	ppb	0.40	#VALUE!	
111 Cd	246.	24.6	ppb	1.47	#VALUE!	
114 Cd	244.4	24.44	ppb	0.85	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	547.8	54.78	ppb	1.56	1000.	
120 Sn	551.8	55.18	ppb	1.57	#VALUE!	
121 Sb	54.63	5.463	ppb	2.04	#VALUE!	
123 Sb	55.05	5.505	ppb	0.86	1000.	
135 Ba	3,376.	337.6	ppb	1.28	2000.	
137 Ba	3,350.	335.	ppb	1.03	#VALUE!	
182 W	97.2	9.72	ppb	1.62	1000.	
203 Tl	106.7	10.67	ppb	2.04	1000.	
205 Tl	105.3	10.53	ppb	1.70	#VALUE!	
208 Pb	295.2	29.52	ppb	1.45	2000.	
232 Th	167.1	16.71	ppb	2.00	1000.	
238 U	114.5	11.45	ppb	1.27	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4794359.50	5.53	4492941.00	106.7	69.5 - 120	
45 Sc	3338444.80	2.01	3094960.50	107.9	69.5 - 120	
72 Ge	626923.31	0.85	631723.63	99.2	69.5 - 120	
159 Tb	6076492.00	1.03	6220065.50	97.7	69.5 - 120	
209 Bi	3021072.30	0.88	3318256.50	91.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001058

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\070SMPL.D\070SMPL.D#
Date Acquired: May 14 2018 06:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-020
Misc Info: LE07IMS1
Vial Number: 2309
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.945	0.8945	ppb	1.64	100.	
11 B	215.3	21.53	ppb	2.90	1000.	
23 Na	4,913.	491.3	ppb	0.94	200000.	
25 Mg	106,600.	10,660.	ppb	0.32	200000.	
27 Al	216,400.	21,640.	ppb	3.24	200000.	
28 Si	3,598.	359.8	ppb	5.09	#VALUE!	
29 Si	3,102.	310.2	ppb	4.92	10000.	
39 K	60,310.	6,031.	ppb	1.05	200000.	
43 Ca	1,202,000.	120,200.	ppb	1.20	#VALUE!	
44 Ca	1,168,000.	116,800.	ppb	0.56	200000.	
51 V	427.4	42.74	ppb	2.30	1000.	
52 Cr	180.3	18.03	ppb	0.38	2000.	
53 Cr	186.7	18.67	ppb	2.03	#VALUE!	
55 Mn	4,748.	474.8	ppb	0.46	2000.	
56 Fe	170,500.	17,050.	ppb	1.23	#VALUE!	
57 Fe	168,500.	16,850.	ppb	1.66	100000.	
59 Co	98.62	9.862	ppb	1.86	1000.	
60 Ni	165.9	16.59	ppb	0.87	1000.	
63 Cu	113.4	11.34	ppb	1.51	#VALUE!	
65 Cu	119.7	11.97	ppb	1.03	2000.	
66 Zn	450.	45.	ppb	0.79	2000.	
68 Zn	614.5	61.45	ppb	0.98	#VALUE!	
75 As	113.5	11.35	ppb	2.66	1000.	
82 Se	9.29	0.929	ppb	36.37	1000.	
88 Sr	2,898.	289.8	ppb	0.87	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.962	0.8962	ppb	1.40	1000.	
107 Ag	0.9791	0.0979	ppb	5.97	100.	
109 Ag	0.858	0.0858	ppb	3.49	#VALUE!	
111 Cd	4.628	0.4628	ppb	5.14	#VALUE!	
114 Cd	1.897	0.1897	ppb	4.54	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.46	4.946	ppb	1.11	1000.	
120 Sn	49.04	4.904	ppb	2.04	#VALUE!	
121 Sb	2.33	0.233	ppb	6.46	#VALUE!	
123 Sb	2.278	0.2278	ppb	6.23	1000.	
135 Ba	5,005.	500.5	ppb	0.55	2000.	
137 Ba	4,966.	496.6	ppb	0.34	#VALUE!	
182 W	1.368	0.1368	ppb	6.88	1000.	
203 Tl	4.148	0.4148	ppb	1.86	1000.	
205 Tl	3.976	0.3976	ppb	5.84	#VALUE!	
208 Pb	157.1	15.71	ppb	0.75	2000.	
232 Th	87.93	8.793	ppb	1.24	1000.	
238 U	18.51	1.851	ppb	0.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4494317.00	0.45	4492941.00	100.0	69.5 - 120	
45 Sc	3112446.50	1.09	3094960.50	100.6	69.5 - 120	
72 Ge	591221.44	1.04	631723.63	93.6	69.5 - 120	
159 Tb	6055446.00	0.17	6220065.50	97.4	69.5 - 120	
209 Bi	3034548.80	1.52	3318256.50	91.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001059

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\071SMPL.D\071SMPL.D#
Date Acquired: May 14 2018 06:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2310
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0144	0.0144	ppb	1.96	100.	
11 B	1.832	1.832	ppb	10.77	1000.	
23 Na	501.3	501.3	ppb	3.44	200000.	
25 Mg	169.7	169.7	ppb	2.59	200000.	
27 Al	5.938	5.938	ppb	5.84	200000.	
28 Si	35.27	35.27	ppb	49.42	#VALUE!	
29 Si	2.001	2.001	ppb	455.02	10000.	
39 K	10.14	10.14	ppb	26.31	200000.	
43 Ca	48.41	48.41	ppb	8.19	#VALUE!	
44 Ca	44.64	44.64	ppb	1.26	200000.	
51 V	-0.0184	-0.0184	ppb	306.14	1000.	
52 Cr	-0.0482	-0.0482	ppb	66.32	2000.	
53 Cr	-1.274	-1.274	ppb	15.63	#VALUE!	
55 Mn	0.2704	0.2704	ppb	6.34	2000.	
56 Fe	11.24	11.24	ppb	6.01	#VALUE!	
57 Fe	8.417	8.417	ppb	27.75	100000.	
59 Co	0.0323	0.0323	ppb	22.38	1000.	
60 Ni	0.1056	0.1056	ppb	16.79	1000.	
63 Cu	0.4101	0.4101	ppb	6.09	#VALUE!	
65 Cu	0.401	0.401	ppb	3.04	2000.	
66 Zn	1.058	1.058	ppb	7.17	2000.	
68 Zn	0.8155	0.8155	ppb	4.03	#VALUE!	
75 As	0.0515	0.0515	ppb	168.23	1000.	
82 Se	0.0305	0.0305	ppb	289.68	1000.	
88 Sr	0.1622	0.1622	ppb	2.71	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0146	0.0146	ppb	20.23	1000.	
107 Ag	0.0021	0.0021	ppb	132.82	100.	
109 Ag	0.0022	0.0022	ppb	82.51	#VALUE!	
111 Cd	-0.0834	-0.0834	ppb	25.90	#VALUE!	
114 Cd	-0.0005	-0.0005	ppb	462.05	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0468	0.0468	ppb	9.11	1000.	
120 Sn	0.0381	0.0381	ppb	49.95	#VALUE!	
121 Sb	0.0001	0.0001	ppb	4322.80	#VALUE!	
123 Sb	0.0003	0.0003	ppb	961.88	1000.	
135 Ba	0.5953	0.5953	ppb	8.61	2000.	
137 Ba	0.586	0.586	ppb	4.85	#VALUE!	
182 W	0.0105	0.0105	ppb	11.61	1000.	
203 Tl	-0.0005	-0.0005	ppb	272.53	1000.	
205 Tl	-0.0036	-0.0036	ppb	28.30	#VALUE!	
208 Pb	0.1593	0.1593	ppb	8.74	2000.	
232 Th	0.0139	0.0139	ppb	9.99	1000.	
238 U	0.0046	0.0046	ppb	18.42	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4505489.00	1.97	4492941.00	100.3	69.5 - 120	
45 Sc	3073679.00	2.05	3094960.50	99.3	69.5 - 120	
72 Ge	616712.63	0.46	631723.63	97.6	69.5 - 120	
159 Tb	5984129.00	0.44	6220065.50	96.2	69.5 - 120	
209 Bi	3161658.00	1.44	3318256.50	95.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001060

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\072SMPL.D\072SMPL.D#
Date Acquired: May 14 2018 06:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE14IMW1
Misc Info:
Vial Number: 2311
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0006	-0.0006	ppb	80.63	100.	
11 B	1.089	1.089	ppb	8.97	1000.	
23 Na	7.449	7.449	ppb	0.89	200000.	
25 Mg	8.002	8.002	ppb	0.32	200000.	
27 Al	4.314	4.314	ppb	1.51	200000.	
28 Si	23.17	23.17	ppb	27.13	#VALUE!	
29 Si	-2.478	-2.478	ppb	285.51	10000.	
39 K	-0.8603	-0.8603	ppb	143.44	200000.	
43 Ca	-2.495	-2.495	ppb	67.82	#VALUE!	
44 Ca	2.381	2.381	ppb	11.03	200000.	
51 V	-0.0959	-0.0959	ppb	80.54	1000.	
52 Cr	-0.0233	-0.0233	ppb	29.59	2000.	
53 Cr	0.0342	0.0342	ppb	428.15	#VALUE!	
55 Mn	0.0629	0.0629	ppb	9.64	2000.	
56 Fe	1.976	1.976	ppb	178.95	#VALUE!	
57 Fe	2.415	2.415	ppb	100.12	100000.	
59 Co	-0.0008	-0.0008	ppb	768.44	1000.	
60 Ni	0.0137	0.0137	ppb	11.61	1000.	
63 Cu	0.0273	0.0273	ppb	12.88	#VALUE!	
65 Cu	0.019	0.019	ppb	33.41	2000.	
66 Zn	0.0766	0.0766	ppb	40.59	2000.	
68 Zn	0.0994	0.0994	ppb	24.30	#VALUE!	
75 As	-0.0585	-0.0585	ppb	109.04	1000.	
82 Se	-0.0378	-0.0378	ppb	330.60	1000.	
88 Sr	0.0107	0.0107	ppb	22.28	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0055	0.0055	ppb	41.05	1000.	
107 Ag	0.0016	0.0016	ppb	217.73	100.	
109 Ag	-0.0002	-0.0002	ppb	623.73	#VALUE!	
111 Cd	-0.0528	-0.0528	ppb	21.71	#VALUE!	
114 Cd	-0.0051	-0.0051	ppb	18.20	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0136	0.0136	ppb	41.50	1000.	
120 Sn	-0.0031	-0.0031	ppb	38.35	#VALUE!	
121 Sb	-0.0034	-0.0034	ppb	29.88	#VALUE!	
123 Sb	-0.0004	-0.0004	ppb	368.58	1000.	
135 Ba	0.0065	0.0065	ppb	164.32	2000.	
137 Ba	0.012	0.012	ppb	18.70	#VALUE!	
182 W	0.0048	0.0048	ppb	62.68	1000.	
203 Tl	-0.0054	-0.0054	ppb	222.06	1000.	
205 Tl	-0.0069	-0.0069	ppb	79.90	#VALUE!	
208 Pb	-0.0143	-0.0143	ppb	19.60	2000.	
232 Th	0.0133	0.0133	ppb	36.79	1000.	
238 U	0.	0.	ppb	1530.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4728968.50	2.15	4492941.00	105.3	69.5 - 120	
45 Sc	3113878.80	0.67	3094960.50	100.6	69.5 - 120	
72 Ge	620768.13	0.61	631723.63	98.3	69.5 - 120	
159 Tb	6058288.00	0.29	6220065.50	97.4	69.5 - 120	
209 Bi	3187547.00	1.07	3318256.50	96.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001061

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\073SMPL.D\073SMPL.D#
Date Acquired: May 14 2018 06:49 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE14IMW1
Misc Info:
Vial Number: 2312
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	43.74	8.748	ppb	2.01	100.	
11 B	461.8	92.36	ppb	4.19	1000.	
23 Na	8,000.	1,600.	ppb	2.20	200000.	
25 Mg	5,405.	1,081.	ppb	2.32	200000.	
27 Al	2,085.	417.	ppb	3.02	200000.	
28 Si	1,127.5	225.5	ppb	5.06	#VALUE!	
29 Si	940.	188.	ppb	3.47	10000.	
39 K	9,965.	1,993.	ppb	0.79	200000.	
43 Ca	2,779.	555.8	ppb	6.08	#VALUE!	
44 Ca	2,467.	493.4	ppb	3.36	200000.	
51 V	518.5	103.7	ppb	1.52	1000.	
52 Cr	195.55	39.11	ppb	1.24	2000.	
53 Cr	194.75	38.95	ppb	1.52	#VALUE!	
55 Mn	500.5	100.1	ppb	1.96	2000.	
56 Fe	1,020.5	204.1	ppb	3.35	#VALUE!	
57 Fe	1,002.5	200.5	ppb	0.88	100000.	
59 Co	508.5	101.7	ppb	1.14	1000.	
60 Ni	497.25	99.45	ppb	1.37	1000.	
63 Cu	250.9	50.18	ppb	1.49	#VALUE!	
65 Cu	254.8	50.96	ppb	1.89	2000.	
66 Zn	519.5	103.9	ppb	2.26	2000.	
68 Zn	576.5	115.3	ppb	1.66	#VALUE!	
75 As	101.8	20.36	ppb	1.00	1000.	
82 Se	103.3	20.66	ppb	1.28	1000.	
88 Sr	494.4	98.88	ppb	1.48	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	98.55	19.71	ppb	2.83	1000.	
107 Ag	50.2	10.04	ppb	2.80	100.	
109 Ag	50.	10.	ppb	2.01	#VALUE!	
111 Cd	253.35	50.67	ppb	1.43	#VALUE!	
114 Cd	251.15	50.23	ppb	1.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	510.5	102.1	ppb	2.57	1000.	
120 Sn	512.5	102.5	ppb	3.06	#VALUE!	
121 Sb	105.1	21.02	ppb	3.64	#VALUE!	
123 Sb	104.85	20.97	ppb	2.14	1000.	
135 Ba	2,073.5	414.7	ppb	2.51	2000.	
137 Ba	2,087.	417.4	ppb	3.05	#VALUE!	
182 W	97.95	19.59	ppb	3.48	1000.	
203 Tl	99.85	19.97	ppb	2.80	1000.	
205 Tl	100.05	20.01	ppb	2.54	#VALUE!	
208 Pb	100.65	20.13	ppb	2.60	2000.	
232 Th	92.15	18.43	ppb	2.11	1000.	
238 U	89.05	17.81	ppb	1.87	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4797498.50	0.49	4492941.00	106.8	69.5 - 120	
45 Sc	3133794.00	2.91	3094960.50	101.3	69.5 - 120	
72 Ge	616491.44	1.29	631723.63	97.6	69.5 - 120	
159 Tb	6076067.00	1.74	6220065.50	97.7	69.5 - 120	
209 Bi	3165794.80	0.70	3318256.50	95.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001062

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\074SMPL.D\074SMPL.D#
Date Acquired: May 14 2018 06:53 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4085-001
Misc Info:
Vial Number: 2401
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0992	0.0992	ppb	5.88	100.	
11 B	15.51	15.51	ppb	5.23	1000.	
23 Na	42,830.	42,830.	ppb	2.27	200000.	
25 Mg	1,039.	1,039.	ppb	3.41	200000.	
27 Al	52.52	52.52	ppb	4.27	200000.	
28 Si	4,399.	4,399.	ppb	1.12	#VALUE!	
29 Si	4,628.	4,628.	ppb	1.40	10000.	
39 K	1,163.	1,163.	ppb	1.45	200000.	
43 Ca	6,598.	6,598.	ppb	2.16	#VALUE!	
44 Ca	6,609.	6,609.	ppb	3.17	200000.	
51 V	-0.0333	-0.0333	ppb	87.43	1000.	
52 Cr	0.2307	0.2307	ppb	6.05	2000.	
53 Cr	5.056	5.056	ppb	44.03	#VALUE!	
55 Mn	23.17	23.17	ppb	0.58	2000.	
56 Fe	442.9	442.9	ppb	2.91	#VALUE!	
57 Fe	459.1	459.1	ppb	2.12	100000.	
59 Co	0.0655	0.0655	ppb	17.49	1000.	
60 Ni	0.6381	0.6381	ppb	8.41	1000.	
63 Cu	72.2	72.2	ppb	1.33	#VALUE!	
65 Cu	73.01	73.01	ppb	1.88	2000.	
66 Zn	36.46	36.46	ppb	1.50	2000.	
68 Zn	35.57	35.57	ppb	1.52	#VALUE!	
75 As	0.1034	0.1034	ppb	192.65	1000.	
82 Se	0.054	0.054	ppb	658.22	1000.	
88 Sr	75.43	75.43	ppb	0.47	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1201	0.1201	ppb	17.04	1000.	
107 Ag	0.0149	0.0149	ppb	16.03	100.	
109 Ag	0.0199	0.0199	ppb	13.38	#VALUE!	
111 Cd	0.0082	0.0082	ppb	221.08	#VALUE!	
114 Cd	0.0708	0.0708	ppb	10.97	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3673	0.3673	ppb	6.17	1000.	
120 Sn	0.3496	0.3496	ppb	15.02	#VALUE!	
121 Sb	0.0151	0.0151	ppb	19.55	#VALUE!	
123 Sb	0.0142	0.0142	ppb	28.89	1000.	
135 Ba	7.08	7.08	ppb	2.18	2000.	
137 Ba	6.99	6.99	ppb	1.72	#VALUE!	
182 W	0.0492	0.0492	ppb	22.32	1000.	
203 Tl	0.0181	0.0181	ppb	8.55	1000.	
205 Tl	0.014	0.014	ppb	19.54	#VALUE!	
208 Pb	0.9994	0.9994	ppb	1.53	2000.	
232 Th	0.1044	0.1044	ppb	36.30	1000.	
238 U	4.711	4.711	ppb	1.26	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4613041.50	4.17	4492941.00	102.7	69.5 - 120	
45 Sc	3083742.50	2.42	3094960.50	99.6	69.5 - 120	
72 Ge	619889.88	1.45	631723.63	98.1	69.5 - 120	
159 Tb	6009094.50	2.41	6220065.50	96.6	69.5 - 120	
209 Bi	3013064.50	1.62	3318256.50	90.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\075SMPL.D\075SMPL.D#
Date Acquired: May 14 2018 06:57 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4085-002
Misc Info:
Vial Number: 2402
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.1067	0.1067	ppb	1.57	100.	
11 B	15.12	15.12	ppb	2.51	1000.	
23 Na	40,090.	40,090.	ppb	3.12	200000.	
25 Mg	1,008.	1,008.	ppb	1.44	200000.	
27 Al	65.41	65.41	ppb	1.56	200000.	
28 Si	4,304.	4,304.	ppb	0.74	#VALUE!	
29 Si	4,536.	4,536.	ppb	0.04	10000.	
39 K	1,118.	1,118.	ppb	2.20	200000.	
43 Ca	6,336.	6,336.	ppb	1.69	#VALUE!	
44 Ca	6,397.	6,397.	ppb	1.11	200000.	
51 V	-0.0396	-0.0396	ppb	175.78	1000.	
52 Cr	0.2006	0.2006	ppb	6.81	2000.	
53 Cr	9.198	9.198	ppb	12.06	#VALUE!	
55 Mn	22.21	22.21	ppb	0.37	2000.	
56 Fe	285.7	285.7	ppb	0.94	#VALUE!	
57 Fe	289.8	289.8	ppb	1.58	100000.	
59 Co	0.0524	0.0524	ppb	7.33	1000.	
60 Ni	1.371	1.371	ppb	2.09	1000.	
63 Cu	60.25	60.25	ppb	0.85	#VALUE!	
65 Cu	60.71	60.71	ppb	0.20	2000.	
66 Zn	62.62	62.62	ppb	0.51	2000.	
68 Zn	59.54	59.54	ppb	0.92	#VALUE!	
75 As	0.1816	0.1816	ppb	110.85	1000.	
82 Se	0.1242	0.1242	ppb	202.58	1000.	
88 Sr	75.48	75.48	ppb	1.09	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0955	0.0955	ppb	9.79	1000.	
107 Ag	0.0104	0.0104	ppb	28.97	100.	
109 Ag	0.0145	0.0145	ppb	26.17	#VALUE!	
111 Cd	0.0116	0.0116	ppb	124.27	#VALUE!	
114 Cd	0.0673	0.0673	ppb	10.16	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1007	0.1007	ppb	2.50	1000.	
120 Sn	0.1024	0.1024	ppb	10.85	#VALUE!	
121 Sb	0.0076	0.0076	ppb	27.81	#VALUE!	
123 Sb	0.011	0.011	ppb	9.33	1000.	
135 Ba	6.689	6.689	ppb	2.53	2000.	
137 Ba	6.611	6.611	ppb	0.07	#VALUE!	
182 W	0.0119	0.0119	ppb	42.45	1000.	
203 Tl	0.0217	0.0217	ppb	22.24	1000.	
205 Tl	0.0133	0.0133	ppb	43.96	#VALUE!	
208 Pb	0.7667	0.7667	ppb	2.60	2000.	
232 Th	0.037	0.037	ppb	24.40	1000.	
238 U	4.583	4.583	ppb	0.40	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4488597.00	5.04	4492941.00	99.9	69.5 - 120	
45 Sc	3149376.30	0.40	3094960.50	101.8	69.5 - 120	
72 Ge	625313.38	0.39	631723.63	99.0	69.5 - 120	
159 Tb	6060413.00	0.67	6220065.50	97.4	69.5 - 120	
209 Bi	3037660.30	0.51	3318256.50	91.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001064

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\076SMPL.D\076SMPL.D#
Date Acquired: May 14 2018 07:01 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4096-002
Misc Info:
Vial Number: 2403
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0092	0.0092	ppb	19.35	100.	
11 B	17.48	17.48	ppb	3.63	1000.	
23 Na	24,640.	24,640.	ppb	4.55	200000.	
25 Mg	4,191.	4,191.	ppb	4.10	200000.	
27 Al	10.96	10.96	ppb	6.09	200000.	
28 Si	3,323.	3,323.	ppb	5.97	#VALUE!	
29 Si	3,467.	3,467.	ppb	6.48	10000.	
39 K	857.9	857.9	ppb	4.65	200000.	
43 Ca	32,380.	32,380.	ppb	2.67	#VALUE!	
44 Ca	31,650.	31,650.	ppb	1.06	200000.	
51 V	-0.0262	-0.0262	ppb	252.33	1000.	
52 Cr	0.3836	0.3836	ppb	11.55	2000.	
53 Cr	3.082	3.082	ppb	9.18	#VALUE!	
55 Mn	9.288	9.288	ppb	1.17	2000.	
56 Fe	71.04	71.04	ppb	6.80	#VALUE!	
57 Fe	87.48	87.48	ppb	3.97	100000.	
59 Co	0.4114	0.4114	ppb	5.79	1000.	
60 Ni	4.069	4.069	ppb	2.66	1000.	
63 Cu	140.	140.	ppb	1.90	#VALUE!	
65 Cu	144.9	144.9	ppb	0.45	2000.	
66 Zn	1,434.	1,434.	ppb	1.38	2000.	
68 Zn	1,369.	1,369.	ppb	1.49	#VALUE!	
75 As	0.2318	0.2318	ppb	28.16	1000.	
82 Se	0.1683	0.1683	ppb	27.55	1000.	
88 Sr	215.3	215.3	ppb	0.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0383	0.0383	ppb	17.24	1000.	
107 Ag	0.0328	0.0328	ppb	18.57	100.	
109 Ag	0.027	0.027	ppb	11.33	#VALUE!	
111 Cd	0.0447	0.0447	ppb	140.17	#VALUE!	
114 Cd	0.0471	0.0471	ppb	27.16	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.06	0.06	ppb	36.95	1000.	
120 Sn	0.0397	0.0397	ppb	25.62	#VALUE!	
121 Sb	0.055	0.055	ppb	20.07	#VALUE!	
123 Sb	0.0613	0.0613	ppb	2.27	1000.	
135 Ba	5.154	5.154	ppb	2.89	2000.	
137 Ba	5.002	5.002	ppb	2.04	#VALUE!	
182 W	0.0071	0.0071	ppb	21.30	1000.	
203 Tl	0.0064	0.0064	ppb	142.14	1000.	
205 Tl	-0.003	-0.003	ppb	223.21	#VALUE!	
208 Pb	4.027	4.027	ppb	1.90	2000.	
232 Th	0.0107	0.0107	ppb	38.36	1000.	
238 U	0.0302	0.0302	ppb	3.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4335981.50	1.63	4492941.00	96.5	69.5 - 120	
45 Sc	3113030.30	3.40	3094960.50	100.6	69.5 - 120	
72 Ge	613751.31	0.55	631723.63	97.2	69.5 - 120	
159 Tb	6036798.00	1.67	6220065.50	97.1	69.5 - 120	
209 Bi	3029982.80	1.15	3318256.50	91.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001065

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\077SMPL.D\077SMPL.D#
Date Acquired: May 14 2018 07:05 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4105-001
Misc Info:
Vial Number: 2404
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0981	0.0981	ppb	6.66	100.	
11 B	81.85	81.85	ppb	2.64	1000.	
23 Na	148,200.	148,200.	ppb	3.48	200000.	
25 Mg	9,823.	9,823.	ppb	4.07	200000.	
27 Al	794.5	794.5	ppb	1.38	200000.	
28 Si	4,950.	4,950.	ppb	1.60	#VALUE!	
29 Si	5,201.	5,201.	ppb	1.77	10000.	
39 K	8,935.	8,935.	ppb	0.96	200000.	
43 Ca	51,840.	51,840.	ppb	1.53	#VALUE!	
44 Ca	49,730.	49,730.	ppb	0.93	200000.	
51 V	1.724	1.724	ppb	3.91	1000.	
52 Cr	3.937	3.937	ppb	0.83	2000.	
53 Cr	7.452	7.452	ppb	11.31	#VALUE!	
55 Mn	195.8	195.8	ppb	1.22	2000.	
56 Fe	1,895.	1,895.	ppb	2.04	#VALUE!	
57 Fe	1,949.	1,949.	ppb	1.16	100000.	
59 Co	0.8396	0.8396	ppb	1.88	1000.	
60 Ni	4.555	4.555	ppb	24.61	1000.	
63 Cu	41.75	41.75	ppb	1.26	#VALUE!	
65 Cu	37.37	37.37	ppb	0.76	2000.	
66 Zn	112.9	112.9	ppb	0.22	2000.	
68 Zn	107.2	107.2	ppb	1.66	#VALUE!	
75 As	1.893	1.893	ppb	7.71	1000.	
82 Se	0.7692	0.7692	ppb	9.17	1000.	
88 Sr	297.9	297.9	ppb	0.74	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.371	1.371	ppb	5.11	1000.	
107 Ag	0.1328	0.1328	ppb	3.08	100.	
109 Ag	0.1358	0.1358	ppb	3.42	#VALUE!	
111 Cd	0.1317	0.1317	ppb	20.74	#VALUE!	
114 Cd	0.157	0.157	ppb	5.72	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.803	1.803	ppb	2.95	1000.	
120 Sn	1.824	1.824	ppb	1.22	#VALUE!	
121 Sb	0.688	0.688	ppb	5.91	#VALUE!	
123 Sb	0.7054	0.7054	ppb	5.11	1000.	
135 Ba	30.22	30.22	ppb	2.82	2000.	
137 Ba	30.1	30.1	ppb	2.02	#VALUE!	
182 W	0.426	0.426	ppb	0.50	1000.	
203 Tl	0.0158	0.0158	ppb	30.34	1000.	
205 Tl	0.0095	0.0095	ppb	47.65	#VALUE!	
208 Pb	4.783	4.783	ppb	1.80	2000.	
232 Th	0.0536	0.0536	ppb	30.05	1000.	
238 U	0.9769	0.9769	ppb	0.97	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4067831.30	2.20	4492941.00	90.5	69.5 - 120	
45 Sc	3080052.80	0.99	3094960.50	99.5	69.5 - 120	
72 Ge	612254.50	0.99	631723.63	96.9	69.5 - 120	
159 Tb	5980093.00	1.93	6220065.50	96.1	69.5 - 120	
209 Bi	2849963.50	0.53	3318256.50	85.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001066

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\078_CCV.D\078_CCV.D#
Date Acquired: May 14 2018 07:09 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.43	ppb	2.59	25	89.72	
11 B	26.32	ppb	2.12	25	105.28	
23 Na	5,316.	ppb	1.74	5,000	106.32	
25 Mg	5,289.	ppb	1.16	5,000	105.78	
27 Al	510.5	ppb	1.99	500	102.1	
28 Si	507.4	ppb	1.93	500	101.48	
29 Si	487.4	ppb	3.57	500	97.48	
39 K	4,923.	ppb	3.09	5,000	98.46	
43 Ca	4,938.	ppb	1.89	5,000	98.76	
44 Ca	5,012.	ppb	0.77	5,000	100.24	
51 V	25.7	ppb	1.10	25	102.8	
52 Cr	24.73	ppb	1.16	25	98.92	
53 Cr	24.12	ppb	4.71	25	96.48	
55 Mn	24.55	ppb	0.82	25	98.2	
56 Fe	4,891.	ppb	1.22	5,000	97.82	
57 Fe	4,965.	ppb	1.44	5,000	99.3	
59 Co	24.72	ppb	0.73	25	98.88	
60 Ni	24.43	ppb	0.41	25	97.72	
63 Cu	24.53	ppb	0.89	25	98.12	
65 Cu	25.06	ppb	0.32	25	100.24	
66 Zn	24.98	ppb	0.22	25	99.92	
68 Zn	24.17	ppb	1.55	25	96.68	
75 As	24.83	ppb	0.40	25	99.32	
82 Se	25.02	ppb	1.75	25	100.08	
88 Sr	24.05	ppb	0.78	25	96.2	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.71	ppb	0.82	25	94.84	
107 Ag	24.03	ppb	0.72	25	96.12	
109 Ag	24.26	ppb	1.10	25	97.04	
111 Cd	24.06	ppb	0.93	25	96.24	
114 Cd	24.24	ppb	0.94	25	96.96	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.7	ppb	0.48	25	98.8	
120 Sn	25.14	ppb	0.87	25	100.56	
121 Sb	25.39	ppb	0.53	25	101.56	
123 Sb	25.5	ppb	0.08	25	102	
135 Ba	25.5	ppb	0.72	25	102	
137 Ba	25.22	ppb	0.32	25	100.88	
182 W	24.33	ppb	0.47	25	97.32	
203 Tl	24.93	ppb	1.68	25	99.72	
205 Tl	24.79	ppb	0.93	25	99.16	
208 Pb	24.89	ppb	1.00	25	99.56	
232 Th	23.34	ppb	0.38	25	93.36	
238 U	22.16	ppb	1.11	25	88.64	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5214757.50	2.26	4492941.00	116.1	80 - 120.4	
45 Sc	3361544.50	1.57	3094960.50	108.6	80 - 120.4	
72 Ge	650007.19	1.26	631723.63	102.9	80 - 120.4	
159 Tb	6287265.50	1.06	6220065.50	101.1	80 - 120.4	
209 Bi	3227602.80	0.31	3318256.50	97.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4001067

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\079_CCB.D\079_CCB.D#
Date Acquired: May 14 2018 07:13 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0007	ppb	163.59	1.00	
11 B	2.69	ppb	14.57	1.00	
23 Na	2.162	ppb	9.08	1.00	
25 Mg	0.0253	ppb	140.02	1.00	
27 Al	0.0768	ppb	64.40	1.00	
28 Si	45.98	ppb	52.70	1.00	
29 Si	3.041	ppb	546.53	1.00	
39 K	0.7882	ppb	266.30	1.00	
43 Ca	-1.904	ppb	119.38	1.00	
44 Ca	0.4627	ppb	96.15	1.00	
51 V	-0.1033	ppb	47.14	1.00	
52 Cr	0.0829	ppb	40.59	1.00	
53 Cr	-1.199	ppb	18.19	1.00	
55 Mn	0.0107	ppb	69.19	1.00	
56 Fe	2.337	ppb	97.52	1.00	
57 Fe	0.6332	ppb	224.10	1.00	
59 Co	-0.0009	ppb	180.19	1.00	
60 Ni	-0.0038	ppb	16.60	1.00	
63 Cu	0.0082	ppb	27.79	1.00	
65 Cu	0.007	ppb	181.66	1.00	
66 Zn	0.0473	ppb	93.65	1.00	
68 Zn	0.0874	ppb	76.59	1.00	
75 As	-0.0688	ppb	214.02	1.00	
82 Se	-0.0393	ppb	606.66	1.00	
88 Sr	0.0008	ppb	425.00	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0314	ppb	24.29	1.00	
107 Ag	0.0039	ppb	31.29	1.00	
109 Ag	0.0039	ppb	55.70	1.00	
111 Cd	-0.0651	ppb	4.01	1.00	
114 Cd	-0.0026	ppb	84.17	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0746	ppb	11.27	1.00	
120 Sn	0.0563	ppb	19.47	1.00	
121 Sb	0.0055	ppb	48.48	1.00	
123 Sb	0.006	ppb	17.73	1.00	
135 Ba	0.0025	ppb	330.80	1.00	
137 Ba	0.003	ppb	79.71	1.00	
182 W	0.0508	ppb	32.86	1.00	
203 Tl	0.0081	ppb	111.74	1.00	
205 Tl	0.0057	ppb	155.96	1.00	
208 Pb	0.1162	ppb	19.37	1.00	
232 Th	0.0579	ppb	4.46	1.00	
238 U	0.0031	ppb	40.82	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3329280.30	9.86	4492941.00	74.1	79.5 - 120	ISFail
45 Sc	2675130.80	7.22	3094960.50	86.4	79.5 - 120	
72 Ge	549782.13	5.82	631723.63	87.0	79.5 - 120	
159 Tb	5891358.00	1.43	6220065.50	94.7	79.5 - 120	
209 Bi	3287457.30	2.27	3318256.50	99.1	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\080SMPL.D\080SMPL.D#
Date Acquired: May 14 2018 07:17 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4105-003
Misc Info:
Vial Number: 2405
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0211	0.0211	ppb	18.18	100.	
11 B	104.5	104.5	ppb	3.98	1000.	
23 Na	133,100.	133,100.	ppb	2.31	200000.	
25 Mg	8,573.	8,573.	ppb	0.50	200000.	
27 Al	49.16	49.16	ppb	2.58	200000.	
28 Si	3,952.	3,952.	ppb	2.47	#VALUE!	
29 Si	4,176.	4,176.	ppb	3.01	10000.	
39 K	9,927.	9,927.	ppb	1.43	200000.	
43 Ca	49,790.	49,790.	ppb	2.15	#VALUE!	
44 Ca	47,130.	47,130.	ppb	1.19	200000.	
51 V	0.4432	0.4432	ppb	2.40	1000.	
52 Cr	0.7493	0.7493	ppb	0.99	2000.	
53 Cr	1.186	1.186	ppb	76.80	#VALUE!	
55 Mn	138.	138.	ppb	1.23	2000.	
56 Fe	158.	158.	ppb	3.20	#VALUE!	
57 Fe	177.9	177.9	ppb	1.37	100000.	
59 Co	0.4672	0.4672	ppb	6.52	1000.	
60 Ni	2.016	2.016	ppb	2.73	1000.	
63 Cu	10.75	10.75	ppb	1.67	#VALUE!	
65 Cu	5.93	5.93	ppb	0.63	2000.	
66 Zn	36.59	36.59	ppb	0.48	2000.	
68 Zn	35.7	35.7	ppb	1.35	#VALUE!	
75 As	1.859	1.859	ppb	10.21	1000.	
82 Se	0.841	0.841	ppb	14.79	1000.	
88 Sr	290.9	290.9	ppb	0.92	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.9564	0.9564	ppb	4.44	1000.	
107 Ag	0.0116	0.0116	ppb	23.57	100.	
109 Ag	0.0092	0.0092	ppb	2.59	#VALUE!	
111 Cd	-0.0342	-0.0342	ppb	18.47	#VALUE!	
114 Cd	0.0219	0.0219	ppb	19.05	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2814	0.2814	ppb	1.77	1000.	
120 Sn	0.2528	0.2528	ppb	8.49	#VALUE!	
121 Sb	0.4791	0.4791	ppb	3.58	#VALUE!	
123 Sb	0.4888	0.4888	ppb	4.72	1000.	
135 Ba	13.78	13.78	ppb	1.20	2000.	
137 Ba	13.51	13.51	ppb	1.25	#VALUE!	
182 W	0.1405	0.1405	ppb	7.55	1000.	
203 Tl	0.0378	0.0378	ppb	30.72	1000.	
205 Tl	0.0228	0.0228	ppb	15.74	#VALUE!	
208 Pb	0.7772	0.7772	ppb	3.15	2000.	
232 Th	0.0633	0.0633	ppb	7.18	1000.	
238 U	0.5376	0.5376	ppb	4.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3389023.00	3.88	4492941.00	75.4	69.5 - 120	
45 Sc	2719890.30	1.28	3094960.50	87.9	69.5 - 120	
72 Ge	554804.38	1.08	631723.63	87.8	69.5 - 120	
159 Tb	5912811.00	0.46	6220065.50	95.1	69.5 - 120	
209 Bi	2900397.50	0.72	3318256.50	87.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001069

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\081SMPL.D\081SMPL.D#
Date Acquired: May 14 2018 07:22 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4096-001
Misc Info:
Vial Number: 2406
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0084	0.0084	ppb	26.85	100.	
11 B	19.92	19.92	ppb	1.86	1000.	
23 Na	23,610.	23,610.	ppb	3.47	200000.	
25 Mg	4,056.	4,056.	ppb	3.12	200000.	
27 Al	14.62	14.62	ppb	3.55	200000.	
28 Si	3,159.	3,159.	ppb	7.03	#VALUE!	
29 Si	3,176.	3,176.	ppb	4.36	10000.	
39 K	855.7	855.7	ppb	2.09	200000.	
43 Ca	32,620.	32,620.	ppb	0.81	#VALUE!	
44 Ca	32,040.	32,040.	ppb	1.97	200000.	
51 V	-0.024	-0.024	ppb	333.11	1000.	
52 Cr	0.501	0.501	ppb	2.21	2000.	
53 Cr	3.003	3.003	ppb	7.61	#VALUE!	
55 Mn	9.733	9.733	ppb	3.20	2000.	
56 Fe	96.17	96.17	ppb	9.04	#VALUE!	
57 Fe	109.7	109.7	ppb	2.66	100000.	
59 Co	0.3784	0.3784	ppb	5.49	1000.	
60 Ni	1.566	1.566	ppb	2.63	1000.	
63 Cu	21.01	21.01	ppb	3.73	#VALUE!	
65 Cu	20.73	20.73	ppb	2.54	2000.	
66 Zn	10.37	10.37	ppb	1.14	2000.	
68 Zn	10.08	10.08	ppb	2.73	#VALUE!	
75 As	0.0054	0.0054	ppb	3615.50	1000.	
82 Se	0.1153	0.1153	ppb	142.32	1000.	
88 Sr	217.8	217.8	ppb	2.62	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0374	0.0374	ppb	4.47	1000.	
107 Ag	0.0167	0.0167	ppb	14.58	100.	
109 Ag	0.0154	0.0154	ppb	21.01	#VALUE!	
111 Cd	-0.0189	-0.0189	ppb	164.29	#VALUE!	
114 Cd	0.0383	0.0383	ppb	26.94	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.92	1.92	ppb	3.98	1000.	
120 Sn	1.875	1.875	ppb	3.14	#VALUE!	
121 Sb	0.0398	0.0398	ppb	3.82	#VALUE!	
123 Sb	0.0415	0.0415	ppb	36.70	1000.	
135 Ba	4.92	4.92	ppb	5.22	2000.	
137 Ba	4.926	4.926	ppb	3.20	#VALUE!	
182 W	0.0085	0.0085	ppb	30.40	1000.	
203 Tl	0.0235	0.0235	ppb	22.84	1000.	
205 Tl	0.0173	0.0173	ppb	15.47	#VALUE!	
208 Pb	0.8884	0.8884	ppb	4.54	2000.	
232 Th	0.0231	0.0231	ppb	35.77	1000.	
238 U	0.0287	0.0287	ppb	8.12	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3657597.50	4.70	4492941.00	81.4	69.5 - 120	
45 Sc	2701940.50	3.16	3094960.50	87.3	69.5 - 120	
72 Ge	553168.13	2.44	631723.63	87.6	69.5 - 120	
159 Tb	5817492.00	2.49	6220065.50	93.5	69.5 - 120	
209 Bi	3050229.30	2.22	3318256.50	91.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001070

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\082SMPL.D\082SMPL.D#
Date Acquired: May 14 2018 07:26 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE07IMW1
Misc Info:
Vial Number: 2407
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0081	0.0016	ppb	158.36	100.	
11 B	13.14	2.628	ppb	8.34	1000.	
23 Na	40.59	8.118	ppb	13.88	200000.	
25 Mg	10.64	2.128	ppb	6.82	200000.	
27 Al	7.005	1.401	ppb	6.85	200000.	
28 Si	195.5	39.1	ppb	34.27	#VALUE!	
29 Si	111.1	22.22	ppb	97.57	10000.	
39 K	39.2	7.84	ppb	71.31	200000.	
43 Ca	-9.33	-1.866	ppb	236.01	#VALUE!	
44 Ca	17.46	3.492	ppb	29.50	200000.	
51 V	0.2981	0.0596	ppb	52.73	1000.	
52 Cr	2.733	0.5466	ppb	19.34	2000.	
53 Cr	47.185	9.437	ppb	5.48	#VALUE!	
55 Mn	0.1945	0.0389	ppb	21.09	2000.	
56 Fe	47.13	9.426	ppb	39.90	#VALUE!	
57 Fe	5.	1.	ppb	212.70	100000.	
59 Co	0.006	0.0012	ppb	137.64	1000.	
60 Ni	0.1112	0.0222	ppb	28.92	1000.	
63 Cu	0.0914	0.0183	ppb	42.61	#VALUE!	
65 Cu	0.0769	0.0154	ppb	12.53	2000.	
66 Zn	-0.0387	-0.0077	ppb	296.71	2000.	
68 Zn	0.0602	0.012	ppb	333.80	#VALUE!	
75 As	0.884	0.1768	ppb	29.23	1000.	
82 Se	0.732	0.1464	ppb	85.11	1000.	
88 Sr	0.0553	0.0111	ppb	57.49	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0225	0.0045	ppb	22.11	1000.	
107 Ag	0.0091	0.0018	ppb	89.60	100.	
109 Ag	0.0037	0.0007	ppb	163.68	#VALUE!	
111 Cd	-0.129	-0.0258	ppb	93.84	#VALUE!	
114 Cd	-0.032	-0.0064	ppb	51.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.579	0.3158	ppb	6.41	1000.	
120 Sn	1.538	0.3076	ppb	8.04	#VALUE!	
121 Sb	0.0723	0.0145	ppb	41.18	#VALUE!	
123 Sb	0.0466	0.0093	ppb	49.76	1000.	
135 Ba	0.041	0.0082	ppb	219.46	2000.	
137 Ba	0.0239	0.0048	ppb	91.23	#VALUE!	
182 W	0.0529	0.0106	ppb	10.27	1000.	
203 Tl	0.0627	0.0125	ppb	40.43	1000.	
205 Tl	0.0453	0.0091	ppb	119.34	#VALUE!	
208 Pb	0.239	0.0478	ppb	46.43	2000.	
232 Th	0.1211	0.0242	ppb	22.88	1000.	
238 U	0.0001	0.	ppb	3165.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3308219.80	2.71	4492941.00	73.6	69.5 - 120	
45 Sc	2456814.30	4.66	3094960.50	79.4	69.5 - 120	
72 Ge	521848.59	1.86	631723.63	82.6	69.5 - 120	
159 Tb	5813783.00	1.39	6220065.50	93.5	69.5 - 120	
209 Bi	3252740.80	1.65	3318256.50	98.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001071

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\083SMPL.D\083SMPL.D#
Date Acquired: May 14 2018 07:30 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE07IMW1
Misc Info:
Vial Number: 2408
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	45.875	9.175	ppb	1.07	100.	
11 B	449.45	89.89	ppb	6.40	1000.	
23 Na	7,300.	1,460.	ppb	0.98	200000.	
25 Mg	4,862.5	972.5	ppb	0.59	200000.	
27 Al	2,061.	412.2	ppb	0.67	200000.	
28 Si	1,208.5	241.7	ppb	1.84	#VALUE!	
29 Si	1,047.	209.4	ppb	5.98	10000.	
39 K	10,105.	2,021.	ppb	0.75	200000.	
43 Ca	2,899.	579.8	ppb	0.98	#VALUE!	
44 Ca	2,558.5	511.7	ppb	2.13	200000.	
51 V	527.5	105.5	ppb	3.68	1000.	
52 Cr	204.2	40.84	ppb	2.77	2000.	
53 Cr	248.7	49.74	ppb	1.96	#VALUE!	
55 Mn	522.5	104.5	ppb	3.45	2000.	
56 Fe	1,092.5	218.5	ppb	6.27	#VALUE!	
57 Fe	1,054.5	210.9	ppb	2.76	100000.	
59 Co	525.	105.	ppb	3.47	1000.	
60 Ni	507.	101.4	ppb	1.93	1000.	
63 Cu	249.35	49.87	ppb	2.42	#VALUE!	
65 Cu	258.	51.6	ppb	2.49	2000.	
66 Zn	518.	103.6	ppb	1.40	2000.	
68 Zn	567.	113.4	ppb	3.12	#VALUE!	
75 As	104.65	20.93	ppb	2.25	1000.	
82 Se	104.	20.8	ppb	2.97	1000.	
88 Sr	529.	105.8	ppb	3.46	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	106.75	21.35	ppb	2.72	1000.	
107 Ag	54.6	10.92	ppb	2.68	100.	
109 Ag	54.9	10.98	ppb	2.81	#VALUE!	
111 Cd	270.85	54.17	ppb	2.70	#VALUE!	
114 Cd	270.35	54.07	ppb	2.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	485.85	97.17	ppb	1.67	1000.	
120 Sn	489.2	97.84	ppb	1.89	#VALUE!	
121 Sb	100.25	20.05	ppb	2.36	#VALUE!	
123 Sb	101.35	20.27	ppb	1.79	1000.	
135 Ba	2,028.5	405.7	ppb	2.28	2000.	
137 Ba	2,041.	408.2	ppb	2.84	#VALUE!	
182 W	108.3	21.66	ppb	2.44	1000.	
203 Tl	104.45	20.89	ppb	1.96	1000.	
205 Tl	105.15	21.03	ppb	2.33	#VALUE!	
208 Pb	106.05	21.21	ppb	2.34	2000.	
232 Th	105.55	21.11	ppb	2.70	1000.	
238 U	110.05	22.01	ppb	3.30	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3430846.80	0.82	4492941.00	76.4	69.5 - 120	
45 Sc	2430781.30	1.53	3094960.50	78.5	69.5 - 120	
72 Ge	503465.00	2.29	631723.63	79.7	69.5 - 120	
159 Tb	5713001.00	1.67	6220065.50	91.8	69.5 - 120	
209 Bi	3214687.80	1.29	3318256.50	96.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001072

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\084SMPL.D\084SMPL.D#
Date Acquired: May 14 2018 07:34 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-002
Misc Info:
Vial Number: 2409
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.56	0.112	ppb	3.43	100.	
11 B	271.1	54.22	ppb	7.73	1000.	
23 Na	273,250.	54,650.	ppb	5.45	200000.	
25 Mg	67,900.	13,580.	ppb	3.17	200000.	
27 Al	10,470.	2,094.	ppb	1.68	200000.	
28 Si	35,130.	7,026.	ppb	1.83	#VALUE!	
29 Si	36,755.	7,351.	ppb	1.75	10000.	
39 K	20,370.	4,074.	ppb	0.48	200000.	
43 Ca	363,650.	72,730.	ppb	1.69	#VALUE!	
44 Ca	345,250.	69,050.	ppb	2.15	200000.	
51 V	34.88	6.976	ppb	2.35	1000.	
52 Cr	42.2	8.44	ppb	1.21	2000.	
53 Cr	79.1	15.82	ppb	1.93	#VALUE!	
55 Mn	1,485.	297.	ppb	0.73	2000.	
56 Fe	15,275.	3,055.	ppb	0.56	#VALUE!	
57 Fe	15,615.	3,123.	ppb	0.55	100000.	
59 Co	6.26	1.252	ppb	0.46	1000.	
60 Ni	20.185	4.037	ppb	1.84	1000.	
63 Cu	24.87	4.974	ppb	0.67	#VALUE!	
65 Cu	15.415	3.083	ppb	2.37	2000.	
66 Zn	141.85	28.37	ppb	1.31	2000.	
68 Zn	142.1	28.42	ppb	2.31	#VALUE!	
75 As	19.88	3.976	ppb	4.28	1000.	
82 Se	1.354	0.2708	ppb	128.40	1000.	
88 Sr	1,551.	310.2	ppb	1.47	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	23.035	4.607	ppb	3.86	1000.	
107 Ag	0.048	0.0096	ppb	11.33	100.	
109 Ag	0.041	0.0082	ppb	32.83	#VALUE!	
111 Cd	-0.165	-0.033	ppb	66.79	#VALUE!	
114 Cd	0.0058	0.0012	ppb	360.26	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.8415	0.5683	ppb	5.70	1000.	
120 Sn	2.758	0.5516	ppb	6.82	#VALUE!	
121 Sb	0.933	0.1866	ppb	2.89	#VALUE!	
123 Sb	0.9735	0.1947	ppb	6.78	1000.	
135 Ba	245.5	49.1	ppb	1.27	2000.	
137 Ba	245.1	49.02	ppb	1.80	#VALUE!	
182 W	0.485	0.097	ppb	7.65	1000.	
203 Tl	0.2482	0.0496	ppb	16.91	1000.	
205 Tl	0.1614	0.0323	ppb	12.68	#VALUE!	
208 Pb	11.585	2.317	ppb	0.60	2000.	
232 Th	7.915	1.583	ppb	3.38	1000.	
238 U	5.495	1.099	ppb	1.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3257057.50	10.47	4492941.00	72.5	69.5 - 120	
45 Sc	2527017.80	2.83	3094960.50	81.6	69.5 - 120	
72 Ge	524791.88	1.81	631723.63	83.1	69.5 - 120	
159 Tb	5863706.50	1.05	6220065.50	94.3	69.5 - 120	
209 Bi	3167876.80	1.47	3318256.50	95.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001073

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\085SMPL.D\085SMPL.D#
Date Acquired: May 14 2018 07:38 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-003
Misc Info:
Vial Number: 2410
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0066	0.0013	ppb	52.88	100.	
11 B	253.05	50.61	ppb	8.36	1000.	
23 Na	301,700.	60,340.	ppb	3.97	200000.	
25 Mg	71,150.	14,230.	ppb	1.38	200000.	
27 Al	9.425	1.885	ppb	1.07	200000.	
28 Si	14,245.	2,849.	ppb	5.62	#VALUE!	
29 Si	14,030.	2,806.	ppb	5.94	10000.	
39 K	18,755.	3,751.	ppb	1.82	200000.	
43 Ca	350,700.	70,140.	ppb	2.47	#VALUE!	
44 Ca	339,000.	67,800.	ppb	2.08	200000.	
51 V	1.418	0.2836	ppb	18.00	1000.	
52 Cr	2.402	0.4804	ppb	12.37	2000.	
53 Cr	64.7	12.94	ppb	16.74	#VALUE!	
55 Mn	1,407.5	281.5	ppb	1.32	2000.	
56 Fe	1,531.5	306.3	ppb	1.60	#VALUE!	
57 Fe	1,777.	355.4	ppb	1.24	100000.	
59 Co	1.553	0.3106	ppb	5.21	1000.	
60 Ni	5.685	1.137	ppb	5.03	1000.	
63 Cu	14.675	2.935	ppb	1.16	#VALUE!	
65 Cu	5.285	1.057	ppb	3.67	2000.	
66 Zn	27.3	5.46	ppb	5.10	2000.	
68 Zn	26.435	5.287	ppb	2.31	#VALUE!	
75 As	12.61	2.522	ppb	1.96	1000.	
82 Se	1.4435	0.2887	ppb	71.60	1000.	
88 Sr	1,471.	294.2	ppb	0.81	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	14.4	2.88	ppb	1.01	1000.	
107 Ag	0.0043	0.0009	ppb	162.24	100.	
109 Ag	0.0143	0.0029	ppb	8.98	#VALUE!	
111 Cd	-0.1218	-0.0244	ppb	34.86	#VALUE!	
114 Cd	-0.0177	-0.0035	ppb	136.66	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.699	0.3398	ppb	1.72	1000.	
120 Sn	1.7725	0.3545	ppb	3.81	#VALUE!	
121 Sb	0.8315	0.1663	ppb	3.18	#VALUE!	
123 Sb	0.764	0.1528	ppb	2.72	1000.	
135 Ba	38.31	7.662	ppb	2.28	2000.	
137 Ba	38.305	7.661	ppb	0.94	#VALUE!	
182 W	0.1975	0.0395	ppb	2.55	1000.	
203 Tl	0.0765	0.0153	ppb	35.46	1000.	
205 Tl	0.0427	0.0085	ppb	94.95	#VALUE!	
208 Pb	0.2731	0.0546	ppb	29.65	2000.	
232 Th	0.2892	0.0578	ppb	9.94	1000.	
238 U	4.3405	0.8681	ppb	1.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4195414.00	6.25	4492941.00	93.4	69.5 - 120	
45 Sc	2891243.00	2.38	3094960.50	93.4	69.5 - 120	
72 Ge	580090.50	0.91	631723.63	91.8	69.5 - 120	
159 Tb	6038897.50	1.62	6220065.50	97.1	69.5 - 120	
209 Bi	3144354.50	2.27	3318256.50	94.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001074

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\086SMPL.D\086SMPL.D#
Date Acquired: May 14 2018 07:42 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004
Misc Info:
Vial Number: 2411
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.1348	0.027	ppb	7.50	100.	
11 B	216.2	43.24	ppb	4.64	1000.	
23 Na	302,850.	60,570.	ppb	2.27	200000.	
25 Mg	77,150.	15,430.	ppb	3.25	200000.	
27 Al	3,024.	604.8	ppb	2.26	200000.	
28 Si	23,080.	4,616.	ppb	2.15	#VALUE!	
29 Si	24,520.	4,904.	ppb	2.00	10000.	
39 K	18,870.	3,774.	ppb	2.78	200000.	
43 Ca	389,300.	77,860.	ppb	0.39	#VALUE!	
44 Ca	370,450.	74,090.	ppb	0.24	200000.	
51 V	7.285	1.457	ppb	9.44	1000.	
52 Cr	28.495	5.699	ppb	1.10	2000.	
53 Cr	80.05	16.01	ppb	1.17	#VALUE!	
55 Mn	1,373.	274.6	ppb	1.91	2000.	
56 Fe	10,930.	2,186.	ppb	1.75	#VALUE!	
57 Fe	11,245.	2,249.	ppb	0.64	100000.	
59 Co	1.961	0.3922	ppb	6.18	1000.	
60 Ni	10.865	2.173	ppb	0.58	1000.	
63 Cu	22.9	4.58	ppb	1.19	#VALUE!	
65 Cu	12.595	2.519	ppb	1.31	2000.	
66 Zn	142.3	28.46	ppb	0.10	2000.	
68 Zn	141.1	28.22	ppb	1.05	#VALUE!	
75 As	11.945	2.389	ppb	10.39	1000.	
82 Se	2.122	0.4244	ppb	40.58	1000.	
88 Sr	1,745.5	349.1	ppb	0.59	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.67	3.534	ppb	0.67	1000.	
107 Ag	0.0258	0.0052	ppb	54.72	100.	
109 Ag	0.0161	0.0032	ppb	85.79	#VALUE!	
111 Cd	-0.2778	-0.0556	ppb	19.46	#VALUE!	
114 Cd	-0.0065	-0.0013	ppb	305.56	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.3375	0.6675	ppb	7.15	1000.	
120 Sn	3.2035	0.6407	ppb	6.07	#VALUE!	
121 Sb	0.3801	0.076	ppb	9.25	#VALUE!	
123 Sb	0.3059	0.0612	ppb	1.93	1000.	
135 Ba	96.8	19.36	ppb	1.70	2000.	
137 Ba	95.5	19.1	ppb	2.01	#VALUE!	
182 W	0.3847	0.0769	ppb	12.52	1000.	
203 Tl	0.1113	0.0223	ppb	19.95	1000.	
205 Tl	0.1347	0.0269	ppb	38.32	#VALUE!	
208 Pb	3.8995	0.7799	ppb	0.84	2000.	
232 Th	2.572	0.5144	ppb	2.62	1000.	
238 U	2.278	0.4556	ppb	3.11	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3266187.30	3.04	4492941.00	72.7	69.5 - 120	
45 Sc	2539251.50	2.33	3094960.50	82.0	69.5 - 120	
72 Ge	516386.19	1.15	631723.63	81.7	69.5 - 120	
159 Tb	5788549.00	0.23	6220065.50	93.1	69.5 - 120	
209 Bi	3100065.30	0.73	3318256.50	93.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001075

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\087SMPL.D\087SMPL.D#
Date Acquired: May 14 2018 07:47 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004L
Misc Info:
Vial Number: 2412
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.1436	0.0057	ppb	19.12	100.	
11 B	266.25	10.65	ppb	5.20	1000.	
23 Na	303,500.	12,140.	ppb	1.28	200000.	
25 Mg	80,125.	3,205.	ppb	3.36	200000.	
27 Al	3,267.5	130.7	ppb	1.54	200000.	
28 Si	24,240.	969.6	ppb	3.04	#VALUE!	
29 Si	23,727.5	949.1	ppb	1.99	10000.	
39 K	19,567.5	782.7	ppb	0.90	200000.	
43 Ca	384,250.	15,370.	ppb	2.90	#VALUE!	
44 Ca	383,250.	15,330.	ppb	1.56	200000.	
51 V	5.5275	0.2211	ppb	43.40	1000.	
52 Cr	31.325	1.253	ppb	2.72	2000.	
53 Cr	108.475	4.339	ppb	2.76	#VALUE!	
55 Mn	1,476.5	59.06	ppb	1.14	2000.	
56 Fe	11,157.5	446.3	ppb	2.51	#VALUE!	
57 Fe	11,475.	459.	ppb	0.95	100000.	
59 Co	2.0993	0.084	ppb	4.86	1000.	
60 Ni	10.9925	0.4397	ppb	15.55	1000.	
63 Cu	24.1825	0.9673	ppb	5.59	#VALUE!	
65 Cu	13.6825	0.5473	ppb	2.20	2000.	
66 Zn	163.025	6.521	ppb	3.06	2000.	
68 Zn	156.825	6.273	ppb	3.41	#VALUE!	
75 As	10.17	0.4068	ppb	24.78	1000.	
82 Se	0.3218	0.0129	ppb	1006.20	1000.	
88 Sr	1,882.25	75.29	ppb	0.78	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	18.295	0.7318	ppb	0.65	1000.	
107 Ag	-0.0091	-0.0004	ppb	168.70	100.	
109 Ag	0.008	0.0003	ppb	214.29	#VALUE!	
111 Cd	-1.6083	-0.0643	ppb	60.36	#VALUE!	
114 Cd	-0.102	-0.0041	ppb	34.67	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	4.335	0.1734	ppb	9.58	1000.	
120 Sn	4.37	0.1748	ppb	8.26	#VALUE!	
121 Sb	0.3135	0.0125	ppb	48.07	#VALUE!	
123 Sb	0.397	0.0159	ppb	32.09	1000.	
135 Ba	99.9	3.996	ppb	4.57	2000.	
137 Ba	97.6	3.904	ppb	1.71	#VALUE!	
182 W	0.4753	0.019	ppb	39.58	1000.	
203 Tl	0.3613	0.0145	ppb	4.85	1000.	
205 Tl	0.1717	0.0069	ppb	90.01	#VALUE!	
208 Pb	6.2925	0.2517	ppb	6.55	2000.	
232 Th	2.1993	0.088	ppb	7.83	1000.	
238 U	2.2473	0.0899	ppb	4.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3240715.30	4.36	4492941.00	72.1	69.5 - 120	
45 Sc	2574308.00	1.01	3094960.50	83.2	69.5 - 120	
72 Ge	526949.31	1.03	631723.63	83.4	69.5 - 120	
159 Tb	5876490.50	1.02	6220065.50	94.5	69.5 - 120	
209 Bi	3325495.30	1.47	3318256.50	100.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001076

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\088SMPL.D\088SMPL.D#
Date Acquired: May 14 2018 07:51 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004A
Misc Info:
Vial Number: 2501
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.925	1.985	ppb	5.20	100.	
11 B	409.75	81.95	ppb	5.43	1000.	
23 Na	294,600.	58,920.	ppb	3.03	200000.	
25 Mg	74,500.	14,900.	ppb	4.54	200000.	
27 Al	3,842.	768.4	ppb	0.92	200000.	
28 Si	27,230.	5,446.	ppb	2.31	#VALUE!	
29 Si	29,175.	5,835.	ppb	6.20	10000.	
39 K	28,980.	5,796.	ppb	5.33	200000.	
43 Ca	402,100.	80,420.	ppb	6.44	#VALUE!	
44 Ca	376,800.	75,360.	ppb	2.66	200000.	
51 V	57.1	11.42	ppb	3.29	1000.	
52 Cr	77.4	15.48	ppb	3.65	2000.	
53 Cr	122.25	24.45	ppb	0.86	#VALUE!	
55 Mn	1,376.5	275.3	ppb	2.11	2000.	
56 Fe	11,890.	2,378.	ppb	2.87	#VALUE!	
57 Fe	12,160.	2,432.	ppb	4.60	100000.	
59 Co	11.78	2.356	ppb	1.33	1000.	
60 Ni	28.72	5.744	ppb	1.62	1000.	
63 Cu	52.05	10.41	ppb	1.73	#VALUE!	
65 Cu	42.125	8.425	ppb	3.13	2000.	
66 Zn	235.65	47.13	ppb	1.61	2000.	
68 Zn	226.7	45.34	ppb	2.93	#VALUE!	
75 As	63.75	12.75	ppb	1.52	1000.	
82 Se	51.35	10.27	ppb	0.42	1000.	
88 Sr	1,809.5	361.9	ppb	2.15	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	71.25	14.25	ppb	2.77	1000.	
107 Ag	10.15	2.03	ppb	5.21	100.	
109 Ag	10.385	2.077	ppb	2.99	#VALUE!	
111 Cd	10.02	2.004	ppb	3.98	#VALUE!	
114 Cd	10.29	2.058	ppb	1.12	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.8	10.16	ppb	3.18	1000.	
120 Sn	50.7	10.14	ppb	3.68	#VALUE!	
121 Sb	10.07	2.014	ppb	4.87	#VALUE!	
123 Sb	10.2	2.04	ppb	2.62	1000.	
135 Ba	114.5	22.9	ppb	2.21	2000.	
137 Ba	115.45	23.09	ppb	3.96	#VALUE!	
182 W	55.7	11.14	ppb	2.95	1000.	
203 Tl	10.625	2.125	ppb	4.49	1000.	
205 Tl	10.505	2.101	ppb	2.08	#VALUE!	
208 Pb	14.11	2.822	ppb	3.14	2000.	
232 Th	13.815	2.763	ppb	1.08	1000.	
238 U	13.935	2.787	ppb	1.32	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2965903.30	6.62	4492941.00	66.0	69.5 - 120	IS Fai
45 Sc	2391856.80	3.67	3094960.50	77.3	69.5 - 120	
72 Ge	497286.34	2.16	631723.63	78.7	69.5 - 120	
159 Tb	5686794.00	2.21	6220065.50	91.4	69.5 - 120	
209 Bi	3079620.00	2.28	3318256.50	92.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001077

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\089SMPL.D\089SMPL.D#
Date Acquired: May 14 2018 07:55 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004S
Misc Info:
Vial Number: 2502
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	49.28	9.856	ppb	0.88	100.	
11 B	711.5	142.3	ppb	2.05	1000.	
23 Na	319,850.	63,970.	ppb	8.15	200000.	
25 Mg	81,050.	16,210.	ppb	4.05	200000.	
27 Al	5,025.	1,005.	ppb	4.65	200000.	
28 Si	25,930.	5,186.	ppb	5.04	#VALUE!	
29 Si	28,520.	5,704.	ppb	5.89	10000.	
39 K	30,475.	6,095.	ppb	3.60	200000.	
43 Ca	414,350.	82,870.	ppb	2.75	#VALUE!	
44 Ca	391,500.	78,300.	ppb	2.61	200000.	
51 V	553.5	110.7	ppb	1.22	1000.	
52 Cr	230.8	46.16	ppb	3.89	2000.	
53 Cr	270.4	54.08	ppb	3.38	#VALUE!	
55 Mn	1,946.	389.2	ppb	2.23	2000.	
56 Fe	12,485.	2,497.	ppb	1.90	#VALUE!	
57 Fe	12,610.	2,522.	ppb	2.21	100000.	
59 Co	533.	106.6	ppb	3.21	1000.	
60 Ni	505.5	101.1	ppb	3.55	1000.	
63 Cu	267.5	53.5	ppb	2.91	#VALUE!	
65 Cu	264.75	52.95	ppb	2.59	2000.	
66 Zn	638.	127.6	ppb	3.15	2000.	
68 Zn	685.	137.	ppb	2.84	#VALUE!	
75 As	120.3	24.06	ppb	3.72	1000.	
82 Se	106.95	21.39	ppb	5.54	1000.	
88 Sr	2,437.5	487.5	ppb	3.26	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	134.8	26.96	ppb	2.77	1000.	
107 Ag	53.9	10.78	ppb	2.06	100.	
109 Ag	54.15	10.83	ppb	2.56	#VALUE!	
111 Cd	271.35	54.27	ppb	2.85	#VALUE!	
114 Cd	270.3	54.06	ppb	2.88	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	492.15	98.43	ppb	4.75	1000.	
120 Sn	502.5	100.5	ppb	3.84	#VALUE!	
121 Sb	99.45	19.89	ppb	3.78	#VALUE!	
123 Sb	101.05	20.21	ppb	3.76	1000.	
135 Ba	2,166.	433.2	ppb	3.46	2000.	
137 Ba	2,184.5	436.9	ppb	3.95	#VALUE!	
182 W	113.65	22.73	ppb	4.35	1000.	
203 Tl	109.7	21.94	ppb	4.17	1000.	
205 Tl	110.	22.	ppb	4.31	#VALUE!	
208 Pb	114.95	22.99	ppb	3.93	2000.	
232 Th	121.4	24.28	ppb	4.51	1000.	
238 U	125.	25.	ppb	3.70	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2876826.50	1.33	4492941.00	64.0	69.5 - 120	IS Fai
45 Sc	2271124.00	5.22	3094960.50	73.4	69.5 - 120	
72 Ge	473315.34	2.95	631723.63	74.9	69.5 - 120	
159 Tb	5570517.50	3.90	6220065.50	89.6	69.5 - 120	
209 Bi	3000176.30	4.02	3318256.50	90.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001078

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\090_CCV.D\090_CCV.D#
Date Acquired: May 14 2018 07:59 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.05	ppb	3.19	25	96.2	
11 B	28.75	ppb	2.98	25	115	Fail
23 Na	4,536.	ppb	4.16	5,000	90.72	
25 Mg	4,572.	ppb	3.66	5,000	91.44	
27 Al	454.7	ppb	2.39	500	90.94	
28 Si	506.9	ppb	3.94	500	101.38	
29 Si	455.7	ppb	6.25	500	91.14	
39 K	4,776.	ppb	1.22	5,000	95.52	
43 Ca	4,869.	ppb	1.56	5,000	97.38	
44 Ca	5,001.	ppb	1.89	5,000	100.02	
51 V	24.41	ppb	1.91	25	97.64	
52 Cr	24.3	ppb	1.46	25	97.2	
53 Cr	24.13	ppb	5.40	25	96.52	
55 Mn	24.81	ppb	1.22	25	99.24	
56 Fe	4,874.	ppb	1.17	5,000	97.48	
57 Fe	5,021.	ppb	0.81	5,000	100.42	
59 Co	24.42	ppb	2.53	25	97.68	
60 Ni	23.77	ppb	0.58	25	95.08	
63 Cu	24.27	ppb	0.97	25	97.08	
65 Cu	24.68	ppb	1.85	25	98.72	
66 Zn	25.44	ppb	0.83	25	101.76	
68 Zn	25.25	ppb	0.95	25	101	
75 As	24.8	ppb	1.11	25	99.2	
82 Se	25.8	ppb	0.78	25	103.2	
88 Sr	25.77	ppb	0.30	25	103.08	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.79	ppb	0.18	25	103.16	
107 Ag	26.14	ppb	0.18	25	104.56	
109 Ag	26.14	ppb	0.61	25	104.56	
111 Cd	26.46	ppb	1.06	25	105.84	
114 Cd	26.34	ppb	0.42	25	105.36	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.29	ppb	0.78	25	93.16	
120 Sn	23.32	ppb	0.99	25	93.28	
121 Sb	24.08	ppb	1.00	25	96.32	
123 Sb	24.19	ppb	0.94	25	96.76	
135 Ba	24.39	ppb	2.14	25	97.56	
137 Ba	24.36	ppb	1.09	25	97.44	
182 W	25.32	ppb	1.37	25	101.28	
203 Tl	24.49	ppb	1.10	25	97.96	
205 Tl	24.66	ppb	0.68	25	98.64	
208 Pb	24.89	ppb	0.67	25	99.56	
232 Th	25.13	ppb	0.59	25	100.52	
238 U	26.37	ppb	1.24	25	105.48	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3070284.50	2.74	4492941.00	68.3	80 - 120.4	ISFail
45 Sc	2462531.80	2.13	3094960.50	79.6	80 - 120.4	
72 Ge	503741.63	1.12	631723.63	79.7	80 - 120.4	
159 Tb	5766978.00	0.37	6220065.50	92.7	80 - 120.4	
209 Bi	3227761.50	0.53	3318256.50	97.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4001079

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\091_CCB.D\091_CCB.D#
Date Acquired: May 14 2018 08:03 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0014	ppb	31.45	1.00	
11 B	3.56	ppb	15.02	1.00	
23 Na	3.125	ppb	3.40	1.00	
25 Mg	-0.0525	ppb	106.81	1.00	
27 Al	-0.0765	ppb	52.86	1.00	
28 Si	51.91	ppb	14.00	1.00	
29 Si	5.611	ppb	175.83	1.00	
39 K	3.597	ppb	75.12	1.00	
43 Ca	-2.959	ppb	73.47	1.00	
44 Ca	0.7479	ppb	115.46	1.00	
51 V	-0.1144	ppb	34.41	1.00	
52 Cr	0.0629	ppb	63.75	1.00	
53 Cr	-0.9009	ppb	20.68	1.00	
55 Mn	0.015	ppb	24.27	1.00	
56 Fe	1.425	ppb	129.96	1.00	
57 Fe	1.948	ppb	62.12	1.00	
59 Co	0.004	ppb	26.29	1.00	
60 Ni	0.0075	ppb	45.16	1.00	
63 Cu	0.0045	ppb	229.58	1.00	
65 Cu	0.0087	ppb	243.02	1.00	
66 Zn	0.0307	ppb	144.55	1.00	
68 Zn	0.048	ppb	58.37	1.00	
75 As	-0.1013	ppb	107.01	1.00	
82 Se	0.0316	ppb	590.89	1.00	
88 Sr	0.0023	ppb	99.47	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0391	ppb	38.60	1.00	
107 Ag	0.0037	ppb	31.22	1.00	
109 Ag	0.0032	ppb	25.59	1.00	
111 Cd	-0.0561	ppb	39.97	1.00	
114 Cd	-0.0039	ppb	16.39	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0623	ppb	15.41	1.00	
120 Sn	0.0551	ppb	5.72	1.00	
121 Sb	0.0051	ppb	35.17	1.00	
123 Sb	0.0074	ppb	32.32	1.00	
135 Ba	0.0076	ppb	127.40	1.00	
137 Ba	-0.0002	ppb	2198.10	1.00	
182 W	0.0514	ppb	19.38	1.00	
203 Tl	0.0072	ppb	62.37	1.00	
205 Tl	0.0018	ppb	127.41	1.00	
208 Pb	0.0803	ppb	1.18	1.00	
232 Th	0.0679	ppb	4.29	1.00	
238 U	0.0036	ppb	54.00	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3067449.30	1.67	4492941.00	68.3	79.5 - 120	ISFail
45 Sc	2424041.50	1.97	3094960.50	78.3	79.5 - 120	ISFail
72 Ge	505036.53	1.08	631723.63	79.9	79.5 - 120	
159 Tb	5727870.00	0.72	6220065.50	92.1	79.5 - 120	
209 Bi	3269967.30	0.60	3318256.50	98.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
2 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001080

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\092SMPL.D\092SMPL.D#
Date Acquired: May 14 2018 08:07 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004P
Misc Info:
Vial Number: 2503
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	48.02	9.604	ppb	2.75	100.	
11 B	700.	140.	ppb	3.16	1000.	
23 Na	299,500.	59,900.	ppb	0.53	200000.	
25 Mg	79,100.	15,820.	ppb	1.12	200000.	
27 Al	5,060.	1,012.	ppb	0.78	200000.	
28 Si	24,935.	4,987.	ppb	2.30	#VALUE!	
29 Si	26,560.	5,312.	ppb	2.41	10000.	
39 K	29,175.	5,835.	ppb	1.95	200000.	
43 Ca	404,250.	80,850.	ppb	2.11	#VALUE!	
44 Ca	380,400.	76,080.	ppb	2.20	200000.	
51 V	538.	107.6	ppb	1.62	1000.	
52 Cr	221.25	44.25	ppb	0.26	2000.	
53 Cr	255.1	51.02	ppb	3.29	#VALUE!	
55 Mn	1,892.	378.4	ppb	1.67	2000.	
56 Fe	12,305.	2,461.	ppb	1.37	#VALUE!	
57 Fe	12,175.	2,435.	ppb	1.13	100000.	
59 Co	505.	101.	ppb	1.27	1000.	
60 Ni	480.55	96.11	ppb	1.17	1000.	
63 Cu	257.6	51.52	ppb	0.54	#VALUE!	
65 Cu	253.	50.6	ppb	0.76	2000.	
66 Zn	609.5	121.9	ppb	1.28	2000.	
68 Zn	652.	130.4	ppb	0.65	#VALUE!	
75 As	113.4	22.68	ppb	1.99	1000.	
82 Se	100.35	20.07	ppb	0.78	1000.	
88 Sr	2,327.5	465.5	ppb	0.98	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	126.75	25.35	ppb	0.45	1000.	
107 Ag	51.45	10.29	ppb	0.61	100.	
109 Ag	51.05	10.21	ppb	0.55	#VALUE!	
111 Cd	258.55	51.71	ppb	1.10	#VALUE!	
114 Cd	257.75	51.55	ppb	0.41	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	471.4	94.28	ppb	0.95	1000.	
120 Sn	476.7	95.34	ppb	1.16	#VALUE!	
121 Sb	96.05	19.21	ppb	1.35	#VALUE!	
123 Sb	96.	19.2	ppb	0.74	1000.	
135 Ba	2,073.	414.6	ppb	0.90	2000.	
137 Ba	2,070.	414.	ppb	1.49	#VALUE!	
182 W	107.95	21.59	ppb	1.45	1000.	
203 Tl	104.4	20.88	ppb	1.18	1000.	
205 Tl	104.15	20.83	ppb	0.35	#VALUE!	
208 Pb	108.15	21.63	ppb	0.25	2000.	
232 Th	113.25	22.65	ppb	1.09	1000.	
238 U	117.3	23.46	ppb	0.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2872195.30	2.00	4492941.00	63.9	69.5 - 120	IS Fai
45 Sc	2295654.30	1.58	3094960.50	74.2	69.5 - 120	
72 Ge	477851.72	0.49	631723.63	75.6	69.5 - 120	
159 Tb	5582497.00	0.63	6220065.50	89.7	69.5 - 120	
209 Bi	3027193.30	0.98	3318256.50	91.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001081

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\093SMPL.D\093SMPL.D#
Date Acquired: May 14 2018 08:11 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005
Misc Info:
Vial Number: 2504
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0121	0.0024	ppb	29.33	100.	
11 B	227.15	45.43	ppb	3.92	1000.	
23 Na	300,350.	60,070.	ppb	3.93	200000.	
25 Mg	74,700.	14,940.	ppb	2.97	200000.	
27 Al	8.13	1.626	ppb	7.58	200000.	
28 Si	16,435.	3,287.	ppb	1.06	#VALUE!	
29 Si	16,515.	3,303.	ppb	0.51	10000.	
39 K	18,030.	3,606.	ppb	1.98	200000.	
43 Ca	400,550.	80,110.	ppb	2.32	#VALUE!	
44 Ca	379,500.	75,900.	ppb	0.80	200000.	
51 V	-0.3629	-0.0726	ppb	78.60	1000.	
52 Cr	2.071	0.4142	ppb	8.69	2000.	
53 Cr	53.35	10.67	ppb	10.33	#VALUE!	
55 Mn	1,366.	273.2	ppb	0.50	2000.	
56 Fe	6,785.	1,357.	ppb	1.00	#VALUE!	
57 Fe	6,940.	1,388.	ppb	1.09	100000.	
59 Co	0.639	0.1278	ppb	4.67	1000.	
60 Ni	3.404	0.6808	ppb	3.96	1000.	
63 Cu	12.	2.4	ppb	2.25	#VALUE!	
65 Cu	1.105	0.221	ppb	6.83	2000.	
66 Zn	48.645	9.729	ppb	0.27	2000.	
68 Zn	47.28	9.456	ppb	1.95	#VALUE!	
75 As	10.86	2.172	ppb	17.09	1000.	
82 Se	1.892	0.3784	ppb	28.54	1000.	
88 Sr	1,785.	357.	ppb	0.53	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	13.725	2.745	ppb	2.11	1000.	
107 Ag	0.0214	0.0043	ppb	54.72	100.	
109 Ag	0.0158	0.0032	ppb	74.55	#VALUE!	
111 Cd	-0.347	-0.0694	ppb	19.73	#VALUE!	
114 Cd	-0.0071	-0.0014	ppb	174.91	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.3655	0.2731	ppb	4.78	1000.	
120 Sn	1.2715	0.2543	ppb	8.42	#VALUE!	
121 Sb	0.2729	0.0546	ppb	5.43	#VALUE!	
123 Sb	0.2575	0.0515	ppb	17.50	1000.	
135 Ba	30.585	6.117	ppb	1.58	2000.	
137 Ba	30.055	6.011	ppb	2.21	#VALUE!	
182 W	0.3893	0.0779	ppb	2.64	1000.	
203 Tl	0.0092	0.0018	ppb	95.76	1000.	
205 Tl	-0.0016	-0.0003	ppb	799.20	#VALUE!	
208 Pb	0.0339	0.0068	ppb	240.67	2000.	
232 Th	0.711	0.1422	ppb	25.71	1000.	
238 U	1.876	0.3752	ppb	5.35	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2983989.80	2.11	4492941.00	66.4	69.5 - 120	IS Fai
45 Sc	2385113.50	0.61	3094960.50	77.1	69.5 - 120	
72 Ge	492744.22	0.60	631723.63	78.0	69.5 - 120	
159 Tb	5578590.50	1.12	6220065.50	89.7	69.5 - 120	
209 Bi	3009941.30	2.45	3318256.50	90.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001082

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\094SMPL.D\094SMPL.D#
Date Acquired: May 14 2018 08:16 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005L
Misc Info:
Vial Number: 2505
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0044	0.0002	ppb	321.08	100.	
11 B	289.75	11.59	ppb	6.54	1000.	
23 Na	317,000.	12,680.	ppb	2.61	200000.	
25 Mg	80,800.	3,232.	ppb	1.27	200000.	
27 Al	19.145	0.7658	ppb	10.09	200000.	
28 Si	18,152.5	726.1	ppb	2.26	#VALUE!	
29 Si	17,527.5	701.1	ppb	3.46	10000.	
39 K	19,130.	765.2	ppb	2.17	200000.	
43 Ca	395,250.	15,810.	ppb	1.14	#VALUE!	
44 Ca	385,000.	15,400.	ppb	1.32	200000.	
51 V	-2.5825	-0.1033	ppb	40.72	1000.	
52 Cr	2.354	0.0942	ppb	28.43	2000.	
53 Cr	91.425	3.657	ppb	15.84	#VALUE!	
55 Mn	1,416.75	56.67	ppb	1.82	2000.	
56 Fe	6,702.5	268.1	ppb	1.15	#VALUE!	
57 Fe	7,080.	283.2	ppb	2.89	100000.	
59 Co	0.633	0.0253	ppb	7.17	1000.	
60 Ni	4.0925	0.1637	ppb	10.02	1000.	
63 Cu	12.075	0.483	ppb	2.97	#VALUE!	
65 Cu	0.874	0.035	ppb	47.74	2000.	
66 Zn	53.675	2.147	ppb	1.63	2000.	
68 Zn	48.75	1.95	ppb	6.97	#VALUE!	
75 As	9.7675	0.3907	ppb	35.94	1000.	
82 Se	0.9163	0.0367	ppb	66.00	1000.	
88 Sr	1,875.5	75.02	ppb	1.53	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	14.0075	0.5603	ppb	1.58	1000.	
107 Ag	-0.0246	-0.001	ppb	134.28	100.	
109 Ag	0.0442	0.0018	ppb	116.36	#VALUE!	
111 Cd	-1.198	-0.0479	ppb	26.36	#VALUE!	
114 Cd	-0.1225	-0.0049	ppb	75.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.1695	0.0868	ppb	14.08	1000.	
120 Sn	1.866	0.0746	ppb	11.06	#VALUE!	
121 Sb	0.2145	0.0086	ppb	47.15	#VALUE!	
123 Sb	0.3448	0.0138	ppb	31.76	1000.	
135 Ba	30.325	1.213	ppb	4.15	2000.	
137 Ba	29.95	1.198	ppb	3.49	#VALUE!	
182 W	0.5633	0.0225	ppb	44.61	1000.	
203 Tl	0.2435	0.0097	ppb	97.56	1000.	
205 Tl	-0.0725	-0.0029	ppb	100.14	#VALUE!	
208 Pb	1.0898	0.0436	ppb	8.90	2000.	
232 Th	0.457	0.0183	ppb	32.94	1000.	
238 U	1.7798	0.0712	ppb	5.03	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3118443.30	2.43	4492941.00	69.4	69.5 - 120	IS Fai
45 Sc	2399691.00	2.09	3094960.50	77.5	69.5 - 120	
72 Ge	511254.66	1.72	631723.63	80.9	69.5 - 120	
159 Tb	5701737.00	0.60	6220065.50	91.7	69.5 - 120	
209 Bi	3201827.00	1.28	3318256.50	96.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001083

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\095SMPL.D\095SMPL.D#
Date Acquired: May 14 2018 08:20 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005A
Misc Info:
Vial Number: 2506
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.48	1.896	ppb	4.66	100.	
11 B	417.1	83.42	ppb	7.33	1000.	
23 Na	305,450.	61,090.	ppb	7.33	200000.	
25 Mg	78,600.	15,720.	ppb	4.23	200000.	
27 Al	924.5	184.9	ppb	1.85	200000.	
28 Si	21,485.	4,297.	ppb	2.14	#VALUE!	
29 Si	22,560.	4,512.	ppb	3.35	10000.	
39 K	28,075.	5,615.	ppb	3.46	200000.	
43 Ca	406,500.	81,300.	ppb	4.14	#VALUE!	
44 Ca	387,900.	77,580.	ppb	3.14	200000.	
51 V	48.555	9.711	ppb	1.68	1000.	
52 Cr	48.105	9.621	ppb	2.12	2000.	
53 Cr	95.15	19.03	ppb	3.44	#VALUE!	
55 Mn	1,407.	281.4	ppb	2.39	2000.	
56 Fe	7,690.	1,538.	ppb	3.23	#VALUE!	
57 Fe	7,975.	1,595.	ppb	3.10	100000.	
59 Co	9.795	1.959	ppb	2.14	1000.	
60 Ni	20.95	4.19	ppb	1.43	1000.	
63 Cu	38.79	7.758	ppb	2.74	#VALUE!	
65 Cu	28.21	5.642	ppb	3.01	2000.	
66 Zn	139.55	27.91	ppb	1.95	2000.	
68 Zn	130.8	26.16	ppb	2.30	#VALUE!	
75 As	57.3	11.46	ppb	4.65	1000.	
82 Se	47.055	9.411	ppb	4.02	1000.	
88 Sr	1,876.	375.2	ppb	3.33	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	63.25	12.65	ppb	1.64	1000.	
107 Ag	9.63	1.926	ppb	2.93	100.	
109 Ag	9.425	1.885	ppb	2.66	#VALUE!	
111 Cd	8.94	1.788	ppb	1.04	#VALUE!	
114 Cd	9.085	1.817	ppb	1.55	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.835	8.967	ppb	0.32	1000.	
120 Sn	45.6	9.12	ppb	0.93	#VALUE!	
121 Sb	9.26	1.852	ppb	3.36	#VALUE!	
123 Sb	9.13	1.826	ppb	0.42	1000.	
135 Ba	49.515	9.903	ppb	2.65	2000.	
137 Ba	48.885	9.777	ppb	2.36	#VALUE!	
182 W	50.95	10.19	ppb	2.16	1000.	
203 Tl	9.665	1.933	ppb	0.53	1000.	
205 Tl	9.615	1.923	ppb	0.86	#VALUE!	
208 Pb	9.725	1.945	ppb	1.94	2000.	
232 Th	10.595	2.119	ppb	1.40	1000.	
238 U	12.705	2.541	ppb	0.79	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2833683.00	6.44	4492941.00	63.1	69.5 - 120	IS Fai
45 Sc	2344565.50	2.60	3094960.50	75.8	69.5 - 120	
72 Ge	486333.63	1.99	631723.63	77.0	69.5 - 120	
159 Tb	5579703.00	0.88	6220065.50	89.7	69.5 - 120	
209 Bi	3003866.00	1.00	3318256.50	90.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001084

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\096SMPL.D\096SMPL.D#
Date Acquired: May 14 2018 08:24 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005S
Misc Info:
Vial Number: 2507
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	48.155	9.631	ppb	1.11	100.	
11 B	723.	144.6	ppb	6.12	1000.	
23 Na	309,700.	61,940.	ppb	5.65	200000.	
25 Mg	80,500.	16,100.	ppb	1.70	200000.	
27 Al	1,988.5	397.7	ppb	3.93	200000.	
28 Si	18,540.	3,708.	ppb	2.25	#VALUE!	
29 Si	19,350.	3,870.	ppb	7.73	10000.	
39 K	28,985.	5,797.	ppb	2.78	200000.	
43 Ca	417,500.	83,500.	ppb	3.09	#VALUE!	
44 Ca	392,750.	78,550.	ppb	2.13	200000.	
51 V	529.5	105.9	ppb	1.09	1000.	
52 Cr	196.95	39.39	ppb	0.80	2000.	
53 Cr	249.55	49.91	ppb	1.56	#VALUE!	
55 Mn	1,896.	379.2	ppb	0.79	2000.	
56 Fe	8,015.	1,603.	ppb	1.19	#VALUE!	
57 Fe	8,210.	1,642.	ppb	0.67	100000.	
59 Co	513.	102.6	ppb	1.25	1000.	
60 Ni	477.	95.4	ppb	0.57	1000.	
63 Cu	245.55	49.11	ppb	0.84	#VALUE!	
65 Cu	243.75	48.75	ppb	0.51	2000.	
66 Zn	518.	103.6	ppb	1.57	2000.	
68 Zn	563.5	112.7	ppb	0.90	#VALUE!	
75 As	112.8	22.56	ppb	0.42	1000.	
82 Se	96.6	19.32	ppb	1.64	1000.	
88 Sr	2,357.5	471.5	ppb	1.91	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	122.2	24.44	ppb	1.68	1000.	
107 Ag	51.15	10.23	ppb	0.69	100.	
109 Ag	50.25	10.05	ppb	1.75	#VALUE!	
111 Cd	256.15	51.23	ppb	1.05	#VALUE!	
114 Cd	253.65	50.73	ppb	1.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	477.25	95.45	ppb	1.31	1000.	
120 Sn	483.05	96.61	ppb	1.13	#VALUE!	
121 Sb	97.35	19.47	ppb	1.43	#VALUE!	
123 Sb	98.4	19.68	ppb	1.23	1000.	
135 Ba	2,020.5	404.1	ppb	0.34	2000.	
137 Ba	2,005.5	401.1	ppb	0.90	#VALUE!	
182 W	108.75	21.75	ppb	0.59	1000.	
203 Tl	102.4	20.48	ppb	1.02	1000.	
205 Tl	102.8	20.56	ppb	1.02	#VALUE!	
208 Pb	103.	20.6	ppb	1.04	2000.	
232 Th	109.3	21.86	ppb	1.26	1000.	
238 U	115.95	23.19	ppb	0.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2922913.80	4.11	4492941.00	65.1	69.5 - 120	IS Fai
45 Sc	2350122.30	4.35	3094960.50	75.9	69.5 - 120	
72 Ge	488471.63	1.88	631723.63	77.3	69.5 - 120	
159 Tb	5649850.50	0.20	6220065.50	90.8	69.5 - 120	
209 Bi	3053947.30	1.47	3318256.50	92.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001085

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\097SMPL.D\097SMPL.D#
Date Acquired: May 14 2018 08:28 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005P
Misc Info:
Vial Number: 2508
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	47.96	9.592	ppb	5.00	100.	
11 B	715.	143.	ppb	5.97	1000.	
23 Na	302,750.	60,550.	ppb	4.09	200000.	
25 Mg	80,000.	16,000.	ppb	2.80	200000.	
27 Al	1,910.	382.	ppb	3.41	200000.	
28 Si	17,785.	3,557.	ppb	2.62	#VALUE!	
29 Si	17,445.	3,489.	ppb	1.82	10000.	
39 K	28,030.	5,606.	ppb	3.54	200000.	
43 Ca	395,850.	79,170.	ppb	2.92	#VALUE!	
44 Ca	378,950.	75,790.	ppb	0.93	200000.	
51 V	523.	104.6	ppb	1.92	1000.	
52 Cr	194.15	38.83	ppb	0.46	2000.	
53 Cr	242.25	48.45	ppb	1.37	#VALUE!	
55 Mn	1,866.5	373.3	ppb	0.41	2000.	
56 Fe	7,865.	1,573.	ppb	0.22	#VALUE!	
57 Fe	7,925.	1,585.	ppb	1.09	100000.	
59 Co	498.9	99.78	ppb	1.31	1000.	
60 Ni	465.15	93.03	ppb	0.14	1000.	
63 Cu	243.	48.6	ppb	1.68	#VALUE!	
65 Cu	239.1	47.82	ppb	1.51	2000.	
66 Zn	510.5	102.1	ppb	0.44	2000.	
68 Zn	558.5	111.7	ppb	0.69	#VALUE!	
75 As	111.05	22.21	ppb	0.38	1000.	
82 Se	97.85	19.57	ppb	2.02	1000.	
88 Sr	2,308.5	461.7	ppb	1.34	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	121.9	24.38	ppb	0.94	1000.	
107 Ag	50.55	10.11	ppb	1.26	100.	
109 Ag	50.4	10.08	ppb	1.37	#VALUE!	
111 Cd	252.3	50.46	ppb	0.76	#VALUE!	
114 Cd	251.3	50.26	ppb	0.08	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	463.15	92.63	ppb	0.78	1000.	
120 Sn	467.15	93.43	ppb	1.03	#VALUE!	
121 Sb	95.5	19.1	ppb	1.16	#VALUE!	
123 Sb	95.4	19.08	ppb	0.74	1000.	
135 Ba	1,967.5	393.5	ppb	1.24	2000.	
137 Ba	1,959.5	391.9	ppb	0.69	#VALUE!	
182 W	106.65	21.33	ppb	1.75	1000.	
203 Tl	101.75	20.35	ppb	1.13	1000.	
205 Tl	101.85	20.37	ppb	0.87	#VALUE!	
208 Pb	101.9	20.38	ppb	1.30	2000.	
232 Th	109.25	21.85	ppb	1.75	1000.	
238 U	114.8	22.96	ppb	0.82	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2846462.80	6.76	4492941.00	63.4	69.5 - 120	IS Fai
45 Sc	2325001.80	1.11	3094960.50	75.1	69.5 - 120	
72 Ge	475063.66	0.35	631723.63	75.2	69.5 - 120	
159 Tb	5590576.50	0.76	6220065.50	89.9	69.5 - 120	
209 Bi	3033688.50	1.01	3318256.50	91.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001086

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\098SMPL.D\098SMPL.D#
Date Acquired: May 14 2018 08:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-006
Misc Info:
Vial Number: 2509
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	1.658	0.3316	ppb	5.53	100.	
11 B	247.85	49.57	ppb	5.19	1000.	
23 Na	264,200.	52,840.	ppb	0.65	200000.	
25 Mg	70,750.	14,150.	ppb	1.77	200000.	
27 Al	30,625.	6,125.	ppb	3.62	200000.	
28 Si	61,500.	12,300.	ppb	2.20	#VALUE!	
29 Si	65,650.	13,130.	ppb	1.10	10000.	>LDR
39 K	24,105.	4,821.	ppb	1.80	200000.	
43 Ca	401,650.	80,330.	ppb	2.19	#VALUE!	
44 Ca	379,250.	75,850.	ppb	1.60	200000.	
51 V	79.85	15.97	ppb	1.24	1000.	
52 Cr	114.25	22.85	ppb	0.96	2000.	
53 Cr	135.4	27.08	ppb	2.44	#VALUE!	
55 Mn	1,774.5	354.9	ppb	1.75	2000.	
56 Fe	44,445.	8,889.	ppb	1.02	#VALUE!	
57 Fe	44,770.	8,954.	ppb	0.99	100000.	
59 Co	17.71	3.542	ppb	1.47	1000.	
60 Ni	52.8	10.56	ppb	1.37	1000.	
63 Cu	56.45	11.29	ppb	0.26	#VALUE!	
65 Cu	47.41	9.482	ppb	1.77	2000.	
66 Zn	198.6	39.72	ppb	1.22	2000.	
68 Zn	202.8	40.56	ppb	1.32	#VALUE!	
75 As	14.97	2.994	ppb	4.84	1000.	
82 Se	2.441	0.4882	ppb	35.42	1000.	
88 Sr	1,809.5	361.9	ppb	0.75	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	26.62	5.324	ppb	0.95	1000.	
107 Ag	0.1235	0.0247	ppb	16.03	100.	
109 Ag	0.1052	0.021	ppb	11.38	#VALUE!	
111 Cd	0.1766	0.0353	ppb	37.40	#VALUE!	
114 Cd	0.3444	0.0689	ppb	29.63	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.3275	0.6655	ppb	4.61	1000.	
120 Sn	3.149	0.6298	ppb	4.36	#VALUE!	
121 Sb	0.676	0.1352	ppb	7.59	#VALUE!	
123 Sb	0.6675	0.1335	ppb	10.80	1000.	
135 Ba	364.35	72.87	ppb	1.52	2000.	
137 Ba	365.05	73.01	ppb	0.52	#VALUE!	
182 W	0.4975	0.0995	ppb	9.04	1000.	
203 Tl	0.5025	0.1005	ppb	11.17	1000.	
205 Tl	0.4493	0.0899	ppb	4.55	#VALUE!	
208 Pb	35.47	7.094	ppb	0.93	2000.	
232 Th	24.56	4.912	ppb	0.61	1000.	
238 U	11.66	2.332	ppb	0.56	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2717256.50	2.02	4492941.00	60.5	69.5 - 120	IS Fai
45 Sc	2283744.30	0.76	3094960.50	73.8	69.5 - 120	
72 Ge	474062.66	0.37	631723.63	75.0	69.5 - 120	
159 Tb	5613869.00	0.99	6220065.50	90.3	69.5 - 120	
209 Bi	3052770.50	0.99	3318256.50	92.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4001087

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\099SMPL.D\099SMPL.D#
Date Acquired: May 14 2018 08:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-007
Misc Info:
Vial Number: 2510
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0131	0.0026	ppb	11.99	100.	
11 B	206.55	41.31	ppb	2.04	1000.	
23 Na	253,650.	50,730.	ppb	2.37	200000.	
25 Mg	63,500.	12,700.	ppb	1.72	200000.	
27 Al	8.175	1.635	ppb	2.42	200000.	
28 Si	17,320.	3,464.	ppb	0.72	#VALUE!	
29 Si	17,390.	3,478.	ppb	1.10	10000.	
39 K	16,860.	3,372.	ppb	2.90	200000.	
43 Ca	366,100.	73,220.	ppb	1.64	#VALUE!	
44 Ca	347,900.	69,580.	ppb	1.66	200000.	
51 V	0.1382	0.0276	ppb	63.63	1000.	
52 Cr	2.259	0.4518	ppb	8.12	2000.	
53 Cr	45.92	9.184	ppb	22.90	#VALUE!	
55 Mn	1,368.5	273.7	ppb	0.70	2000.	
56 Fe	6,445.	1,289.	ppb	1.96	#VALUE!	
57 Fe	6,560.	1,312.	ppb	0.14	100000.	
59 Co	0.595	0.119	ppb	7.98	1000.	
60 Ni	3.908	0.7816	ppb	9.70	1000.	
63 Cu	10.66	2.132	ppb	1.82	#VALUE!	
65 Cu	1.095	0.219	ppb	7.34	2000.	
66 Zn	17.88	3.576	ppb	4.02	2000.	
68 Zn	16.15	3.23	ppb	2.87	#VALUE!	
75 As	9.685	1.937	ppb	14.47	1000.	
82 Se	1.8455	0.3691	ppb	47.44	1000.	
88 Sr	1,562.	312.4	ppb	1.04	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	13.465	2.693	ppb	1.35	1000.	
107 Ag	0.0037	0.0007	ppb	212.43	100.	
109 Ag	0.0041	0.0008	ppb	191.95	#VALUE!	
111 Cd	-0.3227	-0.0645	ppb	35.50	#VALUE!	
114 Cd	-0.0238	-0.0048	ppb	35.25	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.1675	0.2335	ppb	4.78	1000.	
120 Sn	1.185	0.237	ppb	8.63	#VALUE!	
121 Sb	0.1293	0.0259	ppb	22.42	#VALUE!	
123 Sb	0.1003	0.0201	ppb	45.86	1000.	
135 Ba	32.44	6.488	ppb	3.29	2000.	
137 Ba	32.505	6.501	ppb	3.50	#VALUE!	
182 W	0.262	0.0524	ppb	10.04	1000.	
203 Tl	0.0074	0.0015	ppb	191.69	1000.	
205 Tl	-0.0215	-0.0043	ppb	111.07	#VALUE!	
208 Pb	-0.0125	-0.0025	ppb	755.88	2000.	
232 Th	0.3238	0.0648	ppb	25.22	1000.	
238 U	0.82	0.164	ppb	10.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2863333.50	0.75	4492941.00	63.7	69.5 - 120	IS Fai
45 Sc	2343089.80	1.32	3094960.50	75.7	69.5 - 120	
72 Ge	487270.88	1.16	631723.63	77.1	69.5 - 120	
159 Tb	5628208.00	2.60	6220065.50	90.5	69.5 - 120	
209 Bi	3054094.50	1.06	3318256.50	92.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001088

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\100SMPL.D\100SMPL.D#
Date Acquired: May 14 2018 08:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-008
Misc Info:
Vial Number: 2511
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	1.6335	0.3267	ppb	5.79	100.	
11 B	187.35	37.47	ppb	5.48	1000.	
23 Na	246,850.	49,370.	ppb	0.55	200000.	
25 Mg	71,500.	14,300.	ppb	2.21	200000.	
27 Al	24,320.	4,864.	ppb	4.79	200000.	
28 Si	56,450.	11,290.	ppb	5.78	#VALUE!	
29 Si	60,150.	12,030.	ppb	4.46	10000.	>LDR
39 K	23,460.	4,692.	ppb	5.28	200000.	
43 Ca	436,750.	87,350.	ppb	2.45	#VALUE!	
44 Ca	421,750.	84,350.	ppb	0.85	200000.	
51 V	77.5	15.5	ppb	1.99	1000.	
52 Cr	93.5	18.7	ppb	1.91	2000.	
53 Cr	116.3	23.26	ppb	1.50	#VALUE!	
55 Mn	1,971.	394.2	ppb	1.84	2000.	
56 Fe	44,465.	8,893.	ppb	1.58	#VALUE!	
57 Fe	44,625.	8,925.	ppb	1.76	100000.	
59 Co	10.63	2.126	ppb	0.75	1000.	
60 Ni	47.06	9.412	ppb	1.58	1000.	
63 Cu	51.05	10.21	ppb	1.79	#VALUE!	
65 Cu	43.48	8.696	ppb	2.82	2000.	
66 Zn	216.85	43.37	ppb	0.35	2000.	
68 Zn	230.05	46.01	ppb	0.84	#VALUE!	
75 As	47.51	9.502	ppb	2.52	1000.	
82 Se	5.56	1.112	ppb	12.70	1000.	
88 Sr	1,916.5	383.3	ppb	1.88	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	23.945	4.789	ppb	1.57	1000.	
107 Ag	0.1253	0.0251	ppb	19.39	100.	
109 Ag	0.0741	0.0148	ppb	29.37	#VALUE!	
111 Cd	0.0105	0.0021	ppb	192.36	#VALUE!	
114 Cd	0.1987	0.0397	ppb	8.66	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.9005	0.5801	ppb	4.91	1000.	
120 Sn	2.841	0.5682	ppb	5.81	#VALUE!	
121 Sb	0.4948	0.099	ppb	8.15	#VALUE!	
123 Sb	0.487	0.0974	ppb	5.34	1000.	
135 Ba	704.5	140.9	ppb	1.29	2000.	
137 Ba	702.5	140.5	ppb	1.13	#VALUE!	
182 W	0.524	0.1048	ppb	8.43	1000.	
203 Tl	0.3834	0.0767	ppb	29.13	1000.	
205 Tl	0.3875	0.0775	ppb	3.39	#VALUE!	
208 Pb	24.875	4.975	ppb	0.70	2000.	
232 Th	20.77	4.154	ppb	0.53	1000.	
238 U	6.425	1.285	ppb	2.70	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2752984.00	0.94	4492941.00	61.3	69.5 - 120	IS Fai
45 Sc	2279668.00	2.53	3094960.50	73.7	69.5 - 120	
72 Ge	468598.22	0.64	631723.63	74.2	69.5 - 120	
159 Tb	5566950.50	1.03	6220065.50	89.5	69.5 - 120	
209 Bi	3056277.50	1.02	3318256.50	92.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4001089

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\101SMPL.D\101SMPL.D#
Date Acquired: May 14 2018 08:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-009
Misc Info:
Vial Number: 2512
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0158	0.0032	ppb	46.81	100.	
11 B	181.95	36.39	ppb	3.93	1000.	
23 Na	259,950.	51,990.	ppb	3.63	200000.	
25 Mg	66,850.	13,370.	ppb	2.18	200000.	
27 Al	12.995	2.599	ppb	5.33	200000.	
28 Si	16,260.	3,252.	ppb	2.25	#VALUE!	
29 Si	16,235.	3,247.	ppb	1.72	10000.	
39 K	18,995.	3,799.	ppb	2.42	200000.	
43 Ca	410,350.	82,070.	ppb	3.39	#VALUE!	
44 Ca	389,650.	77,930.	ppb	1.49	200000.	
51 V	0.0646	0.0129	ppb	784.83	1000.	
52 Cr	2.2385	0.4477	ppb	12.35	2000.	
53 Cr	53.	10.6	ppb	22.06	#VALUE!	
55 Mn	1,334.	266.8	ppb	2.62	2000.	
56 Fe	3,899.	779.8	ppb	0.41	#VALUE!	
57 Fe	4,105.	821.	ppb	0.10	100000.	
59 Co	0.974	0.1948	ppb	6.81	1000.	
60 Ni	20.755	4.151	ppb	0.88	1000.	
63 Cu	10.635	2.127	ppb	2.67	#VALUE!	
65 Cu	1.1985	0.2397	ppb	10.45	2000.	
66 Zn	54.65	10.93	ppb	2.83	2000.	
68 Zn	51.5	10.3	ppb	1.92	#VALUE!	
75 As	27.46	5.492	ppb	3.02	1000.	
82 Se	0.797	0.1594	ppb	73.09	1000.	
88 Sr	1,738.	347.6	ppb	0.29	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	13.47	2.694	ppb	2.31	1000.	
107 Ag	0.013	0.0026	ppb	27.58	100.	
109 Ag	0.0002	0.	ppb	5437.90	#VALUE!	
111 Cd	-0.3245	-0.0649	ppb	16.10	#VALUE!	
114 Cd	-0.0024	-0.0005	ppb	656.76	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.247	0.2494	ppb	5.24	1000.	
120 Sn	1.2855	0.2571	ppb	7.12	#VALUE!	
121 Sb	0.173	0.0346	ppb	14.08	#VALUE!	
123 Sb	0.1528	0.0306	ppb	32.95	1000.	
135 Ba	40.73	8.146	ppb	3.78	2000.	
137 Ba	40.45	8.09	ppb	1.52	#VALUE!	
182 W	0.325	0.065	ppb	8.32	1000.	
203 Tl	0.0146	0.0029	ppb	159.99	1000.	
205 Tl	-0.0126	-0.0025	ppb	253.06	#VALUE!	
208 Pb	0.0679	0.0136	ppb	99.93	2000.	
232 Th	0.2153	0.0431	ppb	18.59	1000.	
238 U	2.594	0.5188	ppb	3.26	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2752526.30	5.14	4492941.00	61.3	69.5 - 120	IS Fai
45 Sc	2242063.50	1.67	3094960.50	72.4	69.5 - 120	
72 Ge	478063.31	2.15	631723.63	75.7	69.5 - 120	
159 Tb	5588661.50	2.49	6220065.50	89.8	69.5 - 120	
209 Bi	3018627.00	2.84	3318256.50	91.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001090

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\102_CCV.D\102_CCV.D#
Date Acquired: May 14 2018 08:49 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.22	ppb	4.82	25	96.88	
11 B	24.96	ppb	3.10	25	99.84	
23 Na	4,412.	ppb	0.57	5,000	88.24	Fail
25 Mg	4,604.	ppb	3.20	5,000	92.08	
27 Al	462.6	ppb	2.07	500	92.52	
28 Si	511.9	ppb	4.20	500	102.38	
29 Si	442.5	ppb	2.24	500	88.5	Fail
39 K	4,649.	ppb	0.87	5,000	92.98	
43 Ca	4,852.	ppb	1.62	5,000	97.04	
44 Ca	5,012.	ppb	1.06	5,000	100.24	
51 V	24.3	ppb	0.77	25	97.2	
52 Cr	24.5	ppb	1.44	25	98	
53 Cr	24.1	ppb	2.07	25	96.4	
55 Mn	24.57	ppb	0.78	25	98.28	
56 Fe	4,868.	ppb	1.08	5,000	97.36	
57 Fe	4,952.	ppb	1.73	5,000	99.04	
59 Co	24.29	ppb	1.58	25	97.16	
60 Ni	23.99	ppb	1.72	25	95.96	
63 Cu	24.29	ppb	1.82	25	97.16	
65 Cu	24.69	ppb	0.58	25	98.76	
66 Zn	25.25	ppb	1.78	25	101	
68 Zn	25.2	ppb	0.96	25	100.8	
75 As	25.07	ppb	0.50	25	100.28	
82 Se	26.09	ppb	0.55	25	104.36	
88 Sr	25.71	ppb	0.35	25	102.84	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	26.1	ppb	0.63	25	104.4	
107 Ag	26.37	ppb	1.07	25	105.48	
109 Ag	26.27	ppb	1.23	25	105.08	
111 Cd	26.83	ppb	1.17	25	107.32	
114 Cd	26.62	ppb	0.59	25	106.48	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	22.71	ppb	1.11	25	90.84	
120 Sn	23.	ppb	1.46	25	92	
121 Sb	23.42	ppb	1.28	25	93.68	
123 Sb	23.87	ppb	1.62	25	95.48	
135 Ba	24.17	ppb	1.09	25	96.68	
137 Ba	24.01	ppb	0.92	25	96.04	
182 W	25.44	ppb	1.15	25	101.76	
203 Tl	24.81	ppb	1.83	25	99.24	
205 Tl	24.83	ppb	1.45	25	99.32	
208 Pb	25.06	ppb	1.63	25	100.24	
232 Th	25.46	ppb	1.23	25	101.84	
238 U	26.91	ppb	1.86	25	107.64	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2895494.30	5.86	4492941.00	64.4	80 - 120.4	ISFail
45 Sc	2374235.00	0.19	3094960.50	76.7	80 - 120.4	ISFail
72 Ge	481094.22	0.37	631723.63	76.2	80 - 120.4	ISFail
159 Tb	5658302.00	0.37	6220065.50	91.0	80 - 120.4	
209 Bi	3203317.80	1.38	3318256.50	96.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4001091

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\103_CCB.D\103_CCB.D#
Date Acquired: May 14 2018 08:53 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0012	ppb	207.25	1.00	
11 B	3.039	ppb	5.53	1.00	
23 Na	8.908	ppb	93.13	1.00	
25 Mg	1.509	ppb	161.96	1.00	
27 Al	0.2536	ppb	117.63	1.00	
28 Si	56.94	ppb	10.32	1.00	
29 Si	7.246	ppb	55.51	1.00	
39 K	4.4	ppb	6.47	1.00	
43 Ca	3.049	ppb	179.01	1.00	
44 Ca	7.151	ppb	147.25	1.00	
51 V	-0.0336	ppb	291.29	1.00	
52 Cr	0.0654	ppb	74.61	1.00	
53 Cr	-1.271	ppb	8.25	1.00	
55 Mn	0.0434	ppb	89.64	1.00	
56 Fe	-2.588	ppb	93.47	1.00	
57 Fe	-0.3323	ppb	640.08	1.00	
59 Co	0.0051	ppb	100.88	1.00	
60 Ni	0.0053	ppb	184.30	1.00	
63 Cu	0.0045	ppb	82.12	1.00	
65 Cu	0.0033	ppb	362.16	1.00	
66 Zn	0.0684	ppb	24.60	1.00	
68 Zn	0.1134	ppb	48.97	1.00	
75 As	-0.089	ppb	188.09	1.00	
82 Se	-0.1771	ppb	114.06	1.00	
88 Sr	0.0332	ppb	147.24	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0361	ppb	17.97	1.00	
107 Ag	0.0044	ppb	89.70	1.00	
109 Ag	0.0043	ppb	107.45	1.00	
111 Cd	-0.0635	ppb	50.42	1.00	
114 Cd	-0.0037	ppb	79.15	1.00	
115 In	--------	---	--------	---	
118 Sn	0.054	ppb	12.86	1.00	
120 Sn	0.0514	ppb	18.86	1.00	
121 Sb	0.0094	ppb	12.26	1.00	
123 Sb	0.0104	ppb	50.10	1.00	
135 Ba	0.0182	ppb	45.39	1.00	
137 Ba	0.0129	ppb	110.03	1.00	
182 W	0.047	ppb	34.77	1.00	
203 Tl	0.0069	ppb	110.97	1.00	
205 Tl	0.0049	ppb	91.49	1.00	
208 Pb	0.0936	ppb	8.56	1.00	
232 Th	0.0578	ppb	6.04	1.00	
238 U	0.006	ppb	46.68	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3001778.00	2.77	4492941.00	66.8	79.5 - 120	ISFail
45 Sc	2361159.50	0.56	3094960.50	76.3	79.5 - 120	ISFail
72 Ge	494357.59	0.12	631723.63	78.3	79.5 - 120	ISFail
159 Tb	5665034.50	0.74	6220065.50	91.1	79.5 - 120	
209 Bi	3238481.00	0.48	3318256.50	97.6	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001092

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\104SMPL.D\104SMPL.D#
Date Acquired: May 14 2018 08:58 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-010
Misc Info:
Vial Number: 3101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	2.007	0.4014	ppb	5.24	100.	
11 B	217.4	43.48	ppb	5.03	1000.	
23 Na	269,100.	53,820.	ppb	3.15	200000.	
25 Mg	73,450.	14,690.	ppb	4.55	200000.	
27 Al	39,620.	7,924.	ppb	6.51	200000.	
28 Si	62,100.	12,420.	ppb	4.51	#VALUE!	
29 Si	65,200.	13,040.	ppb	4.78	10000.	>LDR
39 K	25,510.	5,102.	ppb	1.92	200000.	
43 Ca	393,600.	78,720.	ppb	2.70	#VALUE!	
44 Ca	375,950.	75,190.	ppb	1.87	200000.	
51 V	106.15	21.23	ppb	5.66	1000.	
52 Cr	150.75	30.15	ppb	4.01	2000.	
53 Cr	166.65	33.33	ppb	4.25	#VALUE!	
55 Mn	1,842.	368.4	ppb	5.40	2000.	
56 Fe	55,150.	11,030.	ppb	5.75	#VALUE!	
57 Fe	54,800.	10,960.	ppb	5.38	100000.	
59 Co	22.685	4.537	ppb	3.54	1000.	
60 Ni	71.3	14.26	ppb	2.19	1000.	
63 Cu	64.75	12.95	ppb	3.93	#VALUE!	
65 Cu	56.4	11.28	ppb	5.48	2000.	
66 Zn	236.75	47.35	ppb	2.64	2000.	
68 Zn	243.55	48.71	ppb	4.69	#VALUE!	
75 As	16.745	3.349	ppb	1.01	1000.	
82 Se	2.369	0.4738	ppb	48.35	1000.	
88 Sr	1,776.	355.2	ppb	4.18	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	29.645	5.929	ppb	3.50	1000.	
107 Ag	0.1462	0.0292	ppb	16.04	100.	
109 Ag	0.1059	0.0212	ppb	9.47	#VALUE!	
111 Cd	0.2865	0.0573	ppb	70.47	#VALUE!	
114 Cd	0.4147	0.0829	ppb	19.98	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.749	0.7498	ppb	3.54	1000.	
120 Sn	3.835	0.767	ppb	5.35	#VALUE!	
121 Sb	0.674	0.1348	ppb	1.73	#VALUE!	
123 Sb	0.779	0.1558	ppb	7.42	1000.	
135 Ba	448.4	89.68	ppb	2.73	2000.	
137 Ba	449.1	89.82	ppb	3.48	#VALUE!	
182 W	0.5285	0.1057	ppb	5.61	1000.	
203 Tl	0.587	0.1174	ppb	4.76	1000.	
205 Tl	0.5685	0.1137	ppb	5.72	#VALUE!	
208 Pb	43.935	8.787	ppb	3.39	2000.	
232 Th	33.645	6.729	ppb	3.82	1000.	
238 U	15.195	3.039	ppb	4.80	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2825346.00	3.68	4492941.00	62.9	69.5 - 120	IS Fai
45 Sc	2268363.00	3.45	3094960.50	73.3	69.5 - 120	
72 Ge	466447.44	3.21	631723.63	73.8	69.5 - 120	
159 Tb	5456861.50	2.43	6220065.50	87.7	69.5 - 120	
209 Bi	2958361.50	2.34	3318256.50	89.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4001093

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\105SMPL.D\105SMPL.D#
Date Acquired: May 14 2018 09:02 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-011
Misc Info:
Vial Number: 3102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.011	0.0022	ppb	72.75	100.	
11 B	193.05	38.61	ppb	4.23	1000.	
23 Na	248,900.	49,780.	ppb	0.75	200000.	
25 Mg	60,550.	12,110.	ppb	0.22	200000.	
27 Al	156.6	31.32	ppb	3.02	200000.	
28 Si	16,670.	3,334.	ppb	1.83	#VALUE!	
29 Si	16,335.	3,267.	ppb	1.15	10000.	
39 K	15,790.	3,158.	ppb	1.38	200000.	
43 Ca	351,850.	70,370.	ppb	3.02	#VALUE!	
44 Ca	335,200.	67,040.	ppb	2.02	200000.	
51 V	0.7265	0.1453	ppb	80.11	1000.	
52 Cr	2.623	0.5246	ppb	8.07	2000.	
53 Cr	45.625	9.125	ppb	21.15	#VALUE!	
55 Mn	1,290.	258.	ppb	0.66	2000.	
56 Fe	5,970.	1,194.	ppb	2.29	#VALUE!	
57 Fe	6,190.	1,238.	ppb	2.08	100000.	
59 Co	0.4976	0.0995	ppb	14.18	1000.	
60 Ni	3.465	0.693	ppb	8.64	1000.	
63 Cu	11.155	2.231	ppb	3.04	#VALUE!	
65 Cu	1.7825	0.3565	ppb	1.11	2000.	
66 Zn	18.43	3.686	ppb	2.23	2000.	
68 Zn	16.915	3.383	ppb	1.94	#VALUE!	
75 As	9.705	1.941	ppb	12.37	1000.	
82 Se	1.4855	0.2971	ppb	62.30	1000.	
88 Sr	1,492.5	298.5	ppb	1.00	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.86	2.572	ppb	1.78	1000.	
107 Ag	0.0084	0.0017	ppb	50.42	100.	
109 Ag	0.0151	0.003	ppb	29.50	#VALUE!	
111 Cd	-0.4082	-0.0816	ppb	20.47	#VALUE!	
114 Cd	-0.0082	-0.0016	ppb	107.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.129	0.2258	ppb	13.33	1000.	
120 Sn	1.2055	0.2411	ppb	11.43	#VALUE!	
121 Sb	0.1347	0.0269	ppb	9.50	#VALUE!	
123 Sb	0.1414	0.0283	ppb	13.62	1000.	
135 Ba	32.265	6.453	ppb	2.58	2000.	
137 Ba	32.67	6.534	ppb	2.14	#VALUE!	
182 W	0.2645	0.0529	ppb	16.23	1000.	
203 Tl	0.0021	0.0004	ppb	737.83	1000.	
205 Tl	-0.0329	-0.0066	ppb	55.23	#VALUE!	
208 Pb	0.5105	0.1021	ppb	22.74	2000.	
232 Th	0.2811	0.0562	ppb	23.70	1000.	
238 U	0.791	0.1582	ppb	4.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2901192.00	2.69	4492941.00	64.6	69.5 - 120	IS Fai
45 Sc	2351906.50	0.86	3094960.50	76.0	69.5 - 120	
72 Ge	487884.25	1.30	631723.63	77.2	69.5 - 120	
159 Tb	5606830.50	2.26	6220065.50	90.1	69.5 - 120	
209 Bi	3098214.80	2.02	3318256.50	93.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001094

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\106SMPL.D\106SMPL.D#
Date Acquired: May 14 2018 09:06 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-012
Misc Info:
Vial Number: 3103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	1.3445	0.2689	ppb	2.28	100.	
11 B	187.25	37.45	ppb	4.55	1000.	
23 Na	266,400.	53,280.	ppb	2.56	200000.	
25 Mg	73,550.	14,710.	ppb	1.25	200000.	
27 Al	21,875.	4,375.	ppb	1.46	200000.	
28 Si	44,555.	8,911.	ppb	1.59	#VALUE!	
29 Si	47,510.	9,502.	ppb	1.05	10000.	
39 K	22,635.	4,527.	ppb	0.85	200000.	
43 Ca	424,450.	84,890.	ppb	1.17	#VALUE!	
44 Ca	409,550.	81,910.	ppb	2.59	200000.	
51 V	61.05	12.21	ppb	3.24	1000.	
52 Cr	107.65	21.53	ppb	0.84	2000.	
53 Cr	132.6	26.52	ppb	1.11	#VALUE!	
55 Mn	2,044.	408.8	ppb	1.41	2000.	
56 Fe	35,545.	7,109.	ppb	1.36	#VALUE!	
57 Fe	36,050.	7,210.	ppb	2.20	100000.	
59 Co	12.27	2.454	ppb	1.32	1000.	
60 Ni	61.3	12.26	ppb	2.30	1000.	
63 Cu	40.755	8.151	ppb	0.97	#VALUE!	
65 Cu	31.585	6.317	ppb	1.05	2000.	
66 Zn	145.2	29.04	ppb	1.26	2000.	
68 Zn	150.95	30.19	ppb	1.40	#VALUE!	
75 As	30.745	6.149	ppb	1.24	1000.	
82 Se	6.38	1.276	ppb	7.64	1000.	
88 Sr	1,869.5	373.9	ppb	1.68	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	24.235	4.847	ppb	1.20	1000.	
107 Ag	0.1217	0.0243	ppb	11.19	100.	
109 Ag	0.0951	0.019	ppb	9.73	#VALUE!	
111 Cd	0.3825	0.0765	ppb	6.99	#VALUE!	
114 Cd	0.4604	0.0921	ppb	7.40	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.502	0.5004	ppb	2.79	1000.	
120 Sn	2.3615	0.4723	ppb	3.67	#VALUE!	
121 Sb	0.4246	0.0849	ppb	9.47	#VALUE!	
123 Sb	0.4129	0.0826	ppb	7.46	1000.	
135 Ba	330.15	66.03	ppb	0.70	2000.	
137 Ba	327.35	65.47	ppb	1.00	#VALUE!	
182 W	0.4644	0.0929	ppb	12.79	1000.	
203 Tl	0.4346	0.0869	ppb	6.91	1000.	
205 Tl	0.3887	0.0777	ppb	4.83	#VALUE!	
208 Pb	23.3	4.66	ppb	0.90	2000.	
232 Th	15.405	3.081	ppb	1.37	1000.	
238 U	6.8	1.36	ppb	2.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2900531.00	3.99	4492941.00	64.6	69.5 - 120	IS Fai
45 Sc	2361496.00	0.87	3094960.50	76.3	69.5 - 120	
72 Ge	476924.66	0.74	631723.63	75.5	69.5 - 120	
159 Tb	5600110.00	0.69	6220065.50	90.0	69.5 - 120	
209 Bi	3071349.80	1.10	3318256.50	92.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001095

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\107SMPL.D\107SMPL.D#
Date Acquired: May 14 2018 09:10 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-013
Misc Info:
Vial Number: 3104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0125	0.0025	ppb	129.36	100.	
11 B	185.9	37.18	ppb	4.60	1000.	
23 Na	278,550.	55,710.	ppb	2.95	200000.	
25 Mg	71,350.	14,270.	ppb	1.30	200000.	
27 Al	11.36	2.272	ppb	33.05	200000.	
28 Si	18,755.	3,751.	ppb	1.04	#VALUE!	
29 Si	18,900.	3,780.	ppb	3.90	10000.	
39 K	19,130.	3,826.	ppb	2.67	200000.	
43 Ca	415,800.	83,160.	ppb	3.44	#VALUE!	
44 Ca	395,500.	79,100.	ppb	2.54	200000.	
51 V	0.1922	0.0384	ppb	396.30	1000.	
52 Cr	1.9035	0.3807	ppb	1.48	2000.	
53 Cr	53.75	10.75	ppb	16.47	#VALUE!	
55 Mn	1,393.5	278.7	ppb	1.62	2000.	
56 Fe	4,764.	952.8	ppb	3.55	#VALUE!	
57 Fe	4,970.	994.	ppb	3.51	100000.	
59 Co	0.4955	0.0991	ppb	16.49	1000.	
60 Ni	1.58	0.316	ppb	8.47	1000.	
63 Cu	11.61	2.322	ppb	1.99	#VALUE!	
65 Cu	1.147	0.2294	ppb	29.14	2000.	
66 Zn	21.065	4.213	ppb	7.71	2000.	
68 Zn	20.815	4.163	ppb	4.03	#VALUE!	
75 As	7.84	1.568	ppb	3.61	1000.	
82 Se	1.247	0.2494	ppb	113.39	1000.	
88 Sr	1,794.5	358.9	ppb	2.16	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.645	2.329	ppb	3.84	1000.	
107 Ag	0.0017	0.0003	ppb	126.31	100.	
109 Ag	0.005	0.001	ppb	99.31	#VALUE!	
111 Cd	-0.3119	-0.0624	ppb	27.29	#VALUE!	
114 Cd	-0.0221	-0.0044	ppb	102.87	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.2665	0.2533	ppb	10.91	1000.	
120 Sn	1.148	0.2296	ppb	12.25	#VALUE!	
121 Sb	0.0871	0.0174	ppb	33.79	#VALUE!	
123 Sb	0.0954	0.0191	ppb	31.87	1000.	
135 Ba	41.76	8.352	ppb	4.64	2000.	
137 Ba	41.735	8.347	ppb	1.08	#VALUE!	
182 W	0.2363	0.0473	ppb	7.38	1000.	
203 Tl	-0.0477	-0.0095	ppb	83.02	1000.	
205 Tl	-0.0436	-0.0087	ppb	107.53	#VALUE!	
208 Pb	-0.0393	-0.0079	ppb	199.31	2000.	
232 Th	0.1719	0.0344	ppb	20.42	1000.	
238 U	0.881	0.1762	ppb	0.99	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2922627.80	1.37	4492941.00	65.0	69.5 - 120	IS Fai
45 Sc	2319177.30	2.92	3094960.50	74.9	69.5 - 120	
72 Ge	489974.25	1.76	631723.63	77.6	69.5 - 120	
159 Tb	5598735.50	1.93	6220065.50	90.0	69.5 - 120	
209 Bi	3036808.30	1.13	3318256.50	91.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001096

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\108SMPL.D\108SMPL.D#
Date Acquired: May 14 2018 09:14 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-014
Misc Info:
Vial Number: 3105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0026	0.0005	ppb	253.43	100.	
11 B	16.11	3.222	ppb	14.94	1000.	
23 Na	45.295	9.059	ppb	10.50	200000.	
25 Mg	15.22	3.044	ppb	13.16	200000.	
27 Al	8.255	1.651	ppb	5.50	200000.	
28 Si	316.2	63.24	ppb	7.22	#VALUE!	
29 Si	133.35	26.67	ppb	6.99	10000.	
39 K	24.725	4.945	ppb	53.04	200000.	
43 Ca	40.	8.	ppb	77.76	#VALUE!	
44 Ca	41.065	8.213	ppb	14.88	200000.	
51 V	0.2932	0.0586	ppb	108.37	1000.	
52 Cr	1.2995	0.2599	ppb	31.02	2000.	
53 Cr	42.895	8.579	ppb	1.62	#VALUE!	
55 Mn	0.6155	0.1231	ppb	12.68	2000.	
56 Fe	47.535	9.507	ppb	21.09	#VALUE!	
57 Fe	32.	6.4	ppb	25.50	100000.	
59 Co	0.0028	0.0006	ppb	346.35	1000.	
60 Ni	0.08	0.016	ppb	89.13	1000.	
63 Cu	0.6575	0.1315	ppb	4.69	#VALUE!	
65 Cu	0.7345	0.1469	ppb	13.53	2000.	
66 Zn	0.671	0.1342	ppb	32.56	2000.	
68 Zn	0.2537	0.0507	ppb	88.17	#VALUE!	
75 As	-0.87	-0.174	ppb	31.83	1000.	
82 Se	0.4069	0.0814	ppb	163.31	1000.	
88 Sr	0.2354	0.0471	ppb	8.23	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1909	0.0382	ppb	7.83	1000.	
107 Ag	0.0041	0.0008	ppb	338.38	100.	
109 Ag	0.0076	0.0015	ppb	135.35	#VALUE!	
111 Cd	-0.1414	-0.0283	ppb	112.62	#VALUE!	
114 Cd	-0.0106	-0.0021	ppb	44.42	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.127	0.2254	ppb	11.22	1000.	
120 Sn	1.1705	0.2341	ppb	7.10	#VALUE!	
121 Sb	0.0358	0.0072	ppb	29.25	#VALUE!	
123 Sb	0.0392	0.0078	ppb	39.54	1000.	
135 Ba	0.2175	0.0435	ppb	11.60	2000.	
137 Ba	0.2119	0.0424	ppb	31.56	#VALUE!	
182 W	0.0331	0.0066	ppb	20.49	1000.	
203 Tl	-0.0039	-0.0008	ppb	699.85	1000.	
205 Tl	-0.0623	-0.0125	ppb	28.84	#VALUE!	
208 Pb	0.0047	0.0009	ppb	1278.70	2000.	
232 Th	0.0719	0.0144	ppb	36.32	1000.	
238 U	0.0007	0.0001	ppb	164.39	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3121443.50	1.85	4492941.00	69.5	69.5 - 120	IS Fai
45 Sc	2356889.00	1.44	3094960.50	76.2	69.5 - 120	
72 Ge	497181.50	0.52	631723.63	78.7	69.5 - 120	
159 Tb	5685343.00	1.84	6220065.50	91.4	69.5 - 120	
209 Bi	3285800.50	1.42	3318256.50	99.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001097

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\109SMPL.D\109SMPL.D#
Date Acquired: May 14 2018 09:19 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-015
Misc Info:
Vial Number: 3106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.4859	0.0972	ppb	7.80	100.	
11 B	190.8	38.16	ppb	9.86	1000.	
23 Na	254,850.	50,970.	ppb	2.54	200000.	
25 Mg	60,400.	12,080.	ppb	6.41	200000.	
27 Al	9,435.	1,887.	ppb	7.97	200000.	
28 Si	37,915.	7,583.	ppb	6.01	#VALUE!	
29 Si	40,470.	8,094.	ppb	2.99	10000.	
39 K	20,315.	4,063.	ppb	5.08	200000.	
43 Ca	393,200.	78,640.	ppb	4.84	#VALUE!	
44 Ca	368,700.	73,740.	ppb	4.39	200000.	
51 V	33.525	6.705	ppb	2.61	1000.	
52 Cr	55.7	11.14	ppb	2.19	2000.	
53 Cr	84.95	16.99	ppb	3.37	#VALUE!	
55 Mn	1,429.	285.8	ppb	1.33	2000.	
56 Fe	20,790.	4,158.	ppb	1.76	#VALUE!	
57 Fe	21,425.	4,285.	ppb	2.16	100000.	
59 Co	5.36	1.072	ppb	3.14	1000.	
60 Ni	27.21	5.442	ppb	1.17	1000.	
63 Cu	33.92	6.784	ppb	1.03	#VALUE!	
65 Cu	25.855	5.171	ppb	1.07	2000.	
66 Zn	90.85	18.17	ppb	1.92	2000.	
68 Zn	95.2	19.04	ppb	3.39	#VALUE!	
75 As	10.3	2.06	ppb	11.27	1000.	
82 Se	2.04	0.408	ppb	48.43	1000.	
88 Sr	1,645.	329.	ppb	2.55	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	21.695	4.339	ppb	3.66	1000.	
107 Ag	0.0617	0.0123	ppb	4.13	100.	
109 Ag	0.0568	0.0114	ppb	23.21	#VALUE!	
111 Cd	-0.3199	-0.064	ppb	29.87	#VALUE!	
114 Cd	0.0051	0.001	ppb	548.07	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.891	0.3782	ppb	4.27	1000.	
120 Sn	1.9055	0.3811	ppb	8.54	#VALUE!	
121 Sb	0.3154	0.0631	ppb	2.36	#VALUE!	
123 Sb	0.3198	0.064	ppb	22.81	1000.	
135 Ba	223.7	44.74	ppb	1.04	2000.	
137 Ba	224.2	44.84	ppb	2.23	#VALUE!	
182 W	0.582	0.1164	ppb	14.05	1000.	
203 Tl	0.1591	0.0318	ppb	14.95	1000.	
205 Tl	0.126	0.0252	ppb	20.79	#VALUE!	
208 Pb	11.015	2.203	ppb	1.78	2000.	
232 Th	8.7	1.74	ppb	2.85	1000.	
238 U	2.263	0.4526	ppb	4.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2842781.50	8.02	4492941.00	63.3	69.5 - 120	IS Fai
45 Sc	2281118.00	5.35	3094960.50	73.7	69.5 - 120	
72 Ge	478900.16	2.05	631723.63	75.8	69.5 - 120	
159 Tb	5586951.00	1.36	6220065.50	89.8	69.5 - 120	
209 Bi	3050850.00	1.57	3318256.50	91.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001098

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\110SMPL.D\110SMPL.D#
Date Acquired: May 14 2018 09:23 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-016
Misc Info:
Vial Number: 3107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0172	0.0034	ppb	60.78	100.	
11 B	206.	41.2	ppb	2.39	1000.	
23 Na	271,450.	54,290.	ppb	0.85	200000.	
25 Mg	63,650.	12,730.	ppb	2.18	200000.	
27 Al	9.735	1.947	ppb	7.10	200000.	
28 Si	18,675.	3,735.	ppb	1.53	#VALUE!	
29 Si	19,040.	3,808.	ppb	2.12	10000.	
39 K	18,645.	3,729.	ppb	2.55	200000.	
43 Ca	407,100.	81,420.	ppb	1.43	#VALUE!	
44 Ca	385,200.	77,040.	ppb	0.80	200000.	
51 V	0.3304	0.0661	ppb	179.20	1000.	
52 Cr	2.487	0.4974	ppb	6.90	2000.	
53 Cr	44.49	8.898	ppb	12.72	#VALUE!	
55 Mn	1,423.5	284.7	ppb	1.00	2000.	
56 Fe	6,410.	1,282.	ppb	1.09	#VALUE!	
57 Fe	6,640.	1,328.	ppb	0.82	100000.	
59 Co	0.778	0.1556	ppb	2.34	1000.	
60 Ni	7.385	1.477	ppb	8.90	1000.	
63 Cu	11.635	2.327	ppb	1.52	#VALUE!	
65 Cu	1.5225	0.3045	ppb	3.33	2000.	
66 Zn	28.41	5.682	ppb	1.65	2000.	
68 Zn	27.335	5.467	ppb	4.28	#VALUE!	
75 As	9.925	1.985	ppb	16.81	1000.	
82 Se	1.8335	0.3667	ppb	28.17	1000.	
88 Sr	1,683.5	336.7	ppb	1.61	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	14.65	2.93	ppb	1.61	1000.	
107 Ag	0.0054	0.0011	ppb	80.88	100.	
109 Ag	0.0047	0.0009	ppb	131.03	#VALUE!	
111 Cd	-0.3411	-0.0682	ppb	36.67	#VALUE!	
114 Cd	-0.0226	-0.0045	ppb	63.85	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.32	0.264	ppb	9.69	1000.	
120 Sn	1.3285	0.2657	ppb	14.28	#VALUE!	
121 Sb	0.1189	0.0238	ppb	23.61	#VALUE!	
123 Sb	0.1155	0.0231	ppb	9.97	1000.	
135 Ba	36.595	7.319	ppb	1.07	2000.	
137 Ba	36.32	7.264	ppb	1.71	#VALUE!	
182 W	0.3252	0.065	ppb	23.48	1000.	
203 Tl	-0.0107	-0.0021	ppb	636.62	1000.	
205 Tl	-0.0356	-0.0071	ppb	22.69	#VALUE!	
208 Pb	0.0133	0.0027	ppb	282.30	2000.	
232 Th	0.1028	0.0206	ppb	16.11	1000.	
238 U	1.1215	0.2243	ppb	5.16	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2827935.30	1.97	4492941.00	62.9	69.5 - 120	IS Fai
45 Sc	2268252.00	1.26	3094960.50	73.3	69.5 - 120	
72 Ge	474097.34	0.61	631723.63	75.0	69.5 - 120	
159 Tb	5507047.00	0.55	6220065.50	88.5	69.5 - 120	
209 Bi	3067445.30	0.66	3318256.50	92.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001099

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\111SMPL.D\111SMPL.D#
Date Acquired: May 14 2018 09:27 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-017
Misc Info:
Vial Number: 3108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.5035	0.1007	ppb	7.03	100.	
11 B	190.9	38.18	ppb	5.92	1000.	
23 Na	209,350.	41,870.	ppb	2.25	200000.	
25 Mg	54,550.	10,910.	ppb	0.56	200000.	
27 Al	7,700.	1,540.	ppb	3.20	200000.	
28 Si	33,225.	6,645.	ppb	2.58	#VALUE!	
29 Si	35,390.	7,078.	ppb	0.35	10000.	
39 K	19,440.	3,888.	ppb	1.56	200000.	
43 Ca	383,550.	76,710.	ppb	2.08	#VALUE!	
44 Ca	365,400.	73,080.	ppb	0.94	200000.	
51 V	24.735	4.947	ppb	3.35	1000.	
52 Cr	33.895	6.779	ppb	0.47	2000.	
53 Cr	62.4	12.48	ppb	3.51	#VALUE!	
55 Mn	1,426.	285.2	ppb	2.81	2000.	
56 Fe	15,930.	3,186.	ppb	0.91	#VALUE!	
57 Fe	16,160.	3,232.	ppb	0.69	100000.	
59 Co	3.9695	0.7939	ppb	3.52	1000.	
60 Ni	13.385	2.677	ppb	3.87	1000.	
63 Cu	25.255	5.051	ppb	2.20	#VALUE!	
65 Cu	17.485	3.497	ppb	2.56	2000.	
66 Zn	60.35	12.07	ppb	1.07	2000.	
68 Zn	64.65	12.93	ppb	4.28	#VALUE!	
75 As	29.36	5.872	ppb	2.64	1000.	
82 Se	2.385	0.477	ppb	38.03	1000.	
88 Sr	1,545.	309.	ppb	0.36	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	16.185	3.237	ppb	3.78	1000.	
107 Ag	0.0417	0.0083	ppb	46.74	100.	
109 Ag	0.0449	0.009	ppb	42.84	#VALUE!	
111 Cd	-0.1313	-0.0263	ppb	182.83	#VALUE!	
114 Cd	0.1494	0.0299	ppb	8.66	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.6405	0.3281	ppb	8.80	1000.	
120 Sn	1.569	0.3138	ppb	10.73	#VALUE!	
121 Sb	0.4128	0.0826	ppb	15.76	#VALUE!	
123 Sb	0.4299	0.086	ppb	4.77	1000.	
135 Ba	198.55	39.71	ppb	1.41	2000.	
137 Ba	198.95	39.79	ppb	2.17	#VALUE!	
182 W	0.3648	0.073	ppb	7.61	1000.	
203 Tl	0.1118	0.0224	ppb	31.67	1000.	
205 Tl	0.1015	0.0203	ppb	13.48	#VALUE!	
208 Pb	12.94	2.588	ppb	0.99	2000.	
232 Th	6.06	1.212	ppb	1.32	1000.	
238 U	3.906	0.7812	ppb	0.81	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2738996.30	2.20	4492941.00	61.0	69.5 - 120	IS Fai
45 Sc	2295861.80	1.56	3094960.50	74.2	69.5 - 120	
72 Ge	475625.13	0.56	631723.63	75.3	69.5 - 120	
159 Tb	5570014.50	1.44	6220065.50	89.5	69.5 - 120	
209 Bi	3066523.50	1.05	3318256.50	92.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\112SMPL.D\112SMPL.D#
Date Acquired: May 14 2018 09:31 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-018
Misc Info:
Vial Number: 3109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0058	0.0012	ppb	74.50	100.	
11 B	185.1	37.02	ppb	7.07	1000.	
23 Na	225,100.	45,020.	ppb	3.36	200000.	
25 Mg	55,150.	11,030.	ppb	0.22	200000.	
27 Al	8.735	1.747	ppb	6.93	200000.	
28 Si	16,660.	3,332.	ppb	2.75	#VALUE!	
29 Si	16,450.	3,290.	ppb	1.37	10000.	
39 K	17,695.	3,539.	ppb	1.76	200000.	
43 Ca	368,550.	73,710.	ppb	0.53	#VALUE!	
44 Ca	355,900.	71,180.	ppb	0.18	200000.	
51 V	-0.3855	-0.0771	ppb	108.46	1000.	
52 Cr	1.769	0.3538	ppb	21.83	2000.	
53 Cr	41.825	8.365	ppb	14.47	#VALUE!	
55 Mn	1,322.5	264.5	ppb	3.28	2000.	
56 Fe	2,023.	404.6	ppb	1.63	#VALUE!	
57 Fe	2,210.5	442.1	ppb	3.24	100000.	
59 Co	0.4202	0.084	ppb	18.78	1000.	
60 Ni	1.2205	0.2441	ppb	15.34	1000.	
63 Cu	9.655	1.931	ppb	1.90	#VALUE!	
65 Cu	1.0855	0.2171	ppb	5.56	2000.	
66 Zn	13.265	2.653	ppb	3.47	2000.	
68 Zn	13.29	2.658	ppb	3.45	#VALUE!	
75 As	21.65	4.33	ppb	2.44	1000.	
82 Se	2.1935	0.4387	ppb	34.22	1000.	
88 Sr	1,546.	309.2	ppb	0.80	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.185	2.437	ppb	2.86	1000.	
107 Ag	0.0044	0.0009	ppb	174.78	100.	
109 Ag	-0.0004	-0.0001	ppb	421.90	#VALUE!	
111 Cd	-0.3109	-0.0622	ppb	25.65	#VALUE!	
114 Cd	0.0112	0.0022	ppb	101.48	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.2755	0.2551	ppb	8.00	1000.	
120 Sn	1.3015	0.2603	ppb	6.04	#VALUE!	
121 Sb	0.1872	0.0374	ppb	2.70	#VALUE!	
123 Sb	0.1911	0.0382	ppb	25.62	1000.	
135 Ba	30.05	6.01	ppb	2.46	2000.	
137 Ba	30.63	6.126	ppb	2.27	#VALUE!	
182 W	0.2333	0.0467	ppb	4.77	1000.	
203 Tl	0.0102	0.002	ppb	381.16	1000.	
205 Tl	-0.0132	-0.0026	ppb	323.34	#VALUE!	
208 Pb	0.0504	0.0101	ppb	169.64	2000.	
232 Th	0.0902	0.018	ppb	19.64	1000.	
238 U	2.7535	0.5507	ppb	1.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2861321.50	2.19	4492941.00	63.7	69.5 - 120	IS Fai
45 Sc	2308340.50	0.74	3094960.50	74.6	69.5 - 120	
72 Ge	472902.38	0.58	631723.63	74.9	69.5 - 120	
159 Tb	5543571.50	0.63	6220065.50	89.1	69.5 - 120	
209 Bi	3037423.00	1.55	3318256.50	91.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001101

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\113SMPL.D\113SMPL.D#
Date Acquired: May 14 2018 09:36 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 3110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0007	0.0007	ppb	295.98	100.	
11 B	2.672	2.672	ppb	4.26	1000.	
23 Na	15.99	15.99	ppb	3.98	200000.	
25 Mg	4.985	4.985	ppb	8.15	200000.	
27 Al	2.911	2.911	ppb	2.48	200000.	
28 Si	56.38	56.38	ppb	14.83	#VALUE!	
29 Si	8.835	8.835	ppb	76.40	10000.	
39 K	3.143	3.143	ppb	91.54	200000.	
43 Ca	10.09	10.09	ppb	11.11	#VALUE!	
44 Ca	15.27	15.27	ppb	14.45	200000.	
51 V	-0.0981	-0.0981	ppb	66.92	1000.	
52 Cr	0.0124	0.0124	ppb	219.95	2000.	
53 Cr	0.3402	0.3402	ppb	96.09	#VALUE!	
55 Mn	0.1256	0.1256	ppb	5.99	2000.	
56 Fe	0.2315	0.2315	ppb	355.38	#VALUE!	
57 Fe	5.182	5.182	ppb	16.91	100000.	
59 Co	0.0091	0.0091	ppb	91.43	1000.	
60 Ni	0.0266	0.0266	ppb	18.62	1000.	
63 Cu	0.1714	0.1714	ppb	6.14	#VALUE!	
65 Cu	0.2093	0.2093	ppb	12.50	2000.	
66 Zn	0.2832	0.2832	ppb	23.57	2000.	
68 Zn	0.3136	0.3136	ppb	28.78	#VALUE!	
75 As	0.0414	0.0414	ppb	255.56	1000.	
82 Se	0.0033	0.0033	ppb	1410.50	1000.	
88 Sr	0.0218	0.0218	ppb	29.15	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.3179	0.3179	ppb	7.82	1000.	
107 Ag	0.0005	0.0005	ppb	65.16	100.	
109 Ag	0.0022	0.0022	ppb	31.31	#VALUE!	
111 Cd	-0.0358	-0.0358	ppb	40.46	#VALUE!	
114 Cd	-0.003	-0.003	ppb	100.17	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0485	0.0485	ppb	25.07	1000.	
120 Sn	0.0387	0.0387	ppb	18.21	#VALUE!	
121 Sb	0.0029	0.0029	ppb	140.66	#VALUE!	
123 Sb	0.0009	0.0009	ppb	495.37	1000.	
135 Ba	0.0804	0.0804	ppb	22.48	2000.	
137 Ba	0.0646	0.0646	ppb	12.62	#VALUE!	
182 W	0.0042	0.0042	ppb	33.57	1000.	
203 Tl	-0.0041	-0.0041	ppb	278.88	1000.	
205 Tl	-0.005	-0.005	ppb	69.89	#VALUE!	
208 Pb	0.2903	0.2903	ppb	7.34	2000.	
232 Th	0.0018	0.0018	ppb	50.75	1000.	
238 U	0.0004	0.0004	ppb	138.67	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2962880.00	2.41	4492941.00	65.9	69.5 - 120	IS Fai
45 Sc	2380699.30	2.94	3094960.50	76.9	69.5 - 120	
72 Ge	492739.19	0.84	631723.63	78.0	69.5 - 120	
159 Tb	5681238.00	0.96	6220065.50	91.3	69.5 - 120	
209 Bi	3324629.80	0.53	3318256.50	100.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001102

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\114_CCV.D\114_CCV.D#
Date Acquired: May 14 2018 09:40 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.99	ppb	1.77	25	95.96	
11 B	23.91	ppb	4.04	25	95.64	
23 Na	4,447.	ppb	4.88	5,000	88.94	Fail
25 Mg	4,663.	ppb	1.81	5,000	93.26	
27 Al	469.4	ppb	0.91	500	93.88	
28 Si	532.4	ppb	3.96	500	106.48	
29 Si	471.2	ppb	5.98	500	94.24	
39 K	4,803.	ppb	0.64	5,000	96.06	
43 Ca	4,869.	ppb	3.69	5,000	97.38	
44 Ca	5,035.	ppb	4.04	5,000	100.7	
51 V	24.57	ppb	1.10	25	98.28	
52 Cr	24.5	ppb	1.70	25	98	
53 Cr	24.09	ppb	3.01	25	96.36	
55 Mn	24.53	ppb	1.70	25	98.12	
56 Fe	4,890.	ppb	1.65	5,000	97.8	
57 Fe	5,023.	ppb	1.86	5,000	100.46	
59 Co	24.31	ppb	0.55	25	97.24	
60 Ni	23.97	ppb	2.09	25	95.88	
63 Cu	23.81	ppb	2.73	25	95.24	
65 Cu	24.54	ppb	2.15	25	98.16	
66 Zn	25.03	ppb	2.06	25	100.12	
68 Zn	24.64	ppb	1.22	25	98.56	
75 As	24.63	ppb	1.20	25	98.52	
82 Se	25.43	ppb	3.18	25	101.72	
88 Sr	25.49	ppb	1.62	25	101.96	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.76	ppb	2.19	25	103.04	
107 Ag	26.04	ppb	1.32	25	104.16	
109 Ag	26.31	ppb	1.06	25	105.24	
111 Cd	26.38	ppb	1.39	25	105.52	
114 Cd	26.24	ppb	1.50	25	104.96	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	22.9	ppb	3.44	25	91.6	
120 Sn	22.88	ppb	2.74	25	91.52	
121 Sb	23.55	ppb	2.61	25	94.2	
123 Sb	23.62	ppb	3.01	25	94.48	
135 Ba	24.17	ppb	3.27	25	96.68	
137 Ba	23.97	ppb	4.10	25	95.88	
182 W	25.4	ppb	3.51	25	101.6	
203 Tl	24.53	ppb	2.91	25	98.12	
205 Tl	24.59	ppb	2.47	25	98.36	
208 Pb	24.99	ppb	2.26	25	99.96	
232 Th	25.22	ppb	3.29	25	100.88	
238 U	26.52	ppb	3.02	25	106.08	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2975111.50	0.77	4492941.00	66.2	80 - 120.4	ISFail
45 Sc	2326776.50	1.98	3094960.50	75.2	80 - 120.4	ISFail
72 Ge	480648.19	1.28	631723.63	76.1	80 - 120.4	ISFail
159 Tb	5598800.50	2.73	6220065.50	90.0	80 - 120.4	
209 Bi	3198996.50	2.23	3318256.50	96.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\115_CCB.D\115_CCB.D#
Date Acquired: May 14 2018 09:44 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0017	ppb	266.14	1.00	
11 B	2.329	ppb	5.50	1.00	
23 Na	3.414	ppb	9.49	1.00	
25 Mg	0.1114	ppb	81.74	1.00	
27 Al	0.1035	ppb	66.22	1.00	
28 Si	46.81	ppb	7.58	1.00	
29 Si	-1.526	ppb	430.21	1.00	
39 K	-0.539	ppb	780.15	1.00	
43 Ca	0.5856	ppb	327.36	1.00	
44 Ca	0.5789	ppb	217.83	1.00	
51 V	-0.1327	ppb	86.89	1.00	
52 Cr	0.0123	ppb	148.73	1.00	
53 Cr	-0.7921	ppb	40.07	1.00	
55 Mn	0.0249	ppb	30.00	1.00	
56 Fe	-4.969	ppb	50.92	1.00	
57 Fe	2.461	ppb	27.01	1.00	
59 Co	0.0025	ppb	183.40	1.00	
60 Ni	0.	ppb	47872.00	1.00	
63 Cu	0.0117	ppb	72.34	1.00	
65 Cu	0.0109	ppb	80.17	1.00	
66 Zn	0.0412	ppb	57.31	1.00	
68 Zn	0.1187	ppb	62.32	1.00	
75 As	-0.0984	ppb	16.67	1.00	
82 Se	0.0406	ppb	388.67	1.00	
88 Sr	0.0029	ppb	106.73	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0325	ppb	35.28	1.00	
107 Ag	0.0046	ppb	50.15	1.00	
109 Ag	0.0043	ppb	80.09	1.00	
111 Cd	-0.0468	ppb	24.02	1.00	
114 Cd	-0.0009	ppb	209.91	1.00	
115 In	--------	---	--------	---	
118 Sn	0.057	ppb	9.38	1.00	
120 Sn	0.0707	ppb	55.22	1.00	
121 Sb	0.008	ppb	19.92	1.00	
123 Sb	0.0085	ppb	16.52	1.00	
135 Ba	0.0083	ppb	82.71	1.00	
137 Ba	-0.0008	ppb	322.87	1.00	
182 W	0.0404	ppb	36.73	1.00	
203 Tl	0.0019	ppb	395.46	1.00	
205 Tl	-0.0015	ppb	284.52	1.00	
208 Pb	0.0819	ppb	13.78	1.00	
232 Th	0.0555	ppb	3.94	1.00	
238 U	0.0032	ppb	36.48	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3031881.50	2.82	4492941.00	67.5	79.5 - 120	ISFail
45 Sc	2391291.50	1.64	3094960.50	77.3	79.5 - 120	ISFail
72 Ge	484841.84	0.55	631723.63	76.7	79.5 - 120	ISFail
159 Tb	5564623.50	0.87	6220065.50	89.5	79.5 - 120	
209 Bi	3272420.50	0.26	3318256.50	98.6	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\116SMPL.D\116SMPL.D#
Date Acquired: May 14 2018 09:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE08IMS2
Misc Info:
Vial Number: 3111
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0035	0.0007	ppb	89.88	100.	
11 B	8.765	1.753	ppb	6.04	1000.	
23 Na	41.795	8.359	ppb	6.98	200000.	
25 Mg	14.335	2.867	ppb	6.43	200000.	
27 Al	5.125	1.025	ppb	3.41	200000.	
28 Si	259.95	51.99	ppb	16.84	#VALUE!	
29 Si	108.15	21.63	ppb	41.98	10000.	
39 K	56.95	11.39	ppb	46.81	200000.	
43 Ca	9.385	1.877	ppb	70.59	#VALUE!	
44 Ca	48.72	9.744	ppb	11.09	200000.	
51 V	-0.2095	-0.0419	ppb	85.77	1000.	
52 Cr	2.322	0.4644	ppb	21.73	2000.	
53 Cr	29.2	5.84	ppb	9.12	#VALUE!	
55 Mn	0.4251	0.085	ppb	15.08	2000.	
56 Fe	37.815	7.563	ppb	53.26	#VALUE!	
57 Fe	19.015	3.803	ppb	45.28	100000.	
59 Co	0.0202	0.004	ppb	74.38	1000.	
60 Ni	0.3601	0.072	ppb	10.68	1000.	
63 Cu	0.5275	0.1055	ppb	9.34	#VALUE!	
65 Cu	0.493	0.0986	ppb	33.23	2000.	
66 Zn	0.938	0.1876	ppb	19.07	2000.	
68 Zn	1.025	0.205	ppb	20.86	#VALUE!	
75 As	0.4203	0.0841	ppb	37.74	1000.	
82 Se	-0.1936	-0.0387	ppb	435.18	1000.	
88 Sr	0.2079	0.0416	ppb	13.06	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1076	0.0215	ppb	14.56	1000.	
107 Ag	0.0176	0.0035	ppb	29.27	100.	
109 Ag	0.0007	0.0001	ppb	1278.60	#VALUE!	
111 Cd	-0.2004	-0.0401	ppb	79.74	#VALUE!	
114 Cd	-0.0867	-0.0173	ppb	54.65	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	41.57	8.314	ppb	2.73	1000.	
120 Sn	41.395	8.279	ppb	0.75	#VALUE!	
121 Sb	0.0313	0.0063	ppb	133.47	#VALUE!	
123 Sb	0.0277	0.0055	ppb	81.05	1000.	
135 Ba	0.1776	0.0355	ppb	60.88	2000.	
137 Ba	0.1411	0.0282	ppb	21.01	#VALUE!	
182 W	0.0671	0.0134	ppb	50.45	1000.	
203 Tl	-0.012	-0.0024	ppb	66.13	1000.	
205 Tl	-0.0483	-0.0097	ppb	55.66	#VALUE!	
208 Pb	0.178	0.0356	ppb	40.24	2000.	
232 Th	0.3155	0.0631	ppb	9.22	1000.	
238 U	0.0013	0.0003	ppb	138.02	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2953606.50	5.40	4492941.00	65.7	69.5 - 120	IS Fai
45 Sc	2256055.50	3.85	3094960.50	72.9	69.5 - 120	
72 Ge	469523.59	1.75	631723.63	74.3	69.5 - 120	
159 Tb	5446766.00	2.23	6220065.50	87.6	69.5 - 120	
209 Bi	3174551.00	2.05	3318256.50	95.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001105

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\117SMPL.D\117SMPL.D#
Date Acquired: May 14 2018 09:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE08IMS2
Misc Info:
Vial Number: 3112
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	45.505	9.101	ppb	4.04	100.	
11 B	460.55	92.11	ppb	2.64	1000.	
23 Na	6,980.	1,396.	ppb	0.95	200000.	
25 Mg	4,541.	908.2	ppb	3.11	200000.	
27 Al	1,919.	383.8	ppb	4.50	200000.	
28 Si	1,215.	243.	ppb	6.72	#VALUE!	
29 Si	1,048.	209.6	ppb	8.38	10000.	
39 K	9,850.	1,970.	ppb	2.60	200000.	
43 Ca	2,779.	555.8	ppb	6.04	#VALUE!	
44 Ca	2,470.5	494.1	ppb	2.46	200000.	
51 V	496.5	99.3	ppb	1.10	1000.	
52 Cr	192.25	38.45	ppb	0.15	2000.	
53 Cr	227.	45.4	ppb	0.56	#VALUE!	
55 Mn	489.8	97.96	ppb	0.71	2000.	
56 Fe	1,029.5	205.9	ppb	2.15	#VALUE!	
57 Fe	1,003.5	200.7	ppb	0.69	100000.	
59 Co	485.8	97.16	ppb	1.95	1000.	
60 Ni	465.35	93.07	ppb	1.30	1000.	
63 Cu	234.95	46.99	ppb	0.75	#VALUE!	
65 Cu	240.4	48.08	ppb	1.00	2000.	
66 Zn	468.8	93.76	ppb	0.69	2000.	
68 Zn	517.5	103.5	ppb	0.98	#VALUE!	
75 As	96.85	19.37	ppb	1.69	1000.	
82 Se	92.95	18.59	ppb	2.09	1000.	
88 Sr	508.	101.6	ppb	1.01	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.7	20.34	ppb	0.66	1000.	
107 Ag	51.8	10.36	ppb	0.22	100.	
109 Ag	52.15	10.43	ppb	1.22	#VALUE!	
111 Cd	255.	51.	ppb	0.92	#VALUE!	
114 Cd	253.25	50.65	ppb	0.91	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	494.55	98.91	ppb	1.51	1000.	
120 Sn	499.15	99.83	ppb	1.56	#VALUE!	
121 Sb	93.05	18.61	ppb	1.70	#VALUE!	
123 Sb	94.7	18.94	ppb	2.62	1000.	
135 Ba	1,915.5	383.1	ppb	1.08	2000.	
137 Ba	1,900.	380.	ppb	1.74	#VALUE!	
182 W	105.2	21.04	ppb	0.11	1000.	
203 Tl	99.8	19.96	ppb	0.79	1000.	
205 Tl	99.9	19.98	ppb	1.07	#VALUE!	
208 Pb	101.05	20.21	ppb	0.79	2000.	
232 Th	104.05	20.81	ppb	1.25	1000.	
238 U	108.4	21.68	ppb	0.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2957434.80	2.49	4492941.00	65.8	69.5 - 120	IS Fai
45 Sc	2234648.80	2.80	3094960.50	72.2	69.5 - 120	
72 Ge	473249.78	0.42	631723.63	74.9	69.5 - 120	
159 Tb	5449637.00	0.93	6220065.50	87.6	69.5 - 120	
209 Bi	3160926.00	1.44	3318256.50	95.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001106

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\118SMPL.D\118SMPL.D#
Date Acquired: May 14 2018 09:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-024
Misc Info:
Vial Number: 3201
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.37	1.274	ppb	5.90	100.	
11 B	130.	26.	ppb	5.04	1000.	
23 Na	4,748.	949.6	ppb	5.01	200000.	
25 Mg	79,450.	15,890.	ppb	2.06	200000.	
27 Al	126,100.	25,220.	ppb	2.63	200000.	
28 Si	2,532.5	506.5	ppb	3.39	#VALUE!	
29 Si	2,236.5	447.3	ppb	0.86	10000.	
39 K	33,655.	6,731.	ppb	0.36	200000.	
43 Ca	915,500.	183,100.	ppb	1.22	#VALUE!	
44 Ca	888,000.	177,600.	ppb	0.33	200000.	
51 V	262.2	52.44	ppb	1.28	1000.	
52 Cr	124.1	24.82	ppb	1.68	2000.	
53 Cr	139.2	27.84	ppb	1.84	#VALUE!	
55 Mn	2,897.5	579.5	ppb	1.72	2000.	
56 Fe	124,150.	24,830.	ppb	1.92	#VALUE!	
57 Fe	122,650.	24,530.	ppb	1.64	100000.	
59 Co	38.09	7.618	ppb	2.17	1000.	
60 Ni	88.5	17.7	ppb	0.70	1000.	
63 Cu	69.65	13.93	ppb	0.96	#VALUE!	
65 Cu	72.45	14.49	ppb	1.50	2000.	
66 Zn	311.35	62.27	ppb	2.28	2000.	
68 Zn	391.6	78.32	ppb	0.48	#VALUE!	
75 As	33.67	6.734	ppb	2.15	1000.	
82 Se	5.06	1.012	ppb	17.93	1000.	
88 Sr	2,426.	485.2	ppb	1.87	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.49	0.698	ppb	4.06	1000.	
107 Ag	0.7015	0.1403	ppb	3.43	100.	
109 Ag	0.4993	0.0999	ppb	9.16	#VALUE!	
111 Cd	3.2105	0.6421	ppb	3.88	#VALUE!	
114 Cd	0.9615	0.1923	ppb	6.23	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.715	9.143	ppb	1.59	1000.	
120 Sn	45.3	9.06	ppb	0.73	#VALUE!	
121 Sb	1.095	0.219	ppb	6.07	#VALUE!	
123 Sb	1.0845	0.2169	ppb	9.38	1000.	
135 Ba	2,843.5	568.7	ppb	1.29	2000.	
137 Ba	2,844.	568.8	ppb	0.84	#VALUE!	
182 W	0.6325	0.1265	ppb	3.77	1000.	
203 Tl	2.5435	0.5087	ppb	2.57	1000.	
205 Tl	2.525	0.505	ppb	1.66	#VALUE!	
208 Pb	88.75	17.75	ppb	0.26	2000.	
232 Th	65.35	13.07	ppb	0.77	1000.	
238 U	13.21	2.642	ppb	0.61	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2679675.50	6.67	4492941.00	59.6	69.5 - 120	IS Fai
45 Sc	2234235.80	0.61	3094960.50	72.2	69.5 - 120	
72 Ge	449727.56	0.51	631723.63	71.2	69.5 - 120	
159 Tb	5459986.00	0.41	6220065.50	87.8	69.5 - 120	
209 Bi	3018003.50	1.42	3318256.50	91.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001107

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\119SMPL.D\119SMPL.D#
Date Acquired: May 14 2018 10:01 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-024L
Misc Info:
Vial Number: 3202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.1425	0.2457	ppb	4.71	100.	
11 B	170.125	6.805	ppb	4.70	1000.	
23 Na	5,297.5	211.9	ppb	4.63	200000.	
25 Mg	86,000.	3,440.	ppb	1.61	200000.	
27 Al	126,675.	5,067.	ppb	3.32	200000.	
28 Si	3,360.	134.4	ppb	6.70	#VALUE!	
29 Si	1,804.25	72.17	ppb	12.21	10000.	
39 K	34,200.	1,368.	ppb	1.11	200000.	
43 Ca	923,750.	36,950.	ppb	1.61	#VALUE!	
44 Ca	916,000.	36,640.	ppb	0.53	200000.	
51 V	255.5	10.22	ppb	2.92	1000.	
52 Cr	125.275	5.011	ppb	1.62	2000.	
53 Cr	110.925	4.437	ppb	4.45	#VALUE!	
55 Mn	3,030.	121.2	ppb	1.19	2000.	
56 Fe	126,200.	5,048.	ppb	1.94	#VALUE!	
57 Fe	129,550.	5,182.	ppb	2.03	100000.	
59 Co	39.425	1.577	ppb	2.71	1000.	
60 Ni	93.925	3.757	ppb	2.31	1000.	
63 Cu	75.575	3.023	ppb	1.31	#VALUE!	
65 Cu	76.65	3.066	ppb	1.02	2000.	
66 Zn	349.75	13.99	ppb	3.03	2000.	
68 Zn	435.5	17.42	ppb	2.70	#VALUE!	
75 As	35.95	1.438	ppb	3.39	1000.	
82 Se	7.0725	0.2829	ppb	28.05	1000.	
88 Sr	2,515.	100.6	ppb	1.17	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.51	0.1404	ppb	8.87	1000.	
107 Ag	0.745	0.0298	ppb	13.62	100.	
109 Ag	0.478	0.0191	ppb	11.45	#VALUE!	
111 Cd	1.8788	0.0752	ppb	52.63	#VALUE!	
114 Cd	1.0973	0.0439	ppb	17.98	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.9	1.916	ppb	1.52	1000.	
120 Sn	47.625	1.905	ppb	2.11	#VALUE!	
121 Sb	1.2273	0.0491	ppb	6.39	#VALUE!	
123 Sb	1.1713	0.0469	ppb	23.14	1000.	
135 Ba	2,877.5	115.1	ppb	1.18	2000.	
137 Ba	2,885.	115.4	ppb	1.48	#VALUE!	
182 W	0.7633	0.0305	ppb	2.03	1000.	
203 Tl	2.4083	0.0963	ppb	11.77	1000.	
205 Tl	2.204	0.0882	ppb	7.64	#VALUE!	
208 Pb	88.75	3.55	ppb	1.50	2000.	
232 Th	61.125	2.445	ppb	1.40	1000.	
238 U	12.425	0.497	ppb	1.44	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2923081.50	2.10	4492941.00	65.1	69.5 - 120	IS Fai
45 Sc	2295543.30	1.98	3094960.50	74.2	69.5 - 120	
72 Ge	466331.09	0.58	631723.63	73.8	69.5 - 120	
159 Tb	5565533.00	0.91	6220065.50	89.5	69.5 - 120	
209 Bi	3218805.30	1.00	3318256.50	97.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\120SMPL.D\120SMPL.D#
Date Acquired: May 14 2018 10:05 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-024A
Misc Info:
Vial Number: 3203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	16.08	3.216	ppb	2.53	100.	
11 B	319.35	63.87	ppb	5.11	1000.	
23 Na	14,200.	2,840.	ppb	2.25	200000.	
25 Mg	80,100.	16,020.	ppb	2.77	200000.	
27 Al	126,050.	25,210.	ppb	4.55	200000.	
28 Si	7,435.	1,487.	ppb	1.90	#VALUE!	
29 Si	7,070.	1,414.	ppb	3.45	10000.	
39 K	42,930.	8,586.	ppb	0.70	200000.	
43 Ca	900,500.	180,100.	ppb	2.61	#VALUE!	
44 Ca	889,500.	177,900.	ppb	1.33	200000.	
51 V	316.	63.2	ppb	2.16	1000.	
52 Cr	176.75	35.35	ppb	1.10	2000.	
53 Cr	193.95	38.79	ppb	0.39	#VALUE!	
55 Mn	2,885.5	577.1	ppb	1.57	2000.	
56 Fe	123,950.	24,790.	ppb	0.23	#VALUE!	
57 Fe	121,500.	24,300.	ppb	1.67	100000.	
59 Co	49.135	9.827	ppb	1.61	1000.	
60 Ni	107.8	21.56	ppb	2.12	1000.	
63 Cu	99.9	19.98	ppb	2.14	#VALUE!	
65 Cu	104.4	20.88	ppb	1.69	2000.	
66 Zn	409.9	81.98	ppb	1.54	2000.	
68 Zn	483.95	96.79	ppb	1.25	#VALUE!	
75 As	87.8	17.56	ppb	1.60	1000.	
82 Se	58.35	11.67	ppb	1.74	1000.	
88 Sr	2,444.	488.8	ppb	0.93	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	63.05	12.61	ppb	1.03	1000.	
107 Ag	12.	2.4	ppb	1.18	100.	
109 Ag	12.13	2.426	ppb	2.13	#VALUE!	
111 Cd	14.545	2.909	ppb	1.21	#VALUE!	
114 Cd	12.39	2.478	ppb	0.93	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	95.45	19.09	ppb	1.56	1000.	
120 Sn	96.8	19.36	ppb	1.56	#VALUE!	
121 Sb	11.54	2.308	ppb	2.66	#VALUE!	
123 Sb	11.405	2.281	ppb	2.94	1000.	
135 Ba	2,863.	572.6	ppb	1.86	2000.	
137 Ba	2,856.	571.2	ppb	1.21	#VALUE!	
182 W	61.3	12.26	ppb	1.04	1000.	
203 Tl	14.245	2.849	ppb	1.32	1000.	
205 Tl	14.285	2.857	ppb	0.16	#VALUE!	
208 Pb	100.05	20.01	ppb	0.72	2000.	
232 Th	78.2	15.64	ppb	0.98	1000.	
238 U	26.145	5.229	ppb	0.43	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2853926.80	2.39	4492941.00	63.5	69.5 - 120	IS Fai
45 Sc	2307148.80	2.69	3094960.50	74.5	69.5 - 120	
72 Ge	457660.75	0.67	631723.63	72.4	69.5 - 120	
159 Tb	5445450.50	1.45	6220065.50	87.5	69.5 - 120	
209 Bi	2982670.00	1.16	3318256.50	89.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001109

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\121SMPL.D\121SMPL.D#
Date Acquired: May 14 2018 10:09 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-024S
Misc Info:
Vial Number: 3204
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	49.9	9.98	ppb	5.13	100.	
11 B	586.	117.2	ppb	2.77	1000.	
23 Na	12,025.	2,405.	ppb	2.04	200000.	
25 Mg	93,100.	18,620.	ppb	3.44	200000.	
27 Al	155,050.	31,010.	ppb	4.07	200000.	
28 Si	3,733.	746.6	ppb	2.46	#VALUE!	
29 Si	3,477.5	695.5	ppb	3.03	10000.	
39 K	47,505.	9,501.	ppb	0.99	200000.	
43 Ca	1,011,500.	202,300.	ppb	2.17	#VALUE!	
44 Ca	994,000.	198,800.	ppb	1.49	200000.	
51 V	847.	169.4	ppb	0.95	1000.	
52 Cr	338.75	67.75	ppb	1.13	2000.	
53 Cr	364.75	72.95	ppb	1.07	#VALUE!	
55 Mn	3,312.	662.4	ppb	1.44	2000.	
56 Fe	137,100.	27,420.	ppb	1.54	#VALUE!	
57 Fe	133,850.	26,770.	ppb	1.11	100000.	
59 Co	522.5	104.5	ppb	1.56	1000.	
60 Ni	541.	108.2	ppb	1.21	1000.	
63 Cu	296.9	59.38	ppb	1.17	#VALUE!	
65 Cu	305.6	61.12	ppb	1.59	2000.	
66 Zn	766.	153.2	ppb	1.48	2000.	
68 Zn	962.5	192.5	ppb	1.25	#VALUE!	
75 As	133.05	26.61	ppb	0.74	1000.	
82 Se	93.2	18.64	ppb	1.30	1000.	
88 Sr	3,374.	674.8	ppb	0.96	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	102.95	20.59	ppb	0.75	1000.	
107 Ag	50.75	10.15	ppb	1.89	100.	
109 Ag	50.5	10.1	ppb	1.27	#VALUE!	
111 Cd	250.35	50.07	ppb	0.45	#VALUE!	
114 Cd	246.8	49.36	ppb	0.69	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	486.1	97.22	ppb	0.96	1000.	
120 Sn	490.75	98.15	ppb	0.98	#VALUE!	
121 Sb	29.54	5.908	ppb	1.64	#VALUE!	
123 Sb	29.375	5.875	ppb	0.43	1000.	
135 Ba	6,585.	1,317.	ppb	0.33	2000.	
137 Ba	6,425.	1,285.	ppb	0.47	#VALUE!	
182 W	53.65	10.73	ppb	0.62	1000.	
203 Tl	105.6	21.12	ppb	1.21	1000.	
205 Tl	106.2	21.24	ppb	0.75	#VALUE!	
208 Pb	203.35	40.67	ppb	0.33	2000.	
232 Th	182.8	36.56	ppb	0.91	1000.	
238 U	131.4	26.28	ppb	0.93	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2863784.00	4.74	4492941.00	63.7	69.5 - 120	IS Fai
45 Sc	2261753.00	2.47	3094960.50	73.1	69.5 - 120	
72 Ge	452315.25	0.79	631723.63	71.6	69.5 - 120	
159 Tb	5427753.00	0.71	6220065.50	87.3	69.5 - 120	
209 Bi	2933763.50	1.31	3318256.50	88.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001110

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\122SMPL.D\122SMPL.D#
Date Acquired: May 14 2018 10:13 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-024P
Misc Info:
Vial Number: 3205
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	48.685	9.737	ppb	3.75	100.	
11 B	570.5	114.1	ppb	5.16	1000.	
23 Na	14,150.	2,830.	ppb	2.41	200000.	
25 Mg	88,600.	17,720.	ppb	2.61	200000.	
27 Al	162,100.	32,420.	ppb	3.07	200000.	
28 Si	3,275.	655.	ppb	5.97	#VALUE!	
29 Si	2,964.	592.8	ppb	2.56	10000.	
39 K	48,945.	9,789.	ppb	4.18	200000.	
43 Ca	880,000.	176,000.	ppb	2.43	#VALUE!	
44 Ca	848,500.	169,700.	ppb	2.54	200000.	
51 V	823.5	164.7	ppb	1.40	1000.	
52 Cr	339.2	67.84	ppb	1.03	2000.	
53 Cr	354.45	70.89	ppb	1.98	#VALUE!	
55 Mn	3,352.	670.4	ppb	1.12	2000.	
56 Fe	142,950.	28,590.	ppb	1.67	#VALUE!	
57 Fe	142,100.	28,420.	ppb	0.98	100000.	
59 Co	526.	105.2	ppb	0.21	1000.	
60 Ni	533.5	106.7	ppb	0.77	1000.	
63 Cu	292.25	58.45	ppb	1.17	#VALUE!	
65 Cu	303.65	60.73	ppb	0.99	2000.	
66 Zn	776.5	155.3	ppb	1.09	2000.	
68 Zn	1,122.	224.4	ppb	0.66	#VALUE!	
75 As	129.8	25.96	ppb	0.79	1000.	
82 Se	91.	18.2	ppb	0.93	1000.	
88 Sr	3,017.5	603.5	ppb	2.02	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	97.4	19.48	ppb	1.32	1000.	
107 Ag	48.495	9.699	ppb	2.04	100.	
109 Ag	48.84	9.768	ppb	1.83	#VALUE!	
111 Cd	244.	48.8	ppb	0.97	#VALUE!	
114 Cd	241.55	48.31	ppb	1.31	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	456.95	91.39	ppb	1.01	1000.	
120 Sn	465.1	93.02	ppb	0.76	#VALUE!	
121 Sb	27.515	5.503	ppb	0.45	#VALUE!	
123 Sb	27.67	5.534	ppb	2.58	1000.	
135 Ba	10,605.	2,121.	ppb	1.56	2000.	>LDR
137 Ba	10,385.	2,077.	ppb	1.37	#VALUE!	
182 W	47.135	9.427	ppb	2.33	1000.	
203 Tl	100.45	20.09	ppb	1.17	1000.	
205 Tl	101.1	20.22	ppb	1.35	#VALUE!	
208 Pb	200.95	40.19	ppb	1.27	2000.	
232 Th	179.6	35.92	ppb	1.07	1000.	
238 U	123.5	24.7	ppb	1.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2895739.80	5.28	4492941.00	64.5	69.5 - 120	IS Fai
45 Sc	2275151.00	1.80	3094960.50	73.5	69.5 - 120	
72 Ge	455179.22	1.10	631723.63	72.1	69.5 - 120	
159 Tb	5463439.00	0.83	6220065.50	87.8	69.5 - 120	
209 Bi	2936934.30	1.13	3318256.50	88.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\123SMPL.D\123SMPL.D#
Date Acquired: May 14 2018 10:18 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-041
Misc Info:
Vial Number: 3206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.59	1.718	ppb	8.46	100.	
11 B	168.	33.6	ppb	5.88	1000.	
23 Na	7,580.	1,516.	ppb	1.81	200000.	
25 Mg	94,600.	18,920.	ppb	1.25	200000.	
27 Al	194,950.	38,990.	ppb	1.60	200000.	
28 Si	3,280.5	656.1	ppb	2.86	#VALUE!	
29 Si	2,945.	589.	ppb	4.60	10000.	
39 K	50,650.	10,130.	ppb	1.52	200000.	
43 Ca	688,000.	137,600.	ppb	0.89	#VALUE!	
44 Ca	673,000.	134,600.	ppb	1.39	200000.	
51 V	420.2	84.04	ppb	2.50	1000.	
52 Cr	194.4	38.88	ppb	1.70	2000.	
53 Cr	208.7	41.74	ppb	1.47	#VALUE!	
55 Mn	5,755.	1,151.	ppb	2.34	2000.	
56 Fe	193,150.	38,630.	ppb	2.24	#VALUE!	
57 Fe	189,000.	37,800.	ppb	2.69	100000.	
59 Co	115.9	23.18	ppb	0.92	1000.	
60 Ni	165.35	33.07	ppb	0.70	1000.	
63 Cu	105.05	21.01	ppb	1.02	#VALUE!	
65 Cu	109.	21.8	ppb	1.17	2000.	
66 Zn	456.3	91.26	ppb	0.24	2000.	
68 Zn	524.	104.8	ppb	2.96	#VALUE!	
75 As	58.55	11.71	ppb	2.79	1000.	
82 Se	5.175	1.035	ppb	22.68	1000.	
88 Sr	1,705.	341.	ppb	0.85	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.015	1.403	ppb	3.10	1000.	
107 Ag	0.88	0.176	ppb	6.05	100.	
109 Ag	0.6995	0.1399	ppb	5.70	#VALUE!	
111 Cd	4.7405	0.9481	ppb	3.76	#VALUE!	
114 Cd	2.2635	0.4527	ppb	5.03	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.48	9.496	ppb	1.54	1000.	
120 Sn	48.35	9.67	ppb	1.41	#VALUE!	
121 Sb	1.663	0.3326	ppb	6.73	#VALUE!	
123 Sb	1.6625	0.3325	ppb	4.52	1000.	
135 Ba	2,761.	552.2	ppb	0.95	2000.	
137 Ba	2,766.	553.2	ppb	0.89	#VALUE!	
182 W	0.862	0.1724	ppb	8.56	1000.	
203 Tl	3.714	0.7428	ppb	3.19	1000.	
205 Tl	3.652	0.7304	ppb	1.20	#VALUE!	
208 Pb	157.1	31.42	ppb	0.92	2000.	
232 Th	99.	19.8	ppb	0.98	1000.	
238 U	17.725	3.545	ppb	1.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2925910.50	6.91	4492941.00	65.1	69.5 - 120	IS Fai
45 Sc	2272499.00	2.25	3094960.50	73.4	69.5 - 120	
72 Ge	455013.69	1.18	631723.63	72.0	69.5 - 120	
159 Tb	5429275.00	0.83	6220065.50	87.3	69.5 - 120	
209 Bi	2970837.80	1.38	3318256.50	89.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001112

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\124SMPL.D\124SMPL.D#
Date Acquired: May 14 2018 10:22 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-042
Misc Info:
Vial Number: 3207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.675	1.335	ppb	2.59	100.	
11 B	137.75	27.55	ppb	0.70	1000.	
23 Na	2,821.5	564.3	ppb	2.64	200000.	
25 Mg	84,650.	16,930.	ppb	2.11	200000.	
27 Al	147,950.	29,590.	ppb	2.20	200000.	
28 Si	3,226.5	645.3	ppb	4.99	#VALUE!	
29 Si	2,768.	553.6	ppb	3.61	10000.	
39 K	42,865.	8,573.	ppb	2.21	200000.	
43 Ca	735,500.	147,100.	ppb	2.73	#VALUE!	
44 Ca	723,500.	144,700.	ppb	2.10	200000.	
51 V	387.65	77.53	ppb	1.07	1000.	
52 Cr	154.35	30.87	ppb	0.25	2000.	
53 Cr	163.45	32.69	ppb	1.87	#VALUE!	
55 Mn	4,730.	946.	ppb	0.78	2000.	
56 Fe	148,200.	29,640.	ppb	0.47	#VALUE!	
57 Fe	145,000.	29,000.	ppb	0.20	100000.	
59 Co	153.65	30.73	ppb	0.59	1000.	
60 Ni	162.95	32.59	ppb	0.54	1000.	
63 Cu	102.85	20.57	ppb	0.42	#VALUE!	
65 Cu	107.	21.4	ppb	1.09	2000.	
66 Zn	379.3	75.86	ppb	0.91	2000.	
68 Zn	451.3	90.26	ppb	1.12	#VALUE!	
75 As	88.2	17.64	ppb	1.66	1000.	
82 Se	4.856	0.9712	ppb	37.73	1000.	
88 Sr	2,353.5	470.7	ppb	1.49	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.895	1.179	ppb	4.61	1000.	
107 Ag	0.6885	0.1377	ppb	3.37	100.	
109 Ag	0.5665	0.1133	ppb	4.52	#VALUE!	
111 Cd	3.2	0.64	ppb	5.46	#VALUE!	
114 Cd	1.4085	0.2817	ppb	3.49	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.48	8.896	ppb	1.34	1000.	
120 Sn	45.02	9.004	ppb	0.48	#VALUE!	
121 Sb	1.614	0.3228	ppb	2.40	#VALUE!	
123 Sb	1.6205	0.3241	ppb	5.09	1000.	
135 Ba	2,678.	535.6	ppb	0.36	2000.	
137 Ba	2,678.	535.6	ppb	0.87	#VALUE!	
182 W	1.2	0.24	ppb	1.76	1000.	
203 Tl	2.836	0.5672	ppb	1.59	1000.	
205 Tl	2.899	0.5798	ppb	2.28	#VALUE!	
208 Pb	120.6	24.12	ppb	0.53	2000.	
232 Th	75.95	15.19	ppb	0.26	1000.	
238 U	14.82	2.964	ppb	1.21	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2962298.80	0.53	4492941.00	65.9	69.5 - 120	IS Fai
45 Sc	2326251.50	0.57	3094960.50	75.2	69.5 - 120	
72 Ge	458472.75	0.10	631723.63	72.6	69.5 - 120	
159 Tb	5431963.00	0.90	6220065.50	87.3	69.5 - 120	
209 Bi	2995761.50	0.88	3318256.50	90.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001113

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\125SMPL.D\125SMPL.D#
Date Acquired: May 14 2018 10:26 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 3208
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0008	0.0008	ppb	187.65	100.	
11 B	3.01	3.01	ppb	5.74	1000.	
23 Na	19.99	19.99	ppb	6.84	200000.	
25 Mg	1.969	1.969	ppb	36.81	200000.	
27 Al	2.43	2.43	ppb	40.73	200000.	
28 Si	73.04	73.04	ppb	18.95	#VALUE!	
29 Si	-10.39	-10.39	ppb	156.88	10000.	
39 K	0.3708	0.3708	ppb	662.35	200000.	
43 Ca	5.933	5.933	ppb	158.42	#VALUE!	
44 Ca	8.347	8.347	ppb	56.69	200000.	
51 V	-0.0785	-0.0785	ppb	95.37	1000.	
52 Cr	-0.0221	-0.0221	ppb	148.58	2000.	
53 Cr	-2.588	-2.588	ppb	6.62	#VALUE!	
55 Mn	0.0912	0.0912	ppb	47.74	2000.	
56 Fe	8.403	8.403	ppb	18.08	#VALUE!	
57 Fe	7.196	7.196	ppb	34.85	100000.	
59 Co	0.0097	0.0097	ppb	107.38	1000.	
60 Ni	0.0338	0.0338	ppb	35.20	1000.	
63 Cu	0.2355	0.2355	ppb	9.43	#VALUE!	
65 Cu	0.2368	0.2368	ppb	3.56	2000.	
66 Zn	0.4774	0.4774	ppb	13.55	2000.	
68 Zn	0.4693	0.4693	ppb	14.50	#VALUE!	
75 As	0.0828	0.0828	ppb	211.16	1000.	
82 Se	0.2635	0.2635	ppb	25.64	1000.	
88 Sr	0.0266	0.0266	ppb	81.00	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.011	0.011	ppb	29.47	1000.	
107 Ag	0.0004	0.0004	ppb	749.36	100.	
109 Ag	0.0013	0.0013	ppb	152.94	#VALUE!	
111 Cd	-0.1169	-0.1169	ppb	14.14	#VALUE!	
114 Cd	0.0015	0.0015	ppb	97.55	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0615	0.0615	ppb	18.98	1000.	
120 Sn	0.0281	0.0281	ppb	45.99	#VALUE!	
121 Sb	0.0005	0.0005	ppb	472.41	#VALUE!	
123 Sb	-0.0001	-0.0001	ppb	648.16	1000.	
135 Ba	0.1684	0.1684	ppb	13.73	2000.	
137 Ba	0.162	0.162	ppb	12.33	#VALUE!	
182 W	0.0056	0.0056	ppb	25.45	1000.	
203 Tl	0.0039	0.0039	ppb	172.17	1000.	
205 Tl	-0.0011	-0.0011	ppb	308.23	#VALUE!	
208 Pb	0.2842	0.2842	ppb	1.19	2000.	
232 Th	0.0119	0.0119	ppb	21.38	1000.	
238 U	0.0008	0.0008	ppb	32.65	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3009887.30	0.21	4492941.00	67.0	69.5 - 120	IS Fai
45 Sc	2314055.80	4.78	3094960.50	74.8	69.5 - 120	
72 Ge	480699.34	1.80	631723.63	76.1	69.5 - 120	
159 Tb	5459927.50	1.35	6220065.50	87.8	69.5 - 120	
209 Bi	3149687.00	2.37	3318256.50	94.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001114

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\126_CCV.D\126_CCV.D#
Date Acquired: May 14 2018 10:31 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.49	ppb	5.71	25	89.96	
11 B	23.17	ppb	8.12	25	92.68	
23 Na	4,250.	ppb	4.96	5,000	85	Fail
25 Mg	4,466.	ppb	3.05	5,000	89.32	Fail
27 Al	455.9	ppb	1.04	500	91.18	
28 Si	514.2	ppb	1.65	500	102.84	
29 Si	430.4	ppb	1.55	500	86.08	Fail
39 K	4,736.	ppb	3.69	5,000	94.72	
43 Ca	4,878.	ppb	4.02	5,000	97.56	
44 Ca	5,011.	ppb	2.95	5,000	100.22	
51 V	24.39	ppb	1.68	25	97.56	
52 Cr	24.59	ppb	1.10	25	98.36	
53 Cr	22.26	ppb	1.57	25	89.04	
55 Mn	24.27	ppb	0.89	25	97.08	
56 Fe	4,838.	ppb	0.69	5,000	96.76	
57 Fe	4,988.	ppb	1.95	5,000	99.76	
59 Co	24.44	ppb	2.38	25	97.76	
60 Ni	23.75	ppb	0.39	25	95	
63 Cu	24.08	ppb	2.55	25	96.32	
65 Cu	24.51	ppb	0.72	25	98.04	
66 Zn	24.9	ppb	1.32	25	99.6	
68 Zn	24.63	ppb	1.04	25	98.52	
75 As	24.7	ppb	2.39	25	98.8	
82 Se	25.59	ppb	0.83	25	102.36	
88 Sr	25.43	ppb	1.63	25	101.72	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.8	ppb	0.98	25	103.2	
107 Ag	25.97	ppb	1.10	25	103.88	
109 Ag	26.24	ppb	1.78	25	104.96	
111 Cd	26.07	ppb	0.83	25	104.28	
114 Cd	26.18	ppb	0.53	25	104.72	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	22.75	ppb	2.43	25	91	
120 Sn	22.97	ppb	2.25	25	91.88	
121 Sb	23.56	ppb	2.18	25	94.24	
123 Sb	23.84	ppb	2.18	25	95.36	
135 Ba	24.07	ppb	1.59	25	96.28	
137 Ba	24.09	ppb	2.40	25	96.36	
182 W	24.88	ppb	1.90	25	99.52	
203 Tl	24.29	ppb	3.06	25	97.16	
205 Tl	24.39	ppb	1.96	25	97.56	
208 Pb	24.49	ppb	1.86	25	97.96	
232 Th	24.89	ppb	2.34	25	99.56	
238 U	25.81	ppb	2.01	25	103.24	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3046256.50	4.01	4492941.00	67.8	80 - 120.4	ISFail
45 Sc	2366580.50	1.38	3094960.50	76.5	80 - 120.4	ISFail
72 Ge	480820.69	0.70	631723.63	76.1	80 - 120.4	ISFail
159 Tb	5593808.00	0.93	6220065.50	89.9	80 - 120.4	
209 Bi	3157561.80	1.23	3318256.50	95.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

3 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\127_CCB.D\127_CCB.D#
Date Acquired: May 14 2018 10:35 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0011	ppb	159.03	1.00	
11 B	2.575	ppb	6.89	1.00	
23 Na	1.032	ppb	27.53	1.00	
25 Mg	0.1165	ppb	15.26	1.00	
27 Al	0.0628	ppb	61.38	1.00	
28 Si	58.71	ppb	15.59	1.00	
29 Si	-18.85	ppb	58.67	1.00	
39 K	-2.77	ppb	80.14	1.00	
43 Ca	-3.89	ppb	35.32	1.00	
44 Ca	0.0125	ppb	5115.80	1.00	
51 V	-0.1418	ppb	33.54	1.00	
52 Cr	0.0038	ppb	240.99	1.00	
53 Cr	-1.704	ppb	9.03	1.00	
55 Mn	0.0188	ppb	49.24	1.00	
56 Fe	1.794	ppb	288.91	1.00	
57 Fe	2.313	ppb	98.70	1.00	
59 Co	0.0007	ppb	446.31	1.00	
60 Ni	0.0062	ppb	71.18	1.00	
63 Cu	0.0338	ppb	14.12	1.00	
65 Cu	0.0092	ppb	102.70	1.00	
66 Zn	0.0143	ppb	477.39	1.00	
68 Zn	0.0202	ppb	128.87	1.00	
75 As	-0.0963	ppb	152.89	1.00	
82 Se	0.1445	ppb	64.80	1.00	
88 Sr	-0.0002	ppb	495.07	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0303	ppb	23.64	1.00	
107 Ag	0.0063	ppb	13.12	1.00	
109 Ag	0.0033	ppb	50.00	1.00	
111 Cd	-0.0803	ppb	5.69	1.00	
114 Cd	-0.0004	ppb	900.49	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0512	ppb	14.58	1.00	
120 Sn	0.0516	ppb	23.37	1.00	
121 Sb	0.0089	ppb	27.67	1.00	
123 Sb	0.009	ppb	23.16	1.00	
135 Ba	0.0084	ppb	70.64	1.00	
137 Ba	0.0037	ppb	245.98	1.00	
182 W	0.0449	ppb	17.20	1.00	
203 Tl	0.0067	ppb	35.16	1.00	
205 Tl	-0.0015	ppb	133.48	1.00	
208 Pb	0.0962	ppb	5.95	1.00	
232 Th	0.0476	ppb	4.99	1.00	
238 U	0.0034	ppb	23.34	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3018464.30	2.38	4492941.00	67.2	79.5 - 120	ISFail
45 Sc	2358158.00	2.20	3094960.50	76.2	79.5 - 120	ISFail
72 Ge	479924.88	0.68	631723.63	76.0	79.5 - 120	ISFail
159 Tb	5514657.00	0.78	6220065.50	88.7	79.5 - 120	
209 Bi	3191219.00	1.26	3318256.50	96.2	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\128SMPL.D\128SMPL.D#
Date Acquired: May 14 2018 10:39 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-043
Misc Info:
Vial Number: 3209
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.475	1.295	ppb	2.93	100.	
11 B	135.8	27.16	ppb	5.81	1000.	
23 Na	2,925.	585.	ppb	4.57	200000.	
25 Mg	78,350.	15,670.	ppb	0.46	200000.	
27 Al	149,300.	29,860.	ppb	2.08	200000.	
28 Si	3,052.5	610.5	ppb	2.38	#VALUE!	
29 Si	2,758.5	551.7	ppb	2.00	10000.	
39 K	42,415.	8,483.	ppb	2.17	200000.	
43 Ca	772,000.	154,400.	ppb	2.47	#VALUE!	
44 Ca	744,500.	148,900.	ppb	1.46	200000.	
51 V	354.6	70.92	ppb	1.26	1000.	
52 Cr	140.95	28.19	ppb	0.58	2000.	
53 Cr	152.95	30.59	ppb	2.82	#VALUE!	
55 Mn	3,859.5	771.9	ppb	1.57	2000.	
56 Fe	171,750.	34,350.	ppb	0.88	#VALUE!	
57 Fe	168,000.	33,600.	ppb	0.36	100000.	
59 Co	56.55	11.31	ppb	1.35	1000.	
60 Ni	114.3	22.86	ppb	1.71	1000.	
63 Cu	86.25	17.25	ppb	0.12	#VALUE!	
65 Cu	89.6	17.92	ppb	1.22	2000.	
66 Zn	337.9	67.58	ppb	1.40	2000.	
68 Zn	410.25	82.05	ppb	2.33	#VALUE!	
75 As	91.65	18.33	ppb	0.41	1000.	
82 Se	4.7135	0.9427	ppb	26.19	1000.	
88 Sr	2,216.	443.2	ppb	0.70	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.57	1.714	ppb	1.20	1000.	
107 Ag	0.7285	0.1457	ppb	10.58	100.	
109 Ag	0.609	0.1218	ppb	7.17	#VALUE!	
111 Cd	3.0105	0.6021	ppb	3.70	#VALUE!	
114 Cd	0.911	0.1822	ppb	5.57	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.63	9.126	ppb	0.60	1000.	
120 Sn	46.47	9.294	ppb	1.64	#VALUE!	
121 Sb	1.3985	0.2797	ppb	8.93	#VALUE!	
123 Sb	1.411	0.2822	ppb	1.84	1000.	
135 Ba	2,646.5	529.3	ppb	1.17	2000.	
137 Ba	2,650.	530.	ppb	1.13	#VALUE!	
182 W	0.9805	0.1961	ppb	2.24	1000.	
203 Tl	2.613	0.5226	ppb	3.24	1000.	
205 Tl	2.565	0.513	ppb	2.99	#VALUE!	
208 Pb	99.95	19.99	ppb	0.88	2000.	
232 Th	72.35	14.47	ppb	1.85	1000.	
238 U	14.73	2.946	ppb	0.96	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2931820.50	6.50	4492941.00	65.3	69.5 - 120	IS Fai
45 Sc	2244741.00	0.24	3094960.50	72.5	69.5 - 120	
72 Ge	449398.50	0.14	631723.63	71.1	69.5 - 120	
159 Tb	5363989.00	1.19	6220065.50	86.2	69.5 - 120	
209 Bi	2943252.50	2.25	3318256.50	88.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001117

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\129SMPL.D\129SMPL.D#
Date Acquired: May 14 2018 10:43 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-044
Misc Info:
Vial Number: 3210
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.93	1.586	ppb	6.46	100.	
11 B	137.3	27.46	ppb	4.01	1000.	
23 Na	4,062.	812.4	ppb	4.21	200000.	
25 Mg	86,000.	17,200.	ppb	1.76	200000.	
27 Al	181,100.	36,220.	ppb	3.24	200000.	
28 Si	2,912.	582.4	ppb	3.05	#VALUE!	
29 Si	2,556.5	511.3	ppb	4.43	10000.	
39 K	44,090.	8,818.	ppb	1.16	200000.	
43 Ca	513,500.	102,700.	ppb	2.53	#VALUE!	
44 Ca	493,850.	98,770.	ppb	3.79	200000.	
51 V	361.7	72.34	ppb	0.85	1000.	
52 Cr	181.5	36.3	ppb	0.49	2000.	
53 Cr	193.	38.6	ppb	2.35	#VALUE!	
55 Mn	3,678.5	735.7	ppb	1.58	2000.	
56 Fe	189,550.	37,910.	ppb	0.04	#VALUE!	
57 Fe	183,650.	36,730.	ppb	1.40	100000.	
59 Co	57.9	11.58	ppb	2.08	1000.	
60 Ni	120.	24.	ppb	0.34	1000.	
63 Cu	99.35	19.87	ppb	1.06	#VALUE!	
65 Cu	102.85	20.57	ppb	1.15	2000.	
66 Zn	425.75	85.15	ppb	0.40	2000.	
68 Zn	472.65	94.53	ppb	3.36	#VALUE!	
75 As	21.645	4.329	ppb	5.87	1000.	
82 Se	4.284	0.8568	ppb	40.20	1000.	
88 Sr	1,333.5	266.7	ppb	1.65	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.776	0.7552	ppb	5.90	1000.	
107 Ag	0.844	0.1688	ppb	5.49	100.	
109 Ag	0.708	0.1416	ppb	3.08	#VALUE!	
111 Cd	2.941	0.5882	ppb	8.24	#VALUE!	
114 Cd	0.544	0.1088	ppb	27.85	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.7	9.34	ppb	0.83	1000.	
120 Sn	47.155	9.431	ppb	0.75	#VALUE!	
121 Sb	1.357	0.2714	ppb	5.38	#VALUE!	
123 Sb	1.479	0.2958	ppb	1.39	1000.	
135 Ba	2,056.5	411.3	ppb	0.80	2000.	
137 Ba	2,051.5	410.3	ppb	0.65	#VALUE!	
182 W	0.53	0.106	ppb	2.57	1000.	
203 Tl	3.0115	0.6023	ppb	2.61	1000.	
205 Tl	3.0065	0.6013	ppb	3.39	#VALUE!	
208 Pb	114.35	22.87	ppb	1.62	2000.	
232 Th	91.1	18.22	ppb	1.64	1000.	
238 U	12.91	2.582	ppb	2.09	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2970225.50	3.63	4492941.00	66.1	69.5 - 120	IS Fai
45 Sc	2297898.50	1.25	3094960.50	74.2	69.5 - 120	
72 Ge	457991.03	0.84	631723.63	72.5	69.5 - 120	
159 Tb	5438582.50	1.06	6220065.50	87.4	69.5 - 120	
209 Bi	3011828.30	1.13	3318256.50	90.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001118

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\130SMPL.D\130SMPL.D#
Date Acquired: May 14 2018 10:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-046
Misc Info:
Vial Number: 3211
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.415	1.483	ppb	5.19	100.	
11 B	148.2	29.64	ppb	2.04	1000.	
23 Na	7,575.	1,515.	ppb	2.49	200000.	
25 Mg	90,050.	18,010.	ppb	1.21	200000.	
27 Al	171,900.	34,380.	ppb	3.35	200000.	
28 Si	3,189.	637.8	ppb	1.18	#VALUE!	
29 Si	2,840.5	568.1	ppb	3.49	10000.	
39 K	46,405.	9,281.	ppb	0.90	200000.	
43 Ca	599,500.	119,900.	ppb	0.60	#VALUE!	
44 Ca	581,500.	116,300.	ppb	1.36	200000.	
51 V	367.95	73.59	ppb	0.54	1000.	
52 Cr	171.6	34.32	ppb	1.78	2000.	
53 Cr	184.9	36.98	ppb	1.10	#VALUE!	
55 Mn	3,999.	799.8	ppb	0.63	2000.	
56 Fe	165,400.	33,080.	ppb	1.45	#VALUE!	
57 Fe	160,150.	32,030.	ppb	1.37	100000.	
59 Co	70.7	14.14	ppb	2.34	1000.	
60 Ni	139.25	27.85	ppb	2.64	1000.	
63 Cu	101.25	20.25	ppb	2.00	#VALUE!	
65 Cu	103.6	20.72	ppb	2.75	2000.	
66 Zn	395.95	79.19	ppb	0.60	2000.	
68 Zn	461.8	92.36	ppb	2.52	#VALUE!	
75 As	56.15	11.23	ppb	0.63	1000.	
82 Se	3.4245	0.6849	ppb	14.26	1000.	
88 Sr	1,831.	366.2	ppb	1.22	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.74	1.548	ppb	4.01	1000.	
107 Ag	0.8155	0.1631	ppb	3.83	100.	
109 Ag	0.6225	0.1245	ppb	4.14	#VALUE!	
111 Cd	2.6015	0.5203	ppb	8.55	#VALUE!	
114 Cd	0.251	0.0502	ppb	69.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.435	9.487	ppb	0.73	1000.	
120 Sn	47.51	9.502	ppb	0.73	#VALUE!	
121 Sb	1.4615	0.2923	ppb	11.15	#VALUE!	
123 Sb	1.417	0.2834	ppb	5.56	1000.	
135 Ba	2,464.5	492.9	ppb	1.45	2000.	
137 Ba	2,469.	493.8	ppb	1.90	#VALUE!	
182 W	0.767	0.1534	ppb	2.72	1000.	
203 Tl	2.8835	0.5767	ppb	2.39	1000.	
205 Tl	3.01	0.602	ppb	5.58	#VALUE!	
208 Pb	122.65	24.53	ppb	1.05	2000.	
232 Th	83.25	16.65	ppb	1.31	1000.	
238 U	14.84	2.968	ppb	0.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2900100.00	5.88	4492941.00	64.5	69.5 - 120	IS Fai
45 Sc	2245934.80	1.74	3094960.50	72.6	69.5 - 120	
72 Ge	453727.91	0.56	631723.63	71.8	69.5 - 120	
159 Tb	5390436.50	1.19	6220065.50	86.7	69.5 - 120	
209 Bi	2972557.30	1.42	3318256.50	89.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001119

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\131SMPL.D\131SMPL.D#
Date Acquired: May 14 2018 10:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-047
Misc Info:
Vial Number: 3212
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.555	1.511	ppb	3.20	100.	
11 B	139.3	27.86	ppb	3.11	1000.	
23 Na	4,899.	979.8	ppb	5.89	200000.	
25 Mg	88,100.	17,620.	ppb	3.58	200000.	
27 Al	172,750.	34,550.	ppb	1.63	200000.	
28 Si	3,578.5	715.7	ppb	2.19	#VALUE!	
29 Si	3,150.5	630.1	ppb	1.52	10000.	
39 K	47,110.	9,422.	ppb	4.54	200000.	
43 Ca	640,000.	128,000.	ppb	3.54	#VALUE!	
44 Ca	619,000.	123,800.	ppb	4.74	200000.	
51 V	391.35	78.27	ppb	2.98	1000.	
52 Cr	170.4	34.08	ppb	3.14	2000.	
53 Cr	182.55	36.51	ppb	3.74	#VALUE!	
55 Mn	4,872.	974.4	ppb	2.23	2000.	
56 Fe	165,850.	33,170.	ppb	1.42	#VALUE!	
57 Fe	161,850.	32,370.	ppb	2.04	100000.	
59 Co	61.45	12.29	ppb	3.37	1000.	
60 Ni	145.35	29.07	ppb	3.42	1000.	
63 Cu	107.6	21.52	ppb	3.96	#VALUE!	
65 Cu	112.55	22.51	ppb	3.85	2000.	
66 Zn	417.45	83.49	ppb	3.92	2000.	
68 Zn	559.5	111.9	ppb	4.33	#VALUE!	
75 As	60.65	12.13	ppb	3.29	1000.	
82 Se	5.49	1.098	ppb	5.78	1000.	
88 Sr	2,138.	427.6	ppb	2.00	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.285	1.657	ppb	2.50	1000.	
107 Ag	0.85	0.17	ppb	2.99	100.	
109 Ag	0.683	0.1366	ppb	6.58	#VALUE!	
111 Cd	3.2565	0.6513	ppb	6.03	#VALUE!	
114 Cd	0.9815	0.1963	ppb	11.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.52	9.304	ppb	4.69	1000.	
120 Sn	47.63	9.526	ppb	3.70	#VALUE!	
121 Sb	1.7945	0.3589	ppb	5.62	#VALUE!	
123 Sb	1.8505	0.3701	ppb	2.26	1000.	
135 Ba	4,639.	927.8	ppb	3.40	2000.	
137 Ba	4,572.5	914.5	ppb	3.49	#VALUE!	
182 W	0.7665	0.1533	ppb	7.03	1000.	
203 Tl	3.412	0.6824	ppb	2.20	1000.	
205 Tl	3.328	0.6656	ppb	4.15	#VALUE!	
208 Pb	112.4	22.48	ppb	3.86	2000.	
232 Th	86.3	17.26	ppb	3.71	1000.	
238 U	15.835	3.167	ppb	3.41	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2961545.80	3.55	4492941.00	65.9	69.5 - 120	IS Fai
45 Sc	2239742.30	0.66	3094960.50	72.4	69.5 - 120	
72 Ge	450586.19	2.31	631723.63	71.3	69.5 - 120	
159 Tb	5332180.50	2.85	6220065.50	85.7	69.5 - 120	
209 Bi	2904780.30	3.71	3318256.50	87.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001120

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\132SMPL.D\132SMPL.D#
Date Acquired: May 14 2018 10:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 3301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0013	0.0013	ppb	34.35	100.	
11 B	2.098	2.098	ppb	10.18	1000.	
23 Na	7.494	7.494	ppb	8.59	200000.	
25 Mg	1.931	1.931	ppb	79.54	200000.	
27 Al	4.009	4.009	ppb	86.08	200000.	
28 Si	65.49	65.49	ppb	14.45	#VALUE!	
29 Si	-19.45	-19.45	ppb	44.37	10000.	
39 K	-1.635	-1.635	ppb	351.93	200000.	
43 Ca	67.84	67.84	ppb	22.88	#VALUE!	
44 Ca	74.76	74.76	ppb	18.94	200000.	
51 V	-0.1034	-0.1034	ppb	61.20	1000.	
52 Cr	-0.0503	-0.0503	ppb	30.73	2000.	
53 Cr	-2.986	-2.986	ppb	5.87	#VALUE!	
55 Mn	0.1033	0.1033	ppb	93.80	2000.	
56 Fe	8.602	8.602	ppb	111.37	#VALUE!	
57 Fe	9.271	9.271	ppb	49.65	100000.	
59 Co	0.0069	0.0069	ppb	104.32	1000.	
60 Ni	0.0264	0.0264	ppb	14.62	1000.	
63 Cu	0.2304	0.2304	ppb	4.06	#VALUE!	
65 Cu	0.2459	0.2459	ppb	12.13	2000.	
66 Zn	0.341	0.341	ppb	14.84	2000.	
68 Zn	0.2869	0.2869	ppb	34.93	#VALUE!	
75 As	-0.0019	-0.0019	ppb	4314.50	1000.	
82 Se	0.0016	0.0016	ppb	8766.10	1000.	
88 Sr	0.0671	0.0671	ppb	40.01	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0066	0.0066	ppb	23.90	1000.	
107 Ag	-0.0001	-0.0001	ppb	992.37	100.	
109 Ag	0.0021	0.0021	ppb	123.33	#VALUE!	
111 Cd	-0.134	-0.134	ppb	20.06	#VALUE!	
114 Cd	-0.0023	-0.0023	ppb	181.40	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0404	0.0404	ppb	9.79	1000.	
120 Sn	0.0171	0.0171	ppb	26.03	#VALUE!	
121 Sb	0.0009	0.0009	ppb	127.73	#VALUE!	
123 Sb	0.0002	0.0002	ppb	1162.30	1000.	
135 Ba	0.1533	0.1533	ppb	27.79	2000.	
137 Ba	0.1475	0.1475	ppb	54.56	#VALUE!	
182 W	0.0032	0.0032	ppb	77.25	1000.	
203 Tl	0.0046	0.0046	ppb	152.36	1000.	
205 Tl	-0.0023	-0.0023	ppb	186.16	#VALUE!	
208 Pb	0.2753	0.2753	ppb	13.79	2000.	
232 Th	0.01	0.01	ppb	31.04	1000.	
238 U	0.0009	0.0009	ppb	62.13	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3165552.50	1.55	4492941.00	70.5	69.5 - 120	
45 Sc	2382331.80	3.03	3094960.50	77.0	69.5 - 120	
72 Ge	494926.25	1.14	631723.63	78.3	69.5 - 120	
159 Tb	5665718.50	1.66	6220065.50	91.1	69.5 - 120	
209 Bi	3187316.80	1.66	3318256.50	96.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001121

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\133SMPL.D\133SMPL.D#
Date Acquired: May 14 2018 11:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE07IMW2
Misc Info:
Vial Number: 3302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0024	-0.0005	ppb	55.92	100.	
11 B	7.915	1.583	ppb	2.04	1000.	
23 Na	15.28	3.056	ppb	6.83	200000.	
25 Mg	9.145	1.829	ppb	11.92	200000.	
27 Al	10.	2.	ppb	1.71	200000.	
28 Si	282.25	56.45	ppb	3.66	#VALUE!	
29 Si	-34.43	-6.886	ppb	103.08	10000.	
39 K	-5.46	-1.092	ppb	213.00	200000.	
43 Ca	4.902	0.9804	ppb	540.80	#VALUE!	
44 Ca	11.005	2.201	ppb	25.87	200000.	
51 V	-0.5645	-0.1129	ppb	92.03	1000.	
52 Cr	1.2175	0.2435	ppb	54.09	2000.	
53 Cr	16.385	3.277	ppb	14.38	#VALUE!	
55 Mn	0.2617	0.0523	ppb	19.00	2000.	
56 Fe	40.885	8.177	ppb	40.59	#VALUE!	
57 Fe	20.455	4.091	ppb	37.64	100000.	
59 Co	0.0169	0.0034	ppb	47.89	1000.	
60 Ni	0.0866	0.0173	ppb	31.33	1000.	
63 Cu	0.344	0.0688	ppb	4.82	#VALUE!	
65 Cu	0.3477	0.0695	ppb	37.01	2000.	
66 Zn	0.1183	0.0237	ppb	282.63	2000.	
68 Zn	-0.0314	-0.0063	ppb	684.06	#VALUE!	
75 As	-0.9025	-0.1805	ppb	210.03	1000.	
82 Se	-0.0346	-0.0069	ppb	3170.40	1000.	
88 Sr	0.0458	0.0092	ppb	9.62	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0353	0.0071	ppb	28.19	1000.	
107 Ag	0.0098	0.002	ppb	100.67	100.	
109 Ag	0.0106	0.0021	ppb	153.56	#VALUE!	
111 Cd	-0.4855	-0.0971	ppb	22.32	#VALUE!	
114 Cd	-0.0339	-0.0068	ppb	19.94	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.081	0.2162	ppb	2.91	1000.	
120 Sn	1.094	0.2188	ppb	6.94	#VALUE!	
121 Sb	0.0431	0.0086	ppb	71.28	#VALUE!	
123 Sb	0.0165	0.0033	ppb	118.33	1000.	
135 Ba	0.0548	0.011	ppb	114.98	2000.	
137 Ba	0.0505	0.0101	ppb	83.71	#VALUE!	
182 W	0.0146	0.0029	ppb	88.92	1000.	
203 Tl	-0.0386	-0.0077	ppb	65.11	1000.	
205 Tl	-0.052	-0.0104	ppb	56.53	#VALUE!	
208 Pb	-0.0152	-0.003	ppb	468.77	2000.	
232 Th	0.0869	0.0174	ppb	42.50	1000.	
238 U	-0.001	-0.0002	ppb	62.65	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3094511.50	4.71	4492941.00	68.9	69.5 - 120	IS Fai
45 Sc	2319256.30	1.32	3094960.50	74.9	69.5 - 120	
72 Ge	481242.50	1.04	631723.63	76.2	69.5 - 120	
159 Tb	5567942.50	1.99	6220065.50	89.5	69.5 - 120	
209 Bi	3187150.80	1.29	3318256.50	96.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001122

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\134SMPL.D\134SMPL.D#
Date Acquired: May 14 2018 11:04 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE07IMW2
Misc Info:
Vial Number: 3303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	43.615	8.723	ppb	4.82	100.	
11 B	438.85	87.77	ppb	8.54	1000.	
23 Na	6,670.	1,334.	ppb	4.99	200000.	
25 Mg	4,467.5	893.5	ppb	2.67	200000.	
27 Al	1,935.	387.	ppb	1.16	200000.	
28 Si	1,227.	245.4	ppb	5.27	#VALUE!	
29 Si	870.	174.	ppb	5.19	10000.	
39 K	9,600.	1,920.	ppb	2.47	200000.	
43 Ca	2,750.	550.	ppb	1.59	#VALUE!	
44 Ca	2,469.	493.8	ppb	1.12	200000.	
51 V	532.	106.4	ppb	2.07	1000.	
52 Cr	203.	40.6	ppb	1.13	2000.	
53 Cr	218.9	43.78	ppb	1.98	#VALUE!	
55 Mn	515.5	103.1	ppb	0.78	2000.	
56 Fe	1,067.5	213.5	ppb	1.18	#VALUE!	
57 Fe	1,066.5	213.3	ppb	3.42	100000.	
59 Co	527.	105.4	ppb	1.10	1000.	
60 Ni	503.	100.6	ppb	1.75	1000.	
63 Cu	246.1	49.22	ppb	0.57	#VALUE!	
65 Cu	255.6	51.12	ppb	0.59	2000.	
66 Zn	503.5	100.7	ppb	0.54	2000.	
68 Zn	549.5	109.9	ppb	0.60	#VALUE!	
75 As	101.9	20.38	ppb	1.77	1000.	
82 Se	101.7	20.34	ppb	0.74	1000.	
88 Sr	540.	108.	ppb	1.51	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	108.8	21.76	ppb	0.12	1000.	
107 Ag	54.75	10.95	ppb	0.43	100.	
109 Ag	55.05	11.01	ppb	0.74	#VALUE!	
111 Cd	270.65	54.13	ppb	0.21	#VALUE!	
114 Cd	267.4	53.48	ppb	0.49	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	469.65	93.93	ppb	1.63	1000.	
120 Sn	473.3	94.66	ppb	0.95	#VALUE!	
121 Sb	96.2	19.24	ppb	1.67	#VALUE!	
123 Sb	97.4	19.48	ppb	1.87	1000.	
135 Ba	1,996.5	399.3	ppb	1.14	2000.	
137 Ba	1,978.	395.6	ppb	0.70	#VALUE!	
182 W	107.1	21.42	ppb	1.05	1000.	
203 Tl	103.45	20.69	ppb	2.20	1000.	
205 Tl	103.05	20.61	ppb	0.91	#VALUE!	
208 Pb	103.9	20.78	ppb	1.09	2000.	
232 Th	106.1	21.22	ppb	1.28	1000.	
238 U	110.6	22.12	ppb	0.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3180511.50	4.00	4492941.00	70.8	69.5 - 120	
45 Sc	2310263.80	0.84	3094960.50	74.6	69.5 - 120	
72 Ge	467382.00	0.20	631723.63	74.0	69.5 - 120	
159 Tb	5516389.50	1.27	6220065.50	88.7	69.5 - 120	
209 Bi	3161684.00	1.57	3318256.50	95.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001123

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\135SMPL.D\135SMPL.D#
Date Acquired: May 14 2018 11:09 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-002
Misc Info:
Vial Number: 3304
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.4277	0.0855	ppb	5.42	100.	
11 B	490.55	98.11	ppb	8.80	1000.	
23 Na	175,050.	35,010.	ppb	2.15	200000.	
25 Mg	38,165.	7,633.	ppb	1.57	200000.	
27 Al	6,845.	1,369.	ppb	3.29	200000.	
28 Si	30,505.	6,101.	ppb	1.88	#VALUE!	
29 Si	31,845.	6,369.	ppb	2.36	10000.	
39 K	16,265.	3,253.	ppb	3.05	200000.	
43 Ca	266,800.	53,360.	ppb	4.99	#VALUE!	
44 Ca	258,400.	51,680.	ppb	1.38	200000.	
51 V	19.31	3.862	ppb	2.37	1000.	
52 Cr	45.025	9.005	ppb	1.17	2000.	
53 Cr	60.7	12.14	ppb	5.04	#VALUE!	
55 Mn	1,189.5	237.9	ppb	0.91	2000.	
56 Fe	15,160.	3,032.	ppb	1.36	#VALUE!	
57 Fe	15,320.	3,064.	ppb	1.03	100000.	
59 Co	3.453	0.6906	ppb	1.34	1000.	
60 Ni	17.045	3.409	ppb	1.71	1000.	
63 Cu	39.085	7.817	ppb	0.38	#VALUE!	
65 Cu	33.27	6.654	ppb	1.03	2000.	
66 Zn	84.3	16.86	ppb	1.81	2000.	
68 Zn	88.95	17.79	ppb	3.43	#VALUE!	
75 As	23.8	4.76	ppb	5.91	1000.	
82 Se	1.2225	0.2445	ppb	82.13	1000.	
88 Sr	1,111.5	222.3	ppb	1.30	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	21.155	4.231	ppb	0.33	1000.	
107 Ag	0.0636	0.0127	ppb	22.86	100.	
109 Ag	0.0605	0.0121	ppb	17.04	#VALUE!	
111 Cd	0.1138	0.0228	ppb	43.20	#VALUE!	
114 Cd	0.55	0.11	ppb	9.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.6865	0.3373	ppb	2.48	1000.	
120 Sn	1.587	0.3174	ppb	7.60	#VALUE!	
121 Sb	0.563	0.1126	ppb	12.32	#VALUE!	
123 Sb	0.631	0.1262	ppb	11.01	1000.	
135 Ba	272.3	54.46	ppb	1.90	2000.	
137 Ba	270.55	54.11	ppb	1.03	#VALUE!	
182 W	0.4793	0.0959	ppb	10.16	1000.	
203 Tl	0.0989	0.0198	ppb	44.12	1000.	
205 Tl	0.1216	0.0243	ppb	4.24	#VALUE!	
208 Pb	27.785	5.557	ppb	0.87	2000.	
232 Th	10.335	2.067	ppb	1.01	1000.	
238 U	4.2795	0.8559	ppb	1.11	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3004264.80	7.33	4492941.00	66.9	69.5 - 120	IS Fai
45 Sc	2256310.50	1.41	3094960.50	72.9	69.5 - 120	
72 Ge	468200.97	1.15	631723.63	74.1	69.5 - 120	
159 Tb	5448454.00	0.47	6220065.50	87.6	69.5 - 120	
209 Bi	3043605.30	1.37	3318256.50	91.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001124

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\136SMPL.D\136SMPL.D#
Date Acquired: May 14 2018 11:13 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-003
Misc Info:
Vial Number: 3305
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0018	0.0004	ppb	208.39	100.	
11 B	460.3	92.06	ppb	5.32	1000.	
23 Na	156,750.	31,350.	ppb	2.65	200000.	
25 Mg	33,220.	6,644.	ppb	2.95	200000.	
27 Al	11.765	2.353	ppb	8.19	200000.	
28 Si	17,045.	3,409.	ppb	3.44	#VALUE!	
29 Si	17,005.	3,401.	ppb	2.19	10000.	
39 K	13,070.	2,614.	ppb	3.53	200000.	
43 Ca	206,150.	41,230.	ppb	2.80	#VALUE!	
44 Ca	206,600.	41,320.	ppb	1.85	200000.	
51 V	0.0628	0.0126	ppb	557.21	1000.	
52 Cr	2.288	0.4576	ppb	9.24	2000.	
53 Cr	36.51	7.302	ppb	15.86	#VALUE!	
55 Mn	788.5	157.7	ppb	1.03	2000.	
56 Fe	2,893.5	578.7	ppb	1.01	#VALUE!	
57 Fe	3,028.5	605.7	ppb	1.45	100000.	
59 Co	0.3496	0.0699	ppb	12.45	1000.	
60 Ni	5.015	1.003	ppb	5.01	1000.	
63 Cu	7.145	1.429	ppb	4.37	#VALUE!	
65 Cu	0.6565	0.1313	ppb	5.58	2000.	
66 Zn	15.66	3.132	ppb	2.35	2000.	
68 Zn	15.68	3.136	ppb	4.65	#VALUE!	
75 As	18.05	3.61	ppb	6.53	1000.	
82 Se	1.	0.2	ppb	110.80	1000.	
88 Sr	959.	191.8	ppb	0.77	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	13.69	2.738	ppb	2.65	1000.	
107 Ag	0.0017	0.0003	ppb	320.51	100.	
109 Ag	-0.0035	-0.0007	ppb	184.30	#VALUE!	
111 Cd	-0.533	-0.1066	ppb	17.20	#VALUE!	
114 Cd	-0.0387	-0.0077	ppb	19.03	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.2705	0.2541	ppb	5.86	1000.	
120 Sn	1.21	0.242	ppb	7.76	#VALUE!	
121 Sb	0.1337	0.0267	ppb	26.32	#VALUE!	
123 Sb	0.126	0.0252	ppb	17.22	1000.	
135 Ba	35.51	7.102	ppb	3.73	2000.	
137 Ba	35.765	7.153	ppb	1.95	#VALUE!	
182 W	0.3089	0.0618	ppb	5.57	1000.	
203 Tl	-0.0125	-0.0025	ppb	93.28	1000.	
205 Tl	-0.0294	-0.0059	ppb	19.08	#VALUE!	
208 Pb	0.0309	0.0062	ppb	57.08	2000.	
232 Th	0.1895	0.0379	ppb	12.02	1000.	
238 U	1.5425	0.3085	ppb	3.53	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3080451.50	3.65	4492941.00	68.6	69.5 - 120	IS Fai
45 Sc	2301078.80	1.70	3094960.50	74.3	69.5 - 120	
72 Ge	470338.66	0.50	631723.63	74.5	69.5 - 120	
159 Tb	5431976.00	0.18	6220065.50	87.3	69.5 - 120	
209 Bi	3084037.50	0.49	3318256.50	92.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001125

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\137SMPL.D\137SMPL.D#
Date Acquired: May 14 2018 11:17 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-004
Misc Info:
Vial Number: 3306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.5615	0.1123	ppb	7.98	100.	
11 B	222.7	44.54	ppb	1.09	1000.	
23 Na	274,300.	54,860.	ppb	3.47	200000.	
25 Mg	69,150.	13,830.	ppb	1.67	200000.	
27 Al	13,540.	2,708.	ppb	3.91	200000.	
28 Si	42,780.	8,556.	ppb	2.09	#VALUE!	
29 Si	45,360.	9,072.	ppb	3.28	10000.	
39 K	20,480.	4,096.	ppb	3.25	200000.	
43 Ca	375,700.	75,140.	ppb	4.03	#VALUE!	
44 Ca	365,200.	73,040.	ppb	2.77	200000.	
51 V	36.72	7.344	ppb	3.07	1000.	
52 Cr	58.05	11.61	ppb	4.66	2000.	
53 Cr	84.45	16.89	ppb	3.07	#VALUE!	
55 Mn	1,497.5	299.5	ppb	1.84	2000.	
56 Fe	24,415.	4,883.	ppb	2.92	#VALUE!	
57 Fe	24,935.	4,987.	ppb	2.31	100000.	
59 Co	7.5	1.5	ppb	4.72	1000.	
60 Ni	26.355	5.271	ppb	1.98	1000.	
63 Cu	41.065	8.213	ppb	1.34	#VALUE!	
65 Cu	32.035	6.407	ppb	2.58	2000.	
66 Zn	171.6	34.32	ppb	1.30	2000.	
68 Zn	175.35	35.07	ppb	2.32	#VALUE!	
75 As	10.945	2.189	ppb	9.52	1000.	
82 Se	1.982	0.3964	ppb	69.75	1000.	
88 Sr	1,741.5	348.3	ppb	1.56	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	25.67	5.134	ppb	1.12	1000.	
107 Ag	0.0836	0.0167	ppb	17.07	100.	
109 Ag	0.0493	0.0099	ppb	18.71	#VALUE!	
111 Cd	-0.4537	-0.0907	ppb	24.83	#VALUE!	
114 Cd	0.0606	0.0121	ppb	51.33	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.3515	0.4703	ppb	3.56	1000.	
120 Sn	2.3075	0.4615	ppb	2.68	#VALUE!	
121 Sb	0.556	0.1112	ppb	1.73	#VALUE!	
123 Sb	0.58	0.116	ppb	14.42	1000.	
135 Ba	261.05	52.21	ppb	3.64	2000.	
137 Ba	258.1	51.62	ppb	3.91	#VALUE!	
182 W	0.699	0.1398	ppb	7.70	1000.	
203 Tl	0.2153	0.0431	ppb	3.49	1000.	
205 Tl	0.1877	0.0375	ppb	5.50	#VALUE!	
208 Pb	23.9	4.78	ppb	3.92	2000.	
232 Th	13.07	2.614	ppb	2.51	1000.	
238 U	3.2905	0.6581	ppb	3.84	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2848300.50	1.57	4492941.00	63.4	69.5 - 120	IS Fai
45 Sc	2245314.30	1.70	3094960.50	72.5	69.5 - 120	
72 Ge	458691.50	1.02	631723.63	72.6	69.5 - 120	
159 Tb	5341076.00	2.68	6220065.50	85.9	69.5 - 120	
209 Bi	2962281.50	2.98	3318256.50	89.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4001126

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\138_CCV.D\138_CCV.D#
Date Acquired: May 14 2018 11:21 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.19	ppb	5.70	25	92.76	
11 B	24.58	ppb	8.83	25	98.32	
23 Na	4,486.	ppb	7.87	5,000	89.72	
25 Mg	4,626.	ppb	6.13	5,000	92.52	
27 Al	468.6	ppb	1.82	500	93.72	
28 Si	519.3	ppb	4.30	500	103.86	
29 Si	444.9	ppb	7.37	500	88.98	Fail
39 K	4,809.	ppb	4.67	5,000	96.18	
43 Ca	4,738.	ppb	6.31	5,000	94.76	
44 Ca	4,966.	ppb	3.20	5,000	99.32	
51 V	24.85	ppb	1.50	25	99.4	
52 Cr	24.38	ppb	2.22	25	97.52	
53 Cr	22.74	ppb	3.76	25	90.96	
55 Mn	24.7	ppb	2.70	25	98.8	
56 Fe	4,906.	ppb	2.58	5,000	98.12	
57 Fe	4,954.	ppb	2.43	5,000	99.08	
59 Co	24.33	ppb	2.50	25	97.32	
60 Ni	23.91	ppb	1.20	25	95.64	
63 Cu	24.16	ppb	1.28	25	96.64	
65 Cu	24.43	ppb	1.06	25	97.72	
66 Zn	24.84	ppb	1.45	25	99.36	
68 Zn	24.52	ppb	2.70	25	98.08	
75 As	24.96	ppb	1.62	25	99.84	
82 Se	25.43	ppb	2.04	25	101.72	
88 Sr	25.57	ppb	1.31	25	102.28	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.55	ppb	0.31	25	102.2	
107 Ag	25.98	ppb	0.66	25	103.92	
109 Ag	26.08	ppb	1.15	25	104.32	
111 Cd	26.09	ppb	1.59	25	104.36	
114 Cd	26.08	ppb	0.39	25	104.32	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	22.62	ppb	2.23	25	90.48	
120 Sn	22.68	ppb	1.37	25	90.72	
121 Sb	23.6	ppb	0.89	25	94.4	
123 Sb	23.94	ppb	1.83	25	95.76	
135 Ba	24.18	ppb	0.81	25	96.72	
137 Ba	24.13	ppb	1.92	25	96.52	
182 W	25.06	ppb	0.91	25	100.24	
203 Tl	24.14	ppb	2.86	25	96.56	
205 Tl	24.24	ppb	2.54	25	96.96	
208 Pb	24.47	ppb	2.30	25	97.88	
232 Th	24.95	ppb	3.36	25	99.8	
238 U	26.12	ppb	2.54	25	104.48	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3121493.50	5.51	4492941.00	69.5	80 - 120.4	ISFail
45 Sc	2385537.80	4.09	3094960.50	77.1	80 - 120.4	ISFail
72 Ge	481299.88	0.67	631723.63	76.2	80 - 120.4	ISFail
159 Tb	5565435.00	0.78	6220065.50	89.5	80 - 120.4	
209 Bi	3181131.50	1.69	3318256.50	95.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\139_CCB.D\139_CCB.D#
Date Acquired: May 14 2018 11:25 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0013	ppb	20.80	1.00	
11 B	3.02	ppb	10.80	1.00	
23 Na	1.946	ppb	4.78	1.00	
25 Mg	0.0889	ppb	136.69	1.00	
27 Al	0.1412	ppb	60.98	1.00	
28 Si	59.66	ppb	2.89	1.00	
29 Si	1.653	ppb	282.76	1.00	
39 K	0.9617	ppb	304.25	1.00	
43 Ca	-2.141	ppb	194.44	1.00	
44 Ca	0.8499	ppb	66.73	1.00	
51 V	-0.0864	ppb	23.35	1.00	
52 Cr	-0.0194	ppb	66.80	1.00	
53 Cr	-1.617	ppb	14.68	1.00	
55 Mn	0.0179	ppb	19.41	1.00	
56 Fe	-0.5958	ppb	340.72	1.00	
57 Fe	2.548	ppb	59.81	1.00	
59 Co	0.003	ppb	184.84	1.00	
60 Ni	0.0064	ppb	192.96	1.00	
63 Cu	0.0103	ppb	29.72	1.00	
65 Cu	0.0206	ppb	148.08	1.00	
66 Zn	0.0319	ppb	226.38	1.00	
68 Zn	0.078	ppb	52.18	1.00	
75 As	-0.1282	ppb	65.65	1.00	
82 Se	-0.2249	ppb	69.28	1.00	
88 Sr	0.0032	ppb	154.63	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0265	ppb	40.85	1.00	
107 Ag	0.0012	ppb	268.96	1.00	
109 Ag	0.0014	ppb	66.14	1.00	
111 Cd	-0.0406	ppb	19.13	1.00	
114 Cd	0.	ppb	15775.00	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0935	ppb	38.72	1.00	
120 Sn	0.0527	ppb	19.72	1.00	
121 Sb	0.0111	ppb	34.93	1.00	
123 Sb	0.0095	ppb	53.23	1.00	
135 Ba	0.0107	ppb	2.11	1.00	
137 Ba	0.0028	ppb	130.27	1.00	
182 W	0.0454	ppb	35.58	1.00	
203 Tl	0.0003	ppb	3211.50	1.00	
205 Tl	0.0001	ppb	7898.70	1.00	
208 Pb	0.0977	ppb	2.80	1.00	
232 Th	0.0537	ppb	2.72	1.00	
238 U	0.0028	ppb	22.43	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3012196.80	2.57	4492941.00	67.0	79.5 - 120	ISFail
45 Sc	2281771.50	0.62	3094960.50	73.7	79.5 - 120	ISFail
72 Ge	468168.78	0.83	631723.63	74.1	79.5 - 120	ISFail
159 Tb	5447280.50	0.96	6220065.50	87.6	79.5 - 120	
209 Bi	3186365.30	1.43	3318256.50	96.0	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500)

ANALYST: JS

ANALYSIS DATE: 05/15/2018

REVIEWED
MD 5/16/18
KATAHDIN ANALYTICAL
METALS SECTION

FILE NAME: JLE15C

METHOD: ICP-MS
- ☑ 200.8
- ☐ 6020
- ☑ DOD

The pHs of all samples that were tested by direct analysis in this analytical run were checked just prior to analysis and confirmed
to be <2. The time of preservation of these samples was checked in the "Measured Turbidity and Preservation of Incoming Samples" logbook to verify that they had been preserved at least 16 hours prior to analysis. These verifications were performed by
_____ (initals) on _____ (date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17761	05/14/2018	05/14/2019	0 ug/L
Standard 1	MW17738	05/11/2018	06/21/2018	Varies by Element
ICV	MW17701	04/24/2018	07/24/2018	Varies by Element
PQL	MW17755	05/10/2018	07/13/2018	Varies by Element
LRS1	MW17735	05/04/2018	08/04/2018	Varies by Element
LRS2	MW17704	04/25/2018	07/25/2018	Varies by Element
ICSA	MW17763	05/14/2018	05/20/2018	Varies by Element
ICSAB	MW17764	05/14/2018	05/20/2018	Varies by Element
CCV	MW17759	05/11/2018	06/21/2018	Varies by Element
Internal Standard	MW17762	05/14/2018	08/142018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

MD 5/16/18

Dilutions: Some samples were diluted based on history or due to interfering element concentrations. Dilution preparations are as follows:

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17761 (pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL of MW17761 (pipet M18)

Post Spike: 0.08mL of MW17698 (pipet M16) into 5x diln. of sample (pipet M18)

(Unless otherwise specified)

INSTRUMENT RUNLOG

Instrument: AGILENT 7500

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
6020 TUNE	1	JLE15C	5/15/2018	6:36:00 14:18	JS
200.8 TUNE	1	JLE15C	5/15/2018	6:36:00 14:21	JS
Cal Blank	1	JLE15C	5/15/2018	6:36:00 18:36	JS
Cal Std	1	JLE15C	5/15/2018	6:40:00 18:40	JS
ICV	1	JLE15C	5/15/2018	6:44:00 18:44	JS
ICB	1	JLE15C	5/15/2018	6:48:00 18:48	JS
PQL	1	JLE15C	5/15/2018	6:52:00 18:52	JS
RINSE	1	JLE15C	5/15/2018	6:56:00 18:56	JS
ICSA	1	JLE15C	5/15/2018	7:00:00 19:00	JS
ICSAB	1	JLE15C	5/15/2018	7:04:00 19:04	JS
RINSE	1	JLE15C	5/15/2018	7:08:00 19:08	JS
LRS1	1	JLE15C	5/15/2018	7:13:00 19:13	JS
LRS2	1	JLE15C	5/15/2018	7:16:00 19:16	JS
RINSE	1	JLE15C	5/15/2018	7:21:00 19:21	JS
RINSE	1	JLE15C	5/15/2018	7:25:00 19:25	JS
CCV	1	JLE15C	5/15/2018	7:29:00 19:29	JS
CCB	1	JLE15C	5/15/2018	7:33:00 19:33	JS
PBWLE14IMW1	1	JLE15C	5/15/2018	7:37:00 19:37	JS
LCSWLE14IMW1	5	JLE15C	5/15/2018	7:41:00 19:41	JS
SL4085-001	1	JLE15C	5/15/2018	7:45:00 19:45	JS
SL4096-001	1	JLE15C	5/15/2018	7:50:00 19:50	JS
SL3807-001	5	JLE15C	5/15/2018	7:54:00 19:54	JS
SL3807-002	5	JLE15C	5/15/2018	7:58:00 19:58	JS
RINSE	1	JLE15C	5/15/2018	8:02:00 20:02	JS
PBWLE07IMW1	5	JLE15C	5/15/2018	8:07:00 20:07	JS
LCSWLE07IMW1	5	JLE15C	5/15/2018	8:11:00 20:11	JS
SL3808-002	5	JLE15C	5/15/2018	8:15:00 20:15	JS
CCV	1	JLE15C	5/15/2018	8:19:00 20:19	JS
CCB	1	JLE15C	5/15/2018	8:23:00 20:23	JS
SL3808-003	5	JLE15C	5/15/2018	8:27:00 20:27	JS
SL3808-004	5	JLE15C	5/15/2018	8:31:00 20:31	JS
SL3808-004L	25	JLE15C	5/15/2018	8:36:00 20:36	JS
SL3808-004A	5	JLE15C	5/15/2018	8:40:00 20:40	JS
SL3808-004S	5	JLE15C	5/15/2018	8:44:00 20:44	JS
SL3808-004P	5	JLE15C	5/15/2018	8:48:00 20:48	JS
SL3808-005	5	JLE15C	5/15/2018	8:52:00 20:52	JS
SL3808-005L	25	JLE15C	5/15/2018	8:56:00 20:56	JS
SL3808-005A	5	JLE15C	5/15/2018	9:01:00 21:01	JS
RINSE	5	JLE15C	5/15/2018	9:05:00 21:05	JS
CCV	1	JLE15C	5/15/2018	9:09:00 21:09	JS
CCB	1	JLE15C	5/15/2018	9:13:00 21:13	JS
SL3808-005S	5	JLE15C	5/15/2018	9:17:00 21:17	JS
SL3808-005P	5	JLE15C	5/15/2018	9:21:00 21:21	JS
SL3808-006	5	JLE15C	5/15/2018	9:25:00 21:25	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3808-007	5	JLE15C	5/15/2018	9:30:00 21:30	JS
SL3808-008	5	JLE15C	5/15/2018	9:34:00 21:34	JS
SL3808-009	5	JLE15C	5/15/2018	9:38:00 21:38	JS
SL3808-010	5	JLE15C	5/15/2018	9:42:00 21:42	JS
SL3808-011	5	JLE15C	5/15/2018	9:47:00 21:47	JS
SL3808-012	5	JLE15C	5/15/2018	9:51:00 21:51	JS
RINSE	1	JLE15C	5/15/2018	9:55:00 21:55	JS
CCV	1	JLE15C	5/15/2018	9:59:00 21:59	JS
CCB	1	JLE15C	5/15/2018	10:03:0 22:03	JS
SL3808-013	5	JLE15C	5/15/2018	10:07:0 22:07	JS
SL3808-014	5	JLE15C	5/15/2018	10:12:0 22:12	JS
SL3808-015	5	JLE15C	5/15/2018	10:16:0 22:16	JS
SL3808-016	5	JLE15C	5/15/2018	10:20:0 22:20	JS
SL3808-017	5	JLE15C	5/15/2018	10:24:0 22:24	JS
SL3808-018	5	JLE15C	5/15/2018	10:28:0 22:28	JS
RINSE	1	JLE15C	5/15/2018	10:33:0 22:33	JS
RINSE	1	JLE15C	5/15/2018	10:37:0 22:37	JS
PBSLE08IMS2	5	JLE15C	5/15/2018	10:41:0 22:41	JS
LCSOLE08IMS2	5	JLE15C	5/15/2018	10:45:0 22:45	JS
CCV	1	JLE15C	5/15/2018	10:49:0 22:49	JS
CCB	1	JLE15C	5/15/2018	10:53:0 22:53	JS
SL3809-024	5	JLE15C	5/15/2018	10:58:0 22:58	JS
SL3809-024L	25	JLE15C	5/15/2018	11:02:0 23:02	JS
SL3809-024A	5	JLE15C	5/15/2018	11:06:0 23:06	JS
SL3809-024S	5	JLE15C	5/15/2018	11:10:0 23:10	JS
SL3809-024P	5	JLE15C	5/15/2018	11:15:0 23:15	JS
SL3809-041	5	JLE15C	5/15/2018	11:19:0 23:19	JS
SL3809-042	5	JLE15C	5/15/2018	11:23:0 23:23	JS
SL3809-043	5	JLE15C	5/15/2018	11:28:0 23:28	JS
SL3809-044	5	JLE15C	5/15/2018	11:32:0 23:32	JS
RINSE	5	JLE15C	5/15/2018	11:36:0 23:36	JS
CCV	1	JLE15C	5/15/2018	11:41:0 23:41	JS
CCB	1	JLE15C	5/15/2018	11:45:0 23:45	JS
SL3809-046	5	JLE15C	5/15/2018	11:49:0 23:49	JS
SL3809-047	5	JLE15C	5/15/2018	11:53:0 23:53	JS
RINSE	1	JLE15C	5/15/2018	11:57:0 23:57	JS
PBWLE07IMW2	5	JLE15C	5/16/2018	12:02:0 0:02	JS
LCSWLE07IMW2	5	JLE15C	5/16/2018	12:06:0 0:06	JS
SL3841-002	5	JLE15C	5/16/2018	12:10:0 0:10	JS
SL3841-003	5	JLE15C	5/16/2018	12:14:0 0:14	JS
SL3841-004	5	JLE15C	5/16/2018	12:18:0 0:18	JS
SL3841-005	5	JLE15C	5/16/2018	12:23:0 0:23	JS
RINSE	1	JLE15C	5/16/2018	12:27:0 0:27	JS
CCV	1	JLE15C	5/16/2018	12:31:0 0:31	JS
CCB	1	JLE15C	5/16/2018	12:35:0 0:35	JS
SL3841-006	5	JLE15C	5/16/2018	12:39:0 0:39	JS
SL3841-008	5	JLE15C	5/16/2018	12:43:0 0:43	JS

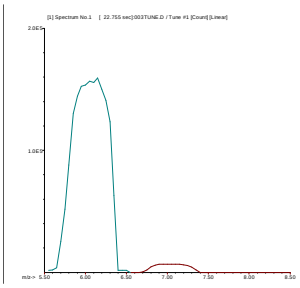
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3841-009	5	JLE15C	5/16/2018	12:48:0 0:48	JS
SL3841-010	5	JLE15C	5/16/2018	12:52:0 0:52	JS
SL3841-011	5	JLE15C	5/16/2018	12:56:0 0:56	JS
SL3841-011L	25	JLE15C	5/16/2018	1:00:00 1:00	JS
SL3841-011A	5	JLE15C	5/16/2018	1:05:00 1:05	JS
SL3841-011S	5	JLE15C	5/16/2018	1:09:00 1:09	JS
SL3841-011P	5	JLE15C	5/16/2018	1:13:00 1:13	JS
RINSE	1	JLE15C	5/16/2018	1:17:00 1:17	JS
CCV	1	JLE15C	5/16/2018	1:21:00 1:21	JS
CCB	1	JLE15C	5/16/2018	1:25:00 1:25	JS
SL3841-012	5	JLE15C	5/16/2018	1:30:00 1:30	JS
SL3841-013	5	JLE15C	5/16/2018	1:34:00 1:34	JS
SL3841-014	5	JLE15C	5/16/2018	1:38:00 1:38	JS
SL3841-015	5	JLE15C	5/16/2018	1:42:00 1:42	JS
SL3841-016	5	JLE15C	5/16/2018	1:47:00 1:47	JS
SL3841-017	5	JLE15C	5/16/2018	1:51:00 1:51	JS
SL3841-018	5	JLE15C	5/16/2018	1:55:00 1:55	JS
SL3841-019	5	JLE15C	5/16/2018	1:59:00 1:59	JS
SL3841-020	5	JLE15C	5/16/2018	2:04:00 2:04	JS
RINSE	1	JLE15C	5/16/2018	2:08:00 2:08	JS
CCV	1	JLE15C	5/16/2018	2:12:00 2:12	JS
CCB	1	JLE15C	5/16/2018	2:16:00 2:16	JS
PQL	1	JLE15C	5/16/2018	2:20:00 2:20	JS
CCV	1	JLE15C	5/16/2018	2:25:00 2:25	JS
CCB	1	JLE15C	5/16/2018	2:29:00 2:29	JS

6020 QC Tune Report

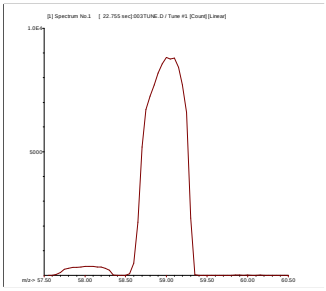
Data File: C:\ICPCHEM\1\DATA\JLE15A.B\003TUNE.D
Date Acquired: May 15 2018 02:18 pm
Acq. Method: TN6020E.M
Operator: JS
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

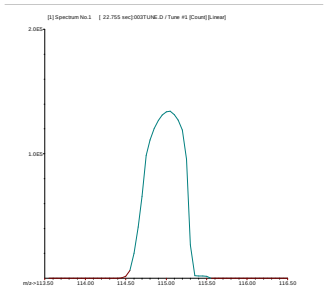
Element	Actual	Required	Flag
7 Li	2.80	5.00	
59 Co	3.05	5.00	
115 In	2.19	5.00	
205 Tl	2.14	5.00	



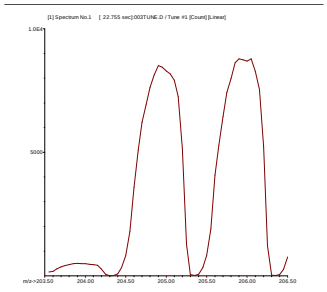
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



115 In
Mass Calib.
Actual: 115.05
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 0.90
Flag:



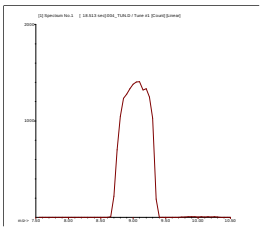
205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

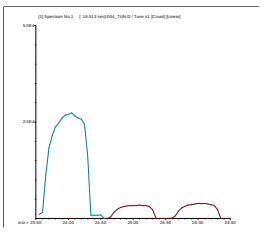
Data File: C:\ICPCHEM\1\DATA\JLE15A.B\004_TUN.D
Date Acquired: May 15 2018 02:21 pm
Acq. Method: TN200_8E.M
Operator: JS
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

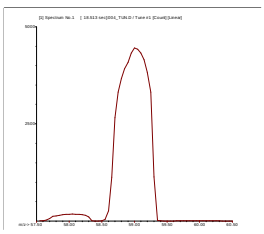
Element	Actual	Required	Flag
9 Be	3.38	5.00	
24 Mg	2.20	5.00	
59 Co	2.04	5.00	
115 In	0.74	5.00	
208 Pb	1.15	5.00	



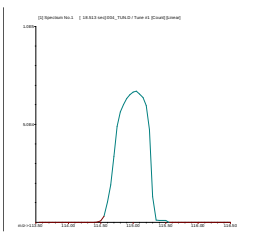
9 Be
Mass Calib.
Actual: 9.10
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



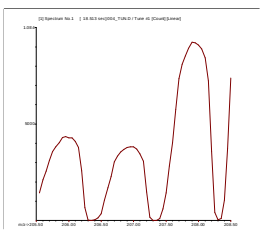
24 Mg
Mass Calib.
Actual: 24.05
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.05
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:

Tune Result: Pass

Katahdin Analytical Services 4001134

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.I
Date Acquired: May 15 2018 06:36 pm
Operator: JS
Sample Name: Cal Blank
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: May 15 2018 06:38 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	3927739.00	A	92700.00	2.36
9	Be	10.74	P	2.80	26.03
11	B	405.58	P	32.89	8.11
23	Na	30975.03	P	2124.00	6.86
25	Mg	184.46	P	33.56	18.19
27	Al	3168.05	P	290.60	9.17
28	Si	1223969.00	A	8813.00	0.72
29	Si	95690.43	P	1045.00	1.09
39	K	954149.81	A	8107.00	0.85
43	Ca	144.46	P	29.40	20.35
44	Ca	2918.57	P	257.80	8.83
45	Sc	2572659.00	A	24100.00	0.94
51	V	2300.28	P	462.20	20.09
52	Cr	7842.30	P	290.00	3.70
53	Cr	9658.94	P	273.70	2.83
55	Mn	1123.41	P	36.06	3.21
56	Fe	1591633.00	A	6934.00	0.44
57	Fe	10218.73	P	118.10	1.16
59	Co	100.01	P	17.64	17.64
60	Ni	50.77	P	16.76	33.01
63	Cu	604.48	P	90.34	14.95
65	Cu	272.23	P	41.14	15.11
66	Zn	694.48	P	35.64	5.13
68	Zn	1134.52	P	91.56	8.07
72	Ge	510197.59	P	9729.00	1.91
75	As	-130.50	P	112.20	85.98
82	Se	-13.96	P	5.73	41.03
88	Sr	77.79	P	22.22	28.57
89	Y	3568781.00	A	19720.00	0.55
98	Mo	33.96	P	12.62	37.16
107	Ag	28.89	P	10.71	37.07
109	Ag	18.89	P	5.09	26.96
111	Cd	732.00	P	25.56	3.49
114	Cd	-5.19	P	5.21	100.30
115	In	3455556.00	A	37390.00	1.08
118	Sn	375.57	P	38.49	10.25
120	Sn	544.47	P	40.74	7.48
121	Sb	34.45	P	13.47	39.11
123	Sb	17.78	P	8.39	47.19
135	Ba	16.67	P	6.67	40.00
137	Ba	33.33	P	12.02	36.06
159	Tb	4617151.00	A	98870.00	2.14
182	W	43.34	P	6.67	15.39
203	Tl	143.34	P	18.56	12.95
205	Tl	352.24	P	50.92	14.46
208	Pb	1785.67	P	28.35	1.59
209	Bi	2380666.00	A	19250.00	0.81
232	Th	30.00	P	3.33	11.11
238	U	14.44	P	5.09	35.25

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\014CALI.D\014CALI.D#
Date Acquired: May 15 2018 06:40 pm
Operator: JS
Sample Name: Cal Std
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: May 15 2018 06:38 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	4228799.00	A	216000.00	5.11
9 Be	152613.70	P	1257.00	0.82
11 B	78814.19	P	2795.00	3.55
23 Na	92552320.00	A	2234000.00	2.41
25 Mg	7688719.00	A	205000.00	2.67
27 Al	6962852.00	A	258300.00	3.71
28 Si	5154026.00	A	16410.00	0.32
29 Si	301817.31	P	4024.00	1.33
39 K	93881152.00	A	829600.00	0.88
43 Ca	164702.80	P	1280.00	0.78
44 Ca	2657397.00	A	32810.00	1.23
45 Sc	2724980.00	A	49510.00	1.82
51 V	532087.31	P	7822.00	1.47
52 Cr	449933.50	P	6031.00	1.34
53 Cr	58155.10	P	1043.00	1.79
55 Mn	560630.38	P	3608.00	0.64
56 Fe	93014160.00	A	539800.00	0.58
57 Fe	2275517.00	A	26380.00	1.16
59 Co	487875.50	P	4335.00	0.89
60 Ni	108787.00	P	970.10	0.89
63 Cu	264713.59	P	3171.00	1.20
65 Cu	124439.90	P	825.20	0.66
66 Zn	62862.39	P	434.80	0.69
68 Zn	46481.72	P	291.00	0.63
72 Ge	527192.69	P	2630.00	0.50
75 As	64053.79	P	208.10	0.32
82 Se	4956.27	P	61.62	1.24
88 Sr	692280.50	P	4563.00	0.66
89 Y	3815167.00	A	16830.00	0.44
98 Mo	205716.41	P	1796.00	0.87
107 Ag	326894.00	P	286.90	0.09
109 Ag	312567.50	P	646.30	0.21
111 Cd	66605.33	P	284.30	0.43
114 Cd	145799.09	P	1159.00	0.79
115 In	3594212.00	A	35680.00	0.99
118 Sn	199929.80	P	240.40	0.12
120 Sn	276795.50	P	2570.00	0.93
121 Sb	242972.80	P	1593.00	0.66
123 Sb	185082.41	P	671.20	0.36
135 Ba	60633.48	P	631.40	1.04
137 Ba	105096.90	P	686.10	0.65
159 Tb	4910357.00	A	33770.00	0.69
182 W	242783.30	P	1990.00	0.82
203 Tl	202711.30	P	1717.00	0.85
205 Tl	476911.81	P	5110.00	1.07
208 Pb	649529.81	P	7484.00	1.15
209 Bi	2415771.00	A	34190.00	1.42
232 Th	673026.19	P	5913.00	0.88
238 U	651473.31	P	9462.00	1.45

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4228798.50	5.11	3927738.80	107.7	79.5 - 120.4	
45 Sc	2724980.30	1.82	2572658.80	105.9	79.5 - 120.4	
72 Ge	527192.63	0.50	510197.59	103.3	79.5 - 120.4	
159 Tb	4910357.00	0.69	4617151.00	106.4	79.5 - 120.4	
209 Bi	2415771.30	1.42	2380666.00	101.5	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001136

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\015_ICV.D\015_ICV.D#
Date Acquired: May 15 2018 06:44 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: ICV
Misc Info:
Vial Number: 1202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	20.02	ppb	3.34	20	100.1	
11 B	21.56	ppb	2.89	20	107.8	
23 Na	3,902.	ppb	2.48	4,000	97.55	
25 Mg	3,846.	ppb	2.73	4,000	96.15	
27 Al	400.1	ppb	2.32	400	100.025	
28 Si	385.8	ppb	6.25	400	96.45	
29 Si	373.7	ppb	8.35	400	93.425	
39 K	3,913.	ppb	1.05	4,000	97.825	
43 Ca	3,960.	ppb	1.85	4,000	99	
44 Ca	4,046.	ppb	1.08	4,000	101.15	
51 V	19.62	ppb	1.68	20	98.1	
52 Cr	19.51	ppb	1.03	20	97.55	
53 Cr	15.59	ppb	2.14	20	77.95	
55 Mn	19.59	ppb	2.82	20	97.95	
56 Fe	3,904.	ppb	2.20	4,000	97.6	
57 Fe	3,993.	ppb	1.58	4,000	99.825	
59 Co	20.05	ppb	1.29	20	100.25	
60 Ni	20.07	ppb	1.29	20	100.35	
63 Cu	19.71	ppb	1.71	20	98.55	
65 Cu	19.96	ppb	1.52	20	99.8	
66 Zn	20.48	ppb	2.54	20	102.4	
68 Zn	20.45	ppb	1.29	20	102.25	
75 As	20.14	ppb	0.75	20	100.7	
82 Se	20.39	ppb	1.50	20	101.95	
88 Sr	19.31	ppb	1.65	20	96.55	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	38.8	ppb	1.31	40	97	
107 Ag	19.93	ppb	0.43	20	99.65	
109 Ag	19.91	ppb	1.21	20	99.55	
111 Cd	19.97	ppb	1.48	20	99.85	
114 Cd	20.08	ppb	0.60	20	100.4	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	20.24	ppb	1.13	20	101.2	
120 Sn	19.95	ppb	2.66	20	99.75	
121 Sb	20.33	ppb	1.38	20	101.65	
123 Sb	20.22	ppb	2.59	20	101.1	
135 Ba	20.41	ppb	2.42	20	102.05	
137 Ba	20.03	ppb	0.80	20	100.15	
182 W	19.59	ppb	0.89	20	97.95	
203 Tl	19.91	ppb	1.02	20	99.55	
205 Tl	20.23	ppb	0.59	20	101.15	
208 Pb	19.62	ppb	0.65	20	98.1	
232 Th	19.47	ppb	0.36	20	97.35	
238 U	19.29	ppb	0.67	20	96.45	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4194787.00	3.80	3927738.80	106.8	80 - 120.4	
45 Sc	2776944.30	1.30	2572658.80	107.9	80 - 120.4	
72 Ge	533205.75	0.34	510197.59	104.5	80 - 120.4	
159 Tb	4802040.00	1.02	4617151.00	104.0	80 - 120.4	
209 Bi	2413266.30	1.97	2380666.00	101.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\016_ICB.D\016_ICB.D#
Date Acquired: May 15 2018 06:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: ICB
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0019	ppb	93.34	1.00	
11 B	1.377	ppb	23.18	1.00	
23 Na	0.019	ppb	602.31	1.00	
25 Mg	0.1288	ppb	99.85	1.00	
27 Al	0.0246	ppb	271.67	1.00	
28 Si	-5.674	ppb	115.05	1.00	
29 Si	-6.3	ppb	53.00	1.00	
39 K	-2.315	ppb	21.32	1.00	
43 Ca	-1.577	ppb	90.36	1.00	
44 Ca	0.5523	ppb	115.14	1.00	
51 V	0.1102	ppb	35.61	1.00	
52 Cr	-0.037	ppb	48.53	1.00	
53 Cr	-3.395	ppb	5.08	1.00	
55 Mn	-0.0013	ppb	12.22	1.00	
56 Fe	-0.576	ppb	526.56	1.00	
57 Fe	0.0172	ppb	17237.00	1.00	
59 Co	-0.003	ppb	24.23	1.00	
60 Ni	0.0042	ppb	431.72	1.00	
63 Cu	-0.0026	ppb	423.66	1.00	
65 Cu	0.0091	ppb	63.27	1.00	
66 Zn	0.0665	ppb	100.05	1.00	
68 Zn	-0.1183	ppb	48.17	1.00	
75 As	-0.1336	ppb	22.11	1.00	
82 Se	0.2507	ppb	33.83	1.00	
88 Sr	0.0015	ppb	215.59	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0558	ppb	32.22	1.00	
107 Ag	0.0037	ppb	25.72	1.00	
109 Ag	0.005	ppb	51.07	1.00	
111 Cd	0.0229	ppb	64.04	1.00	
114 Cd	0.002	ppb	182.28	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0403	ppb	5.05	1.00	
120 Sn	0.0333	ppb	26.67	1.00	
121 Sb	0.0065	ppb	36.28	1.00	
123 Sb	0.0095	ppb	20.32	1.00	
135 Ba	0.0039	ppb	213.29	1.00	
137 Ba	-0.0039	ppb	101.64	1.00	
182 W	0.0542	ppb	33.09	1.00	
203 Tl	0.0069	ppb	134.58	1.00	
205 Tl	0.0053	ppb	41.78	1.00	
208 Pb	-0.0054	ppb	103.41	1.00	
232 Th	0.0438	ppb	18.17	1.00	
238 U	0.003	ppb	17.33	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4027835.80	6.79	3927738.80	102.5	79.5 - 120	
45 Sc	2697291.80	0.24	2572658.80	104.8	79.5 - 120	
72 Ge	521111.94	0.99	510197.59	102.1	79.5 - 120	
159 Tb	4620834.50	0.79	4617151.00	100.1	79.5 - 120	
209 Bi	2369894.50	0.72	2380666.00	99.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001138

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\017_PQL.D\017_PQL.D#
Date Acquired: May 15 2018 06:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PQL
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.2069	ppb	2.39	0.20	103.45	
11 B	4.574	ppb	1.07	4.00	114.35	
23 Na	194.1	ppb	3.70	200.00	97.05	
25 Mg	19.19	ppb	1.14	20.00	95.95	
27 Al	19.29	ppb	1.73	20.00	96.45	
28 Si	103.1	ppb	5.60	100.00	103.1	
29 Si	102.2	ppb	7.95	100.00	102.2	
39 K	191.1	ppb	2.61	200.00	95.55	
43 Ca	21.83	ppb	11.57	20.00	109.15	
44 Ca	19.83	ppb	6.17	20.00	99.15	
51 V	1.026	ppb	8.88	1.00	102.6	
52 Cr	0.9205	ppb	2.17	1.00	92.05	
53 Cr	-2.266	ppb	11.92	---	#VALUE!	
55 Mn	0.3835	ppb	3.89	0.40	95.875	
56 Fe	15.59	ppb	11.31	20.00	77.95	
57 Fe	19.56	ppb	3.58	20.00	97.8	
59 Co	0.1932	ppb	9.96	0.20	96.6	
60 Ni	0.3786	ppb	4.21	0.40	94.65	
63 Cu	0.592	ppb	6.70	0.60	98.6667	
65 Cu	0.6034	ppb	4.42	0.60	100.567	
66 Zn	2.125	ppb	4.44	2.00	106.25	
68 Zn	1.979	ppb	9.78	2.00	98.95	
75 As	0.9864	ppb	5.23	1.00	98.64	
82 Se	1.156	ppb	20.13	1.00	115.6	
88 Sr	0.961	ppb	0.93	1.00	96.1	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	0.9695	ppb	2.20	1.00	96.95	
107 Ag	0.1977	ppb	5.51	0.20	98.85	
109 Ag	0.206	ppb	7.78	0.20	103	
111 Cd	0.2027	ppb	15.68	0.20	101.35	
114 Cd	0.2031	ppb	2.72	0.20	101.55	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	1.041	ppb	3.72	1.00	104.1	
120 Sn	1.	ppb	3.13	1.00	100	
121 Sb	0.2042	ppb	7.95	0.20	102.1	
123 Sb	0.2088	ppb	1.39	0.20	104.4	
135 Ba	0.4338	ppb	1.64	0.40	108.45	
137 Ba	0.4102	ppb	10.54	0.40	102.55	
182 W	0.9796	ppb	1.14	1.00	97.96	
203 Tl	0.2056	ppb	8.81	0.20	102.8	
205 Tl	0.1977	ppb	5.54	0.20	98.85	
208 Pb	0.1988	ppb	3.89	0.20	99.4	
232 Th	0.2053	ppb	2.42	0.20	102.65	
238 U	0.1855	ppb	1.14	0.20	92.75	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4007850.30	2.47	3927738.80	102.0	80 - 120.4	
45 Sc	2636955.80	1.28	2572658.80	102.5	80 - 120.4	
72 Ge	518486.31	0.50	510197.59	101.6	80 - 120.4	
159 Tb	4636618.00	1.27	4617151.00	100.4	80 - 120.4	
209 Bi	2377560.50	1.27	2380666.00	99.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001139

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\018SMPL.D\018SMPL.D#
Date Acquired: May 15 2018 06:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0002	-0.0002	ppb	280.24	100.	
11 B	0.3801	0.3801	ppb	20.93	1000.	
23 Na	0.7564	0.7564	ppb	19.61	200000.	
25 Mg	0.0737	0.0737	ppb	83.74	200000.	
27 Al	0.4611	0.4611	ppb	16.48	200000.	
28 Si	7.501	7.501	ppb	101.99	#VALUE!	
29 Si	1.871	1.871	ppb	210.15	10000.	
39 K	0.0609	0.0609	ppb	1292.60	200000.	
43 Ca	2.427	2.427	ppb	95.01	#VALUE!	
44 Ca	0.755	0.755	ppb	78.12	200000.	
51 V	0.0287	0.0287	ppb	218.15	1000.	
52 Cr	-0.0265	-0.0265	ppb	64.66	2000.	
53 Cr	-3.643	-3.643	ppb	9.13	#VALUE!	
55 Mn	0.0029	0.0029	ppb	393.23	2000.	
56 Fe	0.8661	0.8661	ppb	242.47	#VALUE!	
57 Fe	3.266	3.266	ppb	23.52	100000.	
59 Co	0.0007	0.0007	ppb	250.22	1000.	
60 Ni	0.0139	0.0139	ppb	47.32	1000.	
63 Cu	0.1533	0.1533	ppb	11.58	#VALUE!	
65 Cu	0.1408	0.1408	ppb	10.03	2000.	
66 Zn	0.0623	0.0623	ppb	40.34	2000.	
68 Zn	-0.1005	-0.1005	ppb	78.43	#VALUE!	
75 As	0.2061	0.2061	ppb	45.43	1000.	
82 Se	0.3767	0.3767	ppb	30.21	1000.	
88 Sr	0.0023	0.0023	ppb	90.76	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0099	0.0099	ppb	23.56	1000.	
107 Ag	-0.0003	-0.0003	ppb	621.03	100.	
109 Ag	-0.0001	-0.0001	ppb	1862.70	#VALUE!	
111 Cd	0.0268	0.0268	ppb	30.56	#VALUE!	
114 Cd	0.0031	0.0031	ppb	94.74	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.022	0.022	ppb	32.72	1000.	
120 Sn	0.0057	0.0057	ppb	150.83	#VALUE!	
121 Sb	0.0001	0.0001	ppb	371.89	#VALUE!	
123 Sb	0.0002	0.0002	ppb	618.01	1000.	
135 Ba	-0.001	-0.001	ppb	1001.00	2000.	
137 Ba	0.006	0.006	ppb	130.28	#VALUE!	
182 W	0.0127	0.0127	ppb	31.93	1000.	
203 Tl	0.0016	0.0016	ppb	170.09	1000.	
205 Tl	0.004	0.004	ppb	59.74	#VALUE!	
208 Pb	0.1351	0.1351	ppb	9.65	2000.	
232 Th	0.0103	0.0103	ppb	29.53	1000.	
238 U	0.0002	0.0002	ppb	141.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4023215.00	0.34	3927738.80	102.4	69.5 - 120	
45 Sc	2616969.30	1.28	2572658.80	101.7	69.5 - 120	
72 Ge	521151.63	0.95	510197.59	102.1	69.5 - 120	
159 Tb	4666094.00	0.50	4617151.00	101.1	69.5 - 120	
209 Bi	2350265.50	0.59	2380666.00	98.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001140

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\019ICSA.D\019ICSA.D#
Date Acquired: May 15 2018 07:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: ICSA
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0013	ppb	27.91		
11 B	0.712	ppb	4.07		
23 Na	92,410.	ppb	1.45		
25 Mg	89,100.	ppb	1.78		
27 Al	91,500.	ppb	0.87		
28 Si	5.718	ppb	107.69		
29 Si	22.94	ppb	22.37		
39 K	95,450.	ppb	1.80		
43 Ca	100,400.	ppb	1.59		
44 Ca	95,500.	ppb	1.95		
51 V	0.2248	ppb	17.08		
52 Cr	0.9327	ppb	5.69		
53 Cr	-1.512	ppb	16.28		
55 Mn	0.3839	ppb	6.31		
56 Fe	93,270.	ppb	0.69		
57 Fe	90,640.	ppb	0.89		
59 Co	0.102	ppb	14.38		
60 Ni	-0.3109	ppb	10.65		
63 Cu	3.713	ppb	2.67		
65 Cu	1.001	ppb	6.41		
66 Zn	2.485	ppb	2.69		
68 Zn	0.3877	ppb	38.41		
75 As	0.2878	ppb	38.08		
82 Se	0.2531	ppb	39.71		
88 Sr	0.8955	ppb	2.13		
89 Y	--------	---	--------		
98 Mo	1,911.	ppb	1.33		
107 Ag	0.0211	ppb	18.21		
109 Ag	0.0217	ppb	8.03		
111 Cd	0.0629	ppb	50.54		
114 Cd	0.0374	ppb	59.40		
115 In	--------	---	--------		
118 Sn	0.0586	ppb	5.87		
120 Sn	0.0568	ppb	10.22		
121 Sb	0.0408	ppb	9.81		
123 Sb	0.0503	ppb	5.31		
135 Ba	0.0954	ppb	17.52		
137 Ba	0.0867	ppb	14.49		
182 W	0.2285	ppb	4.39		
203 Tl	0.0049	ppb	86.14		
205 Tl	0.0054	ppb	122.31		
208 Pb	0.0583	ppb	6.57		
232 Th	0.0589	ppb	16.21		
238 U	0.0002	ppb	287.77		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3656458.80	2.00	3927738.80	93.1	69.5 - 120.4	
45 Sc	2738870.50	0.42	2572658.80	106.5	69.5 - 120.4	
72 Ge	532628.50	1.10	510197.59	104.4	69.5 - 120.4	
159 Tb	4788053.50	1.01	4617151.00	103.7	69.5 - 120.4	
209 Bi	2163522.80	1.25	2380666.00	90.9	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\020ICSB.D\020ICSB.D#
Date Acquired: May 15 2018 07:04 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: ICSAB
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	21.05	ppb	1.21	20.00	79.5 - 120	
11 B	22.67	ppb	3.10	20.00	79.5 - 120	
23 Na	94,170.	ppb	3.08	#########	79.5 - 120	
25 Mg	91,850.	ppb	6.27	#########	79.5 - 120	
27 Al	93,940.	ppb	4.47	#########	79.5 - 120	
28 Si	491.5	ppb	6.43	---	##### - #####	
29 Si	513.3	ppb	6.89	---	##### - #####	
39 K	97,210.	ppb	3.26	#########	79.5 - 120	
43 Ca	102,000.	ppb	4.71	#########	79.5 - 120	
44 Ca	96,200.	ppb	2.57	#########	79.5 - 120	
51 V	19.81	ppb	2.04	20.00	79.5 - 120	
52 Cr	20.13	ppb	1.70	20.00	79.5 - 120	
53 Cr	19.85	ppb	1.44	---	##### - #####	
55 Mn	19.54	ppb	1.23	20.00	79.5 - 120	
56 Fe	94,150.	ppb	1.62	#########	79.5 - 120	
57 Fe	91,150.	ppb	1.14	#########	79.5 - 120	
59 Co	19.25	ppb	0.83	20.00	79.5 - 120	
60 Ni	18.31	ppb	1.12	20.00	79.5 - 120	
63 Cu	21.72	ppb	0.97	20.00	79.5 - 120	
65 Cu	19.39	ppb	1.38	20.00	79.5 - 120	
66 Zn	20.19	ppb	2.02	20.00	79.5 - 120	
68 Zn	18.2	ppb	0.81	20.00	79.5 - 120	
75 As	19.62	ppb	0.38	20.00	79.5 - 120	
82 Se	19.32	ppb	2.20	20.00	79.5 - 120	
88 Sr	20.65	ppb	1.44	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,960.	ppb	1.27	2000.00	79.5 - 120	
107 Ag	18.35	ppb	1.18	20.00	79.5 - 120	
109 Ag	18.31	ppb	1.37	20.00	79.5 - 120	
111 Cd	18.45	ppb	1.24	20.00	79.5 - 120	
114 Cd	18.49	ppb	1.43	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	20.3	ppb	2.74	20.00	79.5 - 120	
120 Sn	20.09	ppb	1.46	20.00	79.5 - 120	
121 Sb	20.11	ppb	1.32	20.00	79.5 - 120	
123 Sb	20.	ppb	2.28	20.00	79.5 - 120	
135 Ba	20.62	ppb	1.15	20.00	79.5 - 120	
137 Ba	20.31	ppb	1.83	20.00	79.5 - 120	
182 W	20.4	ppb	2.30	20.00	79.5 - 120	
203 Tl	20.88	ppb	2.29	20.00	79.5 - 120	
205 Tl	20.86	ppb	2.06	20.00	79.5 - 120	
208 Pb	20.8	ppb	2.40	20.00	79.5 - 120	
232 Th	22.	ppb	2.16	20.00	79.5 - 120	
238 U	21.27	ppb	3.12	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3673971.30	0.44	3927738.80	93.5	69.5 - 120	
45 Sc	2730908.80	2.94	2572658.80	106.2	69.5 - 120	
72 Ge	532965.44	0.39	510197.59	104.5	69.5 - 120	
159 Tb	4854034.00	1.28	4617151.00	105.1	69.5 - 120	
209 Bi	2181126.50	2.02	2380666.00	91.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001142

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\021SMPL.D\021SMPL.D#
Date Acquired: May 15 2018 07:08 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0007	0.0007	ppb	85.96	100.	
11 B	0.4679	0.4679	ppb	22.36	1000.	
23 Na	3.994	3.994	ppb	2.06	200000.	
25 Mg	0.5611	0.5611	ppb	27.62	200000.	
27 Al	0.8498	0.8498	ppb	8.44	200000.	
28 Si	8.632	8.632	ppb	167.28	#VALUE!	
29 Si	-13.32	-13.32	ppb	77.40	10000.	
39 K	-2.2	-2.2	ppb	150.73	200000.	
43 Ca	-0.4594	-0.4594	ppb	333.48	#VALUE!	
44 Ca	2.567	2.567	ppb	29.74	200000.	
51 V	-0.0025	-0.0025	ppb	1716.40	1000.	
52 Cr	0.0551	0.0551	ppb	46.79	2000.	
53 Cr	-0.5508	-0.5508	ppb	47.22	#VALUE!	
55 Mn	0.077	0.077	ppb	10.30	2000.	
56 Fe	2.44	2.44	ppb	137.05	#VALUE!	
57 Fe	4.926	4.926	ppb	20.52	100000.	
59 Co	-0.0004	-0.0004	ppb	886.64	1000.	
60 Ni	0.0084	0.0084	ppb	119.41	1000.	
63 Cu	0.1961	0.1961	ppb	8.80	#VALUE!	
65 Cu	0.2026	0.2026	ppb	7.52	2000.	
66 Zn	0.1233	0.1233	ppb	52.00	2000.	
68 Zn	0.0909	0.0909	ppb	73.82	#VALUE!	
75 As	0.1111	0.1111	ppb	146.44	1000.	
82 Se	0.0108	0.0108	ppb	157.47	1000.	
88 Sr	0.0007	0.0007	ppb	295.56	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.031	1.031	ppb	37.41	1000.	
107 Ag	0.0013	0.0013	ppb	133.48	100.	
109 Ag	0.0036	0.0036	ppb	38.21	#VALUE!	
111 Cd	-0.0179	-0.0179	ppb	246.88	#VALUE!	
114 Cd	0.0004	0.0004	ppb	701.98	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0158	0.0158	ppb	30.69	1000.	
120 Sn	0.0202	0.0202	ppb	21.01	#VALUE!	
121 Sb	-0.0007	-0.0007	ppb	70.86	#VALUE!	
123 Sb	0.0051	0.0051	ppb	95.87	1000.	
135 Ba	0.0573	0.0573	ppb	27.16	2000.	
137 Ba	0.0336	0.0336	ppb	41.79	#VALUE!	
182 W	0.0094	0.0094	ppb	48.14	1000.	
203 Tl	0.0072	0.0072	ppb	139.60	1000.	
205 Tl	0.0078	0.0078	ppb	15.42	#VALUE!	
208 Pb	0.115	0.115	ppb	3.95	2000.	
232 Th	0.0101	0.0101	ppb	10.39	1000.	
238 U	0.0014	0.0014	ppb	17.56	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3877507.00	2.57	3927738.80	98.7	69.5 - 120	
45 Sc	2636587.00	2.04	2572658.80	102.5	69.5 - 120	
72 Ge	517748.88	1.00	510197.59	101.5	69.5 - 120	
159 Tb	4583198.00	1.51	4617151.00	99.3	69.5 - 120	
209 Bi	2337929.80	2.18	2380666.00	98.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001143

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\022SMPL.D\022SMPL.D#
Date Acquired: May 15 2018 07:13 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LRS1
Misc Info:
Vial Number: 3511
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	100.8	100.8	ppb	2.27	100.	>LDR
11 B	0.2195	0.2195	ppb	6.38	1000.	
23 Na	11.36	11.36	ppb	123.94	200000.	
25 Mg	8.451	8.451	ppb	153.00	200000.	
27 Al	10.02	10.02	ppb	136.93	200000.	
28 Si	-11.74	-11.74	ppb	54.42	#VALUE!	
29 Si	-13.3	-13.3	ppb	103.38	10000.	
39 K	4.706	4.706	ppb	293.03	200000.	
43 Ca	1,468.	1,468.	ppb	1.49	#VALUE!	
44 Ca	117.1	117.1	ppb	6.56	200000.	
51 V	1,019.	1,019.	ppb	2.23	1000.	>LDR
52 Cr	2,021.	2,021.	ppb	1.74	2000.	>LDR
53 Cr	2,215.	2,215.	ppb	1.47	#VALUE!	
55 Mn	1,962.	1,962.	ppb	0.64	2000.	
56 Fe	2.243	2.243	ppb	638.88	#VALUE!	
57 Fe	2.776	2.776	ppb	381.48	100000.	
59 Co	1,010.	1,010.	ppb	2.67	1000.	>LDR
60 Ni	1,027.	1,027.	ppb	2.19	1000.	>LDR
63 Cu	1,964.	1,964.	ppb	1.28	#VALUE!	
65 Cu	2,002.	2,002.	ppb	1.62	2000.	>LDR
66 Zn	2,051.	2,051.	ppb	1.56	2000.	>LDR
68 Zn	2,058.	2,058.	ppb	1.76	#VALUE!	
75 As	1,042.	1,042.	ppb	2.49	1000.	>LDR
82 Se	1,071.	1,071.	ppb	0.85	1000.	>LDR
88 Sr	1,926.	1,926.	ppb	1.48	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1,004.	1,004.	ppb	1.27	1000.	>LDR
107 Ag	106.7	106.7	ppb	1.11	100.	>LDR
109 Ag	106.7	106.7	ppb	0.06	#VALUE!	
111 Cd	1,041.	1,041.	ppb	0.90	#VALUE!	
114 Cd	1,012.	1,012.	ppb	1.19	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,003.	1,003.	ppb	1.61	1000.	>LDR
120 Sn	992.	992.	ppb	1.09	#VALUE!	
121 Sb	1,011.	1,011.	ppb	0.93	#VALUE!	
123 Sb	1,023.	1,023.	ppb	0.45	1000.	>LDR
135 Ba	2,046.	2,046.	ppb	0.78	2000.	>LDR
137 Ba	2,011.	2,011.	ppb	1.67	#VALUE!	
182 W	987.7	987.7	ppb	0.62	1000.	
203 Tl	976.3	976.3	ppb	0.73	1000.	
205 Tl	971.6	971.6	ppb	0.44	#VALUE!	
208 Pb	1,925.	1,925.	ppb	0.33	2000.	
232 Th	954.	954.	ppb	0.37	1000.	
238 U	944.5	944.5	ppb	0.52	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4065653.30	1.26	3927738.80	103.5	69.5 - 120	
45 Sc	2626603.30	2.57	2572658.80	102.1	69.5 - 120	
72 Ge	504165.38	2.93	510197.59	98.8	69.5 - 120	
159 Tb	4681912.50	1.99	4617151.00	101.4	69.5 - 120	
209 Bi	2434879.30	1.09	2380666.00	102.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

15 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4001144

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\023SMPL.D\023SMPL.D#
Date Acquired: May 15 2018 07:16 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LRS2
Misc Info:
Vial Number: 3512
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0078	0.0078	ppb	40.27	100.	
11 B	0.587	0.587	ppb	5.08	1000.	
23 Na	185,300.	185,300.	ppb	2.58	200000.	
25 Mg	180,600.	180,600.	ppb	1.22	200000.	
27 Al	188,400.	188,400.	ppb	1.12	200000.	
28 Si	9,750.	9,750.	ppb	0.61	#VALUE!	
29 Si	10,270.	10,270.	ppb	1.10	10000.	>LDR
39 K	185,900.	185,900.	ppb	1.19	200000.	
43 Ca	190,600.	190,600.	ppb	0.61	#VALUE!	
44 Ca	187,800.	187,800.	ppb	0.95	200000.	
51 V	0.2079	0.2079	ppb	27.21	1000.	
52 Cr	2.884	2.884	ppb	1.65	2000.	
53 Cr	-1.937	-1.937	ppb	23.20	#VALUE!	
55 Mn	7.344	7.344	ppb	1.21	2000.	
56 Fe	92,580.	92,580.	ppb	1.02	#VALUE!	
57 Fe	89,580.	89,580.	ppb	0.98	100000.	
59 Co	2.682	2.682	ppb	1.06	1000.	
60 Ni	2.983	2.983	ppb	3.88	1000.	
63 Cu	9.04	9.04	ppb	1.13	#VALUE!	
65 Cu	2.837	2.837	ppb	1.67	2000.	
66 Zn	3.443	3.443	ppb	2.33	2000.	
68 Zn	1.031	1.031	ppb	13.18	#VALUE!	
75 As	0.3915	0.3915	ppb	37.42	1000.	
82 Se	0.727	0.727	ppb	15.59	1000.	
88 Sr	6.685	6.685	ppb	1.52	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.423	1.423	ppb	30.59	1000.	
107 Ag	0.3459	0.3459	ppb	3.06	100.	
109 Ag	0.3428	0.3428	ppb	4.29	#VALUE!	
111 Cd	0.0489	0.0489	ppb	34.39	#VALUE!	
114 Cd	0.0038	0.0038	ppb	150.77	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.7044	0.7044	ppb	9.76	1000.	
120 Sn	0.7106	0.7106	ppb	6.46	#VALUE!	
121 Sb	0.2144	0.2144	ppb	7.82	#VALUE!	
123 Sb	0.2205	0.2205	ppb	11.74	1000.	
135 Ba	0.2637	0.2637	ppb	17.07	2000.	
137 Ba	0.2318	0.2318	ppb	10.24	#VALUE!	
182 W	1.383	1.383	ppb	31.83	1000.	
203 Tl	0.0382	0.0382	ppb	16.66	1000.	
205 Tl	0.0341	0.0341	ppb	16.80	#VALUE!	
208 Pb	0.4741	0.4741	ppb	4.05	2000.	
232 Th	1.481	1.481	ppb	35.79	1000.	
238 U	0.1043	0.1043	ppb	9.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3663938.30	4.80	3927738.80	93.3	69.5 - 120	
45 Sc	2800012.80	3.57	2572658.80	108.8	69.5 - 120	
72 Ge	521149.97	2.05	510197.59	102.1	69.5 - 120	
159 Tb	4434250.50	1.54	4617151.00	96.0	69.5 - 120	
209 Bi	1849094.40	1.90	2380666.00	77.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4001145

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\024SMPL.D\024SMPL.D#
Date Acquired: May 15 2018 07:21 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0007	-0.0007	ppb	54.23	100.	
11 B	0.1518	0.1518	ppb	15.90	1000.	
23 Na	19.35	19.35	ppb	64.44	200000.	
25 Mg	10.08	10.08	ppb	111.11	200000.	
27 Al	10.01	10.01	ppb	107.59	200000.	
28 Si	23.15	23.15	ppb	45.01	#VALUE!	
29 Si	-0.6374	-0.6374	ppb	2414.50	10000.	
39 K	10.1	10.1	ppb	143.17	200000.	
43 Ca	6.926	6.926	ppb	117.46	#VALUE!	
44 Ca	10.81	10.81	ppb	110.64	200000.	
51 V	0.0198	0.0198	ppb	186.13	1000.	
52 Cr	0.0884	0.0884	ppb	42.14	2000.	
53 Cr	2.746	2.746	ppb	12.92	#VALUE!	
55 Mn	0.0814	0.0814	ppb	2.70	2000.	
56 Fe	14.01	14.01	ppb	63.31	#VALUE!	
57 Fe	11.27	11.27	ppb	62.43	100000.	
59 Co	0.0038	0.0038	ppb	21.45	1000.	
60 Ni	0.0237	0.0237	ppb	26.10	1000.	
63 Cu	0.238	0.238	ppb	11.23	#VALUE!	
65 Cu	0.2157	0.2157	ppb	8.17	2000.	
66 Zn	0.2182	0.2182	ppb	11.52	2000.	
68 Zn	0.12	0.12	ppb	101.58	#VALUE!	
75 As	0.0314	0.0314	ppb	219.20	1000.	
82 Se	0.0859	0.0859	ppb	157.36	1000.	
88 Sr	0.0073	0.0073	ppb	46.65	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.201	0.201	ppb	42.56	1000.	
107 Ag	0.0035	0.0035	ppb	71.72	100.	
109 Ag	0.0029	0.0029	ppb	24.36	#VALUE!	
111 Cd	-0.0076	-0.0076	ppb	255.91	#VALUE!	
114 Cd	0.0025	0.0025	ppb	148.82	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1086	0.1086	ppb	11.54	1000.	
120 Sn	0.109	0.109	ppb	14.85	#VALUE!	
121 Sb	0.0355	0.0355	ppb	17.18	#VALUE!	
123 Sb	0.0372	0.0372	ppb	13.32	1000.	
135 Ba	0.0459	0.0459	ppb	38.60	2000.	
137 Ba	0.0462	0.0462	ppb	17.98	#VALUE!	
182 W	0.237	0.237	ppb	34.55	1000.	
203 Tl	0.0151	0.0151	ppb	71.93	1000.	
205 Tl	0.0106	0.0106	ppb	28.20	#VALUE!	
208 Pb	0.1204	0.1204	ppb	10.76	2000.	
232 Th	0.067	0.067	ppb	41.51	1000.	
238 U	0.0056	0.0056	ppb	49.06	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4065809.50	3.56	3927738.80	103.5	69.5 - 120	
45 Sc	2737375.50	1.91	2572658.80	106.4	69.5 - 120	
72 Ge	531000.00	1.62	510197.59	104.1	69.5 - 120	
159 Tb	4532983.50	0.78	4617151.00	98.2	69.5 - 120	
209 Bi	2228511.50	1.56	2380666.00	93.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001146

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\025SMPL.D\025SMPL.D#
Date Acquired: May 15 2018 07:25 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0004	0.0004	ppb	385.86	100.	
11 B	0.1135	0.1135	ppb	22.78	1000.	
23 Na	5.058	5.058	ppb	12.95	200000.	
25 Mg	0.6796	0.6796	ppb	12.39	200000.	
27 Al	0.9582	0.9582	ppb	4.51	200000.	
28 Si	15.17	15.17	ppb	24.00	#VALUE!	
29 Si	-6.024	-6.024	ppb	181.94	10000.	
39 K	-1.02	-1.02	ppb	226.67	200000.	
43 Ca	0.4981	0.4981	ppb	498.49	#VALUE!	
44 Ca	2.123	2.123	ppb	41.75	200000.	
51 V	0.1367	0.1367	ppb	52.36	1000.	
52 Cr	0.0763	0.0763	ppb	15.89	2000.	
53 Cr	2.089	2.089	ppb	2.67	#VALUE!	
55 Mn	0.0763	0.0763	ppb	13.19	2000.	
56 Fe	2.257	2.257	ppb	186.00	#VALUE!	
57 Fe	2.905	2.905	ppb	71.02	100000.	
59 Co	0.005	0.005	ppb	8.91	1000.	
60 Ni	0.0173	0.0173	ppb	119.57	1000.	
63 Cu	0.1703	0.1703	ppb	2.40	#VALUE!	
65 Cu	0.2131	0.2131	ppb	10.14	2000.	
66 Zn	0.1996	0.1996	ppb	23.12	2000.	
68 Zn	0.0702	0.0702	ppb	98.66	#VALUE!	
75 As	0.1714	0.1714	ppb	112.37	1000.	
82 Se	0.1946	0.1946	ppb	134.02	1000.	
88 Sr	0.0007	0.0007	ppb	248.28	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0716	0.0716	ppb	27.42	1000.	
107 Ag	0.0025	0.0025	ppb	52.30	100.	
109 Ag	0.0017	0.0017	ppb	144.07	#VALUE!	
111 Cd	-0.0211	-0.0211	ppb	194.25	#VALUE!	
114 Cd	0.0032	0.0032	ppb	55.10	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.05	0.05	ppb	8.75	1000.	
120 Sn	0.0602	0.0602	ppb	22.18	#VALUE!	
121 Sb	0.0158	0.0158	ppb	48.58	#VALUE!	
123 Sb	0.0214	0.0214	ppb	20.04	1000.	
135 Ba	0.0476	0.0476	ppb	34.20	2000.	
137 Ba	0.0458	0.0458	ppb	18.78	#VALUE!	
182 W	0.0933	0.0933	ppb	29.06	1000.	
203 Tl	0.0117	0.0117	ppb	65.94	1000.	
205 Tl	0.0059	0.0059	ppb	87.85	#VALUE!	
208 Pb	0.1249	0.1249	ppb	4.24	2000.	
232 Th	0.0501	0.0501	ppb	27.72	1000.	
238 U	0.001	0.001	ppb	132.54	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4143091.50	2.40	3927738.80	105.5	69.5 - 120	
45 Sc	2683343.00	1.83	2572658.80	104.3	69.5 - 120	
72 Ge	524120.78	0.64	510197.59	102.7	69.5 - 120	
159 Tb	4561281.50	0.38	4617151.00	98.8	69.5 - 120	
209 Bi	2310591.30	0.90	2380666.00	97.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001147

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\026_CCV.D\026_CCV.D#
Date Acquired: May 15 2018 07:29 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.37	ppb	1.18	25	101.48	
11 B	24.91	ppb	3.35	25	99.64	
23 Na	4,828.	ppb	0.96	5,000	96.56	
25 Mg	4,845.	ppb	0.31	5,000	96.9	
27 Al	490.7	ppb	1.09	500	98.14	
28 Si	477.5	ppb	1.89	500	95.5	
29 Si	464.1	ppb	2.61	500	92.82	
39 K	4,833.	ppb	1.29	5,000	96.66	
43 Ca	4,876.	ppb	0.88	5,000	97.52	
44 Ca	4,941.	ppb	1.36	5,000	98.82	
51 V	24.51	ppb	0.52	25	98.04	
52 Cr	24.81	ppb	0.68	25	99.24	
53 Cr	24.81	ppb	4.33	25	99.24	
55 Mn	24.52	ppb	1.34	25	98.08	
56 Fe	4,816.	ppb	0.79	5,000	96.32	
57 Fe	4,942.	ppb	0.58	5,000	98.84	
59 Co	24.93	ppb	0.78	25	99.72	
60 Ni	24.56	ppb	0.81	25	98.24	
63 Cu	24.74	ppb	1.02	25	98.96	
65 Cu	24.93	ppb	2.15	25	99.72	
66 Zn	24.6	ppb	0.35	25	98.4	
68 Zn	24.54	ppb	2.24	25	98.16	
75 As	24.92	ppb	0.33	25	99.68	
82 Se	25.33	ppb	1.20	25	101.32	
88 Sr	24.37	ppb	0.89	25	97.48	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.72	ppb	0.29	25	98.88	
107 Ag	24.8	ppb	0.53	25	99.2	
109 Ag	24.88	ppb	0.74	25	99.52	
111 Cd	24.64	ppb	1.17	25	98.56	
114 Cd	24.93	ppb	0.57	25	99.72	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.89	ppb	1.35	25	99.56	
120 Sn	24.84	ppb	1.92	25	99.36	
121 Sb	25.27	ppb	1.81	25	101.08	
123 Sb	25.35	ppb	1.24	25	101.4	
135 Ba	25.44	ppb	0.99	25	101.76	
137 Ba	25.29	ppb	1.79	25	101.16	
182 W	24.44	ppb	2.32	25	97.76	
203 Tl	24.23	ppb	0.44	25	96.92	
205 Tl	24.26	ppb	0.78	25	97.04	
208 Pb	24.35	ppb	0.35	25	97.4	
232 Th	23.63	ppb	1.55	25	94.52	
238 U	23.69	ppb	0.66	25	94.76	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4096449.00	1.77	3927738.80	104.3	80 - 120.4	
45 Sc	2740937.00	1.28	2572658.80	106.5	80 - 120.4	
72 Ge	520514.56	0.41	510197.59	102.0	80 - 120.4	
159 Tb	4732701.50	0.56	4617151.00	102.5	80 - 120.4	
209 Bi	2416532.30	0.56	2380666.00	101.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\027_CCB.D\027_CCB.D#
Date Acquired: May 15 2018 07:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0011	ppb	213.05	1.00	
11 B	0.965	ppb	25.54	1.00	
23 Na	3.869	ppb	10.12	1.00	
25 Mg	0.5357	ppb	80.66	1.00	
27 Al	0.1798	ppb	74.53	1.00	
28 Si	7.003	ppb	32.63	1.00	
29 Si	-5.388	ppb	9.42	1.00	
39 K	-0.1349	ppb	1570.10	1.00	
43 Ca	-0.0073	ppb	21779.00	1.00	
44 Ca	2.206	ppb	8.73	1.00	
51 V	0.0672	ppb	74.14	1.00	
52 Cr	-0.036	ppb	14.04	1.00	
53 Cr	-1.145	ppb	18.93	1.00	
55 Mn	0.0044	ppb	81.19	1.00	
56 Fe	-3.265	ppb	40.06	1.00	
57 Fe	0.1393	ppb	1117.70	1.00	
59 Co	-0.0001	ppb	1988.70	1.00	
60 Ni	0.0061	ppb	188.86	1.00	
63 Cu	0.0201	ppb	49.32	1.00	
65 Cu	0.0245	ppb	36.03	1.00	
66 Zn	0.1076	ppb	51.39	1.00	
68 Zn	-0.0771	ppb	121.94	1.00	
75 As	0.2815	ppb	44.73	1.00	
82 Se	0.2666	ppb	101.76	1.00	
88 Sr	0.0019	ppb	165.64	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0513	ppb	37.49	1.00	
107 Ag	0.0033	ppb	27.01	1.00	
109 Ag	0.0032	ppb	107.70	1.00	
111 Cd	0.0092	ppb	105.82	1.00	
114 Cd	0.0002	ppb	1746.70	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0506	ppb	15.98	1.00	
120 Sn	0.0518	ppb	17.63	1.00	
121 Sb	0.0172	ppb	31.07	1.00	
123 Sb	0.0152	ppb	45.79	1.00	
135 Ba	0.0327	ppb	15.69	1.00	
137 Ba	0.0139	ppb	43.52	1.00	
182 W	0.0687	ppb	42.36	1.00	
203 Tl	0.0049	ppb	195.59	1.00	
205 Tl	0.0024	ppb	135.25	1.00	
208 Pb	-0.0218	ppb	10.92	1.00	
232 Th	0.0766	ppb	21.18	1.00	
238 U	0.0032	ppb	40.96	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4060173.80	1.80	3927738.80	103.4	79.5 - 120	
45 Sc	2641437.00	2.03	2572658.80	102.7	79.5 - 120	
72 Ge	514198.72	0.24	510197.59	100.8	79.5 - 120	
159 Tb	4567900.50	0.40	4617151.00	98.9	79.5 - 120	
209 Bi	2342393.50	0.69	2380666.00	98.4	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001149

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\028SMPL.D\028SMPL.D#
Date Acquired: May 15 2018 07:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE14IMW1
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0001	-0.0001	ppb	1063.80	100.	
11 B	0.452	0.452	ppb	7.04	1000.	
23 Na	9.306	9.306	ppb	1.40	200000.	
25 Mg	8.295	8.295	ppb	6.49	200000.	
27 Al	4.447	4.447	ppb	5.53	200000.	
28 Si	30.35	30.35	ppb	33.61	#VALUE!	
29 Si	20.66	20.66	ppb	30.06	10000.	
39 K	2.143	2.143	ppb	33.54	200000.	
43 Ca	1.724	1.724	ppb	82.48	#VALUE!	
44 Ca	3.39	3.39	ppb	31.24	200000.	
51 V	0.0761	0.0761	ppb	55.57	1000.	
52 Cr	0.0368	0.0368	ppb	29.17	2000.	
53 Cr	-0.747	-0.747	ppb	18.59	#VALUE!	
55 Mn	0.0414	0.0414	ppb	11.16	2000.	
56 Fe	-1.418	-1.418	ppb	120.59	#VALUE!	
57 Fe	1.524	1.524	ppb	106.50	100000.	
59 Co	0.0048	0.0048	ppb	19.23	1000.	
60 Ni	0.0151	0.0151	ppb	19.91	1000.	
63 Cu	0.0381	0.0381	ppb	11.59	#VALUE!	
65 Cu	0.0137	0.0137	ppb	119.02	2000.	
66 Zn	0.1297	0.1297	ppb	36.45	2000.	
68 Zn	-0.0711	-0.0711	ppb	79.76	#VALUE!	
75 As	-0.0295	-0.0295	ppb	26.44	1000.	
82 Se	0.0152	0.0152	ppb	938.61	1000.	
88 Sr	0.0076	0.0076	ppb	37.81	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0188	0.0188	ppb	34.51	1000.	
107 Ag	0.0008	0.0008	ppb	77.32	100.	
109 Ag	0.0015	0.0015	ppb	204.05	#VALUE!	
111 Cd	0.0148	0.0148	ppb	184.37	#VALUE!	
114 Cd	0.0014	0.0014	ppb	279.38	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0593	0.0593	ppb	25.67	1000.	
120 Sn	0.0526	0.0526	ppb	6.35	#VALUE!	
121 Sb	0.0081	0.0081	ppb	16.68	#VALUE!	
123 Sb	0.0106	0.0106	ppb	49.46	1000.	
135 Ba	0.0234	0.0234	ppb	36.24	2000.	
137 Ba	0.0172	0.0172	ppb	10.82	#VALUE!	
182 W	0.029	0.029	ppb	30.82	1000.	
203 Tl	0.0056	0.0056	ppb	117.96	1000.	
205 Tl	0.0053	0.0053	ppb	68.33	#VALUE!	
208 Pb	-0.0182	-0.0182	ppb	21.90	2000.	
232 Th	0.043	0.043	ppb	24.31	1000.	
238 U	0.0001	0.0001	ppb	462.49	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3923622.00	3.77	3927738.80	99.9	69.5 - 120	
45 Sc	2555535.30	1.18	2572658.80	99.3	69.5 - 120	
72 Ge	506190.56	1.49	510197.59	99.2	69.5 - 120	
159 Tb	4500283.50	0.45	4617151.00	97.5	69.5 - 120	
209 Bi	2313382.30	1.08	2380666.00	97.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001150

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\029SMPL.D\029SMPL.D#
Date Acquired: May 15 2018 07:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE14IMW1
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	49.775	9.955	ppb	0.97	100.	
11 B	522.	104.4	ppb	1.84	1000.	
23 Na	7,425.	1,485.	ppb	3.37	200000.	
25 Mg	5,065.	1,013.	ppb	2.19	200000.	
27 Al	2,055.5	411.1	ppb	3.21	200000.	
28 Si	1,060.	212.	ppb	2.40	#VALUE!	
29 Si	955.5	191.1	ppb	5.34	10000.	
39 K	10,020.	2,004.	ppb	2.00	200000.	
43 Ca	2,945.5	589.1	ppb	3.91	#VALUE!	
44 Ca	2,519.	503.8	ppb	2.02	200000.	
51 V	503.5	100.7	ppb	1.21	1000.	
52 Cr	196.65	39.33	ppb	0.68	2000.	
53 Cr	212.5	42.5	ppb	1.38	#VALUE!	
55 Mn	507.	101.4	ppb	1.50	2000.	
56 Fe	977.5	195.5	ppb	3.09	#VALUE!	
57 Fe	972.5	194.5	ppb	1.43	100000.	
59 Co	517.5	103.5	ppb	0.81	1000.	
60 Ni	512.5	102.5	ppb	0.71	1000.	
63 Cu	248.7	49.74	ppb	1.83	#VALUE!	
65 Cu	253.95	50.79	ppb	0.34	2000.	
66 Zn	522.	104.4	ppb	0.58	2000.	
68 Zn	577.5	115.5	ppb	0.98	#VALUE!	
75 As	104.35	20.87	ppb	0.44	1000.	
82 Se	104.3	20.86	ppb	2.96	1000.	
88 Sr	489.9	97.98	ppb	0.94	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	100.1	20.02	ppb	0.92	1000.	
107 Ag	50.95	10.19	ppb	0.31	100.	
109 Ag	51.2	10.24	ppb	1.58	#VALUE!	
111 Cd	254.1	50.82	ppb	0.54	#VALUE!	
114 Cd	255.2	51.04	ppb	1.23	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	506.	101.2	ppb	1.18	1000.	
120 Sn	508.5	101.7	ppb	1.33	#VALUE!	
121 Sb	104.65	20.93	ppb	1.65	#VALUE!	
123 Sb	103.2	20.64	ppb	1.69	1000.	
135 Ba	2,045.5	409.1	ppb	1.50	2000.	
137 Ba	2,049.5	409.9	ppb	1.20	#VALUE!	
182 W	98.8	19.76	ppb	1.41	1000.	
203 Tl	99.1	19.82	ppb	2.38	1000.	
205 Tl	99.6	19.92	ppb	1.74	#VALUE!	
208 Pb	100.15	20.03	ppb	1.44	2000.	
232 Th	93.4	18.68	ppb	1.90	1000.	
238 U	96.8	19.36	ppb	0.78	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4120364.50	3.12	3927738.80	104.9	69.5 - 120	
45 Sc	2650621.80	2.66	2572658.80	103.0	69.5 - 120	
72 Ge	509866.78	2.02	510197.59	99.9	69.5 - 120	
159 Tb	4653340.00	2.06	4617151.00	100.8	69.5 - 120	
209 Bi	2394147.80	1.71	2380666.00	100.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001151

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\030SMPL.D\030SMPL.D#
Date Acquired: May 15 2018 07:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4085-001
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.1175	0.1175	ppb	15.15	100.	
11 B	15.69	15.69	ppb	3.80	1000.	
23 Na	39,940.	39,940.	ppb	1.87	200000.	
25 Mg	962.9	962.9	ppb	0.60	200000.	
27 Al	49.07	49.07	ppb	2.78	200000.	
28 Si	4,228.	4,228.	ppb	2.80	#VALUE!	
29 Si	4,548.	4,548.	ppb	2.10	10000.	
39 K	1,113.	1,113.	ppb	1.45	200000.	
43 Ca	6,408.	6,408.	ppb	1.36	#VALUE!	
44 Ca	6,454.	6,454.	ppb	0.45	200000.	
51 V	0.1515	0.1515	ppb	34.49	1000.	
52 Cr	0.2455	0.2455	ppb	6.71	2000.	
53 Cr	2.601	2.601	ppb	99.92	#VALUE!	
55 Mn	23.02	23.02	ppb	0.51	2000.	
56 Fe	419.3	419.3	ppb	2.33	#VALUE!	
57 Fe	434.7	434.7	ppb	1.50	100000.	
59 Co	0.0608	0.0608	ppb	15.02	1000.	
60 Ni	0.6908	0.6908	ppb	3.18	1000.	
63 Cu	71.28	71.28	ppb	0.47	#VALUE!	
65 Cu	70.51	70.51	ppb	1.25	2000.	
66 Zn	36.63	36.63	ppb	0.64	2000.	
68 Zn	35.58	35.58	ppb	0.97	#VALUE!	
75 As	0.0923	0.0923	ppb	178.01	1000.	
82 Se	0.0632	0.0632	ppb	403.20	1000.	
88 Sr	73.15	73.15	ppb	1.26	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1159	0.1159	ppb	13.62	1000.	
107 Ag	0.0144	0.0144	ppb	14.83	100.	
109 Ag	0.0161	0.0161	ppb	10.08	#VALUE!	
111 Cd	0.0471	0.0471	ppb	35.95	#VALUE!	
114 Cd	0.0656	0.0656	ppb	6.08	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3867	0.3867	ppb	4.91	1000.	
120 Sn	0.3872	0.3872	ppb	4.50	#VALUE!	
121 Sb	0.0279	0.0279	ppb	17.94	#VALUE!	
123 Sb	0.0383	0.0383	ppb	15.61	1000.	
135 Ba	6.841	6.841	ppb	1.68	2000.	
137 Ba	6.941	6.941	ppb	0.31	#VALUE!	
182 W	0.0556	0.0556	ppb	17.32	1000.	
203 Tl	0.0221	0.0221	ppb	31.92	1000.	
205 Tl	0.0243	0.0243	ppb	12.24	#VALUE!	
208 Pb	0.9841	0.9841	ppb	3.95	2000.	
232 Th	0.2131	0.2131	ppb	14.67	1000.	
238 U	5.175	5.175	ppb	1.28	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3996066.30	1.24	3927738.80	101.7	69.5 - 120	
45 Sc	2687386.30	0.35	2572658.80	104.5	69.5 - 120	
72 Ge	521394.69	0.60	510197.59	102.2	69.5 - 120	
159 Tb	4748174.50	0.18	4617151.00	102.8	69.5 - 120	
209 Bi	2321555.30	1.60	2380666.00	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001152

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\031SMPL.D\031SMPL.D#
Date Acquired: May 15 2018 07:50 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4096-001
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0111	0.0111	ppb	15.21	100.	
11 B	17.97	17.97	ppb	2.80	1000.	
23 Na	23,120.	23,120.	ppb	2.21	200000.	
25 Mg	3,894.	3,894.	ppb	2.53	200000.	
27 Al	15.15	15.15	ppb	4.08	200000.	
28 Si	3,109.	3,109.	ppb	2.91	#VALUE!	
29 Si	3,403.	3,403.	ppb	3.06	10000.	
39 K	828.3	828.3	ppb	1.40	200000.	
43 Ca	32,370.	32,370.	ppb	0.89	#VALUE!	
44 Ca	31,370.	31,370.	ppb	1.29	200000.	
51 V	0.1255	0.1255	ppb	65.67	1000.	
52 Cr	0.381	0.381	ppb	12.58	2000.	
53 Cr	-0.8406	-0.8406	ppb	153.46	#VALUE!	
55 Mn	9.425	9.425	ppb	1.33	2000.	
56 Fe	82.31	82.31	ppb	4.13	#VALUE!	
57 Fe	114.5	114.5	ppb	5.28	100000.	
59 Co	0.3615	0.3615	ppb	3.31	1000.	
60 Ni	1.558	1.558	ppb	2.03	1000.	
63 Cu	20.92	20.92	ppb	1.31	#VALUE!	
65 Cu	20.39	20.39	ppb	0.83	2000.	
66 Zn	9.926	9.926	ppb	0.38	2000.	
68 Zn	9.511	9.511	ppb	2.83	#VALUE!	
75 As	0.286	0.286	ppb	28.61	1000.	
82 Se	0.0606	0.0606	ppb	211.68	1000.	
88 Sr	207.5	207.5	ppb	1.47	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.036	0.036	ppb	9.79	1000.	
107 Ag	0.0159	0.0159	ppb	29.66	100.	
109 Ag	0.0125	0.0125	ppb	18.44	#VALUE!	
111 Cd	0.0342	0.0342	ppb	80.82	#VALUE!	
114 Cd	0.0381	0.0381	ppb	19.90	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.885	1.885	ppb	2.27	1000.	
120 Sn	1.888	1.888	ppb	2.28	#VALUE!	
121 Sb	0.0434	0.0434	ppb	14.45	#VALUE!	
123 Sb	0.0484	0.0484	ppb	5.26	1000.	
135 Ba	4.922	4.922	ppb	3.79	2000.	
137 Ba	4.974	4.974	ppb	3.41	#VALUE!	
182 W	0.0182	0.0182	ppb	48.36	1000.	
203 Tl	0.0134	0.0134	ppb	49.49	1000.	
205 Tl	0.005	0.005	ppb	77.95	#VALUE!	
208 Pb	0.6766	0.6766	ppb	1.94	2000.	
232 Th	0.0669	0.0669	ppb	28.58	1000.	
238 U	0.0313	0.0313	ppb	13.94	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4112162.80	1.37	3927738.80	104.7	69.5 - 120	
45 Sc	2705097.80	0.61	2572658.80	105.1	69.5 - 120	
72 Ge	529560.50	0.67	510197.59	103.8	69.5 - 120	
159 Tb	4786442.50	0.46	4617151.00	103.7	69.5 - 120	
209 Bi	2410667.00	0.62	2380666.00	101.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001153

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\032SMPL.D\032SMPL.D#
Date Acquired: May 15 2018 07:54 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-001
Misc Info: LE04IMS1
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.665	1.133	ppb	2.63	100.	
11 B	61.65	12.33	ppb	2.46	1000.	
23 Na	1,124.	224.8	ppb	1.82	200000.	
25 Mg	23,615.	4,723.	ppb	3.40	200000.	
27 Al	98,300.	19,660.	ppb	2.66	200000.	
28 Si	3,178.	635.6	ppb	2.06	#VALUE!	
29 Si	3,164.5	632.9	ppb	1.93	10000.	
39 K	33,880.	6,776.	ppb	0.76	200000.	
43 Ca	25,265.	5,053.	ppb	2.20	#VALUE!	
44 Ca	25,445.	5,089.	ppb	2.10	200000.	
51 V	210.5	42.1	ppb	0.82	1000.	
52 Cr	107.3	21.46	ppb	0.54	2000.	
53 Cr	143.8	28.76	ppb	4.85	#VALUE!	
55 Mn	2,838.5	567.7	ppb	1.22	2000.	
56 Fe	93,950.	18,790.	ppb	0.21	#VALUE!	
57 Fe	91,700.	18,340.	ppb	0.47	100000.	
59 Co	53.1	10.62	ppb	1.06	1000.	
60 Ni	84.75	16.95	ppb	1.39	1000.	
63 Cu	92.85	18.57	ppb	1.25	#VALUE!	
65 Cu	95.2	19.04	ppb	0.97	2000.	
66 Zn	320.5	64.1	ppb	0.94	2000.	
68 Zn	368.35	73.67	ppb	0.74	#VALUE!	
75 As	25.71	5.142	ppb	3.52	1000.	
82 Se	5.905	1.181	ppb	23.64	1000.	
88 Sr	332.15	66.43	ppb	1.01	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.77	2.354	ppb	1.13	1000.	
107 Ag	0.587	0.1174	ppb	5.71	100.	
109 Ag	0.545	0.109	ppb	5.83	#VALUE!	
111 Cd	3.9155	0.7831	ppb	4.13	#VALUE!	
114 Cd	1.9825	0.3965	ppb	2.65	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.605	9.121	ppb	2.18	1000.	
120 Sn	45.345	9.069	ppb	0.45	#VALUE!	
121 Sb	1.3815	0.2763	ppb	1.12	#VALUE!	
123 Sb	1.3885	0.2777	ppb	1.77	1000.	
135 Ba	1,590.5	318.1	ppb	1.71	2000.	
137 Ba	1,602.5	320.5	ppb	1.35	#VALUE!	
182 W	0.8605	0.1721	ppb	2.61	1000.	
203 Tl	2.2645	0.4529	ppb	5.03	1000.	
205 Tl	2.2215	0.4443	ppb	4.94	#VALUE!	
208 Pb	130.55	26.11	ppb	0.86	2000.	
232 Th	79.1	15.82	ppb	0.54	1000.	
238 U	18.015	3.603	ppb	1.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4100547.00	1.42	3927738.80	104.4	69.5 - 120	
45 Sc	2680447.30	1.31	2572658.80	104.2	69.5 - 120	
72 Ge	517377.25	0.53	510197.59	101.4	69.5 - 120	
159 Tb	4881977.00	1.27	4617151.00	105.7	69.5 - 120	
209 Bi	2507848.30	0.82	2380666.00	105.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001154

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\033SMPL.D\033SMPL.D#
Date Acquired: May 15 2018 07:58 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-002
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.855	1.571	ppb	2.39	100.	
11 B	138.8	27.76	ppb	3.54	1000.	
23 Na	2,017.5	403.5	ppb	5.59	200000.	
25 Mg	89,750.	17,950.	ppb	3.87	200000.	
27 Al	171,200.	34,240.	ppb	3.33	200000.	
28 Si	4,025.	805.	ppb	3.46	#VALUE!	
29 Si	3,970.5	794.1	ppb	4.69	10000.	
39 K	46,935.	9,387.	ppb	2.82	200000.	
43 Ca	336,050.	67,210.	ppb	1.98	#VALUE!	
44 Ca	316,850.	63,370.	ppb	2.23	200000.	
51 V	441.85	88.37	ppb	1.30	1000.	
52 Cr	167.85	33.57	ppb	1.81	2000.	
53 Cr	200.4	40.08	ppb	1.72	#VALUE!	
55 Mn	2,977.	595.4	ppb	1.02	2000.	
56 Fe	163,800.	32,760.	ppb	0.65	#VALUE!	
57 Fe	161,050.	32,210.	ppb	1.80	100000.	
59 Co	65.2	13.04	ppb	2.94	1000.	
60 Ni	150.3	30.06	ppb	1.53	1000.	
63 Cu	111.2	22.24	ppb	0.06	#VALUE!	
65 Cu	112.85	22.57	ppb	1.17	2000.	
66 Zn	425.75	85.15	ppb	2.43	2000.	
68 Zn	487.75	97.55	ppb	0.99	#VALUE!	
75 As	113.05	22.61	ppb	1.02	1000.	
82 Se	3.7585	0.7517	ppb	17.25	1000.	
88 Sr	1,356.	271.2	ppb	0.59	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.695	2.139	ppb	0.84	1000.	
107 Ag	0.7635	0.1527	ppb	8.09	100.	
109 Ag	0.6355	0.1271	ppb	8.25	#VALUE!	
111 Cd	2.7505	0.5501	ppb	4.52	#VALUE!	
114 Cd	-0.0084	-0.0017	ppb	343.20	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.3	10.06	ppb	1.62	1000.	
120 Sn	50.7	10.14	ppb	2.37	#VALUE!	
121 Sb	2.48	0.496	ppb	2.93	#VALUE!	
123 Sb	2.4245	0.4849	ppb	1.49	1000.	
135 Ba	2,297.5	459.5	ppb	1.69	2000.	
137 Ba	2,288.5	457.7	ppb	1.61	#VALUE!	
182 W	0.821	0.1642	ppb	8.48	1000.	
203 Tl	2.8515	0.5703	ppb	3.51	1000.	
205 Tl	2.8775	0.5755	ppb	3.04	#VALUE!	
208 Pb	109.9	21.98	ppb	2.45	2000.	
232 Th	76.15	15.23	ppb	2.76	1000.	
238 U	16.255	3.251	ppb	3.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4018657.00	3.16	3927738.80	102.3	69.5 - 120	
45 Sc	2614905.30	1.71	2572658.80	101.6	69.5 - 120	
72 Ge	505923.63	0.42	510197.59	99.2	69.5 - 120	
159 Tb	4816300.50	1.40	4617151.00	104.3	69.5 - 120	
209 Bi	2442884.30	3.00	2380666.00	102.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001155

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\034SMPL.D\034SMPL.D#
Date Acquired: May 15 2018 08:02 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0005	-0.0005	ppb	226.97	100.	
11 B	1.369	1.369	ppb	13.66	1000.	
23 Na	16.46	16.46	ppb	2.47	200000.	
25 Mg	1.985	1.985	ppb	62.72	200000.	
27 Al	3.419	3.419	ppb	74.93	200000.	
28 Si	6.281	6.281	ppb	164.46	#VALUE!	
29 Si	-13.93	-13.93	ppb	81.48	10000.	
39 K	-1.439	-1.439	ppb	123.56	200000.	
43 Ca	44.78	44.78	ppb	15.11	#VALUE!	
44 Ca	37.67	37.67	ppb	9.58	200000.	
51 V	0.0834	0.0834	ppb	41.97	1000.	
52 Cr	-0.0404	-0.0404	ppb	56.58	2000.	
53 Cr	-4.345	-4.345	ppb	0.37	#VALUE!	
55 Mn	0.0833	0.0833	ppb	60.63	2000.	
56 Fe	2.037	2.037	ppb	285.52	#VALUE!	
57 Fe	2.956	2.956	ppb	46.58	100000.	
59 Co	0.0045	0.0045	ppb	99.73	1000.	
60 Ni	0.0348	0.0348	ppb	23.95	1000.	
63 Cu	0.2209	0.2209	ppb	7.21	#VALUE!	
65 Cu	0.234	0.234	ppb	10.47	2000.	
66 Zn	0.6397	0.6397	ppb	8.23	2000.	
68 Zn	0.415	0.415	ppb	5.15	#VALUE!	
75 As	0.0047	0.0047	ppb	4236.90	1000.	
82 Se	0.1101	0.1101	ppb	67.48	1000.	
88 Sr	0.0483	0.0483	ppb	40.56	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0118	0.0118	ppb	27.29	1000.	
107 Ag	0.001	0.001	ppb	165.83	100.	
109 Ag	0.0012	0.0012	ppb	192.54	#VALUE!	
111 Cd	0.0001	0.0001	ppb	6639.10	#VALUE!	
114 Cd	0.0016	0.0016	ppb	52.71	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0613	0.0613	ppb	25.29	1000.	
120 Sn	0.0357	0.0357	ppb	38.76	#VALUE!	
121 Sb	0.0012	0.0012	ppb	159.63	#VALUE!	
123 Sb	0.0051	0.0051	ppb	92.45	1000.	
135 Ba	0.1388	0.1388	ppb	15.95	2000.	
137 Ba	0.1252	0.1252	ppb	12.68	#VALUE!	
182 W	0.0061	0.0061	ppb	39.75	1000.	
203 Tl	0.0097	0.0097	ppb	96.96	1000.	
205 Tl	0.0039	0.0039	ppb	38.20	#VALUE!	
208 Pb	0.1189	0.1189	ppb	10.72	2000.	
232 Th	0.0186	0.0186	ppb	44.47	1000.	
238 U	0.0007	0.0007	ppb	136.42	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3954243.30	0.87	3927738.80	100.7	69.5 - 120	
45 Sc	2540530.50	0.79	2572658.80	98.8	69.5 - 120	
72 Ge	502235.00	0.90	510197.59	98.4	69.5 - 120	
159 Tb	4602784.00	1.62	4617151.00	99.7	69.5 - 120	
209 Bi	2371603.30	1.39	2380666.00	99.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001156

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\035SMPL.D\035SMPL.D#
Date Acquired: May 15 2018 08:07 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE07IMW1
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0005	-0.0001	ppb	1144.80	100.	
11 B	3.2275	0.6455	ppb	8.17	1000.	
23 Na	15.32	3.064	ppb	11.14	200000.	
25 Mg	9.73	1.946	ppb	7.28	200000.	
27 Al	7.385	1.477	ppb	13.01	200000.	
28 Si	41.275	8.255	ppb	138.95	#VALUE!	
29 Si	-42.75	-8.55	ppb	82.41	10000.	
39 K	-9.28	-1.856	ppb	103.56	200000.	
43 Ca	3.5895	0.7179	ppb	534.34	#VALUE!	
44 Ca	12.675	2.535	ppb	37.94	200000.	
51 V	0.0058	0.0012	ppb	5462.70	1000.	
52 Cr	-0.2075	-0.0415	ppb	46.43	2000.	
53 Cr	-8.63	-1.726	ppb	19.22	#VALUE!	
55 Mn	0.079	0.0158	ppb	22.24	2000.	
56 Fe	-13.51	-2.702	ppb	46.78	#VALUE!	
57 Fe	-0.5155	-0.1031	ppb	2183.30	100000.	
59 Co	-0.0039	-0.0008	ppb	304.24	1000.	
60 Ni	-0.008	-0.0016	ppb	484.06	1000.	
63 Cu	0.086	0.0172	ppb	78.94	#VALUE!	
65 Cu	0.1503	0.0301	ppb	15.06	2000.	
66 Zn	0.5215	0.1043	ppb	14.92	2000.	
68 Zn	0.1087	0.0217	ppb	482.28	#VALUE!	
75 As	0.8845	0.1769	ppb	49.84	1000.	
82 Se	0.998	0.1996	ppb	46.39	1000.	
88 Sr	0.0105	0.0021	ppb	118.26	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0157	0.0031	ppb	81.79	1000.	
107 Ag	0.0023	0.0005	ppb	428.94	100.	
109 Ag	-0.0015	-0.0003	ppb	837.87	#VALUE!	
111 Cd	-0.0551	-0.011	ppb	66.57	#VALUE!	
114 Cd	0.01	0.002	ppb	168.35	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.1209	0.0242	ppb	50.95	1000.	
120 Sn	0.0797	0.0159	ppb	95.17	#VALUE!	
121 Sb	0.0027	0.0005	ppb	514.26	#VALUE!	
123 Sb	0.0226	0.0045	ppb	2.70	1000.	
135 Ba	0.0549	0.011	ppb	40.29	2000.	
137 Ba	0.0323	0.0065	ppb	138.31	#VALUE!	
182 W	0.031	0.0062	ppb	28.66	1000.	
203 Tl	0.0109	0.0022	ppb	373.78	1000.	
205 Tl	0.0045	0.0009	ppb	532.52	#VALUE!	
208 Pb	-0.106	-0.0212	ppb	40.14	2000.	
232 Th	0.1015	0.0203	ppb	50.91	1000.	
238 U	-0.0017	-0.0003	ppb	76.06	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3902003.80	1.95	3927738.80	99.3	69.5 - 120	
45 Sc	2518454.30	1.96	2572658.80	97.9	69.5 - 120	
72 Ge	498793.03	2.06	510197.59	97.8	69.5 - 120	
159 Tb	4580423.50	1.27	4617151.00	99.2	69.5 - 120	
209 Bi	2383297.50	0.73	2380666.00	100.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001157

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\036SMPL.D\036SMPL.D#
Date Acquired: May 15 2018 08:11 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE07IMW1
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	48.89	9.778	ppb	2.28	100.	
11 B	497.2	99.44	ppb	3.34	1000.	
23 Na	7,435.	1,487.	ppb	1.90	200000.	
25 Mg	5,020.	1,004.	ppb	1.97	200000.	
27 Al	2,034.5	406.9	ppb	0.49	200000.	
28 Si	1,032.	206.4	ppb	3.58	#VALUE!	
29 Si	909.	181.8	ppb	5.24	10000.	
39 K	9,920.	1,984.	ppb	0.47	200000.	
43 Ca	2,882.	576.4	ppb	3.58	#VALUE!	
44 Ca	2,512.5	502.5	ppb	0.28	200000.	
51 V	503.	100.6	ppb	1.59	1000.	
52 Cr	196.75	39.35	ppb	0.98	2000.	
53 Cr	204.3	40.86	ppb	2.09	#VALUE!	
55 Mn	502.	100.4	ppb	1.34	2000.	
56 Fe	981.5	196.3	ppb	3.08	#VALUE!	
57 Fe	983.	196.6	ppb	4.09	100000.	
59 Co	518.	103.6	ppb	1.98	1000.	
60 Ni	505.5	101.1	ppb	1.04	1000.	
63 Cu	247.9	49.58	ppb	0.12	#VALUE!	
65 Cu	253.65	50.73	ppb	0.40	2000.	
66 Zn	517.	103.4	ppb	0.92	2000.	
68 Zn	578.5	115.7	ppb	1.39	#VALUE!	
75 As	104.2	20.84	ppb	0.70	1000.	
82 Se	104.15	20.83	ppb	3.65	1000.	
88 Sr	493.15	98.63	ppb	0.74	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.15	20.23	ppb	0.47	1000.	
107 Ag	51.2	10.24	ppb	0.90	100.	
109 Ag	50.85	10.17	ppb	0.59	#VALUE!	
111 Cd	255.85	51.17	ppb	0.92	#VALUE!	
114 Cd	255.55	51.11	ppb	0.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	503.5	100.7	ppb	1.45	1000.	
120 Sn	501.	100.2	ppb	1.74	#VALUE!	
121 Sb	102.95	20.59	ppb	2.01	#VALUE!	
123 Sb	102.85	20.57	ppb	2.60	1000.	
135 Ba	2,023.	404.6	ppb	1.40	2000.	
137 Ba	2,003.	400.6	ppb	1.26	#VALUE!	
182 W	101.25	20.25	ppb	2.49	1000.	
203 Tl	98.9	19.78	ppb	0.22	1000.	
205 Tl	99.4	19.88	ppb	1.63	#VALUE!	
208 Pb	100.1	20.02	ppb	1.10	2000.	
232 Th	95.7	19.14	ppb	1.00	1000.	
238 U	97.9	19.58	ppb	1.04	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4077643.30	2.03	3927738.80	103.8	69.5 - 120	
45 Sc	2589261.00	1.20	2572658.80	100.6	69.5 - 120	
72 Ge	504378.34	0.91	510197.59	98.9	69.5 - 120	
159 Tb	4679568.50	1.53	4617151.00	101.4	69.5 - 120	
209 Bi	2421956.80	0.21	2380666.00	101.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001158

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\037SMPL.D\037SMPL.D#
Date Acquired: May 15 2018 08:15 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-002
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.565	0.113	ppb	8.41	100.	
11 B	270.9	54.18	ppb	5.28	1000.	
23 Na	281,450.	56,290.	ppb	2.79	200000.	
25 Mg	66,350.	13,270.	ppb	1.16	200000.	
27 Al	10,425.	2,085.	ppb	2.21	200000.	
28 Si	36,865.	7,373.	ppb	0.68	#VALUE!	
29 Si	39,630.	7,926.	ppb	1.36	10000.	
39 K	20,310.	4,062.	ppb	1.69	200000.	
43 Ca	354,100.	70,820.	ppb	2.05	#VALUE!	
44 Ca	331,150.	66,230.	ppb	1.00	200000.	
51 V	34.26	6.852	ppb	2.68	1000.	
52 Cr	41.56	8.312	ppb	1.28	2000.	
53 Cr	77.25	15.45	ppb	13.81	#VALUE!	
55 Mn	1,451.5	290.3	ppb	1.17	2000.	
56 Fe	14,625.	2,925.	ppb	1.72	#VALUE!	
57 Fe	15,345.	3,069.	ppb	1.17	100000.	
59 Co	6.085	1.217	ppb	3.17	1000.	
60 Ni	21.22	4.244	ppb	2.30	1000.	
63 Cu	23.38	4.676	ppb	2.23	#VALUE!	
65 Cu	15.735	3.147	ppb	3.16	2000.	
66 Zn	140.85	28.17	ppb	3.21	2000.	
68 Zn	139.95	27.99	ppb	2.15	#VALUE!	
75 As	20.38	4.076	ppb	4.63	1000.	
82 Se	1.724	0.3448	ppb	71.11	1000.	
88 Sr	1,422.	284.4	ppb	0.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	21.97	4.394	ppb	2.38	1000.	
107 Ag	0.0407	0.0081	ppb	31.68	100.	
109 Ag	0.0271	0.0054	ppb	31.30	#VALUE!	
111 Cd	0.0545	0.0109	ppb	198.81	#VALUE!	
114 Cd	0.0201	0.004	ppb	248.53	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.48	0.496	ppb	0.50	1000.	
120 Sn	2.537	0.5074	ppb	2.84	#VALUE!	
121 Sb	0.922	0.1844	ppb	2.61	#VALUE!	
123 Sb	0.9775	0.1955	ppb	3.55	1000.	
135 Ba	243.45	48.69	ppb	0.75	2000.	
137 Ba	245.65	49.13	ppb	1.19	#VALUE!	
182 W	0.5595	0.1119	ppb	16.59	1000.	
203 Tl	0.1717	0.0343	ppb	31.36	1000.	
205 Tl	0.1416	0.0283	ppb	13.29	#VALUE!	
208 Pb	10.725	2.145	ppb	1.47	2000.	
232 Th	7.525	1.505	ppb	3.38	1000.	
238 U	4.9885	0.9977	ppb	2.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4012288.30	3.19	3927738.80	102.2	69.5 - 120	
45 Sc	2587933.00	2.15	2572658.80	100.6	69.5 - 120	
72 Ge	514773.69	0.82	510197.59	100.9	69.5 - 120	
159 Tb	4848173.50	1.33	4617151.00	105.0	69.5 - 120	
209 Bi	2408503.00	1.63	2380666.00	101.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001159

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\038_CCV.D\038_CCV.D#
Date Acquired: May 15 2018 08:19 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.66	ppb	0.94	25	98.64	
11 B	26.34	ppb	2.74	25	105.36	
23 Na	4,618.	ppb	3.62	5,000	92.36	
25 Mg	4,686.	ppb	1.60	5,000	93.72	
27 Al	479.7	ppb	1.29	500	95.94	
28 Si	466.9	ppb	0.76	500	93.38	
29 Si	454.	ppb	2.23	500	90.8	
39 K	4,757.	ppb	0.42	5,000	95.14	
43 Ca	4,844.	ppb	1.11	5,000	96.88	
44 Ca	4,918.	ppb	2.07	5,000	98.36	
51 V	24.04	ppb	1.79	25	96.16	
52 Cr	24.45	ppb	0.63	25	97.8	
53 Cr	23.17	ppb	8.70	25	92.68	
55 Mn	24.21	ppb	1.28	25	96.84	
56 Fe	4,774.	ppb	0.61	5,000	95.48	
57 Fe	4,875.	ppb	0.34	5,000	97.5	
59 Co	24.49	ppb	1.48	25	97.96	
60 Ni	24.6	ppb	0.87	25	98.4	
63 Cu	24.61	ppb	0.77	25	98.44	
65 Cu	24.5	ppb	1.15	25	98	
66 Zn	24.97	ppb	2.04	25	99.88	
68 Zn	24.63	ppb	1.10	25	98.52	
75 As	24.72	ppb	0.59	25	98.88	
82 Se	25.41	ppb	0.62	25	101.64	
88 Sr	23.93	ppb	0.92	25	95.72	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.66	ppb	1.01	25	98.64	
107 Ag	24.95	ppb	1.37	25	99.8	
109 Ag	24.86	ppb	0.76	25	99.44	
111 Cd	24.92	ppb	1.49	25	99.68	
114 Cd	24.98	ppb	1.15	25	99.92	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.16	ppb	1.43	25	96.64	
120 Sn	24.04	ppb	2.89	25	96.16	
121 Sb	24.57	ppb	1.69	25	98.28	
123 Sb	24.58	ppb	1.92	25	98.32	
135 Ba	25.06	ppb	2.64	25	100.24	
137 Ba	24.58	ppb	3.28	25	98.32	
182 W	24.52	ppb	3.07	25	98.08	
203 Tl	24.	ppb	2.37	25	96	
205 Tl	24.2	ppb	2.32	25	96.8	
208 Pb	24.23	ppb	1.89	25	96.92	
232 Th	23.78	ppb	2.92	25	95.12	
238 U	23.88	ppb	1.95	25	95.52	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4016574.50	0.62	3927738.80	102.3	80 - 120.4	
45 Sc	2682869.80	1.41	2572658.80	104.3	80 - 120.4	
72 Ge	512815.84	0.70	510197.59	100.5	80 - 120.4	
159 Tb	4822348.00	1.80	4617151.00	104.4	80 - 120.4	
209 Bi	2488946.80	1.42	2380666.00	104.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001160

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\039_CCB.D\039_CCB.D#
Date Acquired: May 15 2018 08:23 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0018	ppb	166.59	1.00	
11 B	2.18	ppb	9.85	1.00	
23 Na	3.602	ppb	60.05	1.00	
25 Mg	0.7431	ppb	127.01	1.00	
27 Al	0.2165	ppb	89.70	1.00	
28 Si	10.97	ppb	16.45	1.00	
29 Si	3.096	ppb	150.32	1.00	
39 K	1.707	ppb	141.07	1.00	
43 Ca	5.974	ppb	112.69	1.00	
44 Ca	2.844	ppb	72.08	1.00	
51 V	0.0613	ppb	73.32	1.00	
52 Cr	-0.0046	ppb	347.31	1.00	
53 Cr	-3.014	ppb	7.23	1.00	
55 Mn	0.0084	ppb	196.07	1.00	
56 Fe	3.556	ppb	114.06	1.00	
57 Fe	0.5631	ppb	162.56	1.00	
59 Co	0.0046	ppb	112.92	1.00	
60 Ni	0.0083	ppb	91.24	1.00	
63 Cu	0.0178	ppb	39.05	1.00	
65 Cu	0.0209	ppb	12.50	1.00	
66 Zn	0.0659	ppb	135.88	1.00	
68 Zn	-0.1338	ppb	14.48	1.00	
75 As	0.1143	ppb	63.07	1.00	
82 Se	0.1674	ppb	170.79	1.00	
88 Sr	0.0093	ppb	156.50	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0311	ppb	15.59	1.00	
107 Ag	0.0036	ppb	102.78	1.00	
109 Ag	0.0026	ppb	162.63	1.00	
111 Cd	0.038	ppb	26.44	1.00	
114 Cd	0.0046	ppb	118.29	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0577	ppb	20.32	1.00	
120 Sn	0.0524	ppb	19.21	1.00	
121 Sb	0.0074	ppb	32.47	1.00	
123 Sb	0.0091	ppb	15.92	1.00	
135 Ba	0.017	ppb	61.72	1.00	
137 Ba	0.0133	ppb	83.11	1.00	
182 W	0.0513	ppb	22.58	1.00	
203 Tl	0.0106	ppb	85.40	1.00	
205 Tl	0.0039	ppb	27.82	1.00	
208 Pb	-0.0135	ppb	81.05	1.00	
232 Th	0.0606	ppb	8.96	1.00	
238 U	0.0023	ppb	85.16	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3855350.00	4.90	3927738.80	98.2	79.5 - 120	
45 Sc	2535912.00	1.46	2572658.80	98.6	79.5 - 120	
72 Ge	503141.22	1.14	510197.59	98.6	79.5 - 120	
159 Tb	4563850.00	0.42	4617151.00	98.8	79.5 - 120	
209 Bi	2369504.00	1.12	2380666.00	99.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001161

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\040SMPL.D\040SMPL.D#
Date Acquired: May 15 2018 08:27 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-003
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0126	0.0025	ppb	48.18	100.	
11 B	273.	54.6	ppb	3.85	1000.	
23 Na	305,000.	61,000.	ppb	0.95	200000.	
25 Mg	71,150.	14,230.	ppb	1.19	200000.	
27 Al	9.925	1.985	ppb	3.48	200000.	
28 Si	14,335.	2,867.	ppb	0.97	#VALUE!	
29 Si	15,225.	3,045.	ppb	4.55	10000.	
39 K	19,070.	3,814.	ppb	0.50	200000.	
43 Ca	371,750.	74,350.	ppb	0.95	#VALUE!	
44 Ca	354,600.	70,920.	ppb	1.17	200000.	
51 V	1.3985	0.2797	ppb	16.60	1000.	
52 Cr	2.24	0.448	ppb	9.19	2000.	
53 Cr	77.5	15.5	ppb	31.92	#VALUE!	
55 Mn	1,442.	288.4	ppb	1.49	2000.	
56 Fe	1,524.	304.8	ppb	1.14	#VALUE!	
57 Fe	1,893.5	378.7	ppb	1.42	100000.	
59 Co	1.7355	0.3471	ppb	4.47	1000.	
60 Ni	6.02	1.204	ppb	6.06	1000.	
63 Cu	14.31	2.862	ppb	1.68	#VALUE!	
65 Cu	5.47	1.094	ppb	5.23	2000.	
66 Zn	29.255	5.851	ppb	2.15	2000.	
68 Zn	26.145	5.229	ppb	3.13	#VALUE!	
75 As	14.57	2.914	ppb	5.66	1000.	
82 Se	1.3745	0.2749	ppb	34.63	1000.	
88 Sr	1,485.	297.	ppb	0.90	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	15.175	3.035	ppb	1.23	1000.	
107 Ag	0.0197	0.0039	ppb	19.61	100.	
109 Ag	0.0119	0.0024	ppb	69.31	#VALUE!	
111 Cd	0.0839	0.0168	ppb	87.06	#VALUE!	
114 Cd	0.0125	0.0025	ppb	229.20	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.0405	0.2081	ppb	12.89	1000.	
120 Sn	1.0075	0.2015	ppb	5.49	#VALUE!	
121 Sb	0.8245	0.1649	ppb	10.89	#VALUE!	
123 Sb	0.87	0.174	ppb	8.86	1000.	
135 Ba	41.17	8.234	ppb	1.44	2000.	
137 Ba	40.555	8.111	ppb	1.02	#VALUE!	
182 W	0.2407	0.0481	ppb	9.67	1000.	
203 Tl	0.0231	0.0046	ppb	157.01	1000.	
205 Tl	-0.0041	-0.0008	ppb	724.06	#VALUE!	
208 Pb	-0.0233	-0.0047	ppb	117.66	2000.	
232 Th	0.4747	0.0949	ppb	20.14	1000.	
238 U	4.1975	0.8395	ppb	1.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3922212.00	3.83	3927738.80	99.9	69.5 - 120	
45 Sc	2669194.00	1.05	2572658.80	103.8	69.5 - 120	
72 Ge	527739.19	1.61	510197.59	103.4	69.5 - 120	
159 Tb	4851172.00	1.82	4617151.00	105.1	69.5 - 120	
209 Bi	2389735.50	0.85	2380666.00	100.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001162

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\041SMPL.D\041SMPL.D#
Date Acquired: May 15 2018 08:31 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.1595	0.0319	ppb	5.06	100.	
11 B	227.45	45.49	ppb	0.73	1000.	
23 Na	318,900.	63,780.	ppb	2.08	200000.	
25 Mg	79,150.	15,830.	ppb	2.85	200000.	
27 Al	3,138.5	627.7	ppb	1.63	200000.	
28 Si	24,430.	4,886.	ppb	0.63	#VALUE!	
29 Si	26,640.	5,328.	ppb	1.06	10000.	
39 K	19,600.	3,920.	ppb	1.85	200000.	
43 Ca	394,500.	78,900.	ppb	0.92	#VALUE!	
44 Ca	372,250.	74,450.	ppb	0.34	200000.	
51 V	7.6	1.52	ppb	7.45	1000.	
52 Cr	27.755	5.551	ppb	1.40	2000.	
53 Cr	104.65	20.93	ppb	3.57	#VALUE!	
55 Mn	1,357.5	271.5	ppb	0.59	2000.	
56 Fe	10,615.	2,123.	ppb	0.61	#VALUE!	
57 Fe	11,010.	2,202.	ppb	0.09	100000.	
59 Co	2.026	0.4052	ppb	4.58	1000.	
60 Ni	11.155	2.231	ppb	2.52	1000.	
63 Cu	22.105	4.421	ppb	0.22	#VALUE!	
65 Cu	12.915	2.583	ppb	1.54	2000.	
66 Zn	143.4	28.68	ppb	0.63	2000.	
68 Zn	138.25	27.65	ppb	2.13	#VALUE!	
75 As	13.885	2.777	ppb	6.02	1000.	
82 Se	3.5235	0.7047	ppb	5.47	1000.	
88 Sr	1,645.	329.	ppb	0.75	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.455	3.491	ppb	3.31	1000.	
107 Ag	0.0177	0.0035	ppb	67.36	100.	
109 Ag	0.0168	0.0034	ppb	112.43	#VALUE!	
111 Cd	0.1835	0.0367	ppb	74.44	#VALUE!	
114 Cd	0.0327	0.0065	ppb	59.91	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.5255	0.5051	ppb	4.45	1000.	
120 Sn	2.47	0.494	ppb	2.98	#VALUE!	
121 Sb	0.2651	0.053	ppb	20.16	#VALUE!	
123 Sb	0.3426	0.0685	ppb	12.02	1000.	
135 Ba	96.5	19.3	ppb	2.93	2000.	
137 Ba	97.2	19.44	ppb	1.52	#VALUE!	
182 W	0.3587	0.0717	ppb	19.86	1000.	
203 Tl	0.0819	0.0164	ppb	23.66	1000.	
205 Tl	0.0621	0.0124	ppb	33.85	#VALUE!	
208 Pb	3.401	0.6802	ppb	2.07	2000.	
232 Th	2.475	0.495	ppb	7.68	1000.	
238 U	2.074	0.4148	ppb	0.41	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3761706.30	0.93	3927738.80	95.8	69.5 - 120	
45 Sc	2630217.30	0.98	2572658.80	102.2	69.5 - 120	
72 Ge	520460.09	0.22	510197.59	102.0	69.5 - 120	
159 Tb	4803478.50	0.71	4617151.00	104.0	69.5 - 120	
209 Bi	2372049.80	1.26	2380666.00	99.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001163

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\042SMPL.D\042SMPL.D#
Date Acquired: May 15 2018 08:36 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004L
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.1301	0.0052	ppb	47.83	100.	
11 B	272.25	10.89	ppb	1.46	1000.	
23 Na	323,500.	12,940.	ppb	1.70	200000.	
25 Mg	80,700.	3,228.	ppb	0.26	200000.	
27 Al	3,342.5	133.7	ppb	3.55	200000.	
28 Si	23,890.	955.6	ppb	1.38	#VALUE!	
29 Si	24,085.	963.4	ppb	1.64	10000.	
39 K	19,195.	767.8	ppb	0.90	200000.	
43 Ca	387,500.	15,500.	ppb	0.80	#VALUE!	
44 Ca	377,250.	15,090.	ppb	0.97	200000.	
51 V	6.6275	0.2651	ppb	35.81	1000.	
52 Cr	27.775	1.111	ppb	2.76	2000.	
53 Cr	160.4	6.416	ppb	3.33	#VALUE!	
55 Mn	1,418.25	56.73	ppb	0.69	2000.	
56 Fe	10,665.	426.6	ppb	0.49	#VALUE!	
57 Fe	11,350.	454.	ppb	2.21	100000.	
59 Co	2.071	0.0828	ppb	5.76	1000.	
60 Ni	11.62	0.4648	ppb	9.35	1000.	
63 Cu	22.8925	0.9157	ppb	4.26	#VALUE!	
65 Cu	13.63	0.5452	ppb	3.79	2000.	
66 Zn	157.25	6.29	ppb	3.32	2000.	
68 Zn	146.125	5.845	ppb	4.09	#VALUE!	
75 As	16.2825	0.6513	ppb	25.84	1000.	
82 Se	2.505	0.1002	ppb	152.30	1000.	
88 Sr	1,719.75	68.79	ppb	0.01	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.36	0.6944	ppb	3.76	1000.	
107 Ag	0.0652	0.0026	ppb	38.75	100.	
109 Ag	0.0023	0.0001	ppb	1209.80	#VALUE!	
111 Cd	0.8203	0.0328	ppb	46.11	#VALUE!	
114 Cd	0.063	0.0025	ppb	68.59	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.0875	0.1235	ppb	8.49	1000.	
120 Sn	2.7525	0.1101	ppb	13.72	#VALUE!	
121 Sb	0.3068	0.0123	ppb	9.92	#VALUE!	
123 Sb	0.5538	0.0222	ppb	9.28	1000.	
135 Ba	98.325	3.933	ppb	2.79	2000.	
137 Ba	100.275	4.011	ppb	3.75	#VALUE!	
182 W	0.4108	0.0164	ppb	13.59	1000.	
203 Tl	0.085	0.0034	ppb	126.68	1000.	
205 Tl	-0.0314	-0.0013	ppb	51.93	#VALUE!	
208 Pb	2.5325	0.1013	ppb	15.81	2000.	
232 Th	2.2078	0.0883	ppb	7.36	1000.	
238 U	1.8965	0.0759	ppb	3.92	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3991227.80	0.78	3927738.80	101.6	69.5 - 120	
45 Sc	2673605.30	1.11	2572658.80	103.9	69.5 - 120	
72 Ge	525500.75	1.02	510197.59	103.0	69.5 - 120	
159 Tb	4809825.00	0.79	4617151.00	104.2	69.5 - 120	
209 Bi	2480411.30	0.94	2380666.00	104.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001164

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\043SMPL.D\043SMPL.D#
Date Acquired: May 15 2018 08:40 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004A
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.675	2.135	ppb	6.26	100.	
11 B	424.05	84.81	ppb	2.43	1000.	
23 Na	323,600.	64,720.	ppb	2.31	200000.	
25 Mg	78,800.	15,760.	ppb	2.24	200000.	
27 Al	4,029.5	805.9	ppb	1.58	200000.	
28 Si	29,100.	5,820.	ppb	1.07	#VALUE!	
29 Si	31,470.	6,294.	ppb	2.08	10000.	
39 K	29,095.	5,819.	ppb	0.57	200000.	
43 Ca	384,500.	76,900.	ppb	1.09	#VALUE!	
44 Ca	363,400.	72,680.	ppb	1.25	200000.	
51 V	57.7	11.54	ppb	1.73	1000.	
52 Cr	76.5	15.3	ppb	0.88	2000.	
53 Cr	143.85	28.77	ppb	1.57	#VALUE!	
55 Mn	1,356.5	271.3	ppb	1.03	2000.	
56 Fe	11,375.	2,275.	ppb	0.02	#VALUE!	
57 Fe	11,740.	2,348.	ppb	1.00	100000.	
59 Co	11.9	2.38	ppb	1.44	1000.	
60 Ni	30.345	6.069	ppb	1.78	1000.	
63 Cu	51.05	10.21	ppb	1.79	#VALUE!	
65 Cu	41.31	8.262	ppb	1.78	2000.	
66 Zn	232.2	46.44	ppb	0.87	2000.	
68 Zn	230.1	46.02	ppb	1.71	#VALUE!	
75 As	61.15	12.23	ppb	1.53	1000.	
82 Se	49.595	9.919	ppb	1.10	1000.	
88 Sr	1,671.5	334.3	ppb	0.47	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	67.7	13.54	ppb	0.87	1000.	
107 Ag	9.675	1.935	ppb	0.78	100.	
109 Ag	9.705	1.941	ppb	1.93	#VALUE!	
111 Cd	9.775	1.955	ppb	3.17	#VALUE!	
114 Cd	9.775	1.955	ppb	2.93	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.35	10.47	ppb	1.15	1000.	
120 Sn	52.2	10.44	ppb	1.01	#VALUE!	
121 Sb	10.135	2.027	ppb	1.62	#VALUE!	
123 Sb	10.34	2.068	ppb	4.67	1000.	
135 Ba	115.9	23.18	ppb	2.14	2000.	
137 Ba	115.3	23.06	ppb	1.10	#VALUE!	
182 W	53.25	10.65	ppb	1.36	1000.	
203 Tl	10.635	2.127	ppb	1.75	1000.	
205 Tl	10.475	2.095	ppb	0.50	#VALUE!	
208 Pb	13.87	2.774	ppb	1.24	2000.	
232 Th	13.18	2.636	ppb	0.94	1000.	
238 U	13.03	2.606	ppb	1.81	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3962230.80	3.94	3927738.80	100.9	69.5 - 120	
45 Sc	2669154.00	0.73	2572658.80	103.8	69.5 - 120	
72 Ge	522555.25	1.02	510197.59	102.4	69.5 - 120	
159 Tb	4847288.50	1.72	4617151.00	105.0	69.5 - 120	
209 Bi	2373576.80	1.34	2380666.00	99.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001165

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\044SMPL.D\044SMPL.D#
Date Acquired: May 15 2018 08:44 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004S
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	56.05	11.21	ppb	2.73	100.	
11 B	820.	164.	ppb	2.33	1000.	
23 Na	357,250.	71,450.	ppb	1.04	200000.	
25 Mg	94,200.	18,840.	ppb	3.87	200000.	
27 Al	5,830.	1,166.	ppb	2.57	200000.	
28 Si	28,810.	5,762.	ppb	3.56	#VALUE!	
29 Si	31,215.	6,243.	ppb	2.43	10000.	
39 K	31,925.	6,385.	ppb	2.30	200000.	
43 Ca	438,950.	87,790.	ppb	0.96	#VALUE!	
44 Ca	418,250.	83,650.	ppb	1.60	200000.	
51 V	578.5	115.7	ppb	0.58	1000.	
52 Cr	245.95	49.19	ppb	1.76	2000.	
53 Cr	331.8	66.36	ppb	0.77	#VALUE!	
55 Mn	2,027.	405.4	ppb	0.48	2000.	
56 Fe	12,935.	2,587.	ppb	1.14	#VALUE!	
57 Fe	13,160.	2,632.	ppb	1.42	100000.	
59 Co	561.5	112.3	ppb	0.09	1000.	
60 Ni	550.	110.	ppb	0.43	1000.	
63 Cu	286.	57.2	ppb	0.68	#VALUE!	
65 Cu	278.85	55.77	ppb	1.22	2000.	
66 Zn	669.5	133.9	ppb	1.35	2000.	
68 Zn	729.5	145.9	ppb	1.27	#VALUE!	
75 As	124.45	24.89	ppb	3.33	1000.	
82 Se	108.15	21.63	ppb	2.15	1000.	
88 Sr	2,369.	473.8	ppb	0.88	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	133.15	26.63	ppb	1.31	1000.	
107 Ag	52.5	10.5	ppb	1.29	100.	
109 Ag	52.55	10.51	ppb	1.73	#VALUE!	
111 Cd	263.35	52.67	ppb	1.40	#VALUE!	
114 Cd	265.6	53.12	ppb	1.50	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	550.5	110.1	ppb	1.98	1000.	
120 Sn	549.5	109.9	ppb	1.21	#VALUE!	
121 Sb	109.65	21.93	ppb	1.58	#VALUE!	
123 Sb	110.25	22.05	ppb	2.36	1000.	
135 Ba	2,338.	467.6	ppb	1.69	2000.	
137 Ba	2,366.	473.2	ppb	0.91	#VALUE!	
182 W	116.1	23.22	ppb	0.59	1000.	
203 Tl	114.9	22.98	ppb	1.33	1000.	
205 Tl	115.2	23.04	ppb	2.10	#VALUE!	
208 Pb	119.1	23.82	ppb	1.33	2000.	
232 Th	122.9	24.58	ppb	1.28	1000.	
238 U	124.3	24.86	ppb	1.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4030679.50	3.28	3927738.80	102.6	69.5 - 120	
45 Sc	2672440.00	1.89	2572658.80	103.9	69.5 - 120	
72 Ge	511634.94	0.82	510197.59	100.3	69.5 - 120	
159 Tb	4784838.50	1.14	4617151.00	103.6	69.5 - 120	
209 Bi	2347763.50	1.44	2380666.00	98.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001166

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\045SMPL.D\045SMPL.D#
Date Acquired: May 15 2018 08:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004P
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	49.4	9.88	ppb	2.13	100.	
11 B	743.5	148.7	ppb	3.57	1000.	
23 Na	336,950.	67,390.	ppb	2.01	200000.	
25 Mg	86,600.	17,320.	ppb	2.19	200000.	
27 Al	5,490.	1,098.	ppb	1.87	200000.	
28 Si	26,070.	5,214.	ppb	1.68	#VALUE!	
29 Si	28,425.	5,685.	ppb	1.87	10000.	
39 K	29,220.	5,844.	ppb	2.05	200000.	
43 Ca	399,050.	79,810.	ppb	1.71	#VALUE!	
44 Ca	374,400.	74,880.	ppb	1.17	200000.	
51 V	516.	103.2	ppb	1.54	1000.	
52 Cr	219.9	43.98	ppb	1.40	2000.	
53 Cr	298.1	59.62	ppb	0.55	#VALUE!	
55 Mn	1,817.	363.4	ppb	0.64	2000.	
56 Fe	11,565.	2,313.	ppb	1.24	#VALUE!	
57 Fe	11,890.	2,378.	ppb	1.48	100000.	
59 Co	504.5	100.9	ppb	0.87	1000.	
60 Ni	489.15	97.83	ppb	0.75	1000.	
63 Cu	253.2	50.64	ppb	0.22	#VALUE!	
65 Cu	248.2	49.64	ppb	1.21	2000.	
66 Zn	593.5	118.7	ppb	1.17	2000.	
68 Zn	645.	129.	ppb	0.54	#VALUE!	
75 As	111.25	22.25	ppb	1.53	1000.	
82 Se	96.4	19.28	ppb	0.96	1000.	
88 Sr	2,107.5	421.5	ppb	1.02	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	116.15	23.23	ppb	0.30	1000.	
107 Ag	46.11	9.222	ppb	0.30	100.	
109 Ag	46.235	9.247	ppb	0.82	#VALUE!	
111 Cd	230.	46.	ppb	0.52	#VALUE!	
114 Cd	230.65	46.13	ppb	0.53	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	495.05	99.01	ppb	0.92	1000.	
120 Sn	495.5	99.1	ppb	0.57	#VALUE!	
121 Sb	98.25	19.65	ppb	1.23	#VALUE!	
123 Sb	97.75	19.55	ppb	0.57	1000.	
135 Ba	2,098.5	419.7	ppb	0.68	2000.	
137 Ba	2,131.5	426.3	ppb	0.33	#VALUE!	
182 W	99.55	19.91	ppb	0.98	1000.	
203 Tl	101.7	20.34	ppb	0.61	1000.	
205 Tl	101.25	20.25	ppb	0.85	#VALUE!	
208 Pb	103.85	20.77	ppb	0.98	2000.	
232 Th	107.3	21.46	ppb	0.97	1000.	
238 U	108.3	21.66	ppb	0.57	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4674846.00	1.78	3927738.80	119.0	69.5 - 120	
45 Sc	2917644.80	0.97	2572658.80	113.4	69.5 - 120	
72 Ge	555517.94	0.20	510197.59	108.9	69.5 - 120	
159 Tb	4989005.00	0.83	4617151.00	108.1	69.5 - 120	
209 Bi	2417636.50	1.11	2380666.00	101.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001167

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\046SMPL.D\046SMPL.D#
Date Acquired: May 15 2018 08:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005
Misc Info:
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0102	0.002	ppb	122.87	100.	
11 B	246.75	49.35	ppb	4.81	1000.	
23 Na	329,850.	65,970.	ppb	1.07	200000.	
25 Mg	81,900.	16,380.	ppb	2.15	200000.	
27 Al	9.795	1.959	ppb	6.90	200000.	
28 Si	17,715.	3,543.	ppb	2.70	#VALUE!	
29 Si	19,395.	3,879.	ppb	2.16	10000.	
39 K	19,120.	3,824.	ppb	2.56	200000.	
43 Ca	403,300.	80,660.	ppb	1.02	#VALUE!	
44 Ca	380,750.	76,150.	ppb	0.29	200000.	
51 V	0.82	0.164	ppb	10.18	1000.	
52 Cr	1.881	0.3762	ppb	1.76	2000.	
53 Cr	75.65	15.13	ppb	11.42	#VALUE!	
55 Mn	1,341.	268.2	ppb	0.95	2000.	
56 Fe	6,455.	1,291.	ppb	1.45	#VALUE!	
57 Fe	6,960.	1,392.	ppb	1.11	100000.	
59 Co	0.805	0.161	ppb	7.88	1000.	
60 Ni	4.2375	0.8475	ppb	4.48	1000.	
63 Cu	10.625	2.125	ppb	0.99	#VALUE!	
65 Cu	1.5145	0.3029	ppb	9.05	2000.	
66 Zn	49.07	9.814	ppb	0.28	2000.	
68 Zn	45.69	9.138	ppb	1.34	#VALUE!	
75 As	11.89	2.378	ppb	14.60	1000.	
82 Se	2.3125	0.4625	ppb	32.07	1000.	
88 Sr	1,657.5	331.5	ppb	0.29	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	13.115	2.623	ppb	1.39	1000.	
107 Ag	0.0091	0.0018	ppb	105.12	100.	
109 Ag	0.0019	0.0004	ppb	74.79	#VALUE!	
111 Cd	0.1372	0.0274	ppb	9.32	#VALUE!	
114 Cd	-0.0025	-0.0005	ppb	1300.70	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.022	0.2044	ppb	5.02	1000.	
120 Sn	1.0115	0.2023	ppb	10.81	#VALUE!	
121 Sb	0.2524	0.0505	ppb	12.26	#VALUE!	
123 Sb	0.2842	0.0568	ppb	10.27	1000.	
135 Ba	31.405	6.281	ppb	2.92	2000.	
137 Ba	31.985	6.397	ppb	0.71	#VALUE!	
182 W	0.4194	0.0839	ppb	19.27	1000.	
203 Tl	0.04	0.008	ppb	74.42	1000.	
205 Tl	-0.0013	-0.0003	ppb	2563.70	#VALUE!	
208 Pb	-0.2657	-0.0531	ppb	2.78	2000.	
232 Th	0.6755	0.1351	ppb	14.49	1000.	
238 U	1.7865	0.3573	ppb	2.49	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4197086.00	5.26	3927738.80	106.9	69.5 - 120	
45 Sc	2733665.50	0.31	2572658.80	106.3	69.5 - 120	
72 Ge	534922.94	0.77	510197.59	104.8	69.5 - 120	
159 Tb	4831836.00	1.31	4617151.00	104.6	69.5 - 120	
209 Bi	2358338.00	1.46	2380666.00	99.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001168

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\047SMPL.D\047SMPL.D#
Date Acquired: May 15 2018 08:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005L
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0368	0.0015	ppb	50.58	100.	
11 B	328.25	13.13	ppb	1.58	1000.	
23 Na	340,750.	13,630.	ppb	1.87	200000.	
25 Mg	86,250.	3,450.	ppb	1.50	200000.	
27 Al	22.81	0.9124	ppb	10.26	200000.	
28 Si	17,702.5	708.1	ppb	3.81	#VALUE!	
29 Si	17,947.5	717.9	ppb	2.74	10000.	
39 K	19,700.	788.	ppb	2.07	200000.	
43 Ca	406,250.	16,250.	ppb	2.12	#VALUE!	
44 Ca	393,750.	15,750.	ppb	1.98	200000.	
51 V	1.8275	0.0731	ppb	70.94	1000.	
52 Cr	2.965	0.1186	ppb	14.13	2000.	
53 Cr	127.25	5.09	ppb	8.16	#VALUE!	
55 Mn	1,459.75	58.39	ppb	1.16	2000.	
56 Fe	6,855.	274.2	ppb	0.73	#VALUE!	
57 Fe	7,532.5	301.3	ppb	1.08	100000.	
59 Co	0.7193	0.0288	ppb	30.21	1000.	
60 Ni	4.4475	0.1779	ppb	3.39	1000.	
63 Cu	11.4875	0.4595	ppb	3.79	#VALUE!	
65 Cu	2.81	0.1124	ppb	22.91	2000.	
66 Zn	59.5	2.38	ppb	2.38	2000.	
68 Zn	50.4	2.016	ppb	4.82	#VALUE!	
75 As	14.775	0.591	ppb	14.92	1000.	
82 Se	0.4998	0.02	ppb	580.29	1000.	
88 Sr	1,811.25	72.45	ppb	1.03	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.8675	0.5147	ppb	2.40	1000.	
107 Ag	0.0078	0.0003	ppb	489.23	100.	
109 Ag	-0.0211	-0.0008	ppb	94.17	#VALUE!	
111 Cd	1.7068	0.0683	ppb	35.20	#VALUE!	
114 Cd	0.0379	0.0015	ppb	166.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.5413	0.0617	ppb	2.51	1000.	
120 Sn	1.5095	0.0604	ppb	42.20	#VALUE!	
121 Sb	0.1619	0.0065	ppb	57.94	#VALUE!	
123 Sb	0.3705	0.0148	ppb	28.72	1000.	
135 Ba	33.	1.32	ppb	0.78	2000.	
137 Ba	33.	1.32	ppb	8.98	#VALUE!	
182 W	0.4355	0.0174	ppb	17.98	1000.	
203 Tl	0.1218	0.0049	ppb	174.69	1000.	
205 Tl	-0.0046	-0.0002	ppb	1814.10	#VALUE!	
208 Pb	-0.8763	-0.0351	ppb	5.63	2000.	
232 Th	0.4873	0.0195	ppb	40.82	1000.	
238 U	1.7308	0.0692	ppb	0.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4104332.50	0.70	3927738.80	104.5	69.5 - 120	
45 Sc	2753865.30	1.68	2572658.80	107.0	69.5 - 120	
72 Ge	534089.00	0.65	510197.59	104.7	69.5 - 120	
159 Tb	4798278.50	0.65	4617151.00	103.9	69.5 - 120	
209 Bi	2453695.30	0.70	2380666.00	103.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001169

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\048SMPL.D\048SMPL.D#
Date Acquired: May 15 2018 09:01 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005A
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.475	2.095	ppb	3.25	100.	
11 B	453.85	90.77	ppb	3.36	1000.	
23 Na	341,850.	68,370.	ppb	4.69	200000.	
25 Mg	82,050.	16,410.	ppb	1.55	200000.	
27 Al	1,057.5	211.5	ppb	1.70	200000.	
28 Si	22,405.	4,481.	ppb	2.14	#VALUE!	
29 Si	24,370.	4,874.	ppb	4.81	10000.	
39 K	28,760.	5,752.	ppb	2.63	200000.	
43 Ca	404,650.	80,930.	ppb	1.45	#VALUE!	
44 Ca	378,950.	75,790.	ppb	0.88	200000.	
51 V	51.8	10.36	ppb	1.45	1000.	
52 Cr	52.5	10.5	ppb	2.35	2000.	
53 Cr	124.65	24.93	ppb	2.99	#VALUE!	
55 Mn	1,347.	269.4	ppb	1.35	2000.	
56 Fe	7,450.	1,490.	ppb	2.03	#VALUE!	
57 Fe	7,960.	1,592.	ppb	2.04	100000.	
59 Co	10.535	2.107	ppb	1.97	1000.	
60 Ni	23.68	4.736	ppb	1.98	1000.	
63 Cu	39.22	7.844	ppb	1.32	#VALUE!	
65 Cu	30.305	6.061	ppb	0.73	2000.	
66 Zn	142.1	28.42	ppb	0.31	2000.	
68 Zn	135.2	27.04	ppb	2.34	#VALUE!	
75 As	62.85	12.57	ppb	1.57	1000.	
82 Se	49.76	9.952	ppb	1.98	1000.	
88 Sr	1,681.	336.2	ppb	1.58	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	63.3	12.66	ppb	1.66	1000.	
107 Ag	9.455	1.891	ppb	1.46	100.	
109 Ag	9.61	1.922	ppb	1.60	#VALUE!	
111 Cd	9.805	1.961	ppb	2.80	#VALUE!	
114 Cd	9.405	1.881	ppb	1.63	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.4	10.28	ppb	3.71	1000.	
120 Sn	50.95	10.19	ppb	3.17	#VALUE!	
121 Sb	10.29	2.058	ppb	4.94	#VALUE!	
123 Sb	10.375	2.075	ppb	1.59	1000.	
135 Ba	51.45	10.29	ppb	1.56	2000.	
137 Ba	52.3	10.46	ppb	3.00	#VALUE!	
182 W	52.85	10.57	ppb	2.06	1000.	
203 Tl	10.33	2.066	ppb	0.23	1000.	
205 Tl	10.235	2.047	ppb	1.98	#VALUE!	
208 Pb	10.025	2.005	ppb	3.92	2000.	
232 Th	10.955	2.191	ppb	1.24	1000.	
238 U	12.485	2.497	ppb	0.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4166964.00	6.12	3927738.80	106.1	69.5 - 120	
45 Sc	2713133.00	2.09	2572658.80	105.5	69.5 - 120	
72 Ge	530580.25	1.18	510197.59	104.0	69.5 - 120	
159 Tb	4806113.50	1.56	4617151.00	104.1	69.5 - 120	
209 Bi	2365146.80	0.98	2380666.00	99.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001170

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\049SMPL.D\049SMPL.D#
Date Acquired: May 15 2018 09:05 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0054	-0.0011	ppb	1.67	100.	
11 B	20.665	4.133	ppb	14.82	1000.	
23 Na	54.95	10.99	ppb	46.75	200000.	
25 Mg	13.16	2.632	ppb	47.23	200000.	
27 Al	7.305	1.461	ppb	6.12	200000.	
28 Si	43.25	8.65	ppb	24.24	#VALUE!	
29 Si	90.7	18.14	ppb	14.53	10000.	
39 K	19.79	3.958	ppb	60.23	200000.	
43 Ca	42.53	8.506	ppb	73.21	#VALUE!	
44 Ca	41.5	8.3	ppb	71.11	200000.	
51 V	0.588	0.1176	ppb	112.50	1000.	
52 Cr	0.828	0.1656	ppb	23.06	2000.	
53 Cr	22.185	4.437	ppb	3.75	#VALUE!	
55 Mn	0.538	0.1076	ppb	18.61	2000.	
56 Fe	46.34	9.268	ppb	38.09	#VALUE!	
57 Fe	26.02	5.204	ppb	13.59	100000.	
59 Co	0.0023	0.0005	ppb	583.41	1000.	
60 Ni	0.1897	0.0379	ppb	16.56	1000.	
63 Cu	1.0575	0.2115	ppb	8.68	#VALUE!	
65 Cu	1.076	0.2152	ppb	12.60	2000.	
66 Zn	1.1935	0.2387	ppb	14.61	2000.	
68 Zn	-0.0524	-0.0105	ppb	262.12	#VALUE!	
75 As	0.3365	0.0673	ppb	105.74	1000.	
82 Se	0.0906	0.0181	ppb	900.66	1000.	
88 Sr	0.1344	0.0269	ppb	71.65	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0729	0.0146	ppb	39.12	1000.	
107 Ag	0.0072	0.0014	ppb	132.52	100.	
109 Ag	0.0166	0.0033	ppb	26.94	#VALUE!	
111 Cd	0.3276	0.0655	ppb	41.35	#VALUE!	
114 Cd	-0.0122	-0.0024	ppb	379.14	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	13.93	2.786	ppb	4.62	1000.	
120 Sn	13.945	2.789	ppb	3.91	#VALUE!	
121 Sb	0.0065	0.0013	ppb	198.00	#VALUE!	
123 Sb	0.0134	0.0027	ppb	161.46	1000.	
135 Ba	0.1444	0.0289	ppb	45.01	2000.	
137 Ba	0.1412	0.0282	ppb	22.74	#VALUE!	
182 W	0.0621	0.0124	ppb	27.38	1000.	
203 Tl	0.0116	0.0023	ppb	137.77	1000.	
205 Tl	0.023	0.0046	ppb	68.37	#VALUE!	
208 Pb	0.3768	0.0754	ppb	5.24	2000.	
232 Th	0.0347	0.0069	ppb	16.27	1000.	
238 U	0.0027	0.0005	ppb	26.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4000313.80	0.67	3927738.80	101.8	69.5 - 120	
45 Sc	2608051.00	1.52	2572658.80	101.4	69.5 - 120	
72 Ge	509603.56	0.82	510197.59	99.9	69.5 - 120	
159 Tb	4553705.50	1.42	4617151.00	98.6	69.5 - 120	
209 Bi	2342422.80	0.35	2380666.00	98.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001171

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\050_CCV.D\050_CCV.D#
Date Acquired: May 15 2018 09:09 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.11	ppb	5.21	25	100.44	
11 B	26.12	ppb	3.92	25	104.48	
23 Na	4,816.	ppb	2.19	5,000	96.32	
25 Mg	4,897.	ppb	2.60	5,000	97.94	
27 Al	498.7	ppb	4.17	500	99.74	
28 Si	481.	ppb	1.87	500	96.2	
29 Si	463.8	ppb	1.89	500	92.76	
39 K	4,848.	ppb	1.82	5,000	96.96	
43 Ca	4,907.	ppb	1.39	5,000	98.14	
44 Ca	4,924.	ppb	0.81	5,000	98.48	
51 V	24.16	ppb	0.12	25	96.64	
52 Cr	24.44	ppb	0.94	25	97.76	
53 Cr	24.41	ppb	2.34	25	97.64	
55 Mn	24.44	ppb	0.50	25	97.76	
56 Fe	4,817.	ppb	0.49	5,000	96.34	
57 Fe	4,884.	ppb	0.95	5,000	97.68	
59 Co	24.2	ppb	0.36	25	96.8	
60 Ni	24.7	ppb	2.62	25	98.8	
63 Cu	24.55	ppb	0.45	25	98.2	
65 Cu	24.54	ppb	1.48	25	98.16	
66 Zn	24.76	ppb	1.50	25	99.04	
68 Zn	24.77	ppb	1.81	25	99.08	
75 As	24.61	ppb	0.71	25	98.44	
82 Se	25.19	ppb	0.63	25	100.76	
88 Sr	23.99	ppb	0.68	25	95.96	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.22	ppb	0.46	25	96.88	
107 Ag	24.61	ppb	0.55	25	98.44	
109 Ag	24.66	ppb	0.27	25	98.64	
111 Cd	24.67	ppb	0.47	25	98.68	
114 Cd	24.53	ppb	0.88	25	98.12	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.08	ppb	0.72	25	96.32	
120 Sn	24.03	ppb	0.87	25	96.12	
121 Sb	24.55	ppb	0.93	25	98.2	
123 Sb	24.41	ppb	1.35	25	97.64	
135 Ba	24.82	ppb	1.04	25	99.28	
137 Ba	24.58	ppb	0.54	25	98.32	
182 W	23.98	ppb	1.73	25	95.92	
203 Tl	24.14	ppb	2.28	25	96.56	
205 Tl	24.07	ppb	1.30	25	96.28	
208 Pb	24.22	ppb	1.15	25	96.88	
232 Th	23.76	ppb	1.26	25	95.04	
238 U	24.39	ppb	2.29	25	97.56	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4136729.00	1.58	3927738.80	105.3	80 - 120.4	
45 Sc	2714310.80	1.77	2572658.80	105.5	80 - 120.4	
72 Ge	516181.22	2.08	510197.59	101.2	80 - 120.4	
159 Tb	4799252.00	2.03	4617151.00	103.9	80 - 120.4	
209 Bi	2442106.00	0.05	2380666.00	102.6	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\051_CCB.D\051_CCB.D#
Date Acquired: May 15 2018 09:13 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0001	ppb	3053.90	1.00	
11 B	2.529	ppb	7.56	1.00	
23 Na	4.937	ppb	38.97	1.00	
25 Mg	0.5382	ppb	127.59	1.00	
27 Al	0.1463	ppb	73.82	1.00	
28 Si	18.24	ppb	69.85	1.00	
29 Si	15.16	ppb	109.10	1.00	
39 K	2.95	ppb	141.19	1.00	
43 Ca	1.41	ppb	219.57	1.00	
44 Ca	3.349	ppb	84.98	1.00	
51 V	0.0204	ppb	362.75	1.00	
52 Cr	-0.0362	ppb	60.56	1.00	
53 Cr	-2.215	ppb	9.65	1.00	
55 Mn	0.0116	ppb	66.29	1.00	
56 Fe	1.735	ppb	337.12	1.00	
57 Fe	3.239	ppb	66.47	1.00	
59 Co	0.0008	ppb	186.65	1.00	
60 Ni	0.0007	ppb	717.61	1.00	
63 Cu	0.0429	ppb	29.72	1.00	
65 Cu	0.0407	ppb	43.50	1.00	
66 Zn	0.1032	ppb	14.05	1.00	
68 Zn	-0.0387	ppb	28.70	1.00	
75 As	0.0019	ppb	11410.00	1.00	
82 Se	0.0548	ppb	335.28	1.00	
88 Sr	0.0094	ppb	154.78	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0272	ppb	41.93	1.00	
107 Ag	0.002	ppb	155.32	1.00	
109 Ag	0.0033	ppb	70.25	1.00	
111 Cd	0.0646	ppb	41.05	1.00	
114 Cd	0.0027	ppb	22.08	1.00	
115 In	--------	---	--------	---	
118 Sn	0.044	ppb	31.25	1.00	
120 Sn	0.047	ppb	36.41	1.00	
121 Sb	0.0071	ppb	66.73	1.00	
123 Sb	0.0095	ppb	17.74	1.00	
135 Ba	0.02	ppb	69.95	1.00	
137 Ba	0.0119	ppb	49.33	1.00	
182 W	0.05	ppb	17.10	1.00	
203 Tl	0.0082	ppb	125.44	1.00	
205 Tl	0.0042	ppb	146.90	1.00	
208 Pb	-0.0053	ppb	51.83	1.00	
232 Th	0.0604	ppb	10.87	1.00	
238 U	0.0028	ppb	39.12	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3871903.30	1.76	3927738.80	98.6	79.5 - 120	
45 Sc	2525691.50	2.66	2572658.80	98.2	79.5 - 120	
72 Ge	495311.94	0.75	510197.59	97.1	79.5 - 120	
159 Tb	4436158.50	1.32	4617151.00	96.1	79.5 - 120	
209 Bi	2330879.30	0.39	2380666.00	97.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\052SMPL.D\052SMPL.D#
Date Acquired: May 15 2018 09:17 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005S
Misc Info:
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	49.9	9.98	ppb	2.34	100.	
11 B	746.	149.2	ppb	4.51	1000.	
23 Na	346,900.	69,380.	ppb	2.08	200000.	
25 Mg	88,500.	17,700.	ppb	2.05	200000.	
27 Al	2,048.	409.6	ppb	3.66	200000.	
28 Si	19,185.	3,837.	ppb	1.99	#VALUE!	
29 Si	21,195.	4,239.	ppb	2.35	10000.	
39 K	29,635.	5,927.	ppb	1.57	200000.	
43 Ca	416,300.	83,260.	ppb	2.36	#VALUE!	
44 Ca	390,150.	78,030.	ppb	1.66	200000.	
51 V	503.5	100.7	ppb	1.51	1000.	
52 Cr	195.25	39.05	ppb	1.63	2000.	
53 Cr	271.3	54.26	ppb	2.32	#VALUE!	
55 Mn	1,850.5	370.1	ppb	2.30	2000.	
56 Fe	7,695.	1,539.	ppb	1.14	#VALUE!	
57 Fe	8,020.	1,604.	ppb	1.32	100000.	
59 Co	500.	100.	ppb	1.21	1000.	
60 Ni	486.75	97.35	ppb	1.47	1000.	
63 Cu	246.9	49.38	ppb	0.46	#VALUE!	
65 Cu	238.9	47.78	ppb	1.85	2000.	
66 Zn	508.	101.6	ppb	1.87	2000.	
68 Zn	566.	113.2	ppb	2.12	#VALUE!	
75 As	110.95	22.19	ppb	2.86	1000.	
82 Se	96.15	19.23	ppb	3.88	1000.	
88 Sr	2,169.5	433.9	ppb	1.05	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	113.4	22.68	ppb	1.11	1000.	
107 Ag	47.175	9.435	ppb	2.06	100.	
109 Ag	46.78	9.356	ppb	1.98	#VALUE!	
111 Cd	232.6	46.52	ppb	1.19	#VALUE!	
114 Cd	233.8	46.76	ppb	1.24	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	497.75	99.55	ppb	1.20	1000.	
120 Sn	497.8	99.56	ppb	0.68	#VALUE!	
121 Sb	99.35	19.87	ppb	0.99	#VALUE!	
123 Sb	99.6	19.92	ppb	1.30	1000.	
135 Ba	2,033.	406.6	ppb	1.33	2000.	
137 Ba	2,031.	406.2	ppb	1.92	#VALUE!	
182 W	103.25	20.65	ppb	0.91	1000.	
203 Tl	102.55	20.51	ppb	1.30	1000.	
205 Tl	102.15	20.43	ppb	0.46	#VALUE!	
208 Pb	101.55	20.31	ppb	0.79	2000.	
232 Th	106.35	21.27	ppb	1.00	1000.	
238 U	108.7	21.74	ppb	1.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4196586.00	2.22	3927738.80	106.8	69.5 - 120	
45 Sc	2681217.80	2.83	2572658.80	104.2	69.5 - 120	
72 Ge	518473.81	1.49	510197.59	101.6	69.5 - 120	
159 Tb	4762145.50	1.00	4617151.00	103.1	69.5 - 120	
209 Bi	2308454.50	1.20	2380666.00	97.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001174

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\053SMPL.D\053SMPL.D#
Date Acquired: May 15 2018 09:21 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005P
Misc Info:
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	50.9	10.18	ppb	4.43	100.	
11 B	779.	155.8	ppb	4.50	1000.	
23 Na	352,200.	70,440.	ppb	0.39	200000.	
25 Mg	87,750.	17,550.	ppb	1.47	200000.	
27 Al	2,092.	418.4	ppb	3.02	200000.	
28 Si	19,285.	3,857.	ppb	1.43	#VALUE!	
29 Si	20,970.	4,194.	ppb	0.75	10000.	
39 K	29,080.	5,816.	ppb	0.48	200000.	
43 Ca	413,700.	82,740.	ppb	1.15	#VALUE!	
44 Ca	387,050.	77,410.	ppb	0.46	200000.	
51 V	516.5	103.3	ppb	2.12	1000.	
52 Cr	198.35	39.67	ppb	1.96	2000.	
53 Cr	282.6	56.52	ppb	1.48	#VALUE!	
55 Mn	1,870.5	374.1	ppb	1.49	2000.	
56 Fe	7,715.	1,543.	ppb	1.58	#VALUE!	
57 Fe	8,135.	1,627.	ppb	2.16	100000.	
59 Co	511.	102.2	ppb	0.13	1000.	
60 Ni	487.8	97.56	ppb	1.32	1000.	
63 Cu	246.	49.2	ppb	2.16	#VALUE!	
65 Cu	242.85	48.57	ppb	0.58	2000.	
66 Zn	513.5	102.7	ppb	1.86	2000.	
68 Zn	564.5	112.9	ppb	2.07	#VALUE!	
75 As	112.85	22.57	ppb	1.93	1000.	
82 Se	97.5	19.5	ppb	2.19	1000.	
88 Sr	2,173.5	434.7	ppb	1.26	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	113.4	22.68	ppb	1.48	1000.	
107 Ag	47.19	9.438	ppb	0.83	100.	
109 Ag	46.98	9.396	ppb	0.71	#VALUE!	
111 Cd	232.85	46.57	ppb	0.87	#VALUE!	
114 Cd	234.95	46.99	ppb	1.18	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	504.	100.8	ppb	1.94	1000.	
120 Sn	504.	100.8	ppb	2.12	#VALUE!	
121 Sb	101.55	20.31	ppb	1.89	#VALUE!	
123 Sb	101.6	20.32	ppb	2.39	1000.	
135 Ba	2,079.	415.8	ppb	2.05	2000.	
137 Ba	2,051.5	410.3	ppb	0.73	#VALUE!	
182 W	104.15	20.83	ppb	2.59	1000.	
203 Tl	101.3	20.26	ppb	2.10	1000.	
205 Tl	102.25	20.45	ppb	1.87	#VALUE!	
208 Pb	101.85	20.37	ppb	1.99	2000.	
232 Th	105.35	21.07	ppb	2.17	1000.	
238 U	108.1	21.62	ppb	1.51	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4199603.00	4.24	3927738.80	106.9	69.5 - 120	
45 Sc	2715271.00	0.27	2572658.80	105.5	69.5 - 120	
72 Ge	522342.50	0.72	510197.59	102.4	69.5 - 120	
159 Tb	4727914.50	1.73	4617151.00	102.4	69.5 - 120	
209 Bi	2318426.50	1.99	2380666.00	97.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001175

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\054SMPL.D\054SMPL.D#
Date Acquired: May 15 2018 09:25 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-006
Misc Info:
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	1.726	0.3452	ppb	2.79	100.	
11 B	260.5	52.1	ppb	3.35	1000.	
23 Na	297,050.	59,410.	ppb	1.26	200000.	
25 Mg	77,100.	15,420.	ppb	4.49	200000.	
27 Al	34,015.	6,803.	ppb	2.71	200000.	
28 Si	70,250.	14,050.	ppb	3.18	#VALUE!	
29 Si	71,650.	14,330.	ppb	2.64	10000.	>LDR
39 K	24,750.	4,950.	ppb	2.04	200000.	
43 Ca	409,450.	81,890.	ppb	3.04	#VALUE!	
44 Ca	377,800.	75,560.	ppb	1.17	200000.	
51 V	78.85	15.77	ppb	2.74	1000.	
52 Cr	114.2	22.84	ppb	0.68	2000.	
53 Cr	150.35	30.07	ppb	0.90	#VALUE!	
55 Mn	1,719.	343.8	ppb	2.42	2000.	
56 Fe	43,195.	8,639.	ppb	1.55	#VALUE!	
57 Fe	43,595.	8,719.	ppb	1.38	100000.	
59 Co	17.835	3.567	ppb	0.72	1000.	
60 Ni	55.85	11.17	ppb	1.24	1000.	
63 Cu	55.35	11.07	ppb	1.03	#VALUE!	
65 Cu	47.855	9.571	ppb	1.93	2000.	
66 Zn	196.65	39.33	ppb	0.27	2000.	
68 Zn	201.	40.2	ppb	0.85	#VALUE!	
75 As	15.455	3.091	ppb	5.49	1000.	
82 Se	4.2445	0.8489	ppb	22.16	1000.	
88 Sr	1,608.	321.6	ppb	1.76	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	24.785	4.957	ppb	2.27	1000.	
107 Ag	0.1132	0.0226	ppb	10.18	100.	
109 Ag	0.104	0.0208	ppb	13.42	#VALUE!	
111 Cd	0.6245	0.1249	ppb	8.17	#VALUE!	
114 Cd	0.3274	0.0655	ppb	11.46	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.1995	0.6399	ppb	0.86	1000.	
120 Sn	3.115	0.623	ppb	3.14	#VALUE!	
121 Sb	0.7125	0.1425	ppb	9.80	#VALUE!	
123 Sb	0.753	0.1506	ppb	5.24	1000.	
135 Ba	370.5	74.1	ppb	0.99	2000.	
137 Ba	370.6	74.12	ppb	0.75	#VALUE!	
182 W	0.4852	0.097	ppb	10.52	1000.	
203 Tl	0.503	0.1006	ppb	19.51	1000.	
205 Tl	0.4639	0.0928	ppb	4.09	#VALUE!	
208 Pb	34.48	6.896	ppb	0.65	2000.	
232 Th	23.14	4.628	ppb	1.84	1000.	
238 U	10.825	2.165	ppb	0.96	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3982417.50	3.13	3927738.80	101.4	69.5 - 120	
45 Sc	2671777.00	2.84	2572658.80	103.9	69.5 - 120	
72 Ge	517128.06	1.23	510197.59	101.4	69.5 - 120	
159 Tb	4788531.50	0.09	4617151.00	103.7	69.5 - 120	
209 Bi	2360853.80	1.41	2380666.00	99.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4001176

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\055SMPL.D\055SMPL.D#
Date Acquired: May 15 2018 09:30 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-007
Misc Info:
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0063	0.0013	ppb	181.92	100.	
11 B	223.45	44.69	ppb	3.59	1000.	
23 Na	288,350.	57,670.	ppb	2.36	200000.	
25 Mg	68,650.	13,730.	ppb	1.41	200000.	
27 Al	20.465	4.093	ppb	6.28	200000.	
28 Si	18,310.	3,662.	ppb	2.18	#VALUE!	
29 Si	20,125.	4,025.	ppb	2.41	10000.	
39 K	17,250.	3,450.	ppb	2.32	200000.	
43 Ca	372,350.	74,470.	ppb	2.87	#VALUE!	
44 Ca	350,550.	70,110.	ppb	2.35	200000.	
51 V	1.2115	0.2423	ppb	32.49	1000.	
52 Cr	2.4385	0.4877	ppb	7.82	2000.	
53 Cr	65.85	13.17	ppb	16.06	#VALUE!	
55 Mn	1,334.	266.8	ppb	1.88	2000.	
56 Fe	6,240.	1,248.	ppb	1.99	#VALUE!	
57 Fe	6,580.	1,316.	ppb	0.91	100000.	
59 Co	0.6225	0.1245	ppb	6.62	1000.	
60 Ni	4.239	0.8478	ppb	1.23	1000.	
63 Cu	9.435	1.887	ppb	4.40	#VALUE!	
65 Cu	1.384	0.2768	ppb	5.01	2000.	
66 Zn	18.4	3.68	ppb	0.70	2000.	
68 Zn	15.835	3.167	ppb	3.12	#VALUE!	
75 As	9.785	1.957	ppb	4.88	1000.	
82 Se	1.863	0.3726	ppb	16.39	1000.	
88 Sr	1,448.	289.6	ppb	1.26	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	12.555	2.511	ppb	1.93	1000.	
107 Ag	0.0008	0.0002	ppb	1410.90	100.	
109 Ag	0.0026	0.0005	ppb	322.13	#VALUE!	
111 Cd	0.1602	0.032	ppb	65.78	#VALUE!	
114 Cd	-0.0102	-0.002	ppb	67.86	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.023	0.2046	ppb	11.07	1000.	
120 Sn	1.022	0.2044	ppb	4.56	#VALUE!	
121 Sb	0.1442	0.0288	ppb	25.42	#VALUE!	
123 Sb	0.1722	0.0344	ppb	14.84	1000.	
135 Ba	33.975	6.795	ppb	2.01	2000.	
137 Ba	33.69	6.738	ppb	4.30	#VALUE!	
182 W	0.2745	0.0549	ppb	16.33	1000.	
203 Tl	0.0658	0.0132	ppb	67.08	1000.	
205 Tl	0.0265	0.0053	ppb	66.54	#VALUE!	
208 Pb	-0.2518	-0.0504	ppb	3.46	2000.	
232 Th	0.4051	0.081	ppb	25.12	1000.	
238 U	0.765	0.153	ppb	1.08	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3962612.00	3.01	3927738.80	100.9	69.5 - 120	
45 Sc	2623350.50	3.10	2572658.80	102.0	69.5 - 120	
72 Ge	513744.88	1.26	510197.59	100.7	69.5 - 120	
159 Tb	4687806.00	2.11	4617151.00	101.5	69.5 - 120	
209 Bi	2349893.50	0.64	2380666.00	98.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001177

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\056SMPL.D\056SMPL.D#
Date Acquired: May 15 2018 09:34 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-008
Misc Info:
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	1.761	0.3522	ppb	3.33	100.	
11 B	203.35	40.67	ppb	1.06	1000.	
23 Na	273,500.	54,700.	ppb	2.27	200000.	
25 Mg	77,100.	15,420.	ppb	2.10	200000.	
27 Al	26,645.	5,329.	ppb	4.34	200000.	
28 Si	62,050.	12,410.	ppb	4.43	#VALUE!	
29 Si	64,450.	12,890.	ppb	2.31	10000.	>LDR
39 K	24,095.	4,819.	ppb	2.62	200000.	
43 Ca	441,250.	88,250.	ppb	2.28	#VALUE!	
44 Ca	418,650.	83,730.	ppb	2.37	200000.	
51 V	75.65	15.13	ppb	1.81	1000.	
52 Cr	92.1	18.42	ppb	1.26	2000.	
53 Cr	125.1	25.02	ppb	3.65	#VALUE!	
55 Mn	1,870.5	374.1	ppb	1.05	2000.	
56 Fe	42,240.	8,448.	ppb	1.14	#VALUE!	
57 Fe	43,015.	8,603.	ppb	1.17	100000.	
59 Co	10.325	2.065	ppb	0.94	1000.	
60 Ni	47.21	9.442	ppb	2.13	1000.	
63 Cu	48.935	9.787	ppb	2.23	#VALUE!	
65 Cu	42.38	8.476	ppb	2.64	2000.	
66 Zn	207.05	41.41	ppb	1.76	2000.	
68 Zn	224.2	44.84	ppb	2.52	#VALUE!	
75 As	45.52	9.104	ppb	4.69	1000.	
82 Se	4.802	0.9604	ppb	34.63	1000.	
88 Sr	1,681.	336.2	ppb	0.90	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	21.475	4.295	ppb	3.14	1000.	
107 Ag	0.1411	0.0282	ppb	22.70	100.	
109 Ag	0.0883	0.0177	ppb	13.42	#VALUE!	
111 Cd	0.5205	0.1041	ppb	11.17	#VALUE!	
114 Cd	0.1436	0.0287	ppb	34.68	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.5275	0.5055	ppb	6.47	1000.	
120 Sn	2.49	0.498	ppb	4.44	#VALUE!	
121 Sb	0.4929	0.0986	ppb	7.60	#VALUE!	
123 Sb	0.474	0.0948	ppb	10.71	1000.	
135 Ba	702.	140.4	ppb	1.81	2000.	
137 Ba	701.5	140.3	ppb	1.37	#VALUE!	
182 W	0.4942	0.0988	ppb	5.69	1000.	
203 Tl	0.37	0.074	ppb	15.48	1000.	
205 Tl	0.3824	0.0765	ppb	0.83	#VALUE!	
208 Pb	23.43	4.686	ppb	3.28	2000.	
232 Th	19.275	3.855	ppb	3.21	1000.	
238 U	5.875	1.175	ppb	4.83	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3874035.00	2.60	3927738.80	98.6	69.5 - 120	
45 Sc	2629377.00	1.46	2572658.80	102.2	69.5 - 120	
72 Ge	509218.34	0.94	510197.59	99.8	69.5 - 120	
159 Tb	4761461.50	0.97	4617151.00	103.1	69.5 - 120	
209 Bi	2380346.50	3.12	2380666.00	100.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4001178

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\057SMPL.D\057SMPL.D#
Date Acquired: May 15 2018 09:38 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-009
Misc Info:
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0114	0.0023	ppb	41.96	100.	
11 B	190.8	38.16	ppb	1.64	1000.	
23 Na	271,550.	54,310.	ppb	1.84	200000.	
25 Mg	69,250.	13,850.	ppb	1.06	200000.	
27 Al	16.915	3.383	ppb	9.70	200000.	
28 Si	16,235.	3,247.	ppb	2.36	#VALUE!	
29 Si	17,715.	3,543.	ppb	0.73	10000.	
39 K	18,410.	3,682.	ppb	1.07	200000.	
43 Ca	403,450.	80,690.	ppb	0.33	#VALUE!	
44 Ca	377,300.	75,460.	ppb	0.47	200000.	
51 V	1.331	0.2662	ppb	69.91	1000.	
52 Cr	1.9125	0.3825	ppb	4.88	2000.	
53 Cr	71.75	14.35	ppb	18.47	#VALUE!	
55 Mn	1,277.5	255.5	ppb	0.38	2000.	
56 Fe	3,709.	741.8	ppb	1.75	#VALUE!	
57 Fe	4,094.	818.8	ppb	2.01	100000.	
59 Co	1.0875	0.2175	ppb	6.86	1000.	
60 Ni	20.35	4.07	ppb	2.78	1000.	
63 Cu	9.275	1.855	ppb	2.93	#VALUE!	
65 Cu	1.582	0.3164	ppb	4.85	2000.	
66 Zn	52.4	10.48	ppb	1.00	2000.	
68 Zn	49.04	9.808	ppb	2.09	#VALUE!	
75 As	26.555	5.311	ppb	6.57	1000.	
82 Se	2.633	0.5266	ppb	10.67	1000.	
88 Sr	1,525.	305.	ppb	2.09	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.285	2.457	ppb	1.09	1000.	
107 Ag	-0.0004	-0.0001	ppb	971.30	100.	
109 Ag	0.0015	0.0003	ppb	292.17	#VALUE!	
111 Cd	0.2428	0.0486	ppb	32.17	#VALUE!	
114 Cd	0.0005	0.0001	ppb	4432.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.861	0.1722	ppb	16.30	1000.	
120 Sn	0.931	0.1862	ppb	11.27	#VALUE!	
121 Sb	0.1714	0.0343	ppb	14.18	#VALUE!	
123 Sb	0.2074	0.0415	ppb	22.67	1000.	
135 Ba	40.72	8.144	ppb	2.56	2000.	
137 Ba	40.4	8.08	ppb	2.34	#VALUE!	
182 W	0.3052	0.061	ppb	4.06	1000.	
203 Tl	-0.0064	-0.0013	ppb	557.40	1000.	
205 Tl	0.0022	0.0004	ppb	1272.60	#VALUE!	
208 Pb	-0.2006	-0.0401	ppb	23.83	2000.	
232 Th	0.2337	0.0467	ppb	29.30	1000.	
238 U	2.343	0.4686	ppb	1.14	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4057630.00	0.82	3927738.80	103.3	69.5 - 120	
45 Sc	2674540.30	1.22	2572658.80	104.0	69.5 - 120	
72 Ge	521810.75	0.73	510197.59	102.3	69.5 - 120	
159 Tb	4747509.00	0.53	4617151.00	102.8	69.5 - 120	
209 Bi	2359705.30	1.26	2380666.00	99.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001179

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\058SMPL.D\058SMPL.D#
Date Acquired: May 15 2018 09:42 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-010
Misc Info:
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	2.0955	0.4191	ppb	7.87	100.	
11 B	230.	46.	ppb	5.84	1000.	
23 Na	282,250.	56,450.	ppb	4.22	200000.	
25 Mg	74,850.	14,970.	ppb	4.03	200000.	
27 Al	40,905.	8,181.	ppb	2.77	200000.	
28 Si	67,650.	13,530.	ppb	4.32	#VALUE!	
29 Si	69,650.	13,930.	ppb	3.03	10000.	>LDR
39 K	25,095.	5,019.	ppb	1.95	200000.	
43 Ca	389,000.	77,800.	ppb	1.81	#VALUE!	
44 Ca	365,500.	73,100.	ppb	1.45	200000.	
51 V	99.85	19.97	ppb	3.90	1000.	
52 Cr	144.8	28.96	ppb	0.52	2000.	
53 Cr	183.15	36.63	ppb	1.25	#VALUE!	
55 Mn	1,745.	349.	ppb	1.22	2000.	
56 Fe	52,000.	10,400.	ppb	2.01	#VALUE!	
57 Fe	52,000.	10,400.	ppb	1.90	100000.	
59 Co	22.71	4.542	ppb	1.94	1000.	
60 Ni	71.65	14.33	ppb	1.21	1000.	
63 Cu	61.7	12.34	ppb	2.30	#VALUE!	
65 Cu	54.5	10.9	ppb	1.15	2000.	
66 Zn	225.05	45.01	ppb	0.47	2000.	
68 Zn	233.3	46.66	ppb	2.42	#VALUE!	
75 As	15.995	3.199	ppb	4.06	1000.	
82 Se	3.877	0.7754	ppb	7.56	1000.	
88 Sr	1,573.	314.6	ppb	1.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	26.715	5.343	ppb	1.18	1000.	
107 Ag	0.1117	0.0223	ppb	8.57	100.	
109 Ag	0.092	0.0184	ppb	31.68	#VALUE!	
111 Cd	0.801	0.1602	ppb	12.20	#VALUE!	
114 Cd	0.3909	0.0782	ppb	10.64	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.381	0.6762	ppb	4.61	1000.	
120 Sn	3.299	0.6598	ppb	5.30	#VALUE!	
121 Sb	0.7195	0.1439	ppb	3.46	#VALUE!	
123 Sb	0.752	0.1504	ppb	12.89	1000.	
135 Ba	446.65	89.33	ppb	2.74	2000.	
137 Ba	444.75	88.95	ppb	2.48	#VALUE!	
182 W	0.4398	0.088	ppb	6.27	1000.	
203 Tl	0.595	0.119	ppb	4.17	1000.	
205 Tl	0.5035	0.1007	ppb	10.47	#VALUE!	
208 Pb	41.225	8.245	ppb	1.86	2000.	
232 Th	30.335	6.067	ppb	1.79	1000.	
238 U	13.515	2.703	ppb	1.80	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3956793.80	5.73	3927738.80	100.7	69.5 - 120	
45 Sc	2652608.00	1.83	2572658.80	103.1	69.5 - 120	
72 Ge	509845.38	0.80	510197.59	99.9	69.5 - 120	
159 Tb	4764786.00	2.01	4617151.00	103.2	69.5 - 120	
209 Bi	2370220.30	1.95	2380666.00	99.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4001180

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\059SMPL.D\059SMPL.D#
Date Acquired: May 15 2018 09:47 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-011
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0053	0.0011	ppb	63.77	100.	
11 B	215.8	43.16	ppb	4.08	1000.	
23 Na	279,850.	55,970.	ppb	3.59	200000.	
25 Mg	68,800.	13,760.	ppb	2.64	200000.	
27 Al	11.08	2.216	ppb	4.06	200000.	
28 Si	18,600.	3,720.	ppb	4.33	#VALUE!	
29 Si	20,200.	4,040.	ppb	3.60	10000.	
39 K	17,205.	3,441.	ppb	2.69	200000.	
43 Ca	371,750.	74,350.	ppb	1.09	#VALUE!	
44 Ca	348,650.	69,730.	ppb	1.95	200000.	
51 V	1.1495	0.2299	ppb	57.76	1000.	
52 Cr	2.3195	0.4639	ppb	4.67	2000.	
53 Cr	66.25	13.25	ppb	14.95	#VALUE!	
55 Mn	1,304.5	260.9	ppb	3.18	2000.	
56 Fe	5,960.	1,192.	ppb	2.06	#VALUE!	
57 Fe	6,375.	1,275.	ppb	1.78	100000.	
59 Co	0.605	0.121	ppb	8.97	1000.	
60 Ni	3.639	0.7278	ppb	2.21	1000.	
63 Cu	9.8	1.96	ppb	1.79	#VALUE!	
65 Cu	1.4545	0.2909	ppb	7.70	2000.	
66 Zn	15.38	3.076	ppb	3.25	2000.	
68 Zn	13.33	2.666	ppb	2.43	#VALUE!	
75 As	9.45	1.89	ppb	11.31	1000.	
82 Se	1.962	0.3924	ppb	34.12	1000.	
88 Sr	1,413.5	282.7	ppb	1.33	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.54	2.508	ppb	2.08	1000.	
107 Ag	0.0077	0.0015	ppb	44.24	100.	
109 Ag	0.0053	0.0011	ppb	74.68	#VALUE!	
111 Cd	0.1638	0.0328	ppb	102.32	#VALUE!	
114 Cd	-0.0045	-0.0009	ppb	541.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.004	0.2008	ppb	11.46	1000.	
120 Sn	0.99	0.198	ppb	10.81	#VALUE!	
121 Sb	0.1142	0.0228	ppb	19.61	#VALUE!	
123 Sb	0.1422	0.0284	ppb	26.63	1000.	
135 Ba	32.01	6.402	ppb	1.81	2000.	
137 Ba	32.27	6.454	ppb	2.06	#VALUE!	
182 W	0.2188	0.0438	ppb	24.70	1000.	
203 Tl	0.0114	0.0023	ppb	113.77	1000.	
205 Tl	0.0042	0.0008	ppb	429.19	#VALUE!	
208 Pb	-0.2477	-0.0495	ppb	20.35	2000.	
232 Th	0.2019	0.0404	ppb	26.33	1000.	
238 U	0.7735	0.1547	ppb	1.03	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4044604.00	3.68	3927738.80	103.0	69.5 - 120	
45 Sc	2627561.50	0.92	2572658.80	102.1	69.5 - 120	
72 Ge	515163.50	1.24	510197.59	101.0	69.5 - 120	
159 Tb	4717266.50	2.83	4617151.00	102.2	69.5 - 120	
209 Bi	2346511.50	2.43	2380666.00	98.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001181

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\060SMPL.D\060SMPL.D#
Date Acquired: May 15 2018 09:51 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-012
Misc Info:
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	1.4825	0.2965	ppb	6.32	100.	
11 B	208.85	41.77	ppb	4.90	1000.	
23 Na	296,300.	59,260.	ppb	2.70	200000.	
25 Mg	81,400.	16,280.	ppb	0.36	200000.	
27 Al	24,445.	4,889.	ppb	4.98	200000.	
28 Si	50,100.	10,020.	ppb	4.64	#VALUE!	
29 Si	52,800.	10,560.	ppb	2.59	10000.	>LDR
39 K	23,750.	4,750.	ppb	3.05	200000.	
43 Ca	447,700.	89,540.	ppb	1.81	#VALUE!	
44 Ca	419,300.	83,860.	ppb	1.50	200000.	
51 V	60.	12.	ppb	1.67	1000.	
52 Cr	106.3	21.26	ppb	1.77	2000.	
53 Cr	145.95	29.19	ppb	2.39	#VALUE!	
55 Mn	1,986.	397.2	ppb	0.74	2000.	
56 Fe	34,750.	6,950.	ppb	1.05	#VALUE!	
57 Fe	35,420.	7,084.	ppb	1.43	100000.	
59 Co	12.345	2.469	ppb	1.24	1000.	
60 Ni	63.75	12.75	ppb	0.37	1000.	
63 Cu	39.575	7.915	ppb	1.48	#VALUE!	
65 Cu	31.76	6.352	ppb	1.32	2000.	
66 Zn	143.05	28.61	ppb	0.63	2000.	
68 Zn	147.75	29.55	ppb	1.01	#VALUE!	
75 As	31.23	6.246	ppb	4.51	1000.	
82 Se	6.9	1.38	ppb	6.54	1000.	
88 Sr	1,689.	337.8	ppb	0.94	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	22.69	4.538	ppb	1.03	1000.	
107 Ag	0.1168	0.0234	ppb	8.77	100.	
109 Ag	0.1174	0.0235	ppb	13.06	#VALUE!	
111 Cd	0.8075	0.1615	ppb	1.23	#VALUE!	
114 Cd	0.478	0.0956	ppb	7.50	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.1125	0.4225	ppb	3.14	1000.	
120 Sn	2.232	0.4464	ppb	2.43	#VALUE!	
121 Sb	0.4845	0.0969	ppb	5.12	#VALUE!	
123 Sb	0.4543	0.0909	ppb	7.91	1000.	
135 Ba	333.15	66.63	ppb	1.67	2000.	
137 Ba	334.1	66.82	ppb	1.34	#VALUE!	
182 W	0.4376	0.0875	ppb	6.52	1000.	
203 Tl	0.4159	0.0832	ppb	12.42	1000.	
205 Tl	0.4128	0.0826	ppb	0.67	#VALUE!	
208 Pb	22.79	4.558	ppb	1.67	2000.	
232 Th	14.52	2.904	ppb	1.09	1000.	
238 U	6.37	1.274	ppb	1.02	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3949935.00	3.98	3927738.80	100.6	69.5 - 120	
45 Sc	2636380.00	1.91	2572658.80	102.5	69.5 - 120	
72 Ge	510580.84	0.58	510197.59	100.1	69.5 - 120	
159 Tb	4760118.50	0.76	4617151.00	103.1	69.5 - 120	
209 Bi	2376653.50	0.21	2380666.00	99.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4001182

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\061SMPL.D\061SMPL.D#
Date Acquired: May 15 2018 09:55 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0002	-0.0002	ppb	311.54	100.	
11 B	2.908	2.908	ppb	9.27	1000.	
23 Na	15.52	15.52	ppb	40.50	200000.	
25 Mg	4.142	4.142	ppb	39.81	200000.	
27 Al	3.202	3.202	ppb	13.12	200000.	
28 Si	40.19	40.19	ppb	12.96	#VALUE!	
29 Si	33.17	33.17	ppb	29.98	10000.	
39 K	0.0796	0.0796	ppb	2854.80	200000.	
43 Ca	10.49	10.49	ppb	100.38	#VALUE!	
44 Ca	14.56	14.56	ppb	61.01	200000.	
51 V	0.0267	0.0267	ppb	280.37	1000.	
52 Cr	0.0141	0.0141	ppb	92.18	2000.	
53 Cr	-1.227	-1.227	ppb	2.00	#VALUE!	
55 Mn	0.1019	0.1019	ppb	57.74	2000.	
56 Fe	10.73	10.73	ppb	30.05	#VALUE!	
57 Fe	7.468	7.468	ppb	12.78	100000.	
59 Co	0.0076	0.0076	ppb	58.23	1000.	
60 Ni	0.0202	0.0202	ppb	39.87	1000.	
63 Cu	0.2076	0.2076	ppb	1.36	#VALUE!	
65 Cu	0.245	0.245	ppb	7.09	2000.	
66 Zn	0.2752	0.2752	ppb	15.15	2000.	
68 Zn	0.0315	0.0315	ppb	425.30	#VALUE!	
75 As	0.149	0.149	ppb	94.16	1000.	
82 Se	0.1758	0.1758	ppb	136.01	1000.	
88 Sr	0.0427	0.0427	ppb	107.24	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1617	0.1617	ppb	3.93	1000.	
107 Ag	0.0007	0.0007	ppb	198.43	100.	
109 Ag	-0.0003	-0.0003	ppb	175.03	#VALUE!	
111 Cd	0.0613	0.0613	ppb	29.29	#VALUE!	
114 Cd	0.0049	0.0049	ppb	17.77	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.048	0.048	ppb	10.21	1000.	
120 Sn	0.045	0.045	ppb	12.70	#VALUE!	
121 Sb	-0.0003	-0.0003	ppb	264.58	#VALUE!	
123 Sb	0.0005	0.0005	ppb	418.87	1000.	
135 Ba	0.0794	0.0794	ppb	17.07	2000.	
137 Ba	0.0759	0.0759	ppb	6.18	#VALUE!	
182 W	0.0011	0.0011	ppb	188.15	1000.	
203 Tl	0.009	0.009	ppb	52.06	1000.	
205 Tl	0.0002	0.0002	ppb	555.35	#VALUE!	
208 Pb	0.1438	0.1438	ppb	13.49	2000.	
232 Th	0.0047	0.0047	ppb	56.44	1000.	
238 U	0.0005	0.0005	ppb	98.14	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4029455.80	3.02	3927738.80	102.6	69.5 - 120	
45 Sc	2582611.30	1.47	2572658.80	100.4	69.5 - 120	
72 Ge	495729.56	2.07	510197.59	97.2	69.5 - 120	
159 Tb	4455480.00	1.97	4617151.00	96.5	69.5 - 120	
209 Bi	2346931.00	2.11	2380666.00	98.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001183

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\062_CCV.D\062_CCV.D#
Date Acquired: May 15 2018 09:59 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.84	ppb	1.56	25	99.36	
11 B	25.61	ppb	6.05	25	102.44	
23 Na	4,835.	ppb	0.89	5,000	96.7	
25 Mg	4,900.	ppb	1.40	5,000	98	
27 Al	494.3	ppb	2.09	500	98.86	
28 Si	477.4	ppb	1.13	500	95.48	
29 Si	456.	ppb	0.57	500	91.2	
39 K	4,812.	ppb	0.73	5,000	96.24	
43 Ca	4,803.	ppb	0.78	5,000	96.06	
44 Ca	4,870.	ppb	1.17	5,000	97.4	
51 V	24.27	ppb	0.96	25	97.08	
52 Cr	24.43	ppb	1.11	25	97.72	
53 Cr	23.15	ppb	1.83	25	92.6	
55 Mn	24.2	ppb	0.94	25	96.8	
56 Fe	4,784.	ppb	1.27	5,000	95.68	
57 Fe	4,840.	ppb	0.63	5,000	96.8	
59 Co	24.26	ppb	0.77	25	97.04	
60 Ni	24.47	ppb	0.50	25	97.88	
63 Cu	24.36	ppb	1.10	25	97.44	
65 Cu	24.18	ppb	1.16	25	96.72	
66 Zn	24.6	ppb	0.82	25	98.4	
68 Zn	23.76	ppb	0.31	25	95.04	
75 As	24.69	ppb	0.41	25	98.76	
82 Se	24.95	ppb	1.36	25	99.8	
88 Sr	23.88	ppb	0.43	25	95.52	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.17	ppb	0.27	25	96.68	
107 Ag	24.49	ppb	0.69	25	97.96	
109 Ag	24.31	ppb	0.26	25	97.24	
111 Cd	24.29	ppb	0.56	25	97.16	
114 Cd	24.33	ppb	0.24	25	97.32	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.78	ppb	0.78	25	95.12	
120 Sn	23.75	ppb	1.15	25	95	
121 Sb	24.25	ppb	0.99	25	97	
123 Sb	24.26	ppb	1.37	25	97.04	
135 Ba	24.34	ppb	0.76	25	97.36	
137 Ba	24.46	ppb	0.88	25	97.84	
182 W	23.79	ppb	0.66	25	95.16	
203 Tl	23.94	ppb	1.98	25	95.76	
205 Tl	23.99	ppb	1.24	25	95.96	
208 Pb	24.02	ppb	1.30	25	96.08	
232 Th	23.78	ppb	1.51	25	95.12	
238 U	24.42	ppb	1.44	25	97.68	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4222635.50	2.21	3927738.80	107.5	80 - 120.4	
45 Sc	2737753.50	0.77	2572658.80	106.4	80 - 120.4	
72 Ge	512067.59	0.97	510197.59	100.4	80 - 120.4	
159 Tb	4765422.50	0.43	4617151.00	103.2	80 - 120.4	
209 Bi	2437298.30	0.21	2380666.00	102.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\063_CCB.D\063_CCB.D#
Date Acquired: May 15 2018 10:03 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.002	ppb	40.95	1.00	
11 B	2.408	ppb	10.62	1.00	
23 Na	4.364	ppb	7.91	1.00	
25 Mg	0.2018	ppb	59.32	1.00	
27 Al	0.1232	ppb	22.47	1.00	
28 Si	22.32	ppb	25.73	1.00	
29 Si	16.22	ppb	24.43	1.00	
39 K	1.081	ppb	139.96	1.00	
43 Ca	1.275	ppb	154.35	1.00	
44 Ca	1.211	ppb	27.84	1.00	
51 V	0.0156	ppb	686.98	1.00	
52 Cr	-0.0047	ppb	565.61	1.00	
53 Cr	-2.746	ppb	9.79	1.00	
55 Mn	0.0046	ppb	146.94	1.00	
56 Fe	4.711	ppb	55.51	1.00	
57 Fe	1.957	ppb	47.93	1.00	
59 Co	0.0029	ppb	55.18	1.00	
60 Ni	0.0014	ppb	985.42	1.00	
63 Cu	0.0672	ppb	16.16	1.00	
65 Cu	0.0415	ppb	81.77	1.00	
66 Zn	0.1181	ppb	51.59	1.00	
68 Zn	-0.1219	ppb	57.15	1.00	
75 As	-0.0239	ppb	226.27	1.00	
82 Se	0.1574	ppb	15.14	1.00	
88 Sr	-0.0002	ppb	231.49	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0233	ppb	36.50	1.00	
107 Ag	0.0031	ppb	53.69	1.00	
109 Ag	0.0028	ppb	95.13	1.00	
111 Cd	0.0341	ppb	36.95	1.00	
114 Cd	0.0056	ppb	83.21	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0657	ppb	20.09	1.00	
120 Sn	0.0516	ppb	12.22	1.00	
121 Sb	0.0078	ppb	19.88	1.00	
123 Sb	0.012	ppb	49.98	1.00	
135 Ba	0.0245	ppb	14.77	1.00	
137 Ba	0.0086	ppb	124.77	1.00	
182 W	0.0476	ppb	35.96	1.00	
203 Tl	0.0128	ppb	10.89	1.00	
205 Tl	0.0081	ppb	52.01	1.00	
208 Pb	0.0007	ppb	669.58	1.00	
232 Th	0.0533	ppb	5.58	1.00	
238 U	0.0027	ppb	35.89	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3905871.50	5.78	3927738.80	99.4	79.5 - 120	
45 Sc	2494548.80	1.31	2572658.80	97.0	79.5 - 120	
72 Ge	479379.31	0.85	510197.59	94.0	79.5 - 120	
159 Tb	4384390.50	0.35	4617151.00	95.0	79.5 - 120	
209 Bi	2285738.50	1.06	2380666.00	96.0	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\064SMPL.D\064SMPL.D#
Date Acquired: May 15 2018 10:07 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-013
Misc Info:
Vial Number: 2307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0067	0.0013	ppb	155.65	100.	
11 B	188.25	37.65	ppb	6.59	1000.	
23 Na	308,300.	61,660.	ppb	4.50	200000.	
25 Mg	76,250.	15,250.	ppb	3.80	200000.	
27 Al	9.86	1.972	ppb	6.86	200000.	
28 Si	19,745.	3,949.	ppb	3.70	#VALUE!	
29 Si	21,440.	4,288.	ppb	3.28	10000.	
39 K	18,675.	3,735.	ppb	2.69	200000.	
43 Ca	411,350.	82,270.	ppb	1.84	#VALUE!	
44 Ca	389,700.	77,940.	ppb	0.14	200000.	
51 V	1.336	0.2672	ppb	26.23	1000.	
52 Cr	2.296	0.4592	ppb	10.59	2000.	
53 Cr	64.85	12.97	ppb	28.17	#VALUE!	
55 Mn	1,375.5	275.1	ppb	0.49	2000.	
56 Fe	4,637.5	927.5	ppb	0.88	#VALUE!	
57 Fe	5,115.	1,023.	ppb	0.79	100000.	
59 Co	0.4899	0.098	ppb	6.15	1000.	
60 Ni	1.901	0.3802	ppb	2.46	1000.	
63 Cu	10.35	2.07	ppb	0.95	#VALUE!	
65 Cu	1.611	0.3222	ppb	4.94	2000.	
66 Zn	21.19	4.238	ppb	0.32	2000.	
68 Zn	19.61	3.922	ppb	5.02	#VALUE!	
75 As	10.13	2.026	ppb	7.93	1000.	
82 Se	2.943	0.5886	ppb	27.95	1000.	
88 Sr	1,622.	324.4	ppb	0.86	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	10.61	2.122	ppb	1.40	1000.	
107 Ag	0.0028	0.0006	ppb	179.58	100.	
109 Ag	0.002	0.0004	ppb	244.55	#VALUE!	
111 Cd	0.2633	0.0527	ppb	46.72	#VALUE!	
114 Cd	0.001	0.0002	ppb	792.09	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.99	0.198	ppb	4.95	1000.	
120 Sn	0.9345	0.1869	ppb	5.08	#VALUE!	
121 Sb	0.1259	0.0252	ppb	13.86	#VALUE!	
123 Sb	0.1489	0.0298	ppb	18.67	1000.	
135 Ba	43.06	8.612	ppb	2.92	2000.	
137 Ba	43.215	8.643	ppb	0.19	#VALUE!	
182 W	0.2946	0.0589	ppb	11.90	1000.	
203 Tl	0.0256	0.0051	ppb	135.85	1000.	
205 Tl	-0.023	-0.0046	ppb	91.31	#VALUE!	
208 Pb	-0.2361	-0.0472	ppb	28.42	2000.	
232 Th	0.4151	0.083	ppb	17.37	1000.	
238 U	0.8315	0.1663	ppb	3.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4367482.00	4.24	3927738.80	111.2	69.5 - 120	
45 Sc	2762253.00	2.21	2572658.80	107.4	69.5 - 120	
72 Ge	527626.06	3.04	510197.59	103.4	69.5 - 120	
159 Tb	4732993.00	2.13	4617151.00	102.5	69.5 - 120	
209 Bi	2314200.30	1.71	2380666.00	97.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001186

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\065SMPL.D\065SMPL.D#
Date Acquired: May 15 2018 10:12 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-014
Misc Info:
Vial Number: 2308
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0045	0.0009	ppb	198.87	100.	
11 B	12.76	2.552	ppb	10.74	1000.	
23 Na	48.95	9.79	ppb	15.99	200000.	
25 Mg	18.5	3.7	ppb	10.97	200000.	
27 Al	9.51	1.902	ppb	4.88	200000.	
28 Si	63.1	12.62	ppb	36.12	#VALUE!	
29 Si	129.5	25.9	ppb	59.58	10000.	
39 K	12.705	2.541	ppb	115.27	200000.	
43 Ca	45.5	9.1	ppb	47.31	#VALUE!	
44 Ca	53.8	10.76	ppb	12.71	200000.	
51 V	1.636	0.3272	ppb	15.92	1000.	
52 Cr	1.924	0.3848	ppb	4.58	2000.	
53 Cr	74.4	14.88	ppb	2.24	#VALUE!	
55 Mn	0.5925	0.1185	ppb	5.42	2000.	
56 Fe	94.35	18.87	ppb	22.95	#VALUE!	
57 Fe	31.07	6.214	ppb	19.09	100000.	
59 Co	-0.0142	-0.0028	ppb	84.28	1000.	
60 Ni	0.1308	0.0262	ppb	12.74	1000.	
63 Cu	1.041	0.2082	ppb	3.57	#VALUE!	
65 Cu	1.0225	0.2045	ppb	6.17	2000.	
66 Zn	1.135	0.227	ppb	5.95	2000.	
68 Zn	-0.0091	-0.0018	ppb	1858.00	#VALUE!	
75 As	0.4816	0.0963	ppb	92.30	1000.	
82 Se	0.653	0.1306	ppb	160.64	1000.	
88 Sr	0.2002	0.04	ppb	12.85	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.1707	0.0341	ppb	2.68	1000.	
107 Ag	0.008	0.0016	ppb	71.63	100.	
109 Ag	0.0108	0.0022	ppb	63.77	#VALUE!	
111 Cd	0.3667	0.0733	ppb	32.63	#VALUE!	
114 Cd	-0.007	-0.0014	ppb	172.83	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.024	0.2048	ppb	15.23	1000.	
120 Sn	1.0315	0.2063	ppb	5.40	#VALUE!	
121 Sb	0.0153	0.0031	ppb	134.95	#VALUE!	
123 Sb	0.0456	0.0091	ppb	23.94	1000.	
135 Ba	0.2969	0.0594	ppb	9.46	2000.	
137 Ba	0.2682	0.0536	ppb	33.38	#VALUE!	
182 W	0.0221	0.0044	ppb	65.17	1000.	
203 Tl	-0.0154	-0.0031	ppb	161.68	1000.	
205 Tl	0.0071	0.0014	ppb	391.58	#VALUE!	
208 Pb	-0.1827	-0.0365	ppb	36.00	2000.	
232 Th	0.1122	0.0224	ppb	45.79	1000.	
238 U	-0.0012	-0.0002	ppb	222.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3950290.00	0.40	3927738.80	100.6	69.5 - 120	
45 Sc	2530694.00	2.62	2572658.80	98.4	69.5 - 120	
72 Ge	495171.31	1.18	510197.59	97.1	69.5 - 120	
159 Tb	4447220.00	1.48	4617151.00	96.3	69.5 - 120	
209 Bi	2322021.00	2.06	2380666.00	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001187

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\066SMPL.D\066SMPL.D#
Date Acquired: May 15 2018 10:16 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-015
Misc Info:
Vial Number: 2309
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.5085	0.1017	ppb	4.64	100.	
11 B	199.45	39.89	ppb	3.80	1000.	
23 Na	279,950.	55,990.	ppb	2.50	200000.	
25 Mg	66,850.	13,370.	ppb	0.96	200000.	
27 Al	10,330.	2,066.	ppb	0.62	200000.	
28 Si	41,630.	8,326.	ppb	1.83	#VALUE!	
29 Si	43,790.	8,758.	ppb	2.46	10000.	
39 K	20,505.	4,101.	ppb	1.50	200000.	
43 Ca	386,450.	77,290.	ppb	0.54	#VALUE!	
44 Ca	361,250.	72,250.	ppb	0.63	200000.	
51 V	34.625	6.925	ppb	3.37	1000.	
52 Cr	56.15	11.23	ppb	0.50	2000.	
53 Cr	95.9	19.18	ppb	2.64	#VALUE!	
55 Mn	1,414.5	282.9	ppb	0.79	2000.	
56 Fe	20,340.	4,068.	ppb	0.57	#VALUE!	
57 Fe	21,035.	4,207.	ppb	1.35	100000.	
59 Co	5.53	1.106	ppb	1.10	1000.	
60 Ni	28.4	5.68	ppb	2.77	1000.	
63 Cu	33.11	6.622	ppb	1.28	#VALUE!	
65 Cu	25.985	5.197	ppb	1.66	2000.	
66 Zn	90.3	18.06	ppb	0.57	2000.	
68 Zn	94.55	18.91	ppb	1.66	#VALUE!	
75 As	12.695	2.539	ppb	17.02	1000.	
82 Se	2.7885	0.5577	ppb	58.97	1000.	
88 Sr	1,501.	300.2	ppb	0.90	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	20.64	4.128	ppb	1.92	1000.	
107 Ag	0.0369	0.0074	ppb	14.47	100.	
109 Ag	0.0459	0.0092	ppb	21.57	#VALUE!	
111 Cd	0.2777	0.0555	ppb	58.11	#VALUE!	
114 Cd	-0.011	-0.0022	ppb	133.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.7615	0.3523	ppb	3.85	1000.	
120 Sn	1.8025	0.3605	ppb	3.46	#VALUE!	
121 Sb	0.3356	0.0671	ppb	26.15	#VALUE!	
123 Sb	0.37	0.074	ppb	12.79	1000.	
135 Ba	225.35	45.07	ppb	1.50	2000.	
137 Ba	225.5	45.1	ppb	0.89	#VALUE!	
182 W	0.518	0.1036	ppb	7.84	1000.	
203 Tl	0.1847	0.0369	ppb	7.74	1000.	
205 Tl	0.1515	0.0303	ppb	13.22	#VALUE!	
208 Pb	10.305	2.061	ppb	1.55	2000.	
232 Th	8.255	1.651	ppb	1.83	1000.	
238 U	2.043	0.4086	ppb	0.64	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4178981.30	0.92	3927738.80	106.4	69.5 - 120	
45 Sc	2650893.00	0.89	2572658.80	103.0	69.5 - 120	
72 Ge	510203.59	0.36	510197.59	100.0	69.5 - 120	
159 Tb	4729541.00	1.31	4617151.00	102.4	69.5 - 120	
209 Bi	2347590.00	0.66	2380666.00	98.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001188

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\067SMPL.D\067SMPL.D#
Date Acquired: May 15 2018 10:20 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-016
Misc Info:
Vial Number: 2310
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0046	0.0009	ppb	118.61	100.	
11 B	203.65	40.73	ppb	4.65	1000.	
23 Na	280,950.	56,190.	ppb	1.02	200000.	
25 Mg	64,250.	12,850.	ppb	2.89	200000.	
27 Al	10.34	2.068	ppb	5.21	200000.	
28 Si	19,050.	3,810.	ppb	2.19	#VALUE!	
29 Si	20,795.	4,159.	ppb	0.41	10000.	
39 K	17,845.	3,569.	ppb	1.65	200000.	
43 Ca	381,000.	76,200.	ppb	0.66	#VALUE!	
44 Ca	362,350.	72,470.	ppb	1.19	200000.	
51 V	0.4242	0.0848	ppb	156.06	1000.	
52 Cr	2.1565	0.4313	ppb	7.74	2000.	
53 Cr	58.7	11.74	ppb	11.70	#VALUE!	
55 Mn	1,321.5	264.3	ppb	1.49	2000.	
56 Fe	5,785.	1,157.	ppb	2.30	#VALUE!	
57 Fe	6,240.	1,248.	ppb	2.42	100000.	
59 Co	0.736	0.1472	ppb	6.48	1000.	
60 Ni	7.23	1.446	ppb	1.51	1000.	
63 Cu	9.77	1.954	ppb	2.67	#VALUE!	
65 Cu	1.944	0.3888	ppb	7.91	2000.	
66 Zn	26.915	5.383	ppb	2.85	2000.	
68 Zn	24.72	4.944	ppb	1.29	#VALUE!	
75 As	9.245	1.849	ppb	13.45	1000.	
82 Se	1.4295	0.2859	ppb	54.70	1000.	
88 Sr	1,466.5	293.3	ppb	0.37	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	12.875	2.575	ppb	1.35	1000.	
107 Ag	0.0007	0.0001	ppb	923.23	100.	
109 Ag	0.0035	0.0007	ppb	78.28	#VALUE!	
111 Cd	0.1301	0.026	ppb	57.11	#VALUE!	
114 Cd	0.007	0.0014	ppb	285.25	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.949	0.1898	ppb	6.12	1000.	
120 Sn	0.958	0.1916	ppb	5.31	#VALUE!	
121 Sb	0.1349	0.027	ppb	15.95	#VALUE!	
123 Sb	0.1428	0.0286	ppb	37.58	1000.	
135 Ba	35.865	7.173	ppb	0.27	2000.	
137 Ba	36.42	7.284	ppb	1.16	#VALUE!	
182 W	0.3226	0.0645	ppb	3.76	1000.	
203 Tl	0.0277	0.0055	ppb	197.76	1000.	
205 Tl	-0.0176	-0.0035	ppb	96.71	#VALUE!	
208 Pb	-0.2209	-0.0442	ppb	12.45	2000.	
232 Th	0.1228	0.0246	ppb	15.76	1000.	
238 U	1.0025	0.2005	ppb	6.77	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4065115.00	2.88	3927738.80	103.5	69.5 - 120	
45 Sc	2657548.00	0.71	2572658.80	103.3	69.5 - 120	
72 Ge	514546.00	0.02	510197.59	100.9	69.5 - 120	
159 Tb	4676124.50	0.95	4617151.00	101.3	69.5 - 120	
209 Bi	2348305.50	0.99	2380666.00	98.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001189

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\068SMPL.D\068SMPL.D#
Date Acquired: May 15 2018 10:24 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-017
Misc Info:
Vial Number: 2311
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.509	0.1018	ppb	6.32	100.	
11 B	196.1	39.22	ppb	1.14	1000.	
23 Na	238,450.	47,690.	ppb	3.30	200000.	
25 Mg	59,100.	11,820.	ppb	2.47	200000.	
27 Al	8,650.	1,730.	ppb	1.47	200000.	
28 Si	35,560.	7,112.	ppb	0.75	#VALUE!	
29 Si	37,800.	7,560.	ppb	1.99	10000.	
39 K	19,425.	3,885.	ppb	3.28	200000.	
43 Ca	384,550.	76,910.	ppb	2.65	#VALUE!	
44 Ca	360,800.	72,160.	ppb	2.49	200000.	
51 V	26.09	5.218	ppb	1.35	1000.	
52 Cr	33.615	6.723	ppb	1.58	2000.	
53 Cr	72.45	14.49	ppb	4.08	#VALUE!	
55 Mn	1,396.	279.2	ppb	3.07	2000.	
56 Fe	15,735.	3,147.	ppb	2.43	#VALUE!	
57 Fe	16,145.	3,229.	ppb	2.68	100000.	
59 Co	4.0725	0.8145	ppb	4.65	1000.	
60 Ni	13.785	2.757	ppb	2.88	1000.	
63 Cu	24.505	4.901	ppb	1.36	#VALUE!	
65 Cu	17.635	3.527	ppb	3.23	2000.	
66 Zn	60.5	12.1	ppb	2.10	2000.	
68 Zn	62.85	12.57	ppb	3.09	#VALUE!	
75 As	28.255	5.651	ppb	7.53	1000.	
82 Se	2.625	0.525	ppb	49.73	1000.	
88 Sr	1,416.	283.2	ppb	0.83	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	14.94	2.988	ppb	1.96	1000.	
107 Ag	0.0422	0.0084	ppb	35.79	100.	
109 Ag	0.0393	0.0079	ppb	46.49	#VALUE!	
111 Cd	0.3983	0.0797	ppb	41.04	#VALUE!	
114 Cd	0.118	0.0236	ppb	22.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.5675	0.3135	ppb	3.04	1000.	
120 Sn	1.4675	0.2935	ppb	1.60	#VALUE!	
121 Sb	0.4122	0.0824	ppb	1.00	#VALUE!	
123 Sb	0.4383	0.0877	ppb	9.30	1000.	
135 Ba	203.3	40.66	ppb	1.20	2000.	
137 Ba	204.25	40.85	ppb	0.92	#VALUE!	
182 W	0.309	0.0618	ppb	14.82	1000.	
203 Tl	0.1679	0.0336	ppb	19.51	1000.	
205 Tl	0.1308	0.0262	ppb	27.43	#VALUE!	
208 Pb	12.15	2.43	ppb	2.90	2000.	
232 Th	5.65	1.13	ppb	4.40	1000.	
238 U	3.624	0.7248	ppb	4.51	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3952377.00	2.13	3927738.80	100.6	69.5 - 120	
45 Sc	2592497.00	1.25	2572658.80	100.8	69.5 - 120	
72 Ge	503000.25	1.01	510197.59	98.6	69.5 - 120	
159 Tb	4652936.00	0.91	4617151.00	100.8	69.5 - 120	
209 Bi	2357018.00	1.45	2380666.00	99.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001190

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\069SMPL.D\069SMPL.D#
Date Acquired: May 15 2018 10:28 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-018
Misc Info:
Vial Number: 2312
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0045	0.0009	ppb	267.18	100.	
11 B	192.15	38.43	ppb	4.15	1000.	
23 Na	240,300.	48,060.	ppb	0.65	200000.	
25 Mg	58,050.	11,610.	ppb	2.60	200000.	
27 Al	9.06	1.812	ppb	0.07	200000.	
28 Si	16,785.	3,357.	ppb	3.23	#VALUE!	
29 Si	18,345.	3,669.	ppb	2.68	10000.	
39 K	17,760.	3,552.	ppb	4.06	200000.	
43 Ca	368,550.	73,710.	ppb	2.64	#VALUE!	
44 Ca	348,900.	69,780.	ppb	3.12	200000.	
51 V	0.74	0.148	ppb	163.04	1000.	
52 Cr	1.645	0.329	ppb	6.50	2000.	
53 Cr	57.5	11.5	ppb	16.82	#VALUE!	
55 Mn	1,236.5	247.3	ppb	0.39	2000.	
56 Fe	1,862.	372.4	ppb	1.73	#VALUE!	
57 Fe	2,298.	459.6	ppb	1.39	100000.	
59 Co	0.5135	0.1027	ppb	3.80	1000.	
60 Ni	1.667	0.3334	ppb	12.21	1000.	
63 Cu	8.17	1.634	ppb	2.52	#VALUE!	
65 Cu	1.459	0.2918	ppb	16.03	2000.	
66 Zn	13.195	2.639	ppb	1.52	2000.	
68 Zn	11.56	2.312	ppb	6.84	#VALUE!	
75 As	22.155	4.431	ppb	2.96	1000.	
82 Se	1.6735	0.3347	ppb	60.77	1000.	
88 Sr	1,373.5	274.7	ppb	1.08	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.655	2.131	ppb	0.61	1000.	
107 Ag	-0.0054	-0.0011	ppb	73.07	100.	
109 Ag	0.0043	0.0009	ppb	130.28	#VALUE!	
111 Cd	0.1976	0.0395	ppb	47.93	#VALUE!	
114 Cd	0.0204	0.0041	ppb	81.79	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.9485	0.1897	ppb	9.47	1000.	
120 Sn	1.007	0.2014	ppb	7.07	#VALUE!	
121 Sb	0.1623	0.0325	ppb	4.70	#VALUE!	
123 Sb	0.1842	0.0368	ppb	6.35	1000.	
135 Ba	30.185	6.037	ppb	3.46	2000.	
137 Ba	30.155	6.031	ppb	3.49	#VALUE!	
182 W	0.2308	0.0462	ppb	8.81	1000.	
203 Tl	0.0295	0.0059	ppb	101.36	1000.	
205 Tl	-0.0167	-0.0033	ppb	146.44	#VALUE!	
208 Pb	-0.2411	-0.0482	ppb	21.30	2000.	
232 Th	0.0972	0.0194	ppb	2.27	1000.	
238 U	2.548	0.5096	ppb	3.56	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4050708.30	2.34	3927738.80	103.1	69.5 - 120	
45 Sc	2680928.00	1.68	2572658.80	104.2	69.5 - 120	
72 Ge	516162.78	0.17	510197.59	101.2	69.5 - 120	
159 Tb	4740578.00	1.44	4617151.00	102.7	69.5 - 120	
209 Bi	2344643.50	1.27	2380666.00	98.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001191

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\070SMPL.D\070SMPL.D#
Date Acquired: May 15 2018 10:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2401
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0004	-0.0004	ppb	361.50	100.	
11 B	2.519	2.519	ppb	11.37	1000.	
23 Na	34.05	34.05	ppb	14.17	200000.	
25 Mg	2.323	2.323	ppb	27.26	200000.	
27 Al	2.521	2.521	ppb	9.88	200000.	
28 Si	4.037	4.037	ppb	250.93	#VALUE!	
29 Si	9.417	9.417	ppb	111.82	10000.	
39 K	1.882	1.882	ppb	144.95	200000.	
43 Ca	9.973	9.973	ppb	52.56	#VALUE!	
44 Ca	10.09	10.09	ppb	49.79	200000.	
51 V	0.0688	0.0688	ppb	94.96	1000.	
52 Cr	0.0686	0.0686	ppb	5.14	2000.	
53 Cr	0.2139	0.2139	ppb	247.83	#VALUE!	
55 Mn	0.2416	0.2416	ppb	4.07	2000.	
56 Fe	10.79	10.79	ppb	49.06	#VALUE!	
57 Fe	8.464	8.464	ppb	13.13	100000.	
59 Co	0.0047	0.0047	ppb	96.61	1000.	
60 Ni	0.0375	0.0375	ppb	38.65	1000.	
63 Cu	0.3244	0.3244	ppb	7.14	#VALUE!	
65 Cu	0.3274	0.3274	ppb	4.80	2000.	
66 Zn	4.827	4.827	ppb	2.47	2000.	
68 Zn	4.49	4.49	ppb	1.52	#VALUE!	
75 As	0.094	0.094	ppb	135.06	1000.	
82 Se	0.1077	0.1077	ppb	215.78	1000.	
88 Sr	0.0278	0.0278	ppb	71.83	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0062	0.0062	ppb	33.17	1000.	
107 Ag	0.0007	0.0007	ppb	280.90	100.	
109 Ag	0.0012	0.0012	ppb	70.62	#VALUE!	
111 Cd	0.0644	0.0644	ppb	34.16	#VALUE!	
114 Cd	-0.0044	-0.0044	ppb	83.84	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0589	0.0589	ppb	36.48	1000.	
120 Sn	0.0611	0.0611	ppb	22.95	#VALUE!	
121 Sb	-0.0005	-0.0005	ppb	308.38	#VALUE!	
123 Sb	0.0038	0.0038	ppb	50.82	1000.	
135 Ba	0.1468	0.1468	ppb	24.69	2000.	
137 Ba	0.1511	0.1511	ppb	1.50	#VALUE!	
182 W	0.0031	0.0031	ppb	34.51	1000.	
203 Tl	0.0083	0.0083	ppb	97.07	1000.	
205 Tl	0.0084	0.0084	ppb	37.83	#VALUE!	
208 Pb	0.131	0.131	ppb	5.28	2000.	
232 Th	0.0005	0.0005	ppb	171.23	1000.	
238 U	-0.0002	-0.0002	ppb	328.51	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4060592.80	2.70	3927738.80	103.4	69.5 - 120	
45 Sc	2612022.00	1.40	2572658.80	101.5	69.5 - 120	
72 Ge	496454.91	1.29	510197.59	97.3	69.5 - 120	
159 Tb	4467283.50	0.79	4617151.00	96.8	69.5 - 120	
209 Bi	2350894.30	1.30	2380666.00	98.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001192

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\071SMPL.D\071SMPL.D#
Date Acquired: May 15 2018 10:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2402
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0007	-0.0007	ppb	134.57	100.	
11 B	1.349	1.349	ppb	1.70	1000.	
23 Na	14.29	14.29	ppb	2.41	200000.	
25 Mg	3.556	3.556	ppb	2.77	200000.	
27 Al	1.827	1.827	ppb	2.48	200000.	
28 Si	22.74	22.74	ppb	40.29	#VALUE!	
29 Si	29.26	29.26	ppb	49.73	10000.	
39 K	4.521	4.521	ppb	57.00	200000.	
43 Ca	8.995	8.995	ppb	47.05	#VALUE!	
44 Ca	8.053	8.053	ppb	6.66	200000.	
51 V	0.0572	0.0572	ppb	154.63	1000.	
52 Cr	0.0432	0.0432	ppb	32.14	2000.	
53 Cr	-0.5855	-0.5855	ppb	38.41	#VALUE!	
55 Mn	0.0444	0.0444	ppb	18.39	2000.	
56 Fe	11.43	11.43	ppb	35.81	#VALUE!	
57 Fe	6.797	6.797	ppb	25.66	100000.	
59 Co	0.0027	0.0027	ppb	61.22	1000.	
60 Ni	0.0247	0.0247	ppb	39.20	1000.	
63 Cu	0.2289	0.2289	ppb	8.44	#VALUE!	
65 Cu	0.2375	0.2375	ppb	2.54	2000.	
66 Zn	0.4771	0.4771	ppb	4.59	2000.	
68 Zn	0.2475	0.2475	ppb	18.14	#VALUE!	
75 As	0.1278	0.1278	ppb	118.23	1000.	
82 Se	0.2755	0.2755	ppb	111.62	1000.	
88 Sr	0.0116	0.0116	ppb	24.09	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0017	0.0017	ppb	113.91	1000.	
107 Ag	0.0003	0.0003	ppb	372.01	100.	
109 Ag	0.0014	0.0014	ppb	57.83	#VALUE!	
111 Cd	0.1138	0.1138	ppb	2.90	#VALUE!	
114 Cd	0.0011	0.0011	ppb	422.06	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0372	0.0372	ppb	40.62	1000.	
120 Sn	0.027	0.027	ppb	19.42	#VALUE!	
121 Sb	0.0004	0.0004	ppb	553.64	#VALUE!	
123 Sb	0.003	0.003	ppb	90.85	1000.	
135 Ba	0.1288	0.1288	ppb	8.11	2000.	
137 Ba	0.1078	0.1078	ppb	13.29	#VALUE!	
182 W	-0.0007	-0.0007	ppb	557.74	1000.	
203 Tl	0.0089	0.0089	ppb	56.33	1000.	
205 Tl	0.0083	0.0083	ppb	81.60	#VALUE!	
208 Pb	0.166	0.166	ppb	8.97	2000.	
232 Th	0.0004	0.0004	ppb	122.98	1000.	
238 U	-0.0002	-0.0002	ppb	277.61	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3843981.30	3.19	3927738.80	97.9	69.5 - 120	
45 Sc	2471715.50	2.48	2572658.80	96.1	69.5 - 120	
72 Ge	477561.91	2.89	510197.59	93.6	69.5 - 120	
159 Tb	4333664.00	1.63	4617151.00	93.9	69.5 - 120	
209 Bi	2266850.30	2.17	2380666.00	95.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001193

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\072SMPL.D\072SMPL.D#
Date Acquired: May 15 2018 10:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE08IMS2
Misc Info:
Vial Number: 2403
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0041	-0.0008	ppb	144.07	100.	
11 B	7.135	1.427	ppb	9.26	1000.	
23 Na	44.46	8.892	ppb	1.72	200000.	
25 Mg	15.81	3.162	ppb	6.70	200000.	
27 Al	7.37	1.474	ppb	4.09	200000.	
28 Si	-0.1153	-0.0231	ppb	19172.00	#VALUE!	
29 Si	137.05	27.41	ppb	18.66	10000.	
39 K	51.65	10.33	ppb	22.18	200000.	
43 Ca	14.77	2.954	ppb	102.30	#VALUE!	
44 Ca	51.4	10.28	ppb	14.56	200000.	
51 V	1.071	0.2142	ppb	34.83	1000.	
52 Cr	2.6315	0.5263	ppb	7.62	2000.	
53 Cr	61.3	12.26	ppb	7.78	#VALUE!	
55 Mn	0.3983	0.0797	ppb	6.21	2000.	
56 Fe	69.35	13.87	ppb	25.62	#VALUE!	
57 Fe	20.065	4.013	ppb	44.98	100000.	
59 Co	0.0024	0.0005	ppb	229.30	1000.	
60 Ni	0.3782	0.0756	ppb	22.44	1000.	
63 Cu	0.904	0.1808	ppb	6.03	#VALUE!	
65 Cu	0.9145	0.1829	ppb	19.52	2000.	
66 Zn	1.1395	0.2279	ppb	5.13	2000.	
68 Zn	0.1656	0.0331	ppb	232.43	#VALUE!	
75 As	0.7615	0.1523	ppb	150.82	1000.	
82 Se	0.3815	0.0763	ppb	244.69	1000.	
88 Sr	0.1697	0.0339	ppb	19.39	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0622	0.0124	ppb	7.45	1000.	
107 Ag	0.0027	0.0005	ppb	221.13	100.	
109 Ag	-0.0029	-0.0006	ppb	152.45	#VALUE!	
111 Cd	0.4942	0.0988	ppb	34.55	#VALUE!	
114 Cd	-0.0615	-0.0123	ppb	104.48	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	41.44	8.288	ppb	2.60	1000.	
120 Sn	42.09	8.418	ppb	2.41	#VALUE!	
121 Sb	0.0165	0.0033	ppb	39.33	#VALUE!	
123 Sb	0.0356	0.0071	ppb	52.55	1000.	
135 Ba	0.2181	0.0436	ppb	3.59	2000.	
137 Ba	0.1136	0.0227	ppb	29.16	#VALUE!	
182 W	0.0197	0.0039	ppb	135.94	1000.	
203 Tl	-0.0011	-0.0002	ppb	3170.00	1000.	
205 Tl	-0.0028	-0.0006	ppb	196.66	#VALUE!	
208 Pb	-0.0584	-0.0117	ppb	112.25	2000.	
232 Th	0.0323	0.0065	ppb	10.65	1000.	
238 U	0.0007	0.0001	ppb	108.21	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3816472.00	1.74	3927738.80	97.2	69.5 - 120	
45 Sc	2449404.30	1.38	2572658.80	95.2	69.5 - 120	
72 Ge	475983.28	1.35	510197.59	93.3	69.5 - 120	
159 Tb	4332031.50	1.13	4617151.00	93.8	69.5 - 120	
209 Bi	2265095.50	0.74	2380666.00	95.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001194

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\073SMPL.D\073SMPL.D#
Date Acquired: May 15 2018 10:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE08IMS2
Misc Info:
Vial Number: 2404
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	47.47	9.494	ppb	2.71	100.	
11 B	511.	102.2	ppb	2.17	1000.	
23 Na	7,870.	1,574.	ppb	2.33	200000.	
25 Mg	5,385.	1,077.	ppb	3.25	200000.	
27 Al	2,106.	421.2	ppb	1.33	200000.	
28 Si	899.	179.8	ppb	4.16	#VALUE!	
29 Si	961.	192.2	ppb	4.81	10000.	
39 K	9,910.	1,982.	ppb	2.63	200000.	
43 Ca	2,897.	579.4	ppb	2.91	#VALUE!	
44 Ca	2,513.5	502.7	ppb	1.86	200000.	
51 V	497.35	99.47	ppb	3.29	1000.	
52 Cr	196.55	39.31	ppb	2.44	2000.	
53 Cr	268.15	53.63	ppb	1.51	#VALUE!	
55 Mn	489.8	97.96	ppb	1.83	2000.	
56 Fe	964.5	192.9	ppb	2.55	#VALUE!	
57 Fe	951.	190.2	ppb	1.52	100000.	
59 Co	497.25	99.45	ppb	0.90	1000.	
60 Ni	490.	98.	ppb	1.52	1000.	
63 Cu	239.05	47.81	ppb	0.40	#VALUE!	
65 Cu	241.8	48.36	ppb	2.12	2000.	
66 Zn	461.2	92.24	ppb	0.75	2000.	
68 Zn	520.5	104.1	ppb	1.14	#VALUE!	
75 As	94.7	18.94	ppb	1.36	1000.	
82 Se	92.8	18.56	ppb	0.70	1000.	
88 Sr	473.05	94.61	ppb	0.56	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	94.95	18.99	ppb	1.84	1000.	
107 Ag	48.16	9.632	ppb	1.17	100.	
109 Ag	48.255	9.651	ppb	1.26	#VALUE!	
111 Cd	231.75	46.35	ppb	1.52	#VALUE!	
114 Cd	233.4	46.68	ppb	1.10	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	530.5	106.1	ppb	1.19	1000.	
120 Sn	529.5	105.9	ppb	1.99	#VALUE!	
121 Sb	98.4	19.68	ppb	2.16	#VALUE!	
123 Sb	99.05	19.81	ppb	1.64	1000.	
135 Ba	2,003.5	400.7	ppb	1.72	2000.	
137 Ba	2,010.5	402.1	ppb	2.94	#VALUE!	
182 W	101.45	20.29	ppb	0.38	1000.	
203 Tl	100.4	20.08	ppb	2.13	1000.	
205 Tl	100.85	20.17	ppb	1.04	#VALUE!	
208 Pb	101.4	20.28	ppb	1.38	2000.	
232 Th	100.8	20.16	ppb	1.83	1000.	
238 U	102.15	20.43	ppb	1.87	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4672298.50	2.86	3927738.80	119.0	69.5 - 120	
45 Sc	2700036.80	2.98	2572658.80	105.0	69.5 - 120	
72 Ge	520871.31	2.43	510197.59	102.1	69.5 - 120	
159 Tb	4626069.00	0.88	4617151.00	100.2	69.5 - 120	
209 Bi	2398915.50	1.06	2380666.00	100.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001195

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\074_CCV.D\074_CCV.D#
Date Acquired: May 15 2018 10:49 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.94	ppb	0.90	25	99.76	
11 B	28.7	ppb	1.78	25	114.8	Fail
23 Na	4,891.	ppb	2.12	5,000	97.82	
25 Mg	4,900.	ppb	1.61	5,000	98	
27 Al	488.7	ppb	0.36	500	97.74	
28 Si	472.9	ppb	4.10	500	94.58	
29 Si	466.7	ppb	3.58	500	93.34	
39 K	4,846.	ppb	0.14	5,000	96.92	
43 Ca	4,897.	ppb	1.84	5,000	97.94	
44 Ca	4,898.	ppb	1.46	5,000	97.96	
51 V	24.14	ppb	0.78	25	96.56	
52 Cr	24.5	ppb	0.89	25	98	
53 Cr	24.12	ppb	3.33	25	96.48	
55 Mn	24.05	ppb	1.15	25	96.2	
56 Fe	4,763.	ppb	0.57	5,000	95.26	
57 Fe	4,806.	ppb	0.57	5,000	96.12	
59 Co	24.11	ppb	0.56	25	96.44	
60 Ni	24.46	ppb	1.57	25	97.84	
63 Cu	24.18	ppb	0.61	25	96.72	
65 Cu	24.27	ppb	1.67	25	97.08	
66 Zn	24.4	ppb	1.30	25	97.6	
68 Zn	24.09	ppb	0.88	25	96.36	
75 As	24.31	ppb	1.20	25	97.24	
82 Se	24.99	ppb	1.77	25	99.96	
88 Sr	23.73	ppb	1.05	25	94.92	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.96	ppb	0.39	25	95.84	
107 Ag	24.21	ppb	0.26	25	96.84	
109 Ag	24.32	ppb	0.55	25	97.28	
111 Cd	24.29	ppb	0.68	25	97.16	
114 Cd	24.29	ppb	1.08	25	97.16	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.45	ppb	0.78	25	93.8	
120 Sn	23.42	ppb	0.66	25	93.68	
121 Sb	23.82	ppb	0.77	25	95.28	
123 Sb	23.87	ppb	0.13	25	95.48	
135 Ba	24.46	ppb	1.05	25	97.84	
137 Ba	24.2	ppb	0.92	25	96.8	
182 W	24.	ppb	1.00	25	96	
203 Tl	23.4	ppb	2.27	25	93.6	
205 Tl	23.68	ppb	1.75	25	94.72	
208 Pb	23.81	ppb	1.61	25	95.24	
232 Th	23.59	ppb	2.19	25	94.36	
238 U	24.32	ppb	1.63	25	97.28	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4036640.80	0.92	3927738.80	102.8	80 - 120.4	
45 Sc	2592441.80	2.32	2572658.80	100.8	80 - 120.4	
72 Ge	487523.50	1.35	510197.59	95.6	80 - 120.4	
159 Tb	4592434.50	0.55	4617151.00	99.5	80 - 120.4	
209 Bi	2413533.00	1.42	2380666.00	101.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4001196

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\075_CCB.D\075_CCB.D#
Date Acquired: May 15 2018 10:53 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0009	ppb	23.18	1.00	
11 B	2.725	ppb	15.37	1.00	
23 Na	3.268	ppb	4.74	1.00	
25 Mg	0.2017	ppb	28.16	1.00	
27 Al	0.1304	ppb	30.19	1.00	
28 Si	19.59	ppb	29.11	1.00	
29 Si	28.6	ppb	46.99	1.00	
39 K	6.403	ppb	7.06	1.00	
43 Ca	-5.477	ppb	14.25	1.00	
44 Ca	1.151	ppb	69.48	1.00	
51 V	0.0294	ppb	277.84	1.00	
52 Cr	0.0123	ppb	241.30	1.00	
53 Cr	-2.185	ppb	5.94	1.00	
55 Mn	0.008	ppb	35.07	1.00	
56 Fe	2.604	ppb	68.24	1.00	
57 Fe	2.686	ppb	52.12	1.00	
59 Co	-0.0001	ppb	5645.20	1.00	
60 Ni	0.0045	ppb	46.34	1.00	
63 Cu	0.0524	ppb	42.80	1.00	
65 Cu	0.0601	ppb	0.88	1.00	
66 Zn	0.0807	ppb	53.75	1.00	
68 Zn	-0.0984	ppb	100.26	1.00	
75 As	0.0617	ppb	67.39	1.00	
82 Se	0.2786	ppb	52.73	1.00	
88 Sr	0.0008	ppb	162.92	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0277	ppb	29.40	1.00	
107 Ag	0.0012	ppb	252.67	1.00	
109 Ag	0.0017	ppb	94.50	1.00	
111 Cd	0.0731	ppb	24.16	1.00	
114 Cd	-0.0001	ppb	214.51	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0623	ppb	10.78	1.00	
120 Sn	0.0635	ppb	28.10	1.00	
121 Sb	0.0093	ppb	39.79	1.00	
123 Sb	0.0143	ppb	29.47	1.00	
135 Ba	0.0161	ppb	50.33	1.00	
137 Ba	0.0082	ppb	48.70	1.00	
182 W	0.0454	ppb	21.75	1.00	
203 Tl	0.0067	ppb	77.07	1.00	
205 Tl	0.0112	ppb	21.80	1.00	
208 Pb	0.0156	ppb	29.20	1.00	
232 Th	0.0713	ppb	9.09	1.00	
238 U	0.0029	ppb	13.05	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3815086.30	0.71	3927738.80	97.1	79.5 - 120	
45 Sc	2402736.50	1.06	2572658.80	93.4	79.5 - 120	
72 Ge	467004.03	0.31	510197.59	91.5	79.5 - 120	
159 Tb	4258601.00	0.81	4617151.00	92.2	79.5 - 120	
209 Bi	2267539.30	1.43	2380666.00	95.2	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001197

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\076SMPL.D\076SMPL.D#
Date Acquired: May 15 2018 10:58 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-024
Misc Info:
Vial Number: 2405
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.53	1.306	ppb	1.88	100.	
11 B	120.35	24.07	ppb	2.68	1000.	
23 Na	5,410.	1,082.	ppb	4.16	200000.	
25 Mg	87,000.	17,400.	ppb	2.53	200000.	
27 Al	136,750.	27,350.	ppb	3.21	200000.	
28 Si	2,294.	458.8	ppb	6.76	#VALUE!	
29 Si	2,139.5	427.9	ppb	1.56	10000.	
39 K	34,395.	6,879.	ppb	1.16	200000.	
43 Ca	901,500.	180,300.	ppb	2.48	#VALUE!	
44 Ca	881,500.	176,300.	ppb	2.00	200000.	
51 V	255.4	51.08	ppb	1.14	1000.	
52 Cr	124.15	24.83	ppb	0.29	2000.	
53 Cr	150.	30.	ppb	1.36	#VALUE!	
55 Mn	2,825.5	565.1	ppb	1.48	2000.	
56 Fe	119,900.	23,980.	ppb	1.21	#VALUE!	
57 Fe	117,000.	23,400.	ppb	0.62	100000.	
59 Co	38.165	7.633	ppb	2.23	1000.	
60 Ni	92.15	18.43	ppb	1.11	1000.	
63 Cu	71.05	14.21	ppb	0.67	#VALUE!	
65 Cu	73.1	14.62	ppb	1.19	2000.	
66 Zn	304.15	60.83	ppb	0.39	2000.	
68 Zn	402.6	80.52	ppb	1.37	#VALUE!	
75 As	34.015	6.803	ppb	1.94	1000.	
82 Se	5.08	1.016	ppb	10.93	1000.	
88 Sr	2,173.	434.6	ppb	1.26	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.1515	0.6303	ppb	5.52	1000.	
107 Ag	0.676	0.1352	ppb	2.02	100.	
109 Ag	0.5055	0.1011	ppb	2.89	#VALUE!	
111 Cd	3.6375	0.7275	ppb	4.90	#VALUE!	
114 Cd	0.8845	0.1769	ppb	10.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.715	9.343	ppb	2.42	1000.	
120 Sn	46.56	9.312	ppb	2.45	#VALUE!	
121 Sb	1.151	0.2302	ppb	4.82	#VALUE!	
123 Sb	1.103	0.2206	ppb	4.65	1000.	
135 Ba	2,873.	574.6	ppb	1.54	2000.	
137 Ba	2,876.	575.2	ppb	0.64	#VALUE!	
182 W	0.508	0.1016	ppb	3.45	1000.	
203 Tl	2.553	0.5106	ppb	2.97	1000.	
205 Tl	2.5685	0.5137	ppb	3.18	#VALUE!	
208 Pb	86.5	17.3	ppb	0.48	2000.	
232 Th	62.1	12.42	ppb	0.35	1000.	
238 U	12.11	2.422	ppb	0.58	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4179047.00	1.28	3927738.80	106.4	69.5 - 120	
45 Sc	2642953.30	0.95	2572658.80	102.7	69.5 - 120	
72 Ge	491791.09	0.47	510197.59	96.4	69.5 - 120	
159 Tb	4673001.00	2.03	4617151.00	101.2	69.5 - 120	
209 Bi	2340479.00	1.22	2380666.00	98.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001198

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\077SMPL.D\077SMPL.D#
Date Acquired: May 15 2018 11:02 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-024L
Misc Info:
Vial Number: 2406
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.625	0.265	ppb	2.06	100.	
11 B	155.725	6.229	ppb	3.62	1000.	
23 Na	5,800.	232.	ppb	2.05	200000.	
25 Mg	91,350.	3,654.	ppb	0.88	200000.	
27 Al	140,475.	5,619.	ppb	0.63	200000.	
28 Si	2,034.	81.36	ppb	5.81	#VALUE!	
29 Si	1,275.5	51.02	ppb	13.60	10000.	
39 K	35,100.	1,404.	ppb	2.09	200000.	
43 Ca	939,500.	37,580.	ppb	2.79	#VALUE!	
44 Ca	911,250.	36,450.	ppb	2.27	200000.	
51 V	256.5	10.26	ppb	1.81	1000.	
52 Cr	124.15	4.966	ppb	0.96	2000.	
53 Cr	85.725	3.429	ppb	13.82	#VALUE!	
55 Mn	2,987.5	119.5	ppb	0.85	2000.	
56 Fe	122,675.	4,907.	ppb	0.19	#VALUE!	
57 Fe	126,325.	5,053.	ppb	0.23	100000.	
59 Co	40.025	1.601	ppb	1.76	1000.	
60 Ni	98.75	3.95	ppb	1.86	1000.	
63 Cu	77.75	3.11	ppb	0.77	#VALUE!	
65 Cu	79.725	3.189	ppb	1.71	2000.	
66 Zn	344.5	13.78	ppb	2.27	2000.	
68 Zn	444.	17.76	ppb	0.84	#VALUE!	
75 As	37.55	1.502	ppb	5.51	1000.	
82 Se	6.3625	0.2545	ppb	39.73	1000.	
88 Sr	2,290.	91.6	ppb	0.18	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	2.8625	0.1145	ppb	7.00	1000.	
107 Ag	0.7725	0.0309	ppb	18.71	100.	
109 Ag	0.4783	0.0191	ppb	9.75	#VALUE!	
111 Cd	3.9675	0.1587	ppb	9.57	#VALUE!	
114 Cd	0.9045	0.0362	ppb	57.55	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.325	1.933	ppb	2.09	1000.	
120 Sn	48.35	1.934	ppb	1.48	#VALUE!	
121 Sb	1.1535	0.0461	ppb	9.52	#VALUE!	
123 Sb	1.4848	0.0594	ppb	23.00	1000.	
135 Ba	2,940.	117.6	ppb	1.50	2000.	
137 Ba	2,940.	117.6	ppb	1.47	#VALUE!	
182 W	0.4853	0.0194	ppb	20.59	1000.	
203 Tl	2.7225	0.1089	ppb	7.98	1000.	
205 Tl	2.5625	0.1025	ppb	8.57	#VALUE!	
208 Pb	84.625	3.385	ppb	1.88	2000.	
232 Th	57.85	2.314	ppb	1.79	1000.	
238 U	11.855	0.4742	ppb	2.08	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4074809.00	3.14	3927738.80	103.7	69.5 - 120	
45 Sc	2602086.50	0.54	2572658.80	101.1	69.5 - 120	
72 Ge	492550.00	0.65	510197.59	96.5	69.5 - 120	
159 Tb	4662375.50	0.64	4617151.00	101.0	69.5 - 120	
209 Bi	2438264.30	0.38	2380666.00	102.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001199

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\078SMPL.D\078SMPL.D#
Date Acquired: May 15 2018 11:06 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-024A
Misc Info:
Vial Number: 2407
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	15.91	3.182	ppb	4.44	100.	
11 B	319.55	63.91	ppb	2.17	1000.	
23 Na	14,690.	2,938.	ppb	1.76	200000.	
25 Mg	87,050.	17,410.	ppb	5.24	200000.	
27 Al	135,550.	27,110.	ppb	4.60	200000.	
28 Si	7,115.	1,423.	ppb	2.48	#VALUE!	
29 Si	6,935.	1,387.	ppb	2.62	10000.	
39 K	43,160.	8,632.	ppb	0.56	200000.	
43 Ca	898,500.	179,700.	ppb	1.70	#VALUE!	
44 Ca	869,000.	173,800.	ppb	1.28	200000.	
51 V	303.2	60.64	ppb	2.28	1000.	
52 Cr	172.	34.4	ppb	2.37	2000.	
53 Cr	205.45	41.09	ppb	0.53	#VALUE!	
55 Mn	2,826.5	565.3	ppb	1.33	2000.	
56 Fe	119,350.	23,870.	ppb	1.75	#VALUE!	
57 Fe	118,050.	23,610.	ppb	1.92	100000.	
59 Co	47.665	9.533	ppb	3.40	1000.	
60 Ni	109.8	21.96	ppb	2.01	1000.	
63 Cu	98.1	19.62	ppb	1.15	#VALUE!	
65 Cu	99.8	19.96	ppb	0.25	2000.	
66 Zn	392.2	78.44	ppb	0.86	2000.	
68 Zn	481.85	96.37	ppb	2.21	#VALUE!	
75 As	81.1	16.22	ppb	1.89	1000.	
82 Se	49.325	9.865	ppb	3.68	1000.	
88 Sr	2,207.5	441.5	ppb	1.51	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	53.55	10.71	ppb	0.63	1000.	
107 Ag	10.19	2.038	ppb	1.25	100.	
109 Ag	9.885	1.977	ppb	0.94	#VALUE!	
111 Cd	13.005	2.601	ppb	1.01	#VALUE!	
114 Cd	10.135	2.027	ppb	1.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	93.55	18.71	ppb	3.49	1000.	
120 Sn	93.6	18.72	ppb	2.11	#VALUE!	
121 Sb	10.56	2.112	ppb	1.36	#VALUE!	
123 Sb	10.525	2.105	ppb	3.51	1000.	
135 Ba	2,844.	568.8	ppb	1.99	2000.	
137 Ba	2,873.	574.6	ppb	2.03	#VALUE!	
182 W	52.2	10.44	ppb	2.10	1000.	
203 Tl	12.875	2.575	ppb	1.27	1000.	
205 Tl	12.885	2.577	ppb	3.59	#VALUE!	
208 Pb	96.35	19.27	ppb	2.19	2000.	
232 Th	73.05	14.61	ppb	2.00	1000.	
238 U	23.25	4.65	ppb	2.14	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4154798.80	3.01	3927738.80	105.8	69.5 - 120	
45 Sc	2642813.00	1.75	2572658.80	102.7	69.5 - 120	
72 Ge	488003.94	1.09	510197.59	95.6	69.5 - 120	
159 Tb	4664968.00	2.18	4617151.00	101.0	69.5 - 120	
209 Bi	2306041.80	2.86	2380666.00	96.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001200

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\079SMPL.D\079SMPL.D#
Date Acquired: May 15 2018 11:10 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-024S
Misc Info:
Vial Number: 2408
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	50.65	10.13	ppb	1.25	100.	
11 B	574.5	114.9	ppb	3.92	1000.	
23 Na	13,475.	2,695.	ppb	3.40	200000.	
25 Mg	102,800.	20,560.	ppb	1.97	200000.	
27 Al	166,150.	33,230.	ppb	1.04	200000.	
28 Si	3,572.	714.4	ppb	0.80	#VALUE!	
29 Si	3,547.	709.4	ppb	1.85	10000.	
39 K	48,975.	9,795.	ppb	1.41	200000.	
43 Ca	1,011,500.	202,300.	ppb	0.65	#VALUE!	
44 Ca	981,000.	196,200.	ppb	0.79	200000.	
51 V	820.	164.	ppb	0.75	1000.	
52 Cr	334.05	66.81	ppb	1.29	2000.	
53 Cr	383.	76.6	ppb	0.30	#VALUE!	
55 Mn	3,215.5	643.1	ppb	1.04	2000.	
56 Fe	131,950.	26,390.	ppb	0.95	#VALUE!	
57 Fe	128,200.	25,640.	ppb	0.40	100000.	
59 Co	513.5	102.7	ppb	1.06	1000.	
60 Ni	548.5	109.7	ppb	0.98	1000.	
63 Cu	292.3	58.46	ppb	0.96	#VALUE!	
65 Cu	300.25	60.05	ppb	0.26	2000.	
66 Zn	745.	149.	ppb	0.99	2000.	
68 Zn	963.	192.6	ppb	0.40	#VALUE!	
75 As	129.7	25.94	ppb	1.88	1000.	
82 Se	87.7	17.54	ppb	3.43	1000.	
88 Sr	2,979.	595.8	ppb	0.36	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	94.8	18.96	ppb	0.57	1000.	
107 Ag	46.225	9.245	ppb	1.22	100.	
109 Ag	45.705	9.141	ppb	0.79	#VALUE!	
111 Cd	223.55	44.71	ppb	0.28	#VALUE!	
114 Cd	222.7	44.54	ppb	0.54	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	497.95	99.59	ppb	0.87	1000.	
120 Sn	500.5	100.1	ppb	0.92	#VALUE!	
121 Sb	29.63	5.926	ppb	1.14	#VALUE!	
123 Sb	30.2	6.04	ppb	0.47	1000.	
135 Ba	6,595.	1,319.	ppb	0.82	2000.	
137 Ba	6,450.	1,290.	ppb	0.68	#VALUE!	
182 W	51.15	10.23	ppb	1.58	1000.	
203 Tl	101.05	20.21	ppb	0.95	1000.	
205 Tl	103.35	20.67	ppb	0.73	#VALUE!	
208 Pb	196.2	39.24	ppb	0.80	2000.	
232 Th	172.75	34.55	ppb	0.78	1000.	
238 U	121.05	24.21	ppb	0.61	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4372508.50	2.15	3927738.80	111.3	69.5 - 120	
45 Sc	2617642.00	0.46	2572658.80	101.7	69.5 - 120	
72 Ge	489992.28	0.73	510197.59	96.0	69.5 - 120	
159 Tb	4626289.50	0.48	4617151.00	100.2	69.5 - 120	
209 Bi	2285375.50	0.32	2380666.00	96.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001201

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\080SMPL.D\080SMPL.D#
Date Acquired: May 15 2018 11:15 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-024P
Misc Info:
Vial Number: 2409
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	50.5	10.1	ppb	1.81	100.	
11 B	602.5	120.5	ppb	4.76	1000.	
23 Na	15,215.	3,043.	ppb	2.97	200000.	
25 Mg	93,000.	18,600.	ppb	1.93	200000.	
27 Al	170,900.	34,180.	ppb	0.90	200000.	
28 Si	3,130.5	626.1	ppb	1.46	#VALUE!	
29 Si	2,870.5	574.1	ppb	2.18	10000.	
39 K	49,450.	9,890.	ppb	0.33	200000.	
43 Ca	860,500.	172,100.	ppb	1.08	#VALUE!	
44 Ca	830,500.	166,100.	ppb	0.31	200000.	
51 V	783.5	156.7	ppb	2.11	1000.	
52 Cr	330.25	66.05	ppb	1.77	2000.	
53 Cr	372.7	74.54	ppb	2.39	#VALUE!	
55 Mn	3,231.	646.2	ppb	1.08	2000.	
56 Fe	136,600.	27,320.	ppb	0.50	#VALUE!	
57 Fe	133,250.	26,650.	ppb	1.33	100000.	
59 Co	509.	101.8	ppb	1.71	1000.	
60 Ni	544.5	108.9	ppb	1.10	1000.	
63 Cu	290.35	58.07	ppb	1.43	#VALUE!	
65 Cu	297.6	59.52	ppb	0.49	2000.	
66 Zn	760.5	152.1	ppb	1.78	2000.	
68 Zn	1,135.	227.	ppb	1.35	#VALUE!	
75 As	125.	25.	ppb	3.48	1000.	
82 Se	87.95	17.59	ppb	1.27	1000.	
88 Sr	2,681.5	536.3	ppb	2.01	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	89.45	17.89	ppb	1.53	1000.	
107 Ag	44.59	8.918	ppb	1.65	100.	
109 Ag	44.625	8.925	ppb	1.14	#VALUE!	
111 Cd	220.25	44.05	ppb	1.34	#VALUE!	
114 Cd	217.6	43.52	ppb	1.62	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	466.	93.2	ppb	0.86	1000.	
120 Sn	464.05	92.81	ppb	1.59	#VALUE!	
121 Sb	27.26	5.452	ppb	1.41	#VALUE!	
123 Sb	27.255	5.451	ppb	2.61	1000.	
135 Ba	10,425.	2,085.	ppb	1.07	2000.	>LDR
137 Ba	10,270.	2,054.	ppb	1.18	#VALUE!	
182 W	45.145	9.029	ppb	2.36	1000.	
203 Tl	97.6	19.52	ppb	0.66	1000.	
205 Tl	97.8	19.56	ppb	0.56	#VALUE!	
208 Pb	192.75	38.55	ppb	0.39	2000.	
232 Th	168.35	33.67	ppb	0.48	1000.	
238 U	113.85	22.77	ppb	0.75	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4106075.00	3.87	3927738.80	104.5	69.5 - 120	
45 Sc	2592434.30	1.19	2572658.80	100.8	69.5 - 120	
72 Ge	478953.25	1.92	510197.59	93.9	69.5 - 120	
159 Tb	4628809.00	1.02	4617151.00	100.3	69.5 - 120	
209 Bi	2302554.30	0.83	2380666.00	96.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4001202

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\081SMPL.D\081SMPL.D#
Date Acquired: May 15 2018 11:19 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-041
Misc Info:
Vial Number: 2410
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.165	1.833	ppb	1.98	100.	
11 B	175.85	35.17	ppb	4.23	1000.	
23 Na	8,170.	1,634.	ppb	1.00	200000.	
25 Mg	101,650.	20,330.	ppb	1.57	200000.	
27 Al	216,400.	43,280.	ppb	1.34	200000.	
28 Si	3,122.5	624.5	ppb	0.87	#VALUE!	
29 Si	2,962.5	592.5	ppb	4.61	10000.	
39 K	51,550.	10,310.	ppb	0.85	200000.	
43 Ca	701,000.	140,200.	ppb	2.68	#VALUE!	
44 Ca	671,500.	134,300.	ppb	1.83	200000.	
51 V	412.95	82.59	ppb	1.08	1000.	
52 Cr	188.05	37.61	ppb	0.95	2000.	
53 Cr	219.	43.8	ppb	1.99	#VALUE!	
55 Mn	5,625.	1,125.	ppb	1.09	2000.	
56 Fe	186,050.	37,210.	ppb	1.26	#VALUE!	
57 Fe	181,900.	36,380.	ppb	1.61	100000.	
59 Co	112.55	22.51	ppb	1.60	1000.	
60 Ni	168.15	33.63	ppb	1.33	1000.	
63 Cu	104.45	20.89	ppb	0.63	#VALUE!	
65 Cu	106.75	21.35	ppb	1.77	2000.	
66 Zn	442.1	88.42	ppb	1.38	2000.	
68 Zn	525.5	105.1	ppb	1.64	#VALUE!	
75 As	56.8	11.36	ppb	1.06	1000.	
82 Se	4.8915	0.9783	ppb	8.09	1000.	
88 Sr	1,524.	304.8	ppb	0.38	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.35	1.27	ppb	0.98	1000.	
107 Ag	0.829	0.1658	ppb	3.57	100.	
109 Ag	0.62	0.124	ppb	5.07	#VALUE!	
111 Cd	5.315	1.063	ppb	6.64	#VALUE!	
114 Cd	1.8575	0.3715	ppb	5.61	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.475	9.695	ppb	0.98	1000.	
120 Sn	48.085	9.617	ppb	2.27	#VALUE!	
121 Sb	1.5735	0.3147	ppb	2.45	#VALUE!	
123 Sb	1.6	0.32	ppb	6.96	1000.	
135 Ba	2,733.	546.6	ppb	1.20	2000.	
137 Ba	2,750.	550.	ppb	0.46	#VALUE!	
182 W	0.779	0.1558	ppb	5.28	1000.	
203 Tl	3.409	0.6818	ppb	3.87	1000.	
205 Tl	3.5415	0.7083	ppb	3.49	#VALUE!	
208 Pb	152.5	30.5	ppb	0.31	2000.	
232 Th	93.3	18.66	ppb	0.44	1000.	
238 U	16.2	3.24	ppb	1.67	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4175266.30	1.73	3927738.80	106.3	69.5 - 120	
45 Sc	2591124.00	1.15	2572658.80	100.7	69.5 - 120	
72 Ge	490769.31	0.50	510197.59	96.2	69.5 - 120	
159 Tb	4657342.00	1.13	4617151.00	100.9	69.5 - 120	
209 Bi	2314142.50	1.05	2380666.00	97.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001203

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\082SMPL.D\082SMPL.D#
Date Acquired: May 15 2018 11:23 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-042
Misc Info:
Vial Number: 2411
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.295	1.459	ppb	2.81	100.	
11 B	141.45	28.29	ppb	4.05	1000.	
23 Na	3,135.5	627.1	ppb	1.33	200000.	
25 Mg	96,550.	19,310.	ppb	0.33	200000.	
27 Al	163,800.	32,760.	ppb	1.84	200000.	
28 Si	2,967.	593.4	ppb	1.31	#VALUE!	
29 Si	2,804.	560.8	ppb	3.64	10000.	
39 K	44,230.	8,846.	ppb	1.07	200000.	
43 Ca	761,000.	152,200.	ppb	0.57	#VALUE!	
44 Ca	724,000.	144,800.	ppb	1.15	200000.	
51 V	376.45	75.29	ppb	1.13	1000.	
52 Cr	150.55	30.11	ppb	0.43	2000.	
53 Cr	176.4	35.28	ppb	0.65	#VALUE!	
55 Mn	4,621.	924.2	ppb	1.11	2000.	
56 Fe	143,950.	28,790.	ppb	1.17	#VALUE!	
57 Fe	140,850.	28,170.	ppb	0.14	100000.	
59 Co	152.45	30.49	ppb	0.20	1000.	
60 Ni	166.75	33.35	ppb	0.58	1000.	
63 Cu	102.35	20.47	ppb	1.55	#VALUE!	
65 Cu	106.75	21.35	ppb	0.85	2000.	
66 Zn	368.1	73.62	ppb	1.22	2000.	
68 Zn	450.1	90.02	ppb	1.32	#VALUE!	
75 As	86.4	17.28	ppb	2.11	1000.	
82 Se	4.5705	0.9141	ppb	19.54	1000.	
88 Sr	2,121.	424.2	ppb	0.39	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.475	1.095	ppb	1.21	1000.	
107 Ag	0.7395	0.1479	ppb	3.32	100.	
109 Ag	0.5885	0.1177	ppb	3.47	#VALUE!	
111 Cd	3.576	0.7152	ppb	3.06	#VALUE!	
114 Cd	0.9365	0.1873	ppb	30.44	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.355	8.871	ppb	0.89	1000.	
120 Sn	45.1	9.02	ppb	0.95	#VALUE!	
121 Sb	1.612	0.3224	ppb	4.38	#VALUE!	
123 Sb	1.648	0.3296	ppb	1.89	1000.	
135 Ba	2,618.5	523.7	ppb	0.75	2000.	
137 Ba	2,640.	528.	ppb	1.04	#VALUE!	
182 W	1.044	0.2088	ppb	6.42	1000.	
203 Tl	2.925	0.585	ppb	2.80	1000.	
205 Tl	2.957	0.5914	ppb	3.24	#VALUE!	
208 Pb	117.9	23.58	ppb	0.73	2000.	
232 Th	73.35	14.67	ppb	0.31	1000.	
238 U	14.015	2.803	ppb	0.23	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4050038.80	1.31	3927738.80	103.1	69.5 - 120	
45 Sc	2538160.50	0.69	2572658.80	98.7	69.5 - 120	
72 Ge	476083.97	0.35	510197.59	93.3	69.5 - 120	
159 Tb	4611266.00	0.39	4617151.00	99.9	69.5 - 120	
209 Bi	2307398.80	0.43	2380666.00	96.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001204

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\083SMPL.D\083SMPL.D#
Date Acquired: May 15 2018 11:28 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-043
Misc Info:
Vial Number: 2412
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.86	1.372	ppb	8.11	100.	
11 B	142.55	28.51	ppb	5.70	1000.	
23 Na	3,076.	615.2	ppb	2.50	200000.	
25 Mg	82,500.	16,500.	ppb	0.52	200000.	
27 Al	160,400.	32,080.	ppb	1.88	200000.	
28 Si	2,767.	553.4	ppb	2.79	#VALUE!	
29 Si	2,649.5	529.9	ppb	3.23	10000.	
39 K	41,860.	8,372.	ppb	2.48	200000.	
43 Ca	731,000.	146,200.	ppb	3.70	#VALUE!	
44 Ca	704,000.	140,800.	ppb	1.89	200000.	
51 V	339.1	67.82	ppb	1.60	1000.	
52 Cr	135.85	27.17	ppb	1.72	2000.	
53 Cr	155.05	31.01	ppb	0.58	#VALUE!	
55 Mn	3,622.5	724.5	ppb	0.52	2000.	
56 Fe	159,000.	31,800.	ppb	1.16	#VALUE!	
57 Fe	155,700.	31,140.	ppb	0.85	100000.	
59 Co	53.7	10.74	ppb	1.69	1000.	
60 Ni	113.25	22.65	ppb	1.14	1000.	
63 Cu	83.7	16.74	ppb	1.02	#VALUE!	
65 Cu	85.9	17.18	ppb	1.52	2000.	
66 Zn	318.4	63.68	ppb	0.91	2000.	
68 Zn	402.25	80.45	ppb	0.92	#VALUE!	
75 As	87.15	17.43	ppb	2.16	1000.	
82 Se	6.315	1.263	ppb	11.16	1000.	
88 Sr	1,922.	384.4	ppb	1.12	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.69	1.538	ppb	0.80	1000.	
107 Ag	0.631	0.1262	ppb	0.55	100.	
109 Ag	0.4591	0.0918	ppb	8.52	#VALUE!	
111 Cd	3.277	0.6554	ppb	6.39	#VALUE!	
114 Cd	0.6585	0.1317	ppb	7.65	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.635	8.927	ppb	2.19	1000.	
120 Sn	44.855	8.971	ppb	1.95	#VALUE!	
121 Sb	1.261	0.2522	ppb	5.06	#VALUE!	
123 Sb	1.401	0.2802	ppb	2.84	1000.	
135 Ba	2,528.5	505.7	ppb	1.07	2000.	
137 Ba	2,523.	504.6	ppb	1.33	#VALUE!	
182 W	0.8535	0.1707	ppb	2.98	1000.	
203 Tl	2.4915	0.4983	ppb	4.01	1000.	
205 Tl	2.5105	0.5021	ppb	0.86	#VALUE!	
208 Pb	93.2	18.64	ppb	0.12	2000.	
232 Th	65.3	13.06	ppb	1.31	1000.	
238 U	13.21	2.642	ppb	0.62	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4077719.00	4.80	3927738.80	103.8	69.5 - 120	
45 Sc	2561773.30	1.45	2572658.80	99.6	69.5 - 120	
72 Ge	481657.16	0.39	510197.59	94.4	69.5 - 120	
159 Tb	4639084.50	0.67	4617151.00	100.5	69.5 - 120	
209 Bi	2328231.30	0.89	2380666.00	97.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001205

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\084SMPL.D\084SMPL.D#
Date Acquired: May 15 2018 11:32 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-044
Misc Info:
Vial Number: 2501
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.65	1.73	ppb	5.17	100.	
11 B	152.75	30.55	ppb	4.93	1000.	
23 Na	4,759.	951.8	ppb	1.53	200000.	
25 Mg	94,900.	18,980.	ppb	2.08	200000.	
27 Al	200,150.	40,030.	ppb	3.02	200000.	
28 Si	2,806.5	561.3	ppb	2.81	#VALUE!	
29 Si	2,678.	535.6	ppb	5.29	10000.	
39 K	47,085.	9,417.	ppb	3.58	200000.	
43 Ca	532,000.	106,400.	ppb	2.99	#VALUE!	
44 Ca	501,500.	100,300.	ppb	2.24	200000.	
51 V	355.35	71.07	ppb	1.65	1000.	
52 Cr	182.7	36.54	ppb	0.49	2000.	
53 Cr	207.25	41.45	ppb	2.05	#VALUE!	
55 Mn	3,595.	719.	ppb	1.11	2000.	
56 Fe	183,350.	36,670.	ppb	1.10	#VALUE!	
57 Fe	177,650.	35,530.	ppb	0.49	100000.	
59 Co	57.65	11.53	ppb	0.56	1000.	
60 Ni	122.15	24.43	ppb	0.60	1000.	
63 Cu	99.75	19.95	ppb	0.41	#VALUE!	
65 Cu	102.95	20.59	ppb	1.02	2000.	
66 Zn	416.9	83.38	ppb	0.46	2000.	
68 Zn	471.1	94.22	ppb	0.40	#VALUE!	
75 As	21.61	4.322	ppb	6.39	1000.	
82 Se	4.5765	0.9153	ppb	18.79	1000.	
88 Sr	1,207.	241.4	ppb	0.62	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.558	0.7116	ppb	0.46	1000.	
107 Ag	0.798	0.1596	ppb	3.29	100.	
109 Ag	0.638	0.1276	ppb	4.54	#VALUE!	
111 Cd	3.4815	0.6963	ppb	0.93	#VALUE!	
114 Cd	0.4437	0.0887	ppb	12.78	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.925	9.585	ppb	0.72	1000.	
120 Sn	48.14	9.628	ppb	1.10	#VALUE!	
121 Sb	1.451	0.2902	ppb	2.45	#VALUE!	
123 Sb	1.4855	0.2971	ppb	2.05	1000.	
135 Ba	2,074.	414.8	ppb	1.03	2000.	
137 Ba	2,086.5	417.3	ppb	2.08	#VALUE!	
182 W	0.5085	0.1017	ppb	0.75	1000.	
203 Tl	3.057	0.6114	ppb	4.54	1000.	
205 Tl	2.9625	0.5925	ppb	1.88	#VALUE!	
208 Pb	112.6	22.52	ppb	1.43	2000.	
232 Th	88.05	17.61	ppb	1.90	1000.	
238 U	12.265	2.453	ppb	2.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4297161.00	5.78	3927738.80	109.4	69.5 - 120	
45 Sc	2588515.30	2.09	2572658.80	100.6	69.5 - 120	
72 Ge	492342.72	2.20	510197.59	96.5	69.5 - 120	
159 Tb	4638938.50	1.13	4617151.00	100.5	69.5 - 120	
209 Bi	2329961.50	0.28	2380666.00	97.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001206

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\085SMPL.D\085SMPL.D#
Date Acquired: May 15 2018 11:36 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2502
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0083	-0.0017	ppb	105.01	100.	
11 B	11.87	2.374	ppb	13.03	1000.	
23 Na	68.05	13.61	ppb	4.92	200000.	
25 Mg	3.827	0.7654	ppb	32.95	200000.	
27 Al	6.35	1.27	ppb	29.16	200000.	
28 Si	46.915	9.383	ppb	89.30	#VALUE!	
29 Si	-152.95	-30.59	ppb	46.91	10000.	
39 K	-23.605	-4.721	ppb	42.92	200000.	
43 Ca	83.7	16.74	ppb	9.98	#VALUE!	
44 Ca	74.	14.8	ppb	5.01	200000.	
51 V	0.2609	0.0522	ppb	49.91	1000.	
52 Cr	-0.2128	-0.0426	ppb	44.20	2000.	
53 Cr	-23.165	-4.633	ppb	1.23	#VALUE!	
55 Mn	0.155	0.031	ppb	34.61	2000.	
56 Fe	22.035	4.407	ppb	58.41	#VALUE!	
57 Fe	28.39	5.678	ppb	39.73	100000.	
59 Co	0.0158	0.0032	ppb	67.06	1000.	
60 Ni	0.0659	0.0132	ppb	65.20	1000.	
63 Cu	1.4475	0.2895	ppb	0.95	#VALUE!	
65 Cu	1.3435	0.2687	ppb	1.32	2000.	
66 Zn	1.4845	0.2969	ppb	3.81	2000.	
68 Zn	0.3926	0.0785	ppb	98.24	#VALUE!	
75 As	0.3544	0.0709	ppb	288.98	1000.	
82 Se	0.576	0.1152	ppb	108.85	1000.	
88 Sr	0.0829	0.0166	ppb	26.95	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0139	0.0028	ppb	22.06	1000.	
107 Ag	0.0062	0.0012	ppb	68.49	100.	
109 Ag	-0.0019	-0.0004	ppb	174.40	#VALUE!	
111 Cd	-0.0408	-0.0082	ppb	572.39	#VALUE!	
114 Cd	0.0125	0.0025	ppb	59.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.129	0.0258	ppb	49.94	1000.	
120 Sn	0.1551	0.031	ppb	50.16	#VALUE!	
121 Sb	0.0005	0.0001	ppb	1405.20	#VALUE!	
123 Sb	-0.0056	-0.0011	ppb	233.39	1000.	
135 Ba	0.1677	0.0335	ppb	32.50	2000.	
137 Ba	0.123	0.0246	ppb	19.75	#VALUE!	
182 W	0.0012	0.0002	ppb	1891.80	1000.	
203 Tl	0.0355	0.0071	ppb	77.66	1000.	
205 Tl	0.0045	0.0009	ppb	639.73	#VALUE!	
208 Pb	0.5915	0.1183	ppb	7.31	2000.	
232 Th	0.0435	0.0087	ppb	33.19	1000.	
238 U	0.0019	0.0004	ppb	199.15	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4092586.50	1.67	3927738.80	104.2	69.5 - 120	
45 Sc	2541709.50	1.26	2572658.80	98.8	69.5 - 120	
72 Ge	479385.81	0.52	510197.59	94.0	69.5 - 120	
159 Tb	4388604.50	1.45	4617151.00	95.1	69.5 - 120	
209 Bi	2311535.30	0.48	2380666.00	97.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001207

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\086_CCV.D\086_CCV.D#
Date Acquired: May 15 2018 11:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.42	ppb	4.54	25	93.68	
11 B	24.74	ppb	5.81	25	98.96	
23 Na	4,907.	ppb	2.76	5,000	98.14	
25 Mg	4,819.	ppb	2.01	5,000	96.38	
27 Al	489.1	ppb	2.69	500	97.82	
28 Si	478.	ppb	2.47	500	95.6	
29 Si	447.1	ppb	3.07	500	89.42	Fail
39 K	4,888.	ppb	1.52	5,000	97.76	
43 Ca	4,865.	ppb	1.76	5,000	97.3	
44 Ca	4,943.	ppb	1.21	5,000	98.86	
51 V	24.85	ppb	3.14	25	99.4	
52 Cr	24.65	ppb	1.03	25	98.6	
53 Cr	21.81	ppb	2.62	25	87.24	
55 Mn	24.36	ppb	2.00	25	97.44	
56 Fe	4,797.	ppb	2.54	5,000	95.94	
57 Fe	4,880.	ppb	3.15	5,000	97.6	
59 Co	24.31	ppb	0.59	25	97.24	
60 Ni	24.75	ppb	1.93	25	99	
63 Cu	24.56	ppb	1.44	25	98.24	
65 Cu	24.49	ppb	1.08	25	97.96	
66 Zn	24.6	ppb	0.80	25	98.4	
68 Zn	24.36	ppb	2.35	25	97.44	
75 As	24.31	ppb	1.39	25	97.24	
82 Se	24.83	ppb	1.86	25	99.32	
88 Sr	23.57	ppb	0.87	25	94.28	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.21	ppb	0.64	25	96.84	
107 Ag	24.02	ppb	0.66	25	96.08	
109 Ag	24.08	ppb	0.69	25	96.32	
111 Cd	24.18	ppb	0.50	25	96.72	
114 Cd	24.21	ppb	0.98	25	96.84	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.65	ppb	0.86	25	94.6	
120 Sn	23.76	ppb	1.19	25	95.04	
121 Sb	24.17	ppb	1.19	25	96.68	
123 Sb	24.17	ppb	1.19	25	96.68	
135 Ba	24.56	ppb	0.91	25	98.24	
137 Ba	24.44	ppb	1.01	25	97.76	
182 W	23.61	ppb	1.28	25	94.44	
203 Tl	23.88	ppb	1.72	25	95.52	
205 Tl	23.97	ppb	0.39	25	95.88	
208 Pb	24.01	ppb	1.08	25	96.04	
232 Th	23.84	ppb	1.21	25	95.36	
238 U	24.31	ppb	0.65	25	97.24	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4455268.50	8.86	3927738.80	113.4	80 - 120.4	
45 Sc	2681968.50	5.29	2572658.80	104.2	80 - 120.4	
72 Ge	499503.25	2.54	510197.59	97.9	80 - 120.4	
159 Tb	4630686.00	1.99	4617151.00	100.3	80 - 120.4	
209 Bi	2371178.30	1.66	2380666.00	99.6	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4001208

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\087_CCB.D\087_CCB.D#
Date Acquired: May 15 2018 11:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0007	ppb	299.17	1.00	
11 B	1.923	ppb	14.93	1.00	
23 Na	1.679	ppb	14.78	1.00	
25 Mg	0.2656	ppb	53.28	1.00	
27 Al	0.101	ppb	78.91	1.00	
28 Si	12.65	ppb	146.96	1.00	
29 Si	-19.07	ppb	113.74	1.00	
39 K	-3.117	ppb	129.16	1.00	
43 Ca	1.085	ppb	182.30	1.00	
44 Ca	1.423	ppb	40.16	1.00	
51 V	0.0333	ppb	206.73	1.00	
52 Cr	-0.0264	ppb	69.51	1.00	
53 Cr	-3.822	ppb	6.51	1.00	
55 Mn	0.0072	ppb	90.07	1.00	
56 Fe	3.78	ppb	104.47	1.00	
57 Fe	0.8781	ppb	323.43	1.00	
59 Co	0.0006	ppb	368.50	1.00	
60 Ni	0.0003	ppb	2013.80	1.00	
63 Cu	0.0773	ppb	6.99	1.00	
65 Cu	0.0703	ppb	18.40	1.00	
66 Zn	0.1202	ppb	44.19	1.00	
68 Zn	-0.1372	ppb	72.46	1.00	
75 As	0.0977	ppb	109.13	1.00	
82 Se	0.0394	ppb	23.60	1.00	
88 Sr	0.0018	ppb	380.58	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0298	ppb	19.05	1.00	
107 Ag	0.002	ppb	91.60	1.00	
109 Ag	0.0006	ppb	142.94	1.00	
111 Cd	0.0215	ppb	77.35	1.00	
114 Cd	0.0006	ppb	140.47	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0561	ppb	9.53	1.00	
120 Sn	0.0561	ppb	11.96	1.00	
121 Sb	0.0069	ppb	43.29	1.00	
123 Sb	0.0119	ppb	26.81	1.00	
135 Ba	0.0281	ppb	35.55	1.00	
137 Ba	0.0126	ppb	68.22	1.00	
182 W	0.0458	ppb	33.16	1.00	
203 Tl	0.0076	ppb	29.49	1.00	
205 Tl	0.005	ppb	83.54	1.00	
208 Pb	0.0004	ppb	1978.40	1.00	
232 Th	0.045	ppb	10.93	1.00	
238 U	0.0017	ppb	75.98	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4213955.50	0.83	3927738.80	107.3	79.5 - 120	
45 Sc	2546516.80	3.97	2572658.80	99.0	79.5 - 120	
72 Ge	481076.63	2.23	510197.59	94.3	79.5 - 120	
159 Tb	4330806.50	1.20	4617151.00	93.8	79.5 - 120	
209 Bi	2268287.00	1.77	2380666.00	95.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\088SMPL.D\088SMPL.D#
Date Acquired: May 15 2018 11:49 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-046
Misc Info:
Vial Number: 2503
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.48	1.496	ppb	1.47	100.	
11 B	147.4	29.48	ppb	2.76	1000.	
23 Na	8,150.	1,630.	ppb	4.23	200000.	
25 Mg	90,650.	18,130.	ppb	4.17	200000.	
27 Al	176,650.	35,330.	ppb	0.31	200000.	
28 Si	2,864.	572.8	ppb	1.91	#VALUE!	
29 Si	2,746.	549.2	ppb	2.05	10000.	
39 K	45,545.	9,109.	ppb	1.90	200000.	
43 Ca	575,500.	115,100.	ppb	0.72	#VALUE!	
44 Ca	552,500.	110,500.	ppb	0.42	200000.	
51 V	360.25	72.05	ppb	3.94	1000.	
52 Cr	163.95	32.79	ppb	1.02	2000.	
53 Cr	191.95	38.39	ppb	1.44	#VALUE!	
55 Mn	3,810.5	762.1	ppb	1.57	2000.	
56 Fe	155,900.	31,180.	ppb	1.20	#VALUE!	
57 Fe	152,450.	30,490.	ppb	1.56	100000.	
59 Co	68.55	13.71	ppb	0.07	1000.	
60 Ni	137.9	27.58	ppb	0.88	1000.	
63 Cu	97.5	19.5	ppb	0.46	#VALUE!	
65 Cu	100.2	20.04	ppb	1.33	2000.	
66 Zn	381.15	76.23	ppb	1.37	2000.	
68 Zn	453.65	90.73	ppb	1.81	#VALUE!	
75 As	54.1	10.82	ppb	1.21	1000.	
82 Se	4.212	0.8424	ppb	25.02	1000.	
88 Sr	1,587.	317.4	ppb	0.48	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.73	1.346	ppb	1.77	1000.	
107 Ag	0.7425	0.1485	ppb	1.23	100.	
109 Ag	0.596	0.1192	ppb	7.34	#VALUE!	
111 Cd	3.154	0.6308	ppb	5.55	#VALUE!	
114 Cd	0.2651	0.053	ppb	35.47	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.395	9.279	ppb	1.91	1000.	
120 Sn	46.105	9.221	ppb	1.04	#VALUE!	
121 Sb	1.466	0.2932	ppb	2.21	#VALUE!	
123 Sb	1.5235	0.3047	ppb	5.70	1000.	
135 Ba	2,347.	469.4	ppb	0.30	2000.	
137 Ba	2,367.	473.4	ppb	1.11	#VALUE!	
182 W	0.743	0.1486	ppb	3.34	1000.	
203 Tl	2.859	0.5718	ppb	4.14	1000.	
205 Tl	2.8905	0.5781	ppb	3.77	#VALUE!	
208 Pb	115.05	23.01	ppb	1.48	2000.	
232 Th	76.35	15.27	ppb	0.55	1000.	
238 U	13.41	2.682	ppb	1.51	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4410353.00	0.63	3927738.80	112.3	69.5 - 120	
45 Sc	2659870.50	0.99	2572658.80	103.4	69.5 - 120	
72 Ge	489557.81	0.66	510197.59	96.0	69.5 - 120	
159 Tb	4648647.00	0.53	4617151.00	100.7	69.5 - 120	
209 Bi	2315193.30	1.64	2380666.00	97.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001210

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\089SMPL.D\089SMPL.D#
Date Acquired: May 15 2018 11:53 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-047
Misc Info:
Vial Number: 2504
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.73	1.546	ppb	6.42	100.	
11 B	141.75	28.35	ppb	7.45	1000.	
23 Na	5,405.	1,081.	ppb	0.52	200000.	
25 Mg	92,800.	18,560.	ppb	3.63	200000.	
27 Al	180,450.	36,090.	ppb	1.93	200000.	
28 Si	3,248.	649.6	ppb	3.17	#VALUE!	
29 Si	3,003.5	600.7	ppb	3.57	10000.	
39 K	46,870.	9,374.	ppb	1.46	200000.	
43 Ca	614,500.	122,900.	ppb	2.61	#VALUE!	
44 Ca	592,500.	118,500.	ppb	2.06	200000.	
51 V	389.45	77.89	ppb	0.51	1000.	
52 Cr	165.05	33.01	ppb	2.18	2000.	
53 Cr	189.95	37.99	ppb	2.12	#VALUE!	
55 Mn	4,699.	939.8	ppb	0.56	2000.	
56 Fe	158,800.	31,760.	ppb	0.55	#VALUE!	
57 Fe	153,550.	30,710.	ppb	1.13	100000.	
59 Co	60.6	12.12	ppb	2.37	1000.	
60 Ni	149.7	29.94	ppb	0.75	1000.	
63 Cu	106.1	21.22	ppb	1.50	#VALUE!	
65 Cu	109.6	21.92	ppb	2.49	2000.	
66 Zn	401.1	80.22	ppb	2.06	2000.	
68 Zn	560.	112.	ppb	1.93	#VALUE!	
75 As	59.55	11.91	ppb	1.59	1000.	
82 Se	4.6945	0.9389	ppb	20.93	1000.	
88 Sr	1,881.	376.2	ppb	1.30	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.82	1.564	ppb	0.96	1000.	
107 Ag	0.779	0.1558	ppb	1.05	100.	
109 Ag	0.582	0.1164	ppb	8.35	#VALUE!	
111 Cd	3.494	0.6988	ppb	3.43	#VALUE!	
114 Cd	0.742	0.1484	ppb	36.95	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.825	9.365	ppb	1.53	1000.	
120 Sn	47.53	9.506	ppb	0.32	#VALUE!	
121 Sb	1.8335	0.3667	ppb	3.77	#VALUE!	
123 Sb	1.781	0.3562	ppb	4.53	1000.	
135 Ba	4,627.	925.4	ppb	1.00	2000.	
137 Ba	4,572.	914.4	ppb	1.70	#VALUE!	
182 W	0.714	0.1428	ppb	9.14	1000.	
203 Tl	3.1305	0.6261	ppb	8.40	1000.	
205 Tl	3.1565	0.6313	ppb	0.69	#VALUE!	
208 Pb	106.8	21.36	ppb	2.01	2000.	
232 Th	80.25	16.05	ppb	2.52	1000.	
238 U	14.17	2.834	ppb	3.01	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4502998.00	6.73	3927738.80	114.6	69.5 - 120	
45 Sc	2692769.50	3.46	2572658.80	104.7	69.5 - 120	
72 Ge	495071.03	2.02	510197.59	97.0	69.5 - 120	
159 Tb	4621974.00	1.03	4617151.00	100.1	69.5 - 120	
209 Bi	2326846.00	1.69	2380666.00	97.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001211

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\090SMPL.D\090SMPL.D#
Date Acquired: May 15 2018 11:57 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2505
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0005	-0.0005	ppb	222.30	100.	
11 B	1.993	1.993	ppb	15.42	1000.	
23 Na	23.52	23.52	ppb	2.72	200000.	
25 Mg	4.608	4.608	ppb	54.19	200000.	
27 Al	5.393	5.393	ppb	57.74	200000.	
28 Si	15.04	15.04	ppb	36.96	#VALUE!	
29 Si	-26.8	-26.8	ppb	20.12	10000.	
39 K	-2.322	-2.322	ppb	29.72	200000.	
43 Ca	23.41	23.41	ppb	76.25	#VALUE!	
44 Ca	20.72	20.72	ppb	56.23	200000.	
51 V	0.0342	0.0342	ppb	21.92	1000.	
52 Cr	-0.0221	-0.0221	ppb	100.68	2000.	
53 Cr	-4.423	-4.423	ppb	4.43	#VALUE!	
55 Mn	0.2021	0.2021	ppb	39.49	2000.	
56 Fe	14.38	14.38	ppb	17.04	#VALUE!	
57 Fe	14.43	14.43	ppb	15.05	100000.	
59 Co	0.011	0.011	ppb	25.66	1000.	
60 Ni	5.936	5.936	ppb	3.00	1000.	
63 Cu	2.6	2.6	ppb	2.31	#VALUE!	
65 Cu	2.557	2.557	ppb	2.20	2000.	
66 Zn	0.7382	0.7382	ppb	7.24	2000.	
68 Zn	0.5131	0.5131	ppb	14.84	#VALUE!	
75 As	-0.0248	-0.0248	ppb	425.00	1000.	
82 Se	0.0052	0.0052	ppb	3309.10	1000.	
88 Sr	0.0503	0.0503	ppb	103.96	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.002	0.002	ppb	109.24	1000.	
107 Ag	0.0012	0.0012	ppb	252.16	100.	
109 Ag	0.0022	0.0022	ppb	52.11	#VALUE!	
111 Cd	-0.0015	-0.0015	ppb	1015.70	#VALUE!	
114 Cd	0.0025	0.0025	ppb	69.87	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0594	0.0594	ppb	36.96	1000.	
120 Sn	0.0421	0.0421	ppb	19.21	#VALUE!	
121 Sb	0.0035	0.0035	ppb	107.94	#VALUE!	
123 Sb	0.0078	0.0078	ppb	76.26	1000.	
135 Ba	0.2743	0.2743	ppb	31.82	2000.	
137 Ba	0.2717	0.2717	ppb	35.71	#VALUE!	
182 W	0.0028	0.0028	ppb	88.20	1000.	
203 Tl	0.0054	0.0054	ppb	108.22	1000.	
205 Tl	0.0043	0.0043	ppb	94.23	#VALUE!	
208 Pb	0.1476	0.1476	ppb	10.14	2000.	
232 Th	0.0122	0.0122	ppb	55.13	1000.	
238 U	0.0023	0.0023	ppb	10.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4437903.00	1.75	3927738.80	113.0	69.5 - 120	
45 Sc	2581895.00	0.63	2572658.80	100.4	69.5 - 120	
72 Ge	494122.44	1.06	510197.59	96.8	69.5 - 120	
159 Tb	4450450.00	1.47	4617151.00	96.4	69.5 - 120	
209 Bi	2311888.80	0.75	2380666.00	97.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001212

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\091SMPL.D\091SMPL.D#
Date Acquired: May 16 2018 12:02 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE07IMW2
Misc Info:
Vial Number: 2506
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0046	-0.0009	ppb	51.42	100.	
11 B	5.315	1.063	ppb	0.95	1000.	
23 Na	8.785	1.757	ppb	3.07	200000.	
25 Mg	10.115	2.023	ppb	6.85	200000.	
27 Al	6.975	1.395	ppb	4.35	200000.	
28 Si	-35.495	-7.099	ppb	216.37	#VALUE!	
29 Si	-233.5	-46.7	ppb	47.52	10000.	
39 K	-50.75	-10.15	ppb	31.76	200000.	
43 Ca	-7.865	-1.573	ppb	82.20	#VALUE!	
44 Ca	7.575	1.515	ppb	98.48	200000.	
51 V	0.0582	0.0116	ppb	278.87	1000.	
52 Cr	-0.1255	-0.0251	ppb	101.35	2000.	
53 Cr	-13.635	-2.727	ppb	10.94	#VALUE!	
55 Mn	0.0819	0.0164	ppb	60.39	2000.	
56 Fe	-22.93	-4.586	ppb	137.61	#VALUE!	
57 Fe	0.7885	0.1577	ppb	1632.80	100000.	
59 Co	0.007	0.0014	ppb	133.31	1000.	
60 Ni	0.0024	0.0005	ppb	1456.50	1000.	
63 Cu	0.366	0.0732	ppb	12.29	#VALUE!	
65 Cu	0.454	0.0908	ppb	10.90	2000.	
66 Zn	0.2762	0.0552	ppb	131.28	2000.	
68 Zn	-0.6915	-0.1383	ppb	36.55	#VALUE!	
75 As	-0.0707	-0.0141	ppb	1547.40	1000.	
82 Se	0.2692	0.0538	ppb	351.60	1000.	
88 Sr	0.0219	0.0044	ppb	20.87	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	-0.0068	-0.0014	ppb	155.30	1000.	
107 Ag	0.0022	0.0004	ppb	824.51	100.	
109 Ag	0.0011	0.0002	ppb	955.68	#VALUE!	
111 Cd	0.0304	0.0061	ppb	94.58	#VALUE!	
114 Cd	0.0002	0.	ppb	3825.60	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0977	0.0195	ppb	40.00	1000.	
120 Sn	0.0774	0.0155	ppb	61.08	#VALUE!	
121 Sb	-0.0244	-0.0049	ppb	30.52	#VALUE!	
123 Sb	0.002	0.0004	ppb	371.65	1000.	
135 Ba	0.0523	0.0105	ppb	151.77	2000.	
137 Ba	0.0102	0.002	ppb	160.21	#VALUE!	
182 W	0.012	0.0024	ppb	107.21	1000.	
203 Tl	0.0224	0.0045	ppb	74.91	1000.	
205 Tl	0.0098	0.002	ppb	151.94	#VALUE!	
208 Pb	-0.0057	-0.0011	ppb	986.82	2000.	
232 Th	0.0355	0.0071	ppb	34.94	1000.	
238 U	-0.0016	-0.0003	ppb	81.99	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4667728.00	3.49	3927738.80	118.8	69.5 - 120	
45 Sc	2774649.30	4.74	2572658.80	107.9	69.5 - 120	
72 Ge	511732.56	3.72	510197.59	100.3	69.5 - 120	
159 Tb	4529257.00	2.05	4617151.00	98.1	69.5 - 120	
209 Bi	2328603.00	1.81	2380666.00	97.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001213

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\092SMPL.D\092SMPL.D#
Date Acquired: May 16 2018 12:06 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE07IMW2
Misc Info:
Vial Number: 2507
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	45.135	9.027	ppb	2.45	100.	
11 B	475.05	95.01	ppb	6.33	1000.	
23 Na	7,665.	1,533.	ppb	1.73	200000.	
25 Mg	5,295.	1,059.	ppb	1.36	200000.	
27 Al	2,099.	419.8	ppb	1.65	200000.	
28 Si	1,033.5	206.7	ppb	2.80	#VALUE!	
29 Si	854.	170.8	ppb	3.51	10000.	
39 K	9,955.	1,991.	ppb	0.92	200000.	
43 Ca	3,045.5	609.1	ppb	2.88	#VALUE!	
44 Ca	2,585.5	517.1	ppb	3.15	200000.	
51 V	528.5	105.7	ppb	0.92	1000.	
52 Cr	205.9	41.18	ppb	0.58	2000.	
53 Cr	245.85	49.17	ppb	0.97	#VALUE!	
55 Mn	517.	103.4	ppb	0.42	2000.	
56 Fe	1,061.5	212.3	ppb	2.72	#VALUE!	
57 Fe	1,039.5	207.9	ppb	2.73	100000.	
59 Co	528.5	105.7	ppb	0.66	1000.	
60 Ni	519.5	103.9	ppb	1.45	1000.	
63 Cu	253.55	50.71	ppb	0.75	#VALUE!	
65 Cu	257.2	51.44	ppb	0.81	2000.	
66 Zn	496.25	99.25	ppb	1.44	2000.	
68 Zn	563.	112.6	ppb	0.90	#VALUE!	
75 As	100.95	20.19	ppb	1.11	1000.	
82 Se	99.6	19.92	ppb	0.51	1000.	
88 Sr	497.95	99.59	ppb	0.38	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.1	20.22	ppb	0.67	1000.	
107 Ag	51.55	10.31	ppb	0.67	100.	
109 Ag	51.25	10.25	ppb	0.92	#VALUE!	
111 Cd	247.9	49.58	ppb	0.73	#VALUE!	
114 Cd	248.7	49.74	ppb	0.86	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	501.	100.2	ppb	0.69	1000.	
120 Sn	497.2	99.44	ppb	0.94	#VALUE!	
121 Sb	100.	20.	ppb	1.29	#VALUE!	
123 Sb	100.15	20.03	ppb	0.84	1000.	
135 Ba	2,052.	410.4	ppb	0.71	2000.	
137 Ba	2,058.	411.6	ppb	0.59	#VALUE!	
182 W	103.	20.6	ppb	0.73	1000.	
203 Tl	101.5	20.3	ppb	0.98	1000.	
205 Tl	102.55	20.51	ppb	0.41	#VALUE!	
208 Pb	102.5	20.5	ppb	0.61	2000.	
232 Th	102.5	20.5	ppb	1.40	1000.	
238 U	104.3	20.86	ppb	1.00	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4620347.50	2.65	3927738.80	117.6	69.5 - 120	
45 Sc	2559969.30	0.65	2572658.80	99.5	69.5 - 120	
72 Ge	480408.59	0.65	510197.59	94.2	69.5 - 120	
159 Tb	4481469.50	0.37	4617151.00	97.1	69.5 - 120	
209 Bi	2351315.50	0.79	2380666.00	98.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001214

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\093SMPL.D\093SMPL.D#
Date Acquired: May 16 2018 12:10 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-002
Misc Info:
Vial Number: 2508
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.4268	0.0854	ppb	5.19	100.	
11 B	519.	103.8	ppb	1.53	1000.	
23 Na	200,050.	40,010.	ppb	0.64	200000.	
25 Mg	40,970.	8,194.	ppb	1.32	200000.	
27 Al	7,375.	1,475.	ppb	1.01	200000.	
28 Si	32,730.	6,546.	ppb	1.36	#VALUE!	
29 Si	35,265.	7,053.	ppb	2.63	10000.	
39 K	16,410.	3,282.	ppb	2.09	200000.	
43 Ca	267,650.	53,530.	ppb	0.92	#VALUE!	
44 Ca	249,650.	49,930.	ppb	0.10	200000.	
51 V	20.79	4.158	ppb	6.63	1000.	
52 Cr	46.145	9.229	ppb	0.83	2000.	
53 Cr	68.8	13.76	ppb	4.82	#VALUE!	
55 Mn	1,166.5	233.3	ppb	0.88	2000.	
56 Fe	14,725.	2,945.	ppb	1.23	#VALUE!	
57 Fe	15,075.	3,015.	ppb	1.29	100000.	
59 Co	3.6425	0.7285	ppb	5.54	1000.	
60 Ni	17.84	3.568	ppb	0.87	1000.	
63 Cu	38.265	7.653	ppb	1.30	#VALUE!	
65 Cu	33.65	6.73	ppb	1.16	2000.	
66 Zn	83.75	16.75	ppb	0.95	2000.	
68 Zn	88.1	17.62	ppb	0.49	#VALUE!	
75 As	24.66	4.932	ppb	1.96	1000.	
82 Se	2.812	0.5624	ppb	57.72	1000.	
88 Sr	1,005.	201.	ppb	0.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	19.74	3.948	ppb	1.96	1000.	
107 Ag	0.0425	0.0085	ppb	6.93	100.	
109 Ag	0.0516	0.0103	ppb	36.43	#VALUE!	
111 Cd	0.6735	0.1347	ppb	23.85	#VALUE!	
114 Cd	0.5765	0.1153	ppb	2.73	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.434	0.2868	ppb	4.61	1000.	
120 Sn	1.439	0.2878	ppb	6.77	#VALUE!	
121 Sb	0.512	0.1024	ppb	3.17	#VALUE!	
123 Sb	0.629	0.1258	ppb	2.78	1000.	
135 Ba	272.4	54.48	ppb	1.26	2000.	
137 Ba	272.65	54.53	ppb	1.08	#VALUE!	
182 W	0.4321	0.0864	ppb	13.23	1000.	
203 Tl	0.0987	0.0197	ppb	50.99	1000.	
205 Tl	0.1145	0.0229	ppb	18.98	#VALUE!	
208 Pb	26.32	5.264	ppb	1.00	2000.	
232 Th	9.555	1.911	ppb	2.16	1000.	
238 U	3.84	0.768	ppb	2.05	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4444194.50	1.43	3927738.80	113.1	69.5 - 120	
45 Sc	2608765.80	1.06	2572658.80	101.4	69.5 - 120	
72 Ge	494610.78	0.44	510197.59	96.9	69.5 - 120	
159 Tb	4614964.00	0.78	4617151.00	100.0	69.5 - 120	
209 Bi	2372277.50	2.22	2380666.00	99.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001215

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\094SMPL.D\094SMPL.D#
Date Acquired: May 16 2018 12:14 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-003
Misc Info:
Vial Number: 2509
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0001	0.	ppb	7974.90	100.	
11 B	501.	100.2	ppb	3.67	1000.	
23 Na	188,850.	37,770.	ppb	0.86	200000.	
25 Mg	37,255.	7,451.	ppb	2.67	200000.	
27 Al	11.65	2.33	ppb	5.90	200000.	
28 Si	18,805.	3,761.	ppb	2.72	#VALUE!	
29 Si	20,400.	4,080.	ppb	2.26	10000.	
39 K	13,685.	2,737.	ppb	1.46	200000.	
43 Ca	224,400.	44,880.	ppb	2.42	#VALUE!	
44 Ca	211,950.	42,390.	ppb	2.06	200000.	
51 V	1.0775	0.2155	ppb	38.52	1000.	
52 Cr	2.33	0.466	ppb	1.51	2000.	
53 Cr	42.53	8.506	ppb	18.63	#VALUE!	
55 Mn	770.5	154.1	ppb	0.51	2000.	
56 Fe	2,777.5	555.5	ppb	0.56	#VALUE!	
57 Fe	2,988.	597.6	ppb	1.59	100000.	
59 Co	0.4648	0.093	ppb	8.10	1000.	
60 Ni	5.19	1.038	ppb	5.93	1000.	
63 Cu	6.47	1.294	ppb	1.64	#VALUE!	
65 Cu	0.8405	0.1681	ppb	7.28	2000.	
66 Zn	14.97	2.994	ppb	3.77	2000.	
68 Zn	14.845	2.969	ppb	3.87	#VALUE!	
75 As	18.775	3.755	ppb	4.14	1000.	
82 Se	1.122	0.2244	ppb	53.79	1000.	
88 Sr	880.5	176.1	ppb	0.28	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	13.03	2.606	ppb	0.32	1000.	
107 Ag	0.0023	0.0005	ppb	368.87	100.	
109 Ag	0.004	0.0008	ppb	182.58	#VALUE!	
111 Cd	0.0177	0.0035	ppb	899.04	#VALUE!	
114 Cd	0.0138	0.0028	ppb	129.52	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.911	0.1822	ppb	8.54	1000.	
120 Sn	0.892	0.1784	ppb	19.20	#VALUE!	
121 Sb	0.0989	0.0198	ppb	20.28	#VALUE!	
123 Sb	0.1025	0.0205	ppb	27.41	1000.	
135 Ba	36.275	7.255	ppb	2.47	2000.	
137 Ba	37.135	7.427	ppb	1.11	#VALUE!	
182 W	0.2874	0.0575	ppb	14.16	1000.	
203 Tl	0.0107	0.0021	ppb	332.40	1000.	
205 Tl	-0.0021	-0.0004	ppb	1314.10	#VALUE!	
208 Pb	-0.224	-0.0448	ppb	19.08	2000.	
232 Th	0.2106	0.0421	ppb	13.35	1000.	
238 U	1.4405	0.2881	ppb	2.97	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4364891.00	3.56	3927738.80	111.1	69.5 - 120	
45 Sc	2610562.80	1.04	2572658.80	101.5	69.5 - 120	
72 Ge	499752.25	0.55	510197.59	98.0	69.5 - 120	
159 Tb	4593432.00	1.14	4617151.00	99.5	69.5 - 120	
209 Bi	2364889.80	1.74	2380666.00	99.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001216

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\095SMPL.D\095SMPL.D#
Date Acquired: May 16 2018 12:18 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-004
Misc Info:
Vial Number: 2510
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.594	0.1188	ppb	8.22	100.	
11 B	223.05	44.61	ppb	2.25	1000.	
23 Na	300,400.	60,080.	ppb	0.94	200000.	
25 Mg	74,500.	14,900.	ppb	1.38	200000.	
27 Al	14,815.	2,963.	ppb	0.41	200000.	
28 Si	46,035.	9,207.	ppb	1.29	#VALUE!	
29 Si	48,095.	9,619.	ppb	0.66	10000.	
39 K	21,260.	4,252.	ppb	0.54	200000.	
43 Ca	390,300.	78,060.	ppb	0.45	#VALUE!	
44 Ca	367,800.	73,560.	ppb	1.42	200000.	
51 V	37.99	7.598	ppb	0.77	1000.	
52 Cr	57.85	11.57	ppb	0.24	2000.	
53 Cr	90.05	18.01	ppb	2.77	#VALUE!	
55 Mn	1,469.5	293.9	ppb	0.46	2000.	
56 Fe	24,000.	4,800.	ppb	0.93	#VALUE!	
57 Fe	25,005.	5,001.	ppb	0.84	100000.	
59 Co	7.655	1.531	ppb	2.21	1000.	
60 Ni	26.565	5.313	ppb	1.35	1000.	
63 Cu	40.645	8.129	ppb	2.85	#VALUE!	
65 Cu	31.83	6.366	ppb	1.49	2000.	
66 Zn	170.2	34.04	ppb	1.42	2000.	
68 Zn	168.85	33.77	ppb	2.04	#VALUE!	
75 As	11.7	2.34	ppb	10.28	1000.	
82 Se	2.2625	0.4525	ppb	22.41	1000.	
88 Sr	1,585.	317.	ppb	0.58	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	23.505	4.701	ppb	2.38	1000.	
107 Ag	0.0571	0.0114	ppb	15.18	100.	
109 Ag	0.0584	0.0117	ppb	23.92	#VALUE!	
111 Cd	0.448	0.0896	ppb	37.83	#VALUE!	
114 Cd	0.0623	0.0125	ppb	22.87	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.881	0.3762	ppb	5.39	1000.	
120 Sn	1.915	0.383	ppb	4.96	#VALUE!	
121 Sb	0.506	0.1012	ppb	9.69	#VALUE!	
123 Sb	0.5815	0.1163	ppb	4.30	1000.	
135 Ba	261.25	52.25	ppb	1.63	2000.	
137 Ba	260.2	52.04	ppb	2.23	#VALUE!	
182 W	0.6365	0.1273	ppb	5.78	1000.	
203 Tl	0.2493	0.0499	ppb	24.71	1000.	
205 Tl	0.2288	0.0458	ppb	7.61	#VALUE!	
208 Pb	23.14	4.628	ppb	1.17	2000.	
232 Th	12.295	2.459	ppb	1.78	1000.	
238 U	3.115	0.623	ppb	4.03	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4483115.50	4.14	3927738.80	114.1	69.5 - 120	
45 Sc	2641637.30	0.73	2572658.80	102.7	69.5 - 120	
72 Ge	493594.00	0.67	510197.59	96.7	69.5 - 120	
159 Tb	4590848.00	1.31	4617151.00	99.4	69.5 - 120	
209 Bi	2297563.30	1.24	2380666.00	96.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001217

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\096SMPL.D\096SMPL.D#
Date Acquired: May 16 2018 12:23 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-005
Misc Info:
Vial Number: 2511
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0072	0.0014	ppb	56.97	100.	
11 B	223.4	44.68	ppb	3.61	1000.	
23 Na	322,350.	64,470.	ppb	1.59	200000.	
25 Mg	72,800.	14,560.	ppb	0.23	200000.	
27 Al	10.365	2.073	ppb	8.61	200000.	
28 Si	19,560.	3,912.	ppb	1.59	#VALUE!	
29 Si	21,930.	4,386.	ppb	2.16	10000.	
39 K	18,025.	3,605.	ppb	1.67	200000.	
43 Ca	393,100.	78,620.	ppb	2.22	#VALUE!	
44 Ca	364,050.	72,810.	ppb	1.37	200000.	
51 V	0.8705	0.1741	ppb	30.17	1000.	
52 Cr	2.188	0.4376	ppb	8.44	2000.	
53 Cr	54.8	10.96	ppb	12.30	#VALUE!	
55 Mn	1,349.5	269.9	ppb	0.47	2000.	
56 Fe	7,125.	1,425.	ppb	1.12	#VALUE!	
57 Fe	7,560.	1,512.	ppb	0.79	100000.	
59 Co	0.606	0.1212	ppb	9.97	1000.	
60 Ni	3.824	0.7648	ppb	3.54	1000.	
63 Cu	10.18	2.036	ppb	0.93	#VALUE!	
65 Cu	1.674	0.3348	ppb	3.74	2000.	
66 Zn	25.905	5.181	ppb	2.24	2000.	
68 Zn	22.73	4.546	ppb	1.26	#VALUE!	
75 As	9.295	1.859	ppb	7.88	1000.	
82 Se	1.463	0.2926	ppb	93.54	1000.	
88 Sr	1,516.5	303.3	ppb	0.46	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	12.355	2.471	ppb	0.24	1000.	
107 Ag	0.0038	0.0008	ppb	121.03	100.	
109 Ag	-0.0064	-0.0013	ppb	133.41	#VALUE!	
111 Cd	0.146	0.0292	ppb	34.06	#VALUE!	
114 Cd	-0.0049	-0.001	ppb	253.65	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.9845	0.1969	ppb	9.35	1000.	
120 Sn	0.8865	0.1773	ppb	6.18	#VALUE!	
121 Sb	0.0994	0.0199	ppb	40.23	#VALUE!	
123 Sb	0.1318	0.0264	ppb	23.10	1000.	
135 Ba	33.66	6.732	ppb	1.24	2000.	
137 Ba	33.595	6.719	ppb	0.92	#VALUE!	
182 W	0.2137	0.0427	ppb	23.96	1000.	
203 Tl	-0.001	-0.0002	ppb	1142.60	1000.	
205 Tl	0.0083	0.0017	ppb	169.95	#VALUE!	
208 Pb	-0.2604	-0.0521	ppb	12.65	2000.	
232 Th	0.1204	0.0241	ppb	13.40	1000.	
238 U	0.8605	0.1721	ppb	3.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4518127.50	2.05	3927738.80	115.0	69.5 - 120	
45 Sc	2657941.50	0.61	2572658.80	103.3	69.5 - 120	
72 Ge	505553.94	0.12	510197.59	99.1	69.5 - 120	
159 Tb	4584096.00	0.55	4617151.00	99.3	69.5 - 120	
209 Bi	2302794.30	1.19	2380666.00	96.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001218

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\097SMPL.D\097SMPL.D#
Date Acquired: May 16 2018 12:27 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2512
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0002	-0.0002	ppb	190.18	100.	
11 B	2.995	2.995	ppb	10.36	1000.	
23 Na	7.913	7.913	ppb	20.25	200000.	
25 Mg	1.399	1.399	ppb	30.82	200000.	
27 Al	1.461	1.461	ppb	5.61	200000.	
28 Si	3.025	3.025	ppb	433.39	#VALUE!	
29 Si	-3.944	-3.944	ppb	409.23	10000.	
39 K	-1.537	-1.537	ppb	203.19	200000.	
43 Ca	-0.2565	-0.2565	ppb	952.05	#VALUE!	
44 Ca	4.057	4.057	ppb	55.83	200000.	
51 V	-0.0038	-0.0038	ppb	1153.40	1000.	
52 Cr	-0.0191	-0.0191	ppb	165.86	2000.	
53 Cr	-0.2955	-0.2955	ppb	114.11	#VALUE!	
55 Mn	0.0552	0.0552	ppb	5.32	2000.	
56 Fe	1.599	1.599	ppb	252.78	#VALUE!	
57 Fe	5.37	5.37	ppb	24.82	100000.	
59 Co	-0.0002	-0.0002	ppb	1132.10	1000.	
60 Ni	0.01	0.01	ppb	31.53	1000.	
63 Cu	0.2213	0.2213	ppb	8.97	#VALUE!	
65 Cu	0.2167	0.2167	ppb	10.63	2000.	
66 Zn	0.2438	0.2438	ppb	37.30	2000.	
68 Zn	0.0207	0.0207	ppb	233.22	#VALUE!	
75 As	0.1462	0.1462	ppb	68.27	1000.	
82 Se	0.1821	0.1821	ppb	178.03	1000.	
88 Sr	0.0127	0.0127	ppb	37.95	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0033	0.0033	ppb	74.30	1000.	
107 Ag	-0.0013	-0.0013	ppb	72.65	100.	
109 Ag	0.0018	0.0018	ppb	132.31	#VALUE!	
111 Cd	0.0861	0.0861	ppb	27.86	#VALUE!	
114 Cd	-0.0008	-0.0008	ppb	140.89	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0378	0.0378	ppb	31.60	1000.	
120 Sn	0.0436	0.0436	ppb	59.52	#VALUE!	
121 Sb	0.0006	0.0006	ppb	94.75	#VALUE!	
123 Sb	0.0029	0.0029	ppb	139.54	1000.	
135 Ba	0.1035	0.1035	ppb	6.09	2000.	
137 Ba	0.0792	0.0792	ppb	20.95	#VALUE!	
182 W	0.	0.	ppb	14761.00	1000.	
203 Tl	0.0126	0.0126	ppb	6.56	1000.	
205 Tl	0.0063	0.0063	ppb	84.76	#VALUE!	
208 Pb	0.1258	0.1258	ppb	13.16	2000.	
232 Th	0.0012	0.0012	ppb	133.67	1000.	
238 U	-0.0003	-0.0003	ppb	141.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4440769.50	3.93	3927738.80	113.1	69.5 - 120	
45 Sc	2636748.80	2.75	2572658.80	102.5	69.5 - 120	
72 Ge	493395.44	2.46	510197.59	96.7	69.5 - 120	
159 Tb	4386238.00	1.83	4617151.00	95.0	69.5 - 120	
209 Bi	2321804.50	0.89	2380666.00	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4001219

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\098_CCV.D\098_CCV.D#
Date Acquired: May 16 2018 12:31 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.92	ppb	1.10	25	91.68	
11 B	23.35	ppb	4.02	25	93.4	
23 Na	5,041.	ppb	2.29	5,000	100.82	
25 Mg	5,096.	ppb	2.98	5,000	101.92	
27 Al	507.3	ppb	2.17	500	101.46	
28 Si	500.1	ppb	2.10	500	100.02	
29 Si	476.8	ppb	4.70	500	95.36	
39 K	4,851.	ppb	2.85	5,000	97.02	
43 Ca	4,894.	ppb	1.79	5,000	97.88	
44 Ca	4,954.	ppb	1.07	5,000	99.08	
51 V	24.42	ppb	0.31	25	97.68	
52 Cr	24.74	ppb	1.18	25	98.96	
53 Cr	23.64	ppb	2.93	25	94.56	
55 Mn	24.28	ppb	0.25	25	97.12	
56 Fe	4,766.	ppb	1.25	5,000	95.32	
57 Fe	4,902.	ppb	1.43	5,000	98.04	
59 Co	24.32	ppb	0.69	25	97.28	
60 Ni	24.47	ppb	0.58	25	97.88	
63 Cu	24.18	ppb	1.01	25	96.72	
65 Cu	24.5	ppb	0.63	25	98	
66 Zn	24.1	ppb	1.96	25	96.4	
68 Zn	24.22	ppb	0.54	25	96.88	
75 As	24.39	ppb	1.24	25	97.56	
82 Se	24.55	ppb	0.89	25	98.2	
88 Sr	23.49	ppb	1.12	25	93.96	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.88	ppb	0.67	25	95.52	
107 Ag	23.76	ppb	0.89	25	95.04	
109 Ag	23.73	ppb	0.32	25	94.92	
111 Cd	23.61	ppb	0.39	25	94.44	
114 Cd	23.73	ppb	0.63	25	94.92	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.56	ppb	1.57	25	94.24	
120 Sn	23.56	ppb	1.34	25	94.24	
121 Sb	23.95	ppb	1.59	25	95.8	
123 Sb	24.1	ppb	2.13	25	96.4	
135 Ba	24.5	ppb	0.26	25	98	
137 Ba	24.65	ppb	1.05	25	98.6	
182 W	23.73	ppb	1.20	25	94.92	
203 Tl	23.69	ppb	1.87	25	94.76	
205 Tl	23.91	ppb	1.12	25	95.64	
208 Pb	23.86	ppb	1.24	25	95.44	
232 Th	23.9	ppb	1.95	25	95.6	
238 U	24.36	ppb	1.09	25	97.44	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4715299.50	2.14	3927738.80	120.1	80 - 120.4	
45 Sc	2685533.80	1.64	2572658.80	104.4	80 - 120.4	
72 Ge	497554.81	1.83	510197.59	97.5	80 - 120.4	
159 Tb	4559555.50	0.34	4617151.00	98.8	80 - 120.4	
209 Bi	2362709.30	0.70	2380666.00	99.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\099_CCB.D\099_CCB.D#
Date Acquired: May 16 2018 12:35 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0004	ppb	227.64	1.00	
11 B	2.328	ppb	14.26	1.00	
23 Na	2.875	ppb	3.88	1.00	
25 Mg	0.2228	ppb	78.91	1.00	
27 Al	0.0552	ppb	91.03	1.00	
28 Si	-2.298	ppb	360.27	1.00	
29 Si	-9.591	ppb	99.96	1.00	
39 K	-2.264	ppb	25.52	1.00	
43 Ca	-1.084	ppb	197.88	1.00	
44 Ca	0.4531	ppb	144.93	1.00	
51 V	0.0461	ppb	34.63	1.00	
52 Cr	-0.0384	ppb	38.49	1.00	
53 Cr	-3.598	ppb	0.42	1.00	
55 Mn	0.0103	ppb	6.09	1.00	
56 Fe	-0.4778	ppb	348.89	1.00	
57 Fe	2.163	ppb	34.79	1.00	
59 Co	0.0006	ppb	247.49	1.00	
60 Ni	0.0024	ppb	428.10	1.00	
63 Cu	0.0392	ppb	50.18	1.00	
65 Cu	0.0477	ppb	18.23	1.00	
66 Zn	0.0819	ppb	96.18	1.00	
68 Zn	-0.1275	ppb	29.90	1.00	
75 As	0.1627	ppb	25.80	1.00	
82 Se	0.2142	ppb	62.70	1.00	
88 Sr	0.0001	ppb	4783.00	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0182	ppb	10.19	1.00	
107 Ag	0.0019	ppb	91.26	1.00	
109 Ag	0.0027	ppb	115.48	1.00	
111 Cd	0.0756	ppb	20.59	1.00	
114 Cd	0.0015	ppb	526.93	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0488	ppb	20.77	1.00	
120 Sn	0.0394	ppb	10.70	1.00	
121 Sb	0.0077	ppb	69.42	1.00	
123 Sb	0.0136	ppb	30.36	1.00	
135 Ba	0.0073	ppb	77.51	1.00	
137 Ba	0.0053	ppb	34.86	1.00	
182 W	0.0459	ppb	40.68	1.00	
203 Tl	0.0108	ppb	10.84	1.00	
205 Tl	0.0016	ppb	194.14	1.00	
208 Pb	-0.004	ppb	22.24	1.00	
232 Th	0.054	ppb	13.94	1.00	
238 U	0.0016	ppb	78.68	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4397487.50	5.46	3927738.80	112.0	79.5 - 120	
45 Sc	2609395.50	0.31	2572658.80	101.4	79.5 - 120	
72 Ge	482523.00	0.89	510197.59	94.6	79.5 - 120	
159 Tb	4330353.50	1.06	4617151.00	93.8	79.5 - 120	
209 Bi	2285600.50	0.45	2380666.00	96.0	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Logbooks and Supporting Documents

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

Aqua Regia: MR2C10 Boiling Stones: MS190 Method: 7471

KMNO4: MR2002 NH2OH-HCl: MR1994

Standards/Spiking Information:

1ppm A : MW1721 Heat Source ID : B

Pipet 1ppm B : MW1702 Start Time: 0959 /Temp. 95 °C

M15 LCSO = 500uL of 1ppm A to 100mL End Time: 1009 /Temp. 94 °C

M11 Spike(S/P) = 100uL of 1ppm A to 100mL Thermometer ID/Pos: A1025 16.5

M15 ICV = 600uL of 1ppm B to 100 mL

1 S10.0 = 1000uL of 1ppm A to 100 mL

Balance ID: Bal15 LCSS: MA

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KATAHDIN ANALYTICAL
METALS SECTION

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LC2OLE04HGS1	LE04HGS1	0.6	g	0.1	L	SL	HG	JS	05/04/2018	N/A
LCSOLE04HGS1	LE04HGS1	1	g	1	L	SL	HG	JS	05/04/2018	
PBSLE04HGS1	LE04HGS1	1	g	1	L	SL	HG	JS	05/04/2018	
SL3708-020	LE04HGS1	0.84	g	1	L	SL	HG	JS	05/04/2018	A
SL3708-021	LE04HGS1	0.73	g	1	L	SL	HG	JS	05/04/2018	1
SL3760-001	LE04HGS1	1.33	g	1	L	SL	HG	JS	05/04/2018	1
SL3782-001	LE04HGS1	1.27	g	1	L	SL	HG	JS	05/04/2018	1
SL3807-001	LE04HGS1	0.80	g	1	L	SL	HG	JS	05/04/2018	E
SL3807-002	LE04HGS1	0.60	g	1	L	SL	HG	JS	05/04/2018	E
SL3809-002	LE04HGS1	0.60	g	1	L	SL	HG	JS	05/04/2018	A
SL3809-002P	LE04HGS1	0.60	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-002S	LE04HGS1	0.61	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-003	LE04HGS1	0.75	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-004	LE04HGS1	0.60	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-005	LE04HGS1	0.73	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-006	LE04HGS1	0.89	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-007	LE04HGS1	0.84	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-008	LE04HGS1	0.67	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-009	LE04HGS1	0.86	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-010	LE04HGS1	0.90	g	1	L	SL	HG	JS	05/04/2018	1
SL3809-011	LE04HGS1	0.84	g	1	L	SL	HG	JS	05/04/2018	1
SL3838-001	LE04HGS1	0.87	g	1	L	SL	HG	JS	05/04/2018	1
SL3838-002	LE04HGS1	0.63	g	1	L	SL	HG	JS	05/04/2018	1
SL3838-003	LE04HGS1	0.68	g	1	L	SL	HG	JS	05/04/2018	1

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Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet** **Method:** 3050H-MS

Reagent Information:

HNO3: MS1198 **HCL:** MS1199 **H2O2:** MS1185 **Filter Paper:** 15243044

Boiling Stones: MS1190

Pipet	LCS / Spike	LCS/Spiking Information:
M11	☑ ☐	CLPP-SPK-1 (ID/Vol): MS2124 / 0.1 mL
M5	☑ ☑	CLPP-SPK-INT1 (ID/Vol): MW17723 / 1.0 mL
1	☑ ☑	CLPP-SPK-INT2 (ID/Vol): MW17724 / 1.0 mL
M1	☐ ☐	M1 Spike (ID/Vol): M1 / mL

LCSS: M1 **Balance ID:** Bal15

Heat Source ID : D

Start Time: 0845 **/Temp.** 94 °C

End Time: 1509 **/Temp.** 96 °C

Thermometer ID/Pos: ALC11 16:5

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KATAHDIN ANALYTICAL
METALS SECTION

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSOLE04IMS2	LE04IMS2	1.0	g	0.1	L	SL	IM	JS	05/04/2018	
PBSLE04IMS2	LE04IMS2	1	g	1	L	SL	IM	JS	05/04/2018	
SL3809-002	LE04IMS2	1.27	g	1	L	SL	IM	JS	05/04/2018	A
SL3809-002P	LE04IMS2	1.28	g	1	L	SL	IM	JS	05/04/2018	
SL3809-002S	LE04IMS2	1.25	g	1	L	SL	IM	JS	05/04/2018	
SL3809-003	LE04IMS2	1.52	g	1	L	SL	IM	JS	05/04/2018	
SL3809-004	LE04IMS2	1.00	g	1	L	SL	IM	JS	05/04/2018	
SL3809-005	LE04IMS2	1.15	g	1	L	SL	IM	JS	05/04/2018	
SL3809-006	LE04IMS2	1.68	g	1	L	SL	IM	JS	05/04/2018	
SL3809-007	LE04IMS2	1.76	g	1	L	SL	IM	JS	05/04/2018	
SL3809-008	LE04IMS2	1.40	g	1	L	SL	IM	JS	05/04/2018	
SL3809-009	LE04IMS2	1.06	g	1	L	SL	IM	JS	05/04/2018	
SL3809-010	LE04IMS2	1.84	g	1	L	SL	IM	JS	05/04/2018	
SL3809-011	LE04IMS2	1.29	g	1	L	SL	IM	JS	05/04/2018	

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5/4/18

Digestion performed by: JS **On:** 5.4.18

Katahdin Analytical Services 4001224

Katahdin Analytical Services, Inc.

Metals Preparation Benchsheet

Reagent Information:

Method: 3010-MS

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KATAHDIN ANALYTICAL
METALS SECTION

HNO3: MSR99 **HCL:** MSR96

Pipet	LCS/Spiking Information:	
M11	CLPP-SPK-1 (ID/Vol):	MS2124 / 0.05 mL
M15	CLPP-SPK-INT1 (ID/Vol):	MW17723 / 0.5 mL
M15	CLPP-SPK-INT2 (ID/Vol):	MW17724 / 0.5 mL
____	Spike (ID/Vol):	N/A / ____ mL

Heat Source ID : E
Start Time: 0818 **/Temp.** 95 °C
End Time: ~~1540~~ **/Temp.** 92 °C 1540 AMJ 5/4/18
Thermometer ID/Pos: AIC24 / 5.1

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSWLE04IMW1	LE04IMW1	0.05	L	0.05	L	AQ	IM	AMJ	05/04/2018	____
PBWLE04IMW1	LE04IMW1	↓	L	↓	L	AQ	IM	AMJ	05/04/2018	____
SL3809-001	LE04IMW1	↓	L	↓	L	AQ	IM	AMJ	05/04/2018	D

JSS 4.18

QA-064-Revision 3 - 06/15/2017 **Digestion performed by:** AMJ **On:** 5/4/18 **Page:** LE027 **Revision:** 00

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information: **Method:** 7470

HNO3: MS1098 **H2SO4:** MS1043

KMNO4: MR2028 **K2S2O8:** MR1963 **NH2OH-HCl:** MR1994

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KATAHDIN ANALYTICAL
METALS SECTION

Standards/Spiking Information:

1ppm A : MW17721

1ppm B : MW17722

Pipet

MH — LCSW = 125uL of 1ppm A to 25mL

J — Spike(S/P) = 25uL of 1ppm A to 25mL

MH5 — ICV = 600uL of 1ppm B to 100 mL

J — S10.0 = 1000uL of 1ppm A to 100 mL

Heat Source ID : 93

Start Time: 0855 **/Temp.** 93 **°C**

End Time: 1055 **/Temp.** 94 **°C**

Thermometer ID/Pos: ALC25 12:3

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSWLE07HGW2	LE07HGW2	0.025	L	0.025	L	AQ	HG	JS	05/07/2018	
PBWLE07HGW2	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3265-001	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	A
SL3265-002	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3265-003	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3380-001	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3380-002	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3380-003	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3380-003P	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3380-003S	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3604-001	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3708-022	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	A
SL3764-001	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3764-002	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3764-003	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3809-001	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	D
SL3810-001	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	A
SL3810-002	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3810-003	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3810-004	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	
SL3810-005	LE07HGW2		L		L	AQ	HG	JS	05/07/2018	

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Katahdin Analytical Services 4001226

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet** **Method:** 3050H-MS

Reagent Information:

HNO3: MSR98 **HCL:** MSR96 **H2O2:** MS185 **Filter Paper:** 15243044

Boiling Stones: MSR90

Pipet	LCS / Spike	LCS/Spiking Information:
M11	☒ ☒	CLPP-SPK-1 (ID/Vol): MS2124 / 0.1 mL
M15	☒ ☒	CLPP-SPK-INT1 (ID/Vol): MW17723 / 1.0 mL
M15	☒ ☒	CLPP-SPK-INT2 (ID/Vol): MW17724 / 1.0 mL
____	☐ ☐	____ Spike (ID/Vol): NA / ____ mL

LCSS: NA **Balance ID:** Bal15

Heat Source ID : D

Start Time: 0750 **/Temp.** 90 °C

End Time: 1345 **/Temp.** 94 °C

Thermometer ID/Pos: ALC11 / 5.7

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KATAHDIN ANALYTICAL
METALS SECTION

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSOLE07IMS1	LE07IMS1	1.0	g	0.1	L	SL	IM	AMJ	05/07/2018	
PBSLE07IMS1	LE07IMS1	1.0	g		L	SL	IM	AMJ	05/07/2018	
SL3809-012	LE07IMS1	1.25	g		L	SL	IM	AMJ	05/07/2018	A
SL3809-013	LE07IMS1	1.13	g		L	SL	IM	AMJ	05/07/2018	
SL3809-014	LE07IMS1	1.12	g		L	SL	IM	AMJ	05/07/2018	
SL3809-015	LE07IMS1	1.02	g		L	SL	IM	AMJ	05/07/2018	
SL3809-017	LE07IMS1	1.51	g		L	SL	IM	AMJ	05/07/2018	
SL3809-018	LE07IMS1	1.21	g		L	SL	IM	AMJ	05/07/2018	
SL3809-019	LE07IMS1	1.03	g		L	SL	IM	AMJ	05/07/2018	
SL3809-020	LE07IMS1	1.69	g		L	SL	IM	AMJ	05/07/2018	
SL3809-056	LE07IMS1	1.57	g		L	SL	IM	AMJ	05/07/2018	
SL3809-057	LE07IMS1	1.42	g		L	SL	IM	AMJ	05/07/2018	
SL3809-058	LE07IMS1	1.19	g		L	SL	IM	AMJ	05/07/2018	
SL3809-059	LE07IMS1	1.17	g		L	SL	IM	AMJ	05/07/2018	
SL3809-060	LE07IMS1	1.37	g		L	SL	IM	AMJ	05/07/2018	
SL3809-061	LE07IMS1	1.10	g		L	SL	IM	AMJ	05/07/2018	
SL3809-062	LE07IMS1	1.18	g		L	SL	IM	AMJ	05/07/2018	
SL3809-063	LE07IMS1	1.17	g		L	SL	IM	AMJ	05/07/2018	
SL3809-064	LE07IMS1	1.21	g		L	SL	IM	AMJ	05/07/2018	
SL3809-065	LE07IMS1	1.04	g		L	SL	IM	AMJ	05/07/2018	

AMJ 5/7/18

MD 5/7/18

JS 5.7.18

QA-065-Revision 2 - 06/16/2017 **Digestion performed by:** AMJ **On:** 5/7/18 **Page:** LE040 **Revision:** 00

JSS 7.18

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

Aqua Regia: MK2012 Boiling Stones: MS190 Method: 7471

KMNO4: MK2002 NH2OH-HCl: MK1994

REVIEWED MD 5/9/18 KATAHDIN ANALYTICAL METALS SECTION

Standards/Spiking Information:

1ppm A : MW17721

Pipet 1ppm B : MW17712

M15 LCSO = 500uL of 1ppm A to 100mL

M11 Spike(S/P) = 100uL of 1ppm A to 100mL

M15 ICV = 600uL of 1ppm B to 100 mL

↓ S10.0 = 1000uL of 1ppm A to 100 mL

Balance ID: Bal15 LCSS: N/A

Heat Source ID : A

Start Time: 0945 /Temp. 97 °C

End Time: 1015 /Temp. 95 °C

Thermometer ID/Pos: DG81 16.2

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSOLE08HGS1	LE08HGS1	0.6	g	0.1	L	SL	HG	JS	05/08/2018	
PBSLE08HGS1	LE08HGS1	1	g		L	SL	HG	JS	05/08/2018	
SL3809-012	LE08HGS1	0.80	g		L	SL	HG	JS	05/08/2018	A
SL3809-013	LE08HGS1	0.78	g		L	SL	HG	JS	05/08/2018	
SL3809-014	LE08HGS1	0.66	g		L	SL	HG	JS	05/08/2018	
SL3809-015	LE08HGS1	0.60	g		L	SL	HG	JS	05/08/2018	
SL3809-016	LE08HGS1	0.69	g		L	SL	HG	JS	05/08/2018	
SL3809-016P	LE08HGS1	0.69	g		L	SL	HG	JS	05/08/2018	
SL3809-016S	LE08HGS1	0.69	g		L	SL	HG	JS	05/08/2018	
SL3809-017	LE08HGS1	0.80	g		L	SL	HG	JS	05/08/2018	
SL3809-018	LE08HGS1	0.65	g		L	SL	HG	JS	05/08/2018	
SL3809-019	LE08HGS1	0.67	g		L	SL	HG	JS	05/08/2018	
SL3809-020	LE08HGS1	0.68	g		L	SL	HG	JS	05/08/2018	
SL3809-021	LE08HGS1	0.77	g		L	SL	HG	JS	05/08/2018	
SL3809-022	LE08HGS1	0.77	g		L	SL	HG	JS	05/08/2018	
SL3809-023	LE08HGS1	0.80	g		L	SL	HG	JS	05/08/2018	
SL3809-025	LE08HGS1	0.78	g		L	SL	HG	JS	05/08/2018	
SL3809-026	LE08HGS1	0.63	g		L	SL	HG	JS	05/08/2018	
SL3809-027	LE08HGS1	0.60	g		L	SL	HG	JS	05/08/2018	
SL3809-028	LE08HGS1	0.88	g		L	SL	HG	JS	05/08/2018	
SL3809-029	LE08HGS1	0.62	g		L	SL	HG	JS	05/08/2018	
SL3809-030	LE08HGS1	0.67	g		L	SL	HG	JS	05/08/2018	
SL3809-031	LE08HGS1	0.61	g		L	SL	HG	JS	05/08/2018	
SL3809-032	LE08HGS1	0.90	g		L	SL	HG	JS	05/08/2018	↓

MD 5/9/18

QA-067-Revision 2 - 05/10/2017 Digestion performed by: JS On: 5-8-18 Page: LE050 Revision: 00

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

Aqua Regia: MR2018 5.8.18 Boiling Stones: MS490 Method: 7471

KMNO4: MR3002 NH2OH-HCl: MR1994

REVIEWED MD 5/9/18 KATAHDIN ANALYTICAL METALS SECTION

Standards/Spiking Information:

1ppm A : MW1772A

1ppm B : MW17722

Heat Source ID : B

Start Time: 0957 /Temp. 91 °C

End Time: 1007 /Temp. 92 °C

Thermometer ID/Pos: A1C25 10.7

Pipet

MS — LCSO = 500uL of 1ppm A to 100mL

MS1 — Spike(S/P) = 100uL of 1ppm A to 100mL

MS — ICV = 600uL of 1ppm B to 100 mL

2 — S10.0 = 1000uL of 1ppm A to 100 mL

Balance ID: Bal15 LCSS: MT

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSOLE08HGS2	LE08HGS2	0.6	g	0.1	L	SL	HG	JS	05/08/2018	
PBSLE08HGS2	LE08HGS2	2	g		L	SL	HG	JS	05/08/2018	
SL3809-024	LE08HGS2	0.73	g		L	SL	HG	JS	05/08/2018	1
SL3809-024P	LE08HGS2	0.75	g		L	SL	HG	JS	05/08/2018	
SL3809-024S	LE08HGS2	0.71	g		L	SL	HG	JS	05/08/2018	
SL3809-033	LE08HGS2	0.77	g		L	SL	HG	JS	05/08/2018	
SL3809-034	LE08HGS2	0.60	g		L	SL	HG	JS	05/08/2018	
SL3809-035	LE08HGS2	0.88	g		L	SL	HG	JS	05/08/2018	
SL3809-036	LE08HGS2	0.84	g		L	SL	HG	JS	05/08/2018	
SL3809-037	LE08HGS2	1.02	g		L	SL	HG	JS	05/08/2018	
SL3809-038	LE08HGS2	0.76	g		L	SL	HG	JS	05/08/2018	
SL3809-039	LE08HGS2	0.66	g		L	SL	HG	JS	05/08/2018	
SL3809-040	LE08HGS2	0.87	g		L	SL	HG	JS	05/08/2018	
SL3809-041	LE08HGS2	0.66	g		L	SL	HG	JS	05/08/2018	
SL3809-042	LE08HGS2	0.87	g		L	SL	HG	JS	05/08/2018	
SL3809-043	LE08HGS2	0.70	g		L	SL	HG	JS	05/08/2018	
SL3809-044	LE08HGS2	0.75	g		L	SL	HG	JS	05/08/2018	
SL3809-046	LE08HGS2	0.60	g		L	SL	HG	JS	05/08/2018	
SL3809-047	LE08HGS2	0.87	g		L	SL	HG	JS	05/08/2018	
SL3809-048	LE08HGS2	0.84	g		L	SL	HG	JS	05/08/2018	
SL3809-049	LE08HGS2	0.61	g		L	SL	HG	JS	05/08/2018	
SL3809-050	LE08HGS2	0.91	g		L	SL	HG	JS	05/08/2018	
SL3809-051	LE08HGS2	0.62	g		L	SL	HG	JS	05/08/2018	
SL3809-052	LE08HGS2	0.70	g		L	SL	HG	JS	05/08/2018	

MD 5/9/18

 Digestion performed by: JS On: 5.8.18 Page: LE051 Revision: 00

Katahdin Analytical Services 4001229

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

Aqua Regia: MR2012 Boiling Stones: MSK90 Method: 7471

KMNO4: MR2003 NH2OH-HCl: MR2011

REVIEWED MD 5/9/18 KATAHDIN ANALYTICAL METALS SECTION

Standards/Spiking Information:

1ppm A : MW17721 Heat Source ID : 5

Pipet 1ppm B : MW17722 Start Time: 1052 /Temp. 94 °C

M15 LCSO = 500uL of 1ppm A to 100mL End Time: 1122 /Temp. 95 °C

M11 Spike(S/P) = 100uL of 1ppm A to 100mL Thermometer ID/Pos: HC25 16.7

M15 ICV = 600uL of 1ppm B to 100 mL

1 S10.0 = 1000uL of 1ppm A to 100 mL

Balance ID: Bal15 LCSS: NA

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSOLE08HGS3	LE08HGS3	0.6	g	0.1	L	SL	HG	JS	05/08/2018	
PBSLE08HGS3	LE08HGS3	1	g		L	SL	HG	JS	05/08/2018	
SL3809-053	LE08HGS3	0.60	g		L	SL	HG	JS	05/08/2018	A
SL3809-054	LE08HGS3	0.63	g		L	SL	HG	JS	05/08/2018	
SL3809-055	LE08HGS3	0.89	g		L	SL	HG	JS	05/08/2018	
SL3809-056	LE08HGS3	0.83	g		L	SL	HG	JS	05/08/2018	
SL3809-057	LE08HGS3	0.70	g		L	SL	HG	JS	05/08/2018	
SL3809-058	LE08HGS3	0.88	g		L	SL	HG	JS	05/08/2018	
SL3809-059	LE08HGS3	0.77	g		L	SL	HG	JS	05/08/2018	
SL3809-060	LE08HGS3	0.74	g		L	SL	HG	JS	05/08/2018	
SL3809-061	LE08HGS3	0.63	g		L	SL	HG	JS	05/08/2018	
SL3809-062	LE08HGS3	0.88	g		L	SL	HG	JS	05/08/2018	
SL3809-063	LE08HGS3	0.77	g		L	SL	HG	JS	05/08/2018	
SL3809-064	LE08HGS3	0.80	g		L	SL	HG	JS	05/08/2018	
SL3809-065	LE08HGS3	0.66	g		L	SL	HG	JS	05/08/2018	
SL3846-001	LE08HGS3	0.46	g		L	SL	HG	JS	05/08/2018	BC 5.8.18
SL3847-001	LE08HGS3	0.65	g		L	SL	HG	JS	05/08/2018	B
SL3875-001	LE08HGS3	0.61	g		L	FP	HG	JS	05/08/2018	A
SL3900-001	LE08HGS3	0.82	g		L	SL	HG	JS	05/08/2018	C
SL3921-001	LE08HGS3	0.60	g		L	FP	HG	JS	05/08/2018	A
SL3921-001P	LE08HGS3	0.62	g		L	FP	HG	JS	05/08/2018	
SL3921-001S	LE08HGS3	0.60	g		L	FP	HG	JS	05/08/2018	

MD 5/9/18

QA-067-Revision 2 - 05/10/2017 Digestion performed by: JS On: 5.8.18 Page: LE054 Revision: 00

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet** **Method:** 3050H-MS

Reagent Information:

HNO3: MS198 **HCL:** MS196 **H2O2:** MS185 **Filter Paper:** 15243044

Boiling Stones: MS190

Pipet	LCS / Spike	LCS/Spiking Information:
M11	☑ ☑	CLPP-SPK-1 (ID/Vol): MS2142 / 0.1 mL
M15	☑ ☑	CLPP-SPK-INT1 (ID/Vol): MWI7723 / 1.0 mL
2	☑ ☑	CLPP-SPK-INT2 (ID/Vol): MWI7724 / 1.0 mL
MA	☐ ☐	MA Spike (ID/Vol): MA / mL

LCSS: MA **Balance ID:** Bal15

Heat Source ID : D

Start Time: 0735 **/Temp.** 94 °C

End Time: 1402 **/Temp.** 95 °C

Thermometer ID/Pos: ALC1 / 1.5

REVIEWED

JS 5-8-18

KATAHDIN ANALYTICAL METALS SECTION

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSOLE08IMS1	LE08IMS1	1.0	g	0.1	L	SL	IM	AMJ	05/08/2018	
PBSLE08IMS1	LE08IMS1	2	g		L	SL	IM	AMJ	05/08/2018	
SL3809-016	LE08IMS1	1.33	g		L	SL	IM	AMJ	05/08/2018	A
SL3809-016P	LE08IMS1	1.32	g		L	SL	IM	AMJ	05/08/2018	
SL3809-016S	LE08IMS1	1.33	g		L	SL	IM	AMJ	05/08/2018	
SL3809-021	LE08IMS1	1.29	g		L	SL	IM	AMJ	05/08/2018	
SL3809-022	LE08IMS1	1.59	g		L	SL	IM	AMJ	05/08/2018	
SL3809-023	LE08IMS1	1.99	g		L	SL	IM	AMJ	05/08/2018	
SL3809-025	LE08IMS1	1.48	g		L	SL	IM	AMJ	05/08/2018	
SL3809-026	LE08IMS1	1.29	g		L	SL	IM	AMJ	05/08/2018	
SL3809-027	LE08IMS1	1.72	g		L	SL	IM	AMJ	05/08/2018	
SL3809-028	LE08IMS1	1.55	g		L	SL	IM	AMJ	05/08/2018	
SL3809-029	LE08IMS1	1.60	g		L	SL	IM	AMJ	05/08/2018	
SL3809-030	LE08IMS1	1.34	g		L	SL	IM	AMJ	05/08/2018	
SL3809-031	LE08IMS1	1.00	g		L	SL	IM	AMJ	05/08/2018	
SL3809-032	LE08IMS1	2.04	g		L	SL	IM	AMJ	05/08/2018	
SL3809-033	LE08IMS1	1.35	g		L	SL	IM	AMJ	05/08/2018	
SL3809-034	LE08IMS1	1.68	g		L	SL	IM	AMJ	05/08/2018	
SL3809-035	LE08IMS1	1.05	g		L	SL	IM	AMJ	05/08/2018	
SL3809-036	LE08IMS1	1.13	g		L	SL	IM	AMJ	05/08/2018	
SL3809-037	LE08IMS1	2.43	g		L	SL	IM	AMJ	05/08/2018	
SL3809-038	LE08IMS1	1.86	g		L	SL	IM	AMJ	05/08/2018	
SL3809-039	LE08IMS1	1.07	g		L	SL	IM	AMJ	05/08/2018	
SL3809-040	LE08IMS1	1.27	g		L	SL	IM	AMJ	05/08/2018	

JS 5-8-18

QA-065-Revision 2 - 06/16/2017 **Digestion performed by:** AMJ **On:** 5/8/18 **Page:** LE045 **Revision:** 00

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet** **Method:** 3050H-MS

Reagent Information:

HNO3: MS1198 HCL: MS1196 H2O2: MS1185 Filter Paper: JS 5.8.18 A/15243044

Boiling Stones: MS1190

Pipet	LCS / Spike	LCS/Spiking Information:
1911	☑ ☑	CLPP-SPK-1 (ID/Vol): MS2124 / 0.1 mL
1915	☑ ☑	CLPP-SPK-INT1 (ID/Vol): MW17723 / 1.0 mL
1915	☑ ☑	CLPP-SPK-INT2 (ID/Vol): MW17724 / 1.0 mL
N/A	☐ ☐	N/A Spike (ID/Vol): N/A / mL

LCSS: N/A Balance ID: Bal15

Heat Source ID : D

Start Time: 0950 /Temp. 97 °C

End Time: 1609 /Temp. 94 °C

Thermometer ID/Pos: AHC11 11:5

REVIEWED
JS 5.8.18
KATAHDIN ANALYTICAL
METALS SECTION

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSOLE08IMS2	LE08IMS2	1.0	g	0.1	L	SL	IM	AMJ	05/08/2018	
PBSLE08IMS2	LE08IMS2	↓	g	↓	L	SL	IM	AMJ	05/08/2018	
SL3809-024	LE08IMS2	1.14	g	↓	L	SL	IM	AMJ	05/08/2018	A
SL3809-024P	LE08IMS2	1.13	g	↓	L	SL	IM	AMJ	05/08/2018	↓
SL3809-024S	LE08IMS2	1.15	g	↓	L	SL	IM	AMJ	05/08/2018	↓
SL3809-041	LE08IMS2	1.55	g	↓	L	SL	IM	AMJ	05/08/2018	↓
SL3809-042	LE08IMS2	1.17	g	↓	L	SL	IM	AMJ	05/08/2018	↓
SL3809-043	LE08IMS2	1.03	g	↓	L	SL	IM	AMJ	05/08/2018	↓
SL3809-044	LE08IMS2	1.51	g	↓	L	SL	IM	AMJ	05/08/2018	↓
SL3809-046	LE08IMS2	1.22	g	↓	L	SL	IM	AMJ	05/08/2018	↓
SL3809-047	LE08IMS2	1.24	g	↓	L	SL	IM	AMJ	05/08/2018	↓

JS 5.8.18

Digestion performed by: AMJ On: 5/8/18

Katahdin Analytical Services 4001232

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet** **Method:** 3050H-MS

Reagent Information:

HNO3: MSR98 HCL: MSR96 H2O2: MSR85 Filter Paper: 15243044

Boiling Stones: MSR90

Pipet	LCS / Spike	LCS/Spiking Information:
M11	☒ ☒	CLPP-SPK-1 (ID/Vol): MS2124 / 0.1 mL
M15	☒ ☒	CLPP-SPK-INT1 (ID/Vol): MW17723 / 1.0 mL
M5	☒ ☒	CLPP-SPK-INT2 (ID/Vol): MW17724 / 1.0 mL
____	☐ ☐	____ Spike (ID/Vol): NA / ____ mL

LCSS: NA Balance ID: Bal15

Heat Source ID: D

Start Time: 0656 /Temp. 92 °C

End Time: 1336 /Temp. 94 °C

Thermometer ID/Pos: HC11 / 6.8

REVIEWED MD 5/9/18

KATAHDIN ANALYTICAL METALS SECTION

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSOLE09IMS1	LE09IMS1	1.0	g	0.1	L	SL	IM	AMJ	05/09/2018	
PBSLE09IMS1	LE09IMS1	1.0	g		L	SL	IM	AMJ	05/09/2018	
~~SL3809-046~~	~~LE09IMS1~~	~~1.22~~	~~g~~		~~L~~	~~SL~~	~~IM~~	~~AMJ~~	~~05/09/2018~~	~~A~~
~~SL3809-047~~	~~LE09IMS1~~	~~1.24~~	~~g~~		~~L~~	~~SL~~	~~IM~~	~~AMJ~~	~~05/09/2018~~	
SL3809-048	LE09IMS1	1.38	g		L	SL	IM	AMJ	05/09/2018	
SL3809-049	LE09IMS1	1.16	g		L	SL	IM	AMJ	05/09/2018	
SL3809-050	LE09IMS1	1.41	g		L	SL	IM	AMJ	05/09/2018	
SL3809-051	LE09IMS1	1.23	g		L	SL	IM	AMJ	05/09/2018	
SL3809-052	LE09IMS1	1.31	g		L	SL	IM	AMJ	05/09/2018	
SL3809-053	LE09IMS1	1.19	g		L	SL	IM	AMJ	05/09/2018	
SL3809-054	LE09IMS1	1.36	g		L	SL	IM	AMJ	05/09/2018	
SL3809-055	LE09IMS1	1.00	g		L	SL	IM	AMJ	05/09/2018	
SL3951-001	LE09IMS1	1.74	g		L	SL	IM	AMJ	05/09/2018	B
SL3951-001P	LE09IMS1	1.73	g		L	SL	IM	AMJ	05/09/2018	B
SL3951-001S	LE09IMS1	1.73	g		L	SL	IM	AMJ	05/09/2018	B
SL3951-002	LE09IMS1	1.13	g		L	SL	IM	AMJ	05/09/2018	A

AMJ 5/9/18

MD 5/9/18

Digestion performed by: AMJ On: 5/9/18

Katahdin Analytical Services 4001233

CONVENTIONAL AND PHYSICAL ANALYTICAL DATA

QC Summary Section

Quality Control Report

Blank Sample Summary Report

Chromium, Hexavalent

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG228391	SW846 7196A	15-MAY-18	14-MAY-18	J 0.26 mg/Kgdrywt	0.48 mg/Kgdrywt	0.29

Total Solids

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG227675	SW3540C	06-MAY-18	04-MAY-18	100 %	1 %	N/A
MBLANK	WG227676	SW3540C	06-MAY-18	04-MAY-18	100 %	1 %	N/A
MBLANK	WG227677	SW3540C	06-MAY-18	04-MAY-18	100 %	1 %	N/A
MBLANK	WG227747	SW3540C	07-MAY-18	06-MAY-18	100 %	1 %	N/A

Quality Control Report

Laboratory Control Sample Summary Report

Chromium, Hexavalent

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG228391-2	LCS	WG228391	15-MAY-18	14-MAY-18	mg/Kgdrywt	40	36.	90	80-120	

Total Solids

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG227675-2	LCS	WG227675	06-MAY-18	04-MAY-18	%	90	90.	100	90-110	
WG227676-2	LCS	WG227676	06-MAY-18	04-MAY-18	%	90	90.	100	90-110	
WG227677-2	LCS	WG227677	06-MAY-18	04-MAY-18	%	90	90.	100	90-110	
WG227747-2	LCS	WG227747	07-MAY-18	06-MAY-18	%	90	90.	100	90-110	

Quality Control Report

Duplicate Sample Summary Report

Total Solids

Duplicate Sample ID	Original Sample ID	QC Batch	Analysis Date	Result Units	Sample Result	Duplicate Result	RPD(%)	RPD Limit
WG227747-4	SL3809-65	WG227747	07-MAY-18	%	83.	83.	0	20
WG227677-3	SL3809-38	WG227677	06-MAY-18	%	76.	76.	0	20
WG227675-3	SL3809-2	WG227675	06-MAY-18	%	78.	78.	0	20
WG227676-3	SL3809-16	WG227676	06-MAY-18	%	78.	78.	1	20
WG227747-3	SL3809-51	WG227747	07-MAY-18	%	83.	82.	1	20
WG227676-4	SL3809-24	WG227676	06-MAY-18	%	80.	80.	0	20

Quality Control Report

Matrix Spike Sample Summary Report

Chromium, Hexavalent

Matrix Spike Sample ID	Sample Type	Original Sample ID	QC Batch	Analysis Date	Result Units	Spike Amount	Sample Result	MS Result	Recovery (%)	Recovery Limit
WG228391-3	MS	SL3809-24	WG228391	15-MAY-18	mg/Kgdrywt	1330.09	0.62	1200	90	75 - 125
WG228391-4	MS	SL3809-24	WG228391	15-MAY-18	mg/Kgdrywt	50.95	0.62	46.	89	75 - 125

Sample Data Section

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1 - pH H2 - DO H3 - sulfite H4 - residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

MCL	Maximum Contaminant Level	NL	No limit
NFL	No Free Liquid Present	FLP	Free Liquid Present
NOD	No Odor Detected	TON	Threshold Odor Number

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is 'qualified' because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-2
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS03H	SL	01-MAY-18 13:05:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	78. %	1		N/A	SW3540C	WG227675	06-MAY-18 14:20:49	SW3540C	04-MAY-18	

Katahdin Analytical Services 500009

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-3
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS07I	SL	01-MAY-18 12:45:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	87. %	1		N/A	SW3540C	WG227675	06-MAY-18 14:21:04	SW3540C	04-MAY-18	

Katahdin Analytical Services 500010

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-4
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS10G	SL	01-MAY-18 11:45:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	80. %	1		N/A	SW3540C	WG227675	06-MAY-18 14:21:22	SW3540C	04-MAY-18	

Katahdin Analytical Services 500001

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-5
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS11G	SL	01-MAY-18 11:50:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	85. %	1		N/A	SW3540C	WG227675	06-MAY-18 14:21:37	SW3540C	04-MAY-18	

Katahdin Analytical Services 500012

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-6
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS08F	SL	01-MAY-18 11:25:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	81. %	1		N/A	SW3540C	WG227675	06-MAY-18 14:21:51	SW3540C	04-MAY-18	

Katahdin Analytical Services 500013

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-7
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS02E	SL	01-MAY-18 09:35:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	81. %	1		N/A	SW3540C	WG227675	06-MAY-18 14:22:04	SW3540C	04-MAY-18	

Katahdin Analytical Services 500014

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-8
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS10E	SL	01-MAY-18 09:30:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	83. %	1		N/A	SW3540C	WG227675	06-MAY-18 14:22:18	SW3540C	04-MAY-18	

Katahdin Analytical Services 500015

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-9
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS02D	SL	01-MAY-18 08:50:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	81. %	1		N/A	SW3540C	WG227675	06-MAY-18 14:22:36	SW3540C	04-MAY-18	

Katahdin Analytical Services 500016

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-10
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS04D	SL	01-MAY-18 08:45:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	73. %	1		N/A	SW3540C	WG227675	06-MAY-18 14:22:51	SW3540C	04-MAY-18	

Katahdin Analytical Services 500017

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-11
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS06D	SL	01-MAY-18 08:40:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	81. %	1		N/A	SW3540C	WG227675	06-MAY-18 14:23:06	SW3540C	04-MAY-18	

Katahdin Analytical Services 500018

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-12
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS04I	SL	01-MAY-18 13:20:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	76. %	1		N/A	SW3540C	WG227675	06-MAY-18 14:23:26	SW3540C	04-MAY-18	

Katahdin Analytical Services 500019

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ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-13
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS09G	SL	01-MAY-18 11:40:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	80. %	1		N/A	SW3540C	WG227676	06-MAY-18 14:43:46	SW3540C	04-MAY-18	

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ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-14
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS08G	SL	01-MAY-18 11:35:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.45 mg/Kgdrywt	0.56	0.17	0.33	SW846 7196A	WG228391	15-MAY-18 16:40:00	SW846 3060A	14-MAY-18	
Total Solids	83. %	1		N/A	SW3540C	WG227676	06-MAY-18 14:43:59	SW3540C	04-MAY-18	

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-15
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS09F	SL	01-MAY-18 11:30:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	79. %	1		N/A	SW3540C	WG227676	06-MAY-18 14:44:15	SW3540C	04-MAY-18	

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-16
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS09D	SL	01-MAY-18 09:10:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	78. %	1		N/A	SW3540C	WG227676	06-MAY-18 14:44:29	SW3540C	04-MAY-18	

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ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-17
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS102D	SL	01-MAY-18 12:00:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	81. %	1		N/A	SW3540C	WG227676	06-MAY-18 14:44:42	SW3540C	04-MAY-18	

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-18
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS08I	SL	01-MAY-18 12:12:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	84. %	1		N/A	SW3540C	WG227676	06-MAY-18 14:44:56	SW3540C	04-MAY-18	

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
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Lab Sample ID: SL3809-19
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS09I	SL	01-MAY-18 12:15:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	84. %	1		N/A	SW3540C	WG227676	06-MAY-18 14:45:13	SW3540C	04-MAY-18	

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
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Lab Sample ID: SL3809-20
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS10I	SL	01-MAY-18 12:10:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	82. %	1		N/A	SW3540C	WG227676	06-MAY-18 14:45:26	SW3540C	04-MAY-18	

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-21
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS11I	SL	01-MAY-18 12:06:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	82. %	1		N/A	SW3540C	WG227676	06-MAY-18 14:45:38	SW3540C	04-MAY-18	

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ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-22
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS09H	SL	01-MAY-18 12:00:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	82. %	1		N/A	SW3540C	WG227676	06-MAY-18 14:45:53	SW3540C	04-MAY-18	

Katahdin Analytical Services 500029

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ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-23
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS10H	SL	01-MAY-18 11:50:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	78. %	1		N/A	SW3540C	WG227676	06-MAY-18 14:46:07	SW3540C	04-MAY-18	

Katahdin Analytical Services 5000030

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-24
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS06F	SL	01-MAY-18 10:45:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	0.62 mg/Kgdrywt	0.59	0.18	0.35	SW846 7196A	WG228391	15-MAY-18 16:40:00	SW846 3060A	14-MAY-18	
Total Solids	80. %	1		N/A	SW3540C	WG227676	06-MAY-18 14:46:25	SW3540C	04-MAY-18	

Katahdin Analytical Services 5000031

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-25
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS07F	SL	01-MAY-18 10:40:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	82. %	1		N/A	SW3540C	WG227676	06-MAY-18 14:46:40	SW3540C	04-MAY-18	

Katahdin Analytical Services 500032

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-26
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS02F	SL	01-MAY-18 10:35:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	86. %	1		N/A	SW3540C	WG227676	06-MAY-18 14:46:54	SW3540C	04-MAY-18	

Katahdin Analytical Services 500033

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-27
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS03F	SL	01-MAY-18 10:30:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	81. %	1		N/A	SW3540C	WG227676	06-MAY-18 14:47:08	SW3540C	04-MAY-18	

Katahdin Analytical Services 500034

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-28
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS05F	SL	01-MAY-18 10:25:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	74. %	1		N/A	SW3540C	WG227676	06-MAY-18 14:47:22	SW3540C	04-MAY-18	

Katahdin Analytical Services 500035

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-29
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS04F	SL	01-MAY-18 10:20:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	74. %	1		N/A	SW3540C	WG227676	06-MAY-18 14:47:34	SW3540C	04-MAY-18	

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
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Columbia,MD 21045

Lab Sample ID: SL3809-30
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS104F	SL	01-MAY-18 12:00:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	82. %	1		N/A	SW3540C	WG227676	06-MAY-18 14:47:51	SW3540C	04-MAY-18	

Katahdin Analytical Services 500037

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-31
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS08E	SL	01-MAY-18 10:00:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	79. %	1		N/A	SW3540C	WG227676	06-MAY-18 14:48:06	SW3540C	04-MAY-18	

Katahdin Analytical Services 500038

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-32
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS09E	SL	01-MAY-18 10:05:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	70. %	1		N/A	SW3540C	WG227676	06-MAY-18 14:48:21	SW3540C	04-MAY-18	

Katahdin Analytical Services 500039

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-33
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS06E	SL	01-MAY-18 09:50:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	79. %	1		N/A	SW3540C	WG227677	06-MAY-18 14:51:18	SW3540C	04-MAY-18	

Katahdin Analytical Services 5000040

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-34
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS07E	SL	01-MAY-18 09:55:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.49 mg/Kgdrywt	0.61	0.18	0.36	SW846 7196A	WG228391	15-MAY-18 16:40:00	SW846 3060A	14-MAY-18	
Total Solids	80. %	1		N/A	SW3540C	WG227677	06-MAY-18 14:51:21	SW3540C	04-MAY-18	

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ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-35
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS04E	SL	01-MAY-18 09:45:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	76. %	1		N/A	SW3540C	WG227677	06-MAY-18 14:51:37	SW3540C	04-MAY-18	

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ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-36
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS03E	SL	01-MAY-18 09:40:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	81. %	1		N/A	SW3540C	WG227677	06-MAY-18 14:52:17	SW3540C	04-MAY-18	

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ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-37
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS11E	SL	01-MAY-18 09:25:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	62. %	1		N/A	SW3540C	WG227677	06-MAY-18 14:52:32	SW3540C	04-MAY-18	

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ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-38
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS07D	SL	01-MAY-18 09:15:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	76. %	1		N/A	SW3540C	WG227677	06-MAY-18 14:53:09	SW3540C	04-MAY-18	

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-39
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS11D	SL	01-MAY-18 09:05:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	74. %	1		N/A	SW3540C	WG227677	06-MAY-18 14:53:26	SW3540C	04-MAY-18	

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ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
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Lab Sample ID: SL3809-40
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS10D	SL	01-MAY-18 09:00:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	79. %	1		N/A	SW3540C	WG227677	06-MAY-18 14:53:43	SW3540C	04-MAY-18	

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-41
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS03D	SL	01-MAY-18 08:55:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	80. %	1		N/A	SW3540C	WG227677	06-MAY-18 14:54:00	SW3540C	04-MAY-18	

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
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Lab Sample ID: SL3809-42
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS10F	SL	01-MAY-18 10:10:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	84. %	1		N/A	SW3540C	WG227677	06-MAY-18 14:54:17	SW3540C	04-MAY-18	

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
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Lab Sample ID: SL3809-43
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS11F	SL	01-MAY-18 10:15:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	86. %	1		N/A	SW3540C	WG227677	06-MAY-18 14:54:35	SW3540C	04-MAY-18	

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-44
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS05E	SL	01-MAY-18 09:50:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.50 mg/Kgdrywt	0.62	0.19	0.37	SW846 7196A	WG228391	15-MAY-18 16:40:00	SW846 3060A	14-MAY-18	
Total Solids	76. %	1		N/A	SW3540C	WG227677	06-MAY-18 14:54:51	SW3540C	04-MAY-18	

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
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Lab Sample ID: SL3809-46
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS07G	SL	01-MAY-18 13:55:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	80. %	1		N/A	SW3540C	WG227677	06-MAY-18 14:55:10	SW3540C	04-MAY-18	

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
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Lab Sample ID: SL3809-47
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS06G	SL	01-MAY-18 13:50:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	81. %	1		N/A	SW3540C	WG227677	06-MAY-18 14:55:37	SW3540C	04-MAY-18	

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
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Lab Sample ID: SL3809-48
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS106G	SL	01-MAY-18 12:00:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	81. %	1		N/A	SW3540C	WG227677	06-MAY-18 14:55:57	SW3540C	04-MAY-18	

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Report of Analytical Results

Client: David Nelson
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Lab Sample ID: SL3809-49
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS05I	SL	01-MAY-18 13:45:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	78. %	1		N/A	SW3540C	WG227677	06-MAY-18 14:56:14	SW3540C	04-MAY-18	

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
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Lab Sample ID: SL3809-50
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS06H	SL	01-MAY-18 13:35:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	82. %	1		N/A	SW3540C	WG227677	06-MAY-18 14:56:30	SW3540C	04-MAY-18	

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
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Lab Sample ID: SL3809-51
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS07H	SL	01-MAY-18 13:40:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	83. %	1		N/A	SW3540C	WG227747	07-MAY-18 07:53:51	SW3540C	06-MAY-18	

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
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Lab Sample ID: SL3809-52
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS05H	SL	01-MAY-18 13:30:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	80. %	1		N/A	SW3540C	WG227747	07-MAY-18 07:54:00	SW3540C	06-MAY-18	

Katahdin Analytical Services 500058

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Report of Analytical Results

Client: David Nelson
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Lab Sample ID: SL3809-53
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS03I	SL	01-MAY-18 13:15:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	78. %	1		N/A	SW3540C	WG227747	07-MAY-18 07:54:08	SW3540C	06-MAY-18	

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ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-54
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS05G	SL	01-MAY-18 13:25:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.50 mg/Kgdrywt	0.63	0.19	0.38	SW846 7196A	WG228391	15-MAY-18 16:40:00	SW846 3060A	14-MAY-18	
Total Solids	79. %	1		N/A	SW3540C	WG227747	07-MAY-18 07:54:17	SW3540C	06-MAY-18	

Katahdin Analytical Services 500060

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ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-55
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS04H	SL	01-MAY-18 13:10:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	75. %	1		N/A	SW3540C	WG227747	07-MAY-18 07:54:26	SW3540C	06-MAY-18	

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ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-56
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS104H	SL	01-MAY-18 12:00:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	73. %	1		N/A	SW3540C	WG227747	07-MAY-18 07:54:34	SW3540C	06-MAY-18	

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
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Lab Sample ID: SL3809-57
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS03G	SL	01-MAY-18 12:50:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	76. %	1		N/A	SW3540C	WG227747	07-MAY-18 07:54:43	SW3540C	06-MAY-18	

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-58
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS04G	SL	01-MAY-18 12:55:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	79. %	1		N/A	SW3540C	WG227747	07-MAY-18 07:54:52	SW3540C	06-MAY-18	

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-59
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS01G	SL	01-MAY-18 12:30:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	78. %	1		N/A	SW3540C	WG227747	07-MAY-18 07:55:00	SW3540C	06-MAY-18	

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
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Lab Sample ID: SL3809-60
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS02G	SL	01-MAY-18 12:35:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	81. %	1		N/A	SW3540C	WG227747	07-MAY-18 07:55:09	SW3540C	06-MAY-18	

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Report of Analytical Results

Client: David Nelson
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Lab Sample ID: SL3809-61
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS06I	SL	01-MAY-18 12:40:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	77. %	1		N/A	SW3540C	WG227747	07-MAY-18 07:55:18	SW3540C	06-MAY-18	

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
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Lab Sample ID: SL3809-62
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS110G	SL	01-MAY-18 12:00:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	80. %	1		N/A	SW3540C	WG227747	07-MAY-18 07:55:26	SW3540C	06-MAY-18	

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-63
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS105E	SL	01-MAY-18 12:00:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.58 mg/Kgdrywt	0.62	0.19	0.38	SW846 7196A	WG228391	15-MAY-18 16:40:00	SW846 3060A	14-MAY-18	
Total Solids	78. %	1		N/A	SW3540C	WG227747	07-MAY-18 07:55:36	SW3540C	06-MAY-18	

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
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Columbia,MD 21045

Lab Sample ID: SL3809-64
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS08H	SL	01-MAY-18 12:03:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	81. %	1		N/A	SW3540C	WG227747	07-MAY-18 07:55:45	SW3540C	06-MAY-18	

Katahdin Analytical Services 500070

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3809-65
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3809

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-SS11H	SL	01-MAY-18 11:55:00	03-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	83. %	1		N/A	SW3540C	WG227747	07-MAY-18 07:55:55	SW3540C	06-MAY-18	

Katahdin Analytical Services 500071

Raw Data Section

TOTAL SOLIDS BATCH REPORT
May 06 2018, 02:35 pm
Batch: WG227675

Sample	Matrix	Type	Prep Date	Tare	Initial	Final1	Final	by	Date	Raw TS	Rep TS	Recovery	RPD
SL3807-1	SL	SAMP	04-MAY-18	1.3 g	19.7897 g	15.449 g	15.449 g	BF	06-MAY-18	76.5240	76. %		
SL3807-2	SL	SAMP	04-MAY-18	1.3 g	21.1811 g	17.5274 g	17.5274 g	BF	06-MAY-18	81.6220	82. %		
SL3809-10	SL	SAMP	04-MAY-18	1.3 g	22.3363 g	16.6713 g	16.6713 g	BF	06-MAY-18	73.0700	73. %		
SL3809-11	SL	SAMP	04-MAY-18	1.3 g	20.6856 g	17.0647 g	17.0647 g	BF	06-MAY-18	81.3220	81. %		
SL3809-12	SL	SAMP	04-MAY-18	1.3 g	20.4819 g	15.817 g	15.817 g	BF	06-MAY-18	75.6810	76. %		
SL3809-2	SL	SAMP	04-MAY-18	1.3 g	17.0925 g	13.572 g	13.572 g	BF	06-MAY-18	77.7080	78. %		
SL3809-3	SL	SAMP	04-MAY-18	1.3 g	15.991 g	14.1143 g	14.1143 g	BF	06-MAY-18	87.2260	87. %		
SL3809-4	SL	SAMP	04-MAY-18	1.3 g	20.1172 g	16.306 g	16.306 g	BF	06-MAY-18	79.7460	80. %		
SL3809-5	SL	SAMP	04-MAY-18	1.3 g	21.6717 g	18.6306 g	18.6306 g	BF	06-MAY-18	85.0720	85. %		
SL3809-6	SL	SAMP	04-MAY-18	1.3 g	21.2471 g	17.3955 g	17.3955 g	BF	06-MAY-18	80.6910	81. %		
SL3809-7	SL	SAMP	04-MAY-18	1.3 g	18.8382 g	15.4434 g	15.4434 g	BF	06-MAY-18	80.6430	81. %		
SL3809-8	SL	SAMP	04-MAY-18	1.3 g	14.5827 g	12.2875 g	12.2875 g	BF	06-MAY-18	82.7200	83. %		
SL3809-9	SL	SAMP	04-MAY-18	1.3 g	17.5165 g	14.429 g	14.429 g	BF	06-MAY-18	80.9610	81. %		
WG227675-1	SL	MBLANK	04-MAY-18	1.3 g	5.8061 g	5.8044 g	5.8044 g	BF	06-MAY-18	99.9620	100 %		
WG227675-2	SL	LCS	04-MAY-18	1.3 g	6.2964 g	5.8024 g	5.8024 g	BF	06-MAY-18	90.1130	90. %	100	
WG227675-3	SL	DUP	04-MAY-18	1.3 g	17.0259 g	13.5478 g	13.5478 g	BF	06-MAY-18	77.8830	78. %		0

Comments:

SL3809-2	MS/MSD
WG227675-1	SL3809-2
WG227675-2	SL3809-2
WG227675-3	SL3809-2

Entered by: BF Date: 5-6-18 Accepted by: [signature] Date: 05-07-18

Katahdin Analytical Services 5000073

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

Work Group Report (wk02)

04-MAY-18 10:14 AM

R471975

Work Group: WG227675
Department: 100 Wetlab Prep

Operator:

Created: 04-MAY-18
Due:

Tin	Sample	Account Name	Product	Matrix	Status	UA	Workdate	PR Location
11	SL3807-1	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
12	SL3807-2	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
13	SL3809-2	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
14	SL3809-3	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
15	SL3809-4	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
16	SL3809-5	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
17	SL3809-6	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
18	SL3809-7	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
19	SL3809-8	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
20	SL3809-9	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
21	SL3809-10	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
22	SL3809-11	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
23	SL3809-12	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
8	WG227675-1	MBLANK	TS	Solid	WIP	U	04-MAY-18	
9	WG227675-2	LCS	TS	Solid	WIP	U	04-MAY-18	
24	WG227675-3	DUP	TS	Solid	WIP	U	04-MAY-18	

Comments:

L3809-2	MS/MSD
WG227675-1	SL3809-2
WG227675-2	SL3809-2
WG227675-3	SL3809-2

Start: 11:50

Total Solids: SM2540 G / ASTM D2216			PQL: 0.10%	Oven ID: 107N0042		Balance Calibrated?
TS	In 1	In 2	TS	Out 1	Out 2	Y / N
ANALYST IN:	~~5-4-18~~ BM		ANALYST OUT:	BF		In:
DATE IN:	5-4-18		DATE OUT:	5-6-18		Out (TS): BF
TIME IN:	12:26		TIME OUT:	12:35		Balance ID:
TEMP IN:	104		TEMP OUT:	104		S/N 1124016031

TOTAL SOLIDS BATCH REPORT
May 06 2018, 03:00 pm
Batch: WG227676

Sample	Matrix	Type	Prep Date	Tare	Initial	Final1	Final	by	Date	Raw TS	Rep TS	Recovery	RPD
SL3809-13	SL	SAMP	04-MAY-18	1.3 g	15.8858 g	12.9369 g	12.9369 g	BF	06-MAY-18	79.7820	80. %		
SL3809-14	SL	SAMP	04-MAY-18	1.3 g	16.3478 g	13.7862 g	13.7862 g	BF	06-MAY-18	82.9770	83. %		
SL3809-15	SL	SAMP	04-MAY-18	1.3 g	15.4326 g	12.5163 g	12.5163 g	BF	06-MAY-18	79.3650	79. %		
SL3809-16	SL	SAMP	04-MAY-18	1.3 g	18.924 g	15.0179 g	15.0179 g	BF	06-MAY-18	77.8360	78. %		
SL3809-17	SL	SAMP	04-MAY-18	1.3 g	15.0776 g	12.4395 g	12.4395 g	BF	06-MAY-18	80.8520	81. %		
SL3809-18	SL	SAMP	04-MAY-18	1.3 g	20.4506 g	17.4381 g	17.4381 g	BF	06-MAY-18	84.2690	84. %		
SL3809-19	SL	SAMP	04-MAY-18	1.3 g	16.046 g	13.6177 g	13.6177 g	BF	06-MAY-18	83.5320	84. %		
SL3809-20	SL	SAMP	04-MAY-18	1.3 g	13.8063 g	11.5802 g	11.5802 g	BF	06-MAY-18	82.2000	82. %		
SL3809-21	SL	SAMP	04-MAY-18	1.3 g	17.8578 g	14.973 g	14.973 g	BF	06-MAY-18	82.5770	82. %		
SL3809-22	SL	SAMP	04-MAY-18	1.3 g	15.8931 g	13.3032 g	13.3032 g	BF	06-MAY-18	82.2520	82. %		
SL3809-23	SL	SAMP	04-MAY-18	1.3 g	20.7251 g	16.532 g	16.532 g	BF	06-MAY-18	78.4140	78. %		
SL3809-24	SL	SAMP	04-MAY-18	1.3 g	21.4277 g	17.4183 g	17.4183 g	BF	06-MAY-18	80.0800	80. %		
SL3809-25	SL	SAMP	04-MAY-18	1.3 g	18.442 g	15.3941 g	15.3941 g	BF	06-MAY-18	82.2200	82. %		
SL3809-26	SL	SAMP	04-MAY-18	1.3 g	20.0386 g	17.4369 g	17.4369 g	BF	06-MAY-18	86.1160	86. %		
SL3809-27	SL	SAMP	04-MAY-18	1.3 g	16.8903 g	13.9819 g	13.9819 g	BF	06-MAY-18	81.3450	81. %		
SL3809-28	SL	SAMP	04-MAY-18	1.3 g	23.7829 g	17.9412 g	17.9412 g	BF	06-MAY-18	74.0170	74. %		
SL3809-29	SL	SAMP	04-MAY-18	1.3 g	19.0025 g	14.4129 g	14.4129 g	BF	06-MAY-18	74.0740	74. %		
SL3809-30	SL	SAMP	04-MAY-18	1.3 g	21.5119 g	17.9661 g	17.9661 g	BF	06-MAY-18	82.4570	82. %		
SL3809-31	SL	SAMP	04-MAY-18	1.3 g	20.4179 g	16.3484 g	16.3484 g	BF	06-MAY-18	78.7140	79. %		
SL3809-32	SL	SAMP	04-MAY-18	1.3 g	25.7924 g	18.3573 g	18.3573 g	BF	06-MAY-18	69.6430	70. %		
WG227676-1	SL	MBLANK	04-MAY-18	1.3 g	5.8027 g	5.8 g	5.8 g	BF	06-MAY-18	99.9400	100 %		
WG227676-2	SL	LCS	04-MAY-18	1.3 g	6.2973 g	5.8016 g	5.8016 g	BF	06-MAY-18	90.0810	90. %	100	
WG227676-3	SL	DUP	04-MAY-18	1.3 g	16.6529 g	13.332 g	13.332 g	BF	06-MAY-18	78.3700	78. %		1
WG227676-4	SL	DUP	04-MAY-18	1.3 g	21.6506 g	17.6443 g	17.6443 g	BF	06-MAY-18	80.3140	80. %		0

Comments:

SL3809-16	MS/MSD
SL3809-24	MS/MSD
WG227676-1	SL3809-16
WG227676-2	SL3809-16
WG227676-3	SL3809-16
WG227676-4	SL3809-24

Entered by: BF Date: 5-6-18 Accepted by: [signature] Date: 05-07-18

Katahdin Analytical Services 5000075

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

Work Group Report (wk02)
04-MAY-18 10:16 AM

R471976

Work Group: WG227676
Department: 100 Wetlab Prep

Operator:

Created: 04-MAY-18
Due:

Tin	Sample	Account Name	Product	Matrix	Status	UA	Workdate	PR Location
25	SL3809-13	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
26	SL3809-14	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
27	SL3809-15	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
28	SL3809-16	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
29	SL3809-17	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
30	SL3809-18	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
31	SL3809-19	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
32	SL3809-20	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
33	SL3809-21	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
34	SL3809-22	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
35	SL3809-23	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
36	SL3809-24	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
37	SL3809-25	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
38	SL3809-26	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
39	SL3809-27	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
40	SL3809-28	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
41	SL3809-29	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
42	SL3809-30	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
43	SL3809-31	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
44	SL3809-32	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
45	WG227676-1	MBLANK	TS	Solid	WIP	U	04-MAY-18	
46	WG227676-2	LCS	TS	Solid	WIP	U	04-MAY-18	
47	WG227676-3	DUP	TS	Solid	WIP	U	04-MAY-18	
48	WG227676-4	DUP	TS	Solid	WIP	U	04-MAY-18	

Comments:

SL3809-16	MS/MSD
SL3809-24	MS/MSD
WG227676-1	SL3809-16
WG227676-2	SL3809-16
WG227676-3	SL3809-16
WG227676-4	SL3809-24

Start: 14:00

Total Solids: SM2540 G / ASTM D2216			PQL: 0.10%	Oven ID: 107N0042		Balance Calibrated?
TS	In 1	In 2	TS	Out 1	Out 2	Y / N
ANALYST IN:	JMS		ANALYST OUT:	BF		In:
DATE IN:	5-4-18		DATE OUT:	5-6-18		Out (TS): BF
TIME IN:	14:00		TIME OUT:	12:35		Balance ID:
TEMP IN:	104		TEMP OUT:	104		S/N 1124016031

TOTAL SOLIDS BATCH REPORT
May 06 2018, 03:01 pm
Batch: WG227677

Sample	Matrix	Type	Prep Date	Tare	Initial	Final1	Final	by	Date	Raw TS	Rep TS	Recovery	RPD
SL3809-33	SL	SAMP	04-MAY-18	1.3 g	17.0834 g	13.8456 g	13.8456 g	BF	06-MAY-18	79.4860	79. %		
SL3809-34	SL	SAMP	04-MAY-18	1.3 g	22.958 g	18.5407 g	18.5407 g	BF	06-MAY-18	79.6040	80. %		
SL3809-35	SL	SAMP	04-MAY-18	1.3 g	19.2943 g	15.0728 g	15.0728 g	BF	06-MAY-18	76.5400	76. %		
SL3809-36	SL	SAMP	04-MAY-18	1.3 g	20.2478 g	16.6232 g	16.6232 g	BF	06-MAY-18	80.8710	81. %		
SL3809-37	SL	SAMP	04-MAY-18	1.3 g	28.1643 g	18.0664 g	18.0664 g	BF	06-MAY-18	62.4110	62. %		
SL3809-38	SL	SAMP	04-MAY-18	1.3 g	21.5764 g	16.6877 g	16.6877 g	BF	06-MAY-18	75.8900	76. %		
SL3809-39	SL	SAMP	04-MAY-18	1.3 g	16.3012 g	12.3933 g	12.3933 g	BF	06-MAY-18	73.9490	74. %		
SL3809-40	SL	SAMP	04-MAY-18	1.3 g	16.566 g	13.3848 g	13.3848 g	BF	06-MAY-18	79.1620	79. %		
SL3809-41	SL	SAMP	04-MAY-18	1.3 g	18.704 g	15.2388 g	15.2388 g	BF	06-MAY-18	80.0900	80. %		
SL3809-42	SL	SAMP	04-MAY-18	1.3 g	19.5623 g	16.6282 g	16.6282 g	BF	06-MAY-18	83.9340	84. %		
SL3809-43	SL	SAMP	04-MAY-18	1.3 g	13.4767 g	11.7133 g	11.7133 g	BF	06-MAY-18	85.5180	86. %		
SL3809-44	SL	SAMP	04-MAY-18	1.3 g	24.8469 g	19.2221 g	19.2221 g	BF	06-MAY-18	76.1120	76. %		
SL3809-46	SL	SAMP	04-MAY-18	1.3 g	19.7154 g	16.1166 g	16.1166 g	BF	06-MAY-18	80.4580	80. %		
SL3809-47	SL	SAMP	04-MAY-18	1.3 g	18.8157 g	15.5021 g	15.5021 g	BF	06-MAY-18	81.0820	81. %		
SL3809-48	SL	SAMP	04-MAY-18	1.3 g	18.9916 g	15.6222 g	15.6222 g	BF	06-MAY-18	80.9550	81. %		
SL3809-49	SL	SAMP	04-MAY-18	1.3 g	20.8995 g	16.6203 g	16.6203 g	BF	06-MAY-18	78.1670	78. %		
SL3809-50	SL	SAMP	04-MAY-18	1.3 g	18.7263 g	15.5574 g	15.5574 g	BF	06-MAY-18	81.8150	82. %		
SL3838-1	SL	SAMP	04-MAY-18	1.3 g	18.8376 g	16.8855 g	16.8855 g	BF	06-MAY-18	88.8690	89. %		
SL3838-2	SL	SAMP	04-MAY-18	1.3 g	17.9097 g	16.6317 g	16.6317 g	BF	06-MAY-18	92.3060	92. %		
SL3838-3	SL	SAMP	04-MAY-18	1.3 g	16.6689 g	15.6671 g	15.6671 g	BF	06-MAY-18	93.4820	93. %		
WG227677-1	SL	MBLANK	04-MAY-18	1.3 g	5.8075 g	5.8055 g	5.8055 g	BF	06-MAY-18	99.9560	100 %		
WG227677-2	SL	LCS	04-MAY-18	1.3 g	6.3032 g	5.8002 g	5.8002 g	BF	06-MAY-18	89.9460	90. %	100	
WG227677-3	SL	DUP	04-MAY-18	1.3 g	20.9337 g	16.2191 g	16.2191 g	BF	06-MAY-18	75.9870	76. %		0
WG227677-4	SL	DUP	04-MAY-18	1.3 g	18.2089 g	16.2862 g	16.2862 g	BF	06-MAY-18	88.6290	89. %		0

Comments:

WG227677-1	SL3809-38
WG227677-2	SL3809-38
WG227677-3	SL3809-38
WG227677-4	SL3838-1

Entered by: BF Date: 5-6-18 Accepted by: [signature] Date: 05-07-18

Katahdin Analytical Services 5000077

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

Work Group Report (wk02)
04-MAY-18 10:19 AM

RM1977

Work Group: WG227677
Department: 100 Wetlab Prep

Operator:

Created: 04-MAY-18
Due:

Tin	Sample	Account Name	Product	Matrix	Status	UA	Workdate	PR Location
49	SL3809-33	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
50	SL3809-34	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
51	SL3809-35	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
52	SL3809-36	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
53	SL3809-37	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
54	SL3809-38	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
55	SL3809-39	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
56	SL3809-40	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
57	SL3809-41	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
58	SL3809-42	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
59	SL3809-43	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
60	SL3809-44	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
61	SL3809-46	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
62	SL3809-47	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
63	SL3809-48	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
64	SL3809-49	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
65	SL3809-50	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
66	SL3838-1	[redacted]	TS	Solid	WIP	U	16-MAY-18	
67	SL3838-2	[redacted]	TS	Solid	WIP	U	16-MAY-18	
68	SL3838-3	[redacted]	TS	Solid	WIP	U	16-MAY-18	
69	WG227677-1	MBLANK	TS	Solid	WIP	U	04-MAY-18	
70	WG227677-2	LCS	TS	Solid	WIP	U	04-MAY-18	
71	WG227677-3	DUP	TS	Solid	WIP	U	04-MAY-18	
72	WG227677-4	DUP	TS	Solid	WIP	U	04-MAY-18	

Comments:

WG227677-1	SL3809-38
WG227677-2	SL3809-38
WG227677-3	SL3809-38
WG227677-4	SL3838-1

Start: 14:10

Total Solids: SM2540 G / ASTM D2216			PQL: 0.10%	Oven ID: 107N0042		Balance Calibrated?
TS	In 1	In 2	TS	Out 1	Out 2	Y / N
ANALYST IN:	JMS		ANALYST OUT:	BF		In:
DATE IN:	5-4-18		DATE OUT:	5-6-18		Out (TS): BF
TIME IN:	14:47		TIME OUT:	12:35		Balance ID:
TEMP IN:	104		TEMP OUT:	104		S/N 1124016031

TOTAL SOLIDS BATCH REPORT
May 07 2018, 07:58 am
Batch: WG227747

Sample	Matrix	Type	Prep Date	Tare	Initial	Final1	Final	by	Date	Raw TS	Rep TS	Recovery	RPD
SL3809-51	SL	SAMP	06-MAY-18	1.3 g	14.1295 g	11.9374 g	11.9374 g	WAS	07-MAY-18	82.9140	83. %		
SL3809-52	SL	SAMP	06-MAY-18	1.3 g	14.339 g	11.6786 g	11.6786 g	WAS	07-MAY-18	79.5960	80. %		
SL3809-53	SL	SAMP	06-MAY-18	1.3 g	18.1846 g	14.4125 g	14.4125 g	WAS	07-MAY-18	77.6600	78. %		
SL3809-54	SL	SAMP	06-MAY-18	1.3 g	27.8571 g	22.2126 g	22.2126 g	WAS	07-MAY-18	78.7460	79. %		
SL3809-55	SL	SAMP	06-MAY-18	1.3 g	12.8456 g	9.9948 g	9.9948 g	WAS	07-MAY-18	75.3080	75. %		
SL3809-56	SL	SAMP	06-MAY-18	1.3 g	20.5238 g	15.3345 g	15.3345 g	WAS	07-MAY-18	73.0060	73. %		
SL3809-57	SL	SAMP	06-MAY-18	1.3 g	17.1621 g	13.319 g	13.319 g	WAS	07-MAY-18	75.7720	76. %		
SL3809-58	SL	SAMP	06-MAY-18	1.3 g	20.46 g	16.4165 g	16.4165 g	WAS	07-MAY-18	78.8960	79. %		
SL3809-59	SL	SAMP	06-MAY-18	1.3 g	17.1092 g	13.7058 g	13.7058 g	WAS	07-MAY-18	78.4720	78. %		
SL3809-60	SL	SAMP	06-MAY-18	1.3 g	11.845 g	9.8246 g	9.8246 g	WAS	07-MAY-18	80.8400	81. %		
SL3809-61	SL	SAMP	06-MAY-18	1.3 g	17.098 g	13.4387 g	13.4387 g	WAS	07-MAY-18	76.8370	77. %		
SL3809-62	SL	SAMP	06-MAY-18	1.3 g	19.4705 g	15.9196 g	15.9196 g	WAS	07-MAY-18	80.4580	80. %		
SL3809-63	SL	SAMP	06-MAY-18	1.3 g	18.5482 g	14.6806 g	14.6806 g	WAS	07-MAY-18	77.5770	78. %		
SL3809-64	SL	SAMP	06-MAY-18	1.3 g	17.6216 g	14.569 g	14.569 g	WAS	07-MAY-18	81.2970	81. %		
SL3809-65	SL	SAMP	06-MAY-18	1.3 g	15.3414 g	12.9289 g	12.9289 g	WAS	07-MAY-18	82.8190	83. %		
WG227747-1	SL	MBLANK	06-MAY-18	1.3 g	5.8062 g	5.8038 g	5.8038 g	WAS	07-MAY-18	99.9470	100 %		
WG227747-2	SL	LCS	06-MAY-18	1.3 g	6.2867 g	5.7858 g	5.7858 g	WAS	07-MAY-18	89.9550	90. %	100	
WG227747-3	SL	DUP	06-MAY-18	1.3 g	16.8198 g	14.0639 g	14.0639 g	WAS	07-MAY-18	82.2430	82. %		1
WG227747-4	SL	DUP	06-MAY-18	1.3 g	20.206 g	16.9349 g	16.9349 g	WAS	07-MAY-18	82.6980	83. %		0

Comments:

WG227747-1	SL3809-51
WG227747-2	SL3809-51
WG227747-3	SL3809-51
WG227747-4	SL3809-65

Entered by: _____ Date: 5-7-18 Accepted by: _____ Date: 5.7.18

Katahdin Analytical Services 5000079

Katahdin
ANALYTICAL SERVICES

R472193

Katahdin Analytical Services

Work Group Report (wk02)
06-MAY-18 03:11 PM

Work Group: WG227747
Department: 100 Wetlab Prep
Operator:
Created: 06-MAY-18
Due:

Tin	Sample	Account Name	Product	Matrix	Status	UA	Workdate	PR Location
24	SL3809-51	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
25	SL3809-52	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
26	SL3809-53	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
27	SL3809-54	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
28	SL3809-55	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
29	SL3809-56	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
30	SL3809-57	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
31	SL3809-58	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
32	SL3809-59	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
33	SL3809-60	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
34	SL3809-61	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
35	SL3809-62	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
36	SL3809-63	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
37	SL3809-64	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
38	SL3809-65	ATI, Inc.	TS	Solid	WIP	U	15-MAY-18	
39	WG227747-1	MBLANK	TS	Solid	WIP	U	06-MAY-18	
40	WG227747-2	LCS	TS	Solid	WIP	U	06-MAY-18	
41	WG227747-3	DUP	TS	Solid	WIP	U	06-MAY-18	
42	WG227747-4	DUP	TS	Solid	WIP	U	06-MAY-18	

Comments:

WG227747-1	SL3809-51
WG227747-2	SL3809-51
WG227747-3	SL3809-51
WG227747-4	SL3809-65

Ftcry: 15:25

Pipette ~~[illegible]~~ BF 5-6-18 W5

Total Solids: SM2540 G / ASTM D2216			PQL: 0.10%	Oven ID: 107N0042		Balance Calibrated?
TS	In 1	In 2	TS	Out 1	Out 2	Y / N
ANALYST IN:	BF		ANALYST OUT:	WD		In:
DATE IN:	5-6-18		DATE OUT:	5-7-18		Out (TS):
TIME IN:	16:35		TIME OUT:	620		Balance ID:
TEMP IN:	104		TEMP OUT:	104		S/N 1124016031

WET CHEMISTRY BATCH REPORT
May 15 2018, 05:35 pm
Batch: WG228391

Parameter: Chromium, Hexavalent

Date Analyzed: 15-MAY-18

Analyst Initials: AP

Prep Date: 14-MAY-18

Prep Method: SW846 3060A

Prep Chemist: AP

Sample	Samp Type	Method	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SL3807-1	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.03	U0.38 mg/Kgdrywt	76.	.4	0.19	0.63		
SL3807-2	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.6	0.60 mg/Kgdrywt	82.	.4	0.17	0.57		
SL3809-14	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.45	J0.45 mg/Kgdrywt	83.	.4	0.17	0.56		
SL3809-24	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.62	0.62 mg/Kgdrywt	80.	.4	0.18	0.59		
SL3809-34	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.49	J0.49 mg/Kgdrywt	80.	.4	0.18	0.61		
SL3809-44	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.5	J0.50 mg/Kgdrywt	76.	.4	0.19	0.62		
SL3809-54	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.5	J0.50 mg/Kgdrywt	79.	.4	0.19	0.63		
SL3809-63	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.58	J0.58 mg/Kgdrywt	78.	.4	0.19	0.62		
SL3995-1	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.24	J0.24 mg/Kgdrywt	85.	.4	0.17	0.57		
SL3995-10	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.55	J0.55 mg/Kgdrywt	80.	.4	0.18	0.60		
SL3995-11	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.48	J0.48 mg/Kgdrywt	81.	.4	0.18	0.60		
SL3995-12	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.49	J0.49 mg/Kgdrywt	82.	.4	0.18	0.61		
SL3995-13	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.48	J0.48 mg/Kgdrywt	80.	.4	0.18	0.60		
SL3995-2	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.83	0.83 mg/Kgdrywt	84.	.4	0.18	0.59		
SL3995-3	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.69	0.69 mg/Kgdrywt	83.	.4	0.18	0.59		
SL3995-4	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.48	J0.48 mg/Kgdrywt	83.	.4	0.18	0.60		
SL3995-6	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.19	U0.19 mg/Kgdrywt	79.	.4	0.19	0.62		
SL3995-7	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.4	J0.40 mg/Kgdrywt	79.	.4	0.18	0.59		
SL3995-8	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.63	0.63 mg/Kgdrywt	81.	.4	0.18	0.60		
SL3995-9	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.47	J0.47 mg/Kgdrywt	81.	.4	0.18	0.59		
WG228391-1	MBLANK	SW846 7196A	20.000mL	25.000mL	1.2	.26	J0.26 mg/Kgdrywt	NA	.4	0.14	0.48		
WG228391-2	LCS	SW846 7196A	20.000mL	25.000mL	1.2	36.1	36. mg/Kgdrywt	NA	.4	0.14	0.48		90
WG228391-3	MS	SW846 7196A	1.0000mL	25.000mL	25	1195.78	1200 mg/Kgdrywt	NA	.4	3.9	13.		90
WG228391-4	MS	SW846 7196A	20.000mL	25.000mL	1.2	46.14	46. mg/Kgdrywt	NA	.4	0.18	0.61		89

Comments:

SL3809-24	MS/MSD
WG228391-1	SL3809-24
WG228391-2	SL3809-24
WG228391-3	SL3809-24
WG228391-4	SL3809-24

Entered by: AP Date: 5/15/18 Accepted by: Date: 05/16/18 ~~05/15/18~~

Katahdin Analytical Services 5000081

HEXAVALENT CHROMIUM IN SOILS

Preparation Method: 3060A (Alkaline Digestion) Analysis Method: 7196A (Colorimetric)

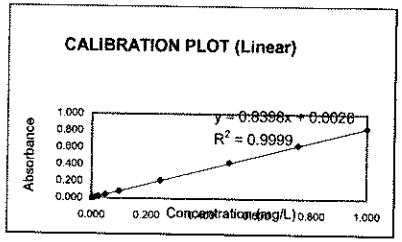
CALIBRATION INFORMATION

Calibration Analysis Date:	3/22/2018
Calibration Analyst:	AP

KCrO4 Stock Standard ID:	W16042
KCrO4 Stock Standard Conc (mg/L):	25

Standard Name	Vol. Of Stock Std. Added (ml)	Final Volume (mL)	Std. Conc. (mg/L)	Meas. Abs.	Response Factor
Calib. Blank	0.000	25	0.000	0.000	
Std. 1	0.010	25	0.010	0.009	1.111
Std. 2	0.025	25	0.025	0.023	1.087
Std. 3	0.050	25	0.050	0.044	1.136
Std. 4	0.100	25	0.100	0.088	1.136
Std. 5	0.250	25	0.250	0.215	1.163
Std. 6	0.500	25	0.500	0.427	1.171
Std. 7	0.750	25	0.750	0.633	1.185
Std. 8	1.000	25	1.000	0.839	1.192

No. of data points:	9
Corr. Coeff. (R):	0.999966371
Slope (m):	0.839828612
Intercept (b):	0.002562242



SAMPLE ANALYSIS

CCV Source Standard ID:	W16186	Spreadsheet File Name:	051518.XLS
CCV Source Std. Conc. (mg/L):	25	Sample Anal. Date:	5/15/2018
		Sample Analyst:	AP

	ANALYSIS INFORMATION								DIGESTION INFORMATION				CALCULATIONS		
Katahdin Sample No.	Initial Volume, IV (mL)	Final Volume, FV (mL)	Dil. Fctr.	Sample Absorbance	Matrix Blk. Absorbance	Corrected Absorbance	Calc. Cr+6 in FV (mg/L)	Calc. Cr+6 in IV (mg/L)	Digested Wet Wt. (g)	Digestate Final Vol. (L)	Total Solids (%)	Cr+6 Spike Added (mg)	Calc. Cr+6 in Sample (mg/kgdrywt)	Calc. Cr+6 Spike Added (mg/kgdrywt)	CCV / Spike Recovery
ICV	25.0	25.0	1.000	0.424		0.424	0.502	0.502							
CCV	25.0	25.0	1.000	0.420		0.420	0.497	0.497							100.4%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							99.4%
METHOD BLANK A	20.0	25.0	1.250	0.007		0.007	0.005	0.007	2.5000	0.100	100.000%		0.26		
LCS A	20.0	25.0	1.250	0.609		0.609	0.722	0.903	2.5000	0.100	100.000%	0.100	36.10	40.00	90.3%
SL3807-1	20.0	25.0	1.250	0.188	0.185	0.003	0.001	0.001	2.5035	0.100	76.524%		0.03		
SL3807-2	20.0	25.0	1.250	0.011		0.011	0.010	0.013	2.5795	0.100	81.622%		0.60		
SL3809-14	20.0	25.0	1.250	0.009		0.009	0.008	0.010	2.5909	0.100	82.977%		0.45		
SL3809-24	20.0	25.0	1.250	0.011		0.011	0.010	0.013	2.5403	0.100	80.080%		0.62		
SL3809-24 Post-Dig MS	20.0	25.0	1.250	0.418		0.418	0.495	0.618	2.5403	0.100	80.080%		30.40		98.9%
SL3809-24 Serial Dilution	4.0	25.0	6.250	0.002		0.002	-0.001	-0.004	2.5403	0.100	80.080%		-0.21		
SL2809-24 Insoluble MS	1.0	25.0	25.000	0.780		0.780	0.926	23.143	2.4168	0.100	80.080%	2.574	1195.78	1330.09	89.9%
SL3809-24 Soluble MS	20.0	25.0	1.250	0.611		0.611	0.724	0.906	2.4508	0.100	80.080%	0.100	46.14	50.95	89.3%
CCV	25.0	25.0	1.000	0.419		0.419	0.496	0.496							99.2%
CCB	25.0	25.0	1.000	0.001		0.001	-0.002	-0.002							
SL3809-34	20.0	25.0	1.250	0.009		0.009	0.008	0.010	2.4713	0.100	79.604%		0.49		
SL3809-44	20.0	25.0	1.250	0.009		0.009	0.008	0.010	2.5267	0.100	76.112%		0.50		
SL3809-54	20.0	25.0	1.250	0.009		0.009	0.008	0.010	2.4192	0.100	78.746%		0.50		
SL3809-63	20.0	25.0	1.250	0.010		0.010	0.009	0.011	2.4736	0.100	77.577%		0.58		
SL3995-1	20.0	25.0	1.250	0.109	0.103	0.006	0.004	0.005	2.4541	0.100	85.108%		0.24		
SL3995-2	20.0	25.0	1.250	0.065	0.051	0.014	0.014	0.017	2.4372	0.100	83.698%		0.83		
SL3995-3	20.0	25.0	1.250	0.088	0.076	0.012	0.011	0.014	2.4456	0.100	83.071%		0.69		
SL3995-4	20.0	25.0	1.250	0.034	0.025	0.009	0.008	0.010	2.4024	0.100	83.459%		0.48		
SL3995-6	20.0	25.0	1.250	0.041	0.036	0.005	0.003	0.004	2.4325	0.100	78.808%		0.19		
SL3995-7	20.0	25.0	1.250	0.093	0.085	0.008	0.006	0.008	2.5705	0.100	79.411%		0.40		
CCV	25.0	25.0	1.000	0.413		0.413	0.489	0.489							97.7%
CCB	25.0	25.0	1.000	0.001		0.001	-0.002	-0.002							
SL3995-8	20.0	25.0	1.250	0.011		0.011	0.010	0.013	2.4639	0.100	81.012%		0.63		
SL3995-9	20.0	25.0	1.250	0.009		0.009	0.008	0.010	2.5074	0.100	81.310%		0.47		
SL3995-10	20.0	25.0	1.250	0.010		0.010	0.009	0.011	2.5015	0.100	80.441%		0.55		
SL3995-11	20.0	25.0	1.250	0.009		0.009	0.008	0.010	2.4577	0.100	81.007%		0.48		
SL3995-12	20.0	25.0	1.250	0.009		0.009	0.008	0.010	2.4027	0.100	81.892%		0.49		
SL3995-13	20.0	25.0	1.250	0.009		0.009	0.008	0.010	2.5304	0.100	79.700%		0.48		
CCV	25.0	25.0	1.000	0.415		0.415	0.491	0.491							98.2%
CCB	25.0	25.0	1.000	0.001		0.001	-0.002	-0.002							

Katahdin Analytical Services 5000082

WC328391 M4 73702

KATAHDIN ANALYTICAL SERVICES

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID **PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)**

Calibration / Quality Control Checks:	
Cal Std. Source ID (K2Cr2O7): W16186 25 ug/mL	**CCV ID:** W16186 25 ug/mL
LCS Stock ID: SWL4101 1000 ug/mL	**ICV ID:** W16187 25 ug/mL
Reagents:	**Phosphate Buffer ID:** W14990
Diphenylcarbazide Solution ID: W16492	**10% H2SO4 ID:** Prep Day of Use 20mL H_2SO_4 SWL4212 → 200mL DI
Alkaline Digestion Reagent ID: W16402/W16483	**Alkaline Digestion Reagent pH:** 12.62
SW 3060A Leachate Generation Date: 5/14/18	**Filtration End Time:** 1805

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm
ICV	1600		✓	✓	25	25		0.424
CCV								0.420
CCB								0.000
Blank					20			0.007
LCS					20			0.609
SL3807-1					20		0.185	0.188
-2					20			0.011
SL3809-14					20			0.009
-24					20			0.011
-24 P.D.S					20			0.418
-24 S.D.					4			0.002
-24 Insol MS					1.00			0.780
-24 Sol MS.					20			0.611
CCV					25			0.419
CCB								0.001
SL3809-34					20			0.009
~~-49~~-44					20			0.009
-54					20			0.009
-63					20			0.010
SL3995-1					20		0.103	0.109
-2	1620				20		~~0.289~~ 0.051	~~0.290~~ 0.065

AP 5/15/18

AP 5/1 *

Notes: W5

* sample centrifuged

Analyst: AP	**Date:** 5/15/18
Checked By: [signature]	**Date:** 05/16/18

KATAHDIN ANALYTICAL SERVICES

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID **PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)**

Calibration / Quality Control Checks:	
Cal Std. Source ID (K2Cr2O7): p13 ug/mL	**CCV ID:** p13 ug/mL
LCS Stock ID: ug/mL	**ICV ID:** ug/mL
Reagents:	**Phosphate Buffer ID:**
Diphenylcarbazide Solution ID:	**10% H2SO4 ID:**
Alkaline Digestion Reagent ID:	**Alkaline Digestion Reagent pH:**
SW 3060A Leachate Generation Date:	**Filtration End Time:**

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm	
SL3995-3	1620		✓	✓	20	25	0.076	0.088	*
-4					20		0.025	0.034	*
-6					20		0.036	0.041	*
-7					20		0.085	0.093	
CCV					25			0.413	
CCB					1			0.001	
SL3995-8					20			0.011	
-9					20			0.009	
-10					20			0.010	
-11					20			0.009	
-12					20			0.009	
-13					20			0.009	
CCV					25			0.415	
CCB	1640				1			0.001	
				AP 5/15/18					

Notes:

Analyst: AP	**Date:** 5/15/18
Checked By:	**Date:** 05/16/18

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

HNO3:_____ HCL:_____ H2O2:_____ **Method:** 3060

LCS / Spike **LCS/Spiking Information:**

☐ ☐ CLPP-SPK-1 (ID/Vol):_____/_____mL

☐ ☐ CLPP-SPK-INT1 (ID/Vol):_____/_____mL

☐ ☐ CLPP-SPK-INT2 (ID/Vol):_____/_____mL

☐ ☐ _____ Spike (ID/Vol):_____/_____mL

☐ ☐ CLPP-SPK-4 (ID/Vol):_____/_____mL

LCSS:_____ Balance ID: 112401603 I

Hot Plate/Block ID : 0

Start Time/Temp.: 1240 / 90 °C

End Time/Temp. : 1340 / 92.5 °C

Thermometer ID/Pos.:_____/_____

Filter Paper:_____

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Texture	Final Color	Final Clarity	Artifacts	Bottle
BLANK	LE14CRS1	2.5	g	0.1	L	SL	CR	AP	05/14/2018	N/A	N/A	N/A	N/A		
LCS	LE14CRS1	2.5	g	0.1	L	SL	CR	AP	05/14/2018	N/A	N/A	N/A	N/A		
SL3807-1	LE14CRS1	2.5035	g	0.1	L	SL	CR	AP	05/14/2018						
SL3807-2	LE14CRS1	2.5795	g	0.1	L	SL	CR	AP	05/14/2018						
SL3809-14	LE14CRS1	2.3909	g	0.1	L	SL	CR	AP	05/14/2018						
SL3809-24	LE14CRS1	2.5403	g	0.1	L	SL	CR	AP	05/14/2018						
SL3809-24 INSOL MS	LE14CRS1	2.4168	g	0.1	L	SL	CR	AP	05/14/2018						
SL3809-24 SOL MS	LE14CRS1	2.4508	g	0.1	L	SL	CR	AP	05/14/2018						
SL3809-34	LE14CRS1	2.4713	g	0.1	L	SL	CR	AP	05/14/2018						
SL3809-44	LE14CRS1	2.5267	g	0.1	L	SL	CR	AP	05/14/2018						
SL3809-54	LE14CRS1	2.4192	g	0.1	L	SL	CR	AP	05/14/2018						
SL3809-63	LE14CRS1	2.4736	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-1	LE14CRS1	2.4541	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-10	LE14CRS1	2.5015	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-11	LE14CRS1	2.4577	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-12	LE14CRS1	2.4027	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-13	LE14CRS1	2.5304	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-2	LE14CRS1	2.4372	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-3	LE14CRS1	2.4456	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-4	LE14CRS1	2.4024	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-6	LE14CRS1	2.4325	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-7	LE14CRS1	2.5705	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-8	LE14CRS1	2.4639	g	0.1	L	SL	CR	AP	05/14/2018						
SL3995-9	LE14CRS1	2.5074	g	0.1	L	SL	CR	AP	05/14/2018						

Insoluble MS spiked w/ 0.0160g $PbCrO_4$ SWL3761

Soluble MS & LCS spiked w/ 0.100 mL (SWL4101) Cr+6 Std 1000mg/L W3

Reviewed 05/16/18

Digestion performed by: AP On: 5/14/18

Filtration End: 1805

Katahdin Analytical Services 5000085

Samplenum	Measuredate	Parameter	Result	Moisture
SL3807-1	06-MAY-18	TOTAL SOLIDS	76.524%	23.476%
SL3807-2	06-MAY-18	TOTAL SOLIDS	81.622%	18.378%

Samplenum	Measuredate	Parameter	Result	Moisture
SL3809-2	06-MAY-18	TOTAL SOLIDS	77.708%	22.292%
SL3809-3	06-MAY-18	TOTAL SOLIDS	87.226%	12.774%
SL3809-4	06-MAY-18	TOTAL SOLIDS	79.746%	20.254%
SL3809-5	06-MAY-18	TOTAL SOLIDS	85.072%	14.928%
SL3809-6	06-MAY-18	TOTAL SOLIDS	80.691%	19.309%
SL3809-7	06-MAY-18	TOTAL SOLIDS	80.643%	19.357%
SL3809-8	06-MAY-18	TOTAL SOLIDS	82.72%	17.28%
SL3809-9	06-MAY-18	TOTAL SOLIDS	80.961%	19.039%
SL3809-10	06-MAY-18	TOTAL SOLIDS	73.07%	26.93%
SL3809-11	06-MAY-18	TOTAL SOLIDS	81.322%	18.678%
SL3809-12	06-MAY-18	TOTAL SOLIDS	75.681%	24.319%
SL3809-13	06-MAY-18	TOTAL SOLIDS	79.782%	20.218%
SL3809-14	06-MAY-18	TOTAL SOLIDS	82.977%	17.023%
SL3809-15	06-MAY-18	TOTAL SOLIDS	79.365%	20.635%
SL3809-16	06-MAY-18	TOTAL SOLIDS	77.836%	22.164%
SL3809-17	06-MAY-18	TOTAL SOLIDS	80.852%	19.148%
SL3809-18	06-MAY-18	TOTAL SOLIDS	84.269%	15.731%
SL3809-19	06-MAY-18	TOTAL SOLIDS	83.532%	16.468%
SL3809-20	06-MAY-18	TOTAL SOLIDS	82.2%	17.8%
SL3809-21	06-MAY-18	TOTAL SOLIDS	82.577%	17.423%
SL3809-22	06-MAY-18	TOTAL SOLIDS	82.252%	17.748%
SL3809-23	06-MAY-18	TOTAL SOLIDS	78.414%	21.586%
SL3809-24	06-MAY-18	TOTAL SOLIDS	80.08%	19.92%
SL3809-25	06-MAY-18	TOTAL SOLIDS	82.22%	17.78%
SL3809-26	06-MAY-18	TOTAL SOLIDS	86.116%	13.884%
SL3809-27	06-MAY-18	TOTAL SOLIDS	81.345%	18.655%
SL3809-28	06-MAY-18	TOTAL SOLIDS	74.017%	25.983%
SL3809-29	06-MAY-18	TOTAL SOLIDS	74.074%	25.926%
SL3809-30	06-MAY-18	TOTAL SOLIDS	82.457%	17.543%
SL3809-31	06-MAY-18	TOTAL SOLIDS	78.714%	21.286%
SL3809-32	06-MAY-18	TOTAL SOLIDS	69.643%	30.357%
SL3809-33	06-MAY-18	TOTAL SOLIDS	79.486%	20.514%
SL3809-34	06-MAY-18	TOTAL SOLIDS	79.604%	20.396%
SL3809-35	06-MAY-18	TOTAL SOLIDS	76.54%	23.46%
SL3809-36	06-MAY-18	TOTAL SOLIDS	80.871%	19.129%
SL3809-37	06-MAY-18	TOTAL SOLIDS	62.411%	37.589%
SL3809-38	06-MAY-18	TOTAL SOLIDS	75.89%	24.11%
SL3809-39	06-MAY-18	TOTAL SOLIDS	73.949%	26.051%
SL3809-40	06-MAY-18	TOTAL SOLIDS	79.162%	20.838%
SL3809-41	06-MAY-18	TOTAL SOLIDS	80.09%	19.91%
SL3809-42	06-MAY-18	TOTAL SOLIDS	83.934%	16.066%
SL3809-43	06-MAY-18	TOTAL SOLIDS	85.518%	14.482%
SL3809-44	06-MAY-18	TOTAL SOLIDS	76.112%	23.888%

Samplenum	Measuredate	Parameter	Result	Moisture
SL3809-46	06-MAY-18	TOTAL SOLIDS	80.458%	19.542%
SL3809-47	06-MAY-18	TOTAL SOLIDS	81.082%	18.918%
SL3809-48	06-MAY-18	TOTAL SOLIDS	80.955%	19.045%
SL3809-49	06-MAY-18	TOTAL SOLIDS	78.167%	21.833%
SL3809-50	06-MAY-18	TOTAL SOLIDS	81.815%	18.185%
SL3809-51	07-MAY-18	TOTAL SOLIDS	82.914%	17.086%
SL3809-52	07-MAY-18	TOTAL SOLIDS	79.596%	20.404%
SL3809-53	07-MAY-18	TOTAL SOLIDS	77.66%	22.34%
SL3809-54	07-MAY-18	TOTAL SOLIDS	78.746%	21.254%
SL3809-55	07-MAY-18	TOTAL SOLIDS	75.308%	24.692%
SL3809-56	07-MAY-18	TOTAL SOLIDS	73.006%	26.994%
SL3809-57	07-MAY-18	TOTAL SOLIDS	75.772%	24.228%
SL3809-58	07-MAY-18	TOTAL SOLIDS	78.896%	21.104%
SL3809-59	07-MAY-18	TOTAL SOLIDS	78.472%	21.528%
SL3809-60	07-MAY-18	TOTAL SOLIDS	80.84%	19.16%
SL3809-61	07-MAY-18	TOTAL SOLIDS	76.837%	23.163%
SL3809-62	07-MAY-18	TOTAL SOLIDS	80.458%	19.542%
SL3809-63	07-MAY-18	TOTAL SOLIDS	77.577%	22.423%
SL3809-64	07-MAY-18	TOTAL SOLIDS	81.297%	18.703%
SL3809-65	07-MAY-18	TOTAL SOLIDS	82.819%	17.181%

Samplenum	Measuredate	Parameter	Result	Moisture
SL3995-1	14-MAY-18	TOTAL SOLIDS	85.108%	14.892%
SL3995-2	14-MAY-18	TOTAL SOLIDS	83.698%	16.302%
SL3995-3	14-MAY-18	TOTAL SOLIDS	83.071%	16.929%
SL3995-4	14-MAY-18	TOTAL SOLIDS	83.459%	16.541%
SL3995-5	14-MAY-18	TOTAL SOLIDS	83.168%	16.832%
SL3995-6	14-MAY-18	TOTAL SOLIDS	78.808%	21.192%
SL3995-7	14-MAY-18	TOTAL SOLIDS	79.411%	20.589%
SL3995-8	14-MAY-18	TOTAL SOLIDS	81.012%	18.988%
SL3995-9	14-MAY-18	TOTAL SOLIDS	81.31%	18.69%
SL3995-10	14-MAY-18	TOTAL SOLIDS	80.441%	19.559%
SL3995-11	14-MAY-18	TOTAL SOLIDS	81.007%	18.993%
SL3995-12	14-MAY-18	TOTAL SOLIDS	81.892%	18.108%
SL3995-13	14-MAY-18	TOTAL SOLIDS	79.7%	20.3%
SL3995-14	14-MAY-18	TOTAL SOLIDS	78.494%	21.506%

ATI, INC.
CORNHUSKER
ARMY AMMUNITION PLANT
SL3841

KATAHDIN ANALYTICAL SERVICES
600 TECHNOLOGY WAY
SCARBOROUGH, ME 04074

Katahdin
ANALYTICAL SERVICES

Lab. ID. 2001(non-air)
Lab. ID. 11121 (air only)

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Lab. ID. 2001(non-air)
Lab. ID. 11121 (air only)

CONVENTIONAL AND PHYSICAL ANALYTICAL DATA 5000001

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SAMPLE DATA PACKAGE

Katahdin
ANALYTICAL SERVICES

Lab. ID. 2001(non-air)
Lab. ID. 11121 (air only)

NARRATIVE
KATAHDIN ANALYTICAL SERVICES
ATI, INC.
CORNHUSKER ARMY AMMUNITION PLANT
SL3841

Sample Receipt

The following samples were received on May 04, 2018 and were logged in under Katahdin Analytical Services work order number SL3841 for a hardcopy due date of May 16, 2018.

KATAHDIN Sample No.	ATI Sample Identification
SL3841-1	CHAAP-TB-050318-DPT
SL3841-2	CHAAP-19C-UGIA-DPT19
SL3841-3	CHAAP-19C-UGIA-DPT19-FF
SL3841-4	CHAAP-19C-LGIA-DPT20
SL3841-5	CHAAP-19C-LGIA-DPT20-FF
SL3841-6	CHAAP-19C-LGIA-DPT24
SL3841-8	CHAAP-19C-UGIA-DPT23
SL3841-9	CHAAP-19C-UGIA-DPT23-FF
SL3841-10	CHAAP-19C-LGIA-DPT16
SL3841-11	CHAAP-19C-LGIA-DPT16-FF
SL3841-12	CHAAP-19C-LGIA-DPT116
SL3841-13	CHAAP-19C-LGIA-DPT116-FF
SL3841-14	CHAAP-19C-UGIA-DPT15
SL3841-15	CHAAP-19C-UGIA-DPT15-FF
SL3841-16	CHAAP-19C-LGIA-DPT12
SL3841-17	CHAAP-19C-LGIA-DPT12-FF
SL3841-18	CHAAP-19C-UGIA-DPT11
SL3841-19	CHAAP-19C-UGIA-DPT11-FF
SL3841-20	CHAAO-EB-050318

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAP standards unless otherwise noted in this narrative or in the Report of Analysis.

We certify that the test results provided in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation L2223.

Analytes which are reported but not listed on our ANAB scope of accreditation will be "^" flagged and the following language will be included in the case narrative for all DoD compliant work: "^" Indicates this analyte is not included on Katahdin Analytical Services DoD-ELAP Scope of Accreditation.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Heather Manz**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of Work Order SL3841 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

8270D SIM Analysis

Note: The Form VII has a column for %D that is set to 20%. The DoD QSM 5.0 criterion for an opening CV is 20%D and a closing CV is 50%D. All of the compounds in the CV's were evaluated to either 20% criteria for opening CVs or 50% criteria for closing CVs.

The closing calibration verification standard (CV) (file N8633) had a high response for the target analyte indeno(1,2,3-cd)pyrene that resulted in a %D that exceeded the DoD QSM acceptance limit of ±50%. If a closing CV fails, the DoD QSM allows for the analysis of two additional CVs which do not need to be within the 12 hour window. The two additional CV's (files N8634 and N8635) were acceptable and all three CVs are reported.

8330B Analysis

All samples were initially analyzed on the primary Phenomenex column. If a sample has a peak that is within the retention time window of a target analyte and the concentration is above the PQL, the sample is reanalyzed for confirmation on the confirmation Acclaim E2 column. An analyte is considered confirmed if the mentioned criteria are achieved with both columns. Sample SL3841-14 was reanalyzed for confirmation on the confirmation Acclaim E2 column. All of the supporting data for the confirmation analysis is included in the report. The results from the primary column are reported.

The independent check standard (file HKH10016), associated with the initial confirmation calibration analyzed on 08/01/17, had high concentrations for the target analytes tetryl, 4-amino-2,6-dinitrotoluene, and 3-nitrotoluene that exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. Since this was associated with the confirmation calibration, no further action was taken.

8260B Analysis

Samples SL3841-4, 6, 8, 10, 12, 14, 16, and 18 had recoveries for the surrogate 1,2-dichloroethand-d4 that were high and outside of the DoD QSM acceptance criteria. Since a high recovery indicates a high bias and no target analytes were detected, no further action was taken.

The independent check standard (file D1272A), associated with the initial confirmation calibration analyzed on the D instrument on 05/10/18, had a high concentration for the target analyte dichlorodifluoromethane that exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

Note: The Form VII has a column for %D that is set to 20%. The DoD QSM 5.0 criterion for an opening CV is 20%D and a closing CV is 50%D. All of the compounds in the CV's were evaluated to either 20% criteria for opening CVs or 50% criteria for closing CVs.

The CV (file P5545) had high responses for the target analytes 4-methyl-2-pentanone and 2-hexanone which resulted in a %D that was greater than the DoD QSM acceptance limit of 20%.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SL3841 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Aqueous-matrix Katahdin Sample Numbers SL3841-(2-6, 8-20) were digested for ICP-MS analysis on 05/07/18 (QC Batch LE07IMW2) in accordance with USEPA Method 3010A. Katahdin Sample Number SL3841-11 was prepared with duplicate matrix-spiked aliquots.

All sample digestates for method 6020A were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. Per client request, samples which required an additional dilution have been identified using a "D" flag in the qualifier column on all Form 1s.

ICP-MS analyses of Katahdin Work Order SL3841 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All samples were analyzed within holding times and all analytical run QC criteria were met.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

Internal Standard Element	Associated Analytes
Lithium	Beryllium, Boron
Scandium	Sodium, Magnesium, Aluminum, Potassium, Calcium
Germanium or Yttrium	Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Silver, Cadmium, Strontium, Molybdenum
Terbium	Antimony, Barium, Tin, Tungsten
Bismuth	Lead, Thallium, Thorium, Uranium

Instrument tuning information can also be found in the raw data section in the reports labeled "6020 QC Tune Report". For Method 6020A, the relative standard deviation was determined from 4 replicate measurements and the peak width was measured at 10% of the peak height.

Analysis of Mercury by Cold Vapor Atomic Absorption (CVAA)

Aqueous-matrix Katahdin Sample Numbers SL3841-(2-6, 8-20) were digested for mercury analysis on 05/07/18 (QC Batch LE07HGW4) in accordance with USEPA Method 7470A. Katahdin Sample Number SL3841-10 was prepared with duplicate matrix-spiked aliquots.

Mercury analysis of the Katahdin Work Order SL3841 sample digestates were performed using a Cetac M6100 automated mercury analyzer in accordance with USEPA Method 7470A. All samples were analyzed within holding times. All analytical run QC criteria were met.

Matrix QC Summary

The measured recoveries of mercury in the matrix-spiked aliquots of Katahdin Sample Number SL3841-10 are within project acceptance criteria.

The measured recoveries of calcium, magnesium, and sodium in one or both of the matrix-spiked aliquots of Katahdin Sample Number SL3841-11 are outside the project acceptance criteria. This may be attributable to the native concentration being significantly greater than the spike added.

The measured recovery of mercury in the post-digestion spiked aliquot of Katahdin Sample Number SL3841-10 is outside the project's acceptance criteria (80%-120% recovery of the added element).

The measured recoveries of calcium, iron, magnesium, manganese, and sodium in the post-digestion spiked aliquot of Katahdin Sample Number SL3841-11 are outside the project's acceptance criteria (80%-120% recovery of the added element). This may be attributable to the native concentration being significantly greater than the spike added.

The matrix-spike duplicate analyses of Katahdin Sample Numbers SL3841-(10, 11) are within the project's acceptance criteria (<20% relative difference between duplicate matrix-spiked aliquots) for all analytes.

The serial dilution analyses of Katahdin Sample Numbers SL3841-(10, 11) are within the project's acceptance criteria (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOD) for all analytes.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the LOQ are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQs, MDLs and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method

detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

The samples of Work Order SL3841 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for hexavalent chromium were performed according to "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA,III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times. All quality control criteria were met except the following:

The recovery of the matrix spike for Katahdin Sample No. SL3841-10 in the original analysis on 5/4/18 was outside of the laboratory's acceptance limits. The sample and matrix spike sample were reanalyzed on 5/4/18 at a dilution of 1:5 with low recoveries. The results with the 1:5 dilution were reported.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Quality Assurance Officer, or their designee, as verified by the following signature.

Leslie Dimond
052418
Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client:	ATI	KAS PM:	HMM	Sampled By:	Client
Project:		KIMS Entry By:	JCB	Delivered By:	Fedex
KAS Work Order#:	SL3841	KIMS Review By:	HMM	Received By:	JCB
SDG #:		Cooler: 1 of 6		Date/Time Rec.:	5-4-18 900

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 0.9
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?	✓				
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?	✓				
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

All 3 VOA vials broken for -2 ~~DPT-19~~ UG1A-DPT-19

MMM 5-5-18

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client: ATI	KAS PM: HMM	Sampled By: Client
Project:	KIMS Entry By: JCB	Delivered By: Fedex
KAS Work Order#: 5L3841	KIMS Review By: HMM	Received By: JCB
SDG #:	Cooler: 2 of 6	Date/Time Rec.: 5-4-18 900

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 2.7
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client: ATI	KAS PM: MM	Sampled By: Client	
Project:	KIMS Entry By: SCB	Delivered By: Fedex	
KAS Work Order#: SL38411	KIMS Review By: MM	Received By: JCB	
SDG #:	Cooler: 3 of 6	Date/Time Rec.: 5-4-18 900	

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 3.4
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:				✓	
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client: ATI	KAS PM: HAM	Sampled By: Client	
Project:	KIMS Entry By: JCB	Delivered By: Fedex	
KAS Work Order#: SL3841	KIMS Review By: HAM	Received By: JCB	
SDG #:	Cooler: 4 of 6	Date/Time Rec.: 5-4-18 900	

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 0.6
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client: ATI	KAS PM: HTM	Sampled By: Client	
Project:	KIMS Entry By: JCB	Delivered By: Fedex	
KAS Work Order#: SL38941	KIMS Review By: HTM	Received By: JCB	
SDG #:	Cooler: 5 of 6	Date/Time Rec.: 5-4-18 900	

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 1.8
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client: ATI	KAS PM: HHM	Sampled By: Client	
Project:	KIMS Entry By: JCB	Delivered By: Fedex	
KAS Work Order#: SL38941	KIMS Review By: HHM	Received By: JCB	
SDG #:	Cooler: 6 of 6	Date/Time Rec.: 5-4-18 900	

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 3.0
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Heather Manz

From: Spies, Jennifer [jspies@hgl.com]
Sent: Friday, May 04, 2018 2:08 PM
To: Heather Manz
Cc: 'Allison Harbottle'; ldimond@katahdinlab.com; 'Greg Lull'; Eichelberger, Shawn; 'David Nelson'; Sullivan, Ryan
Subject: RE: Samples received today

We'll just be re-collecting the VOC sample. Please use the original explosives/metals samples for analysis. Thanks!

Jennifer Spies
HGL
85 NE Interstate Loop 410, Suite 605
San Antonio, TX 78216
phone: 512-291-3588
www.hgl.com

From: Heather Manz <hmanz@katahdinlab.com>
Sent: Friday, May 04, 2018 1:01 PM
To: Spies, Jennifer <jspies@hgl.com>
Cc: 'Allison Harbottle' <aharbottle@katahdinlab.com>; ldimond@katahdinlab.com; 'Greg Lull' <glull@katahdinlab.com>; Eichelberger, Shawn <seichelberger@hgl.com>; 'David Nelson' <David.Nelson@atiinc.com>; Sullivan, Ryan <rsullivan@hgl.com>
Subject: RE: Samples received today

Thanks Jennifer,

Just to clarify, do you want us to cancel all analysis on this sample or just the VOA?

Thanks
Heather

From: Spies, Jennifer [mailto:jspies@hgl.com]
Sent: Friday, May 04, 2018 1:47 PM
To: Heather Manz
Cc: 'Allison Harbottle'; ldimond@katahdinlab.com; 'Greg Lull'; Eichelberger, Shawn; David Nelson; Sullivan, Ryan
Subject: RE: Samples received today

Hi Heather,
We're going to recollect sample CHAAP-19C-UGIA-DPT-19.
Thanks,
Jennifer

Jennifer Spies
HGL
85 NE Interstate Loop 410, Suite 605
San Antonio, TX 78216
phone: 512-291-3588
www.hgl.com

From: Heather Manz <hmanz@katahdinlab.com>
Sent: Friday, May 04, 2018 10:22 AM
To: Spies, Jennifer <jspies@hgl.com>

Cc: 'Allison Harbottle' <aharbottle@katahdinlab.com>; ldimond@katahdinlab.com; 'Greg Lull' <glull@katahdinlab.com>
Subject: Samples received today

Hi Jennifer,

I was just notified by login that all three VOA vials for one of the samples we received today are broken. The sample is CHAAP-19C-UGIA-DPT-19 taken on 05/03/2018 at 09:35.
We could prep vials here in the lab from one of the other jars, this could slightly compromise recoveries of lighter VOA compounds.
We figured you are probably still in the field and would want to re-sample. Let us know how you would like to proceed or if you have any questions.

Thank you,

Heather Manz

Federal Programs Project Manager
Katahdin Analytical Services
A Small Business Enterprise
DoD ELAP Accredited
600 Technology Way
Scarborough, Maine 04074
Office - 207.874.2400 x17
Fax - 207.775.4029
www.katahdinlab.com

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Katahdin ANALYTICAL SERVICES
600 Technology Way
P.O. Box 540
Scarborough, ME 04070
Tel: (207) 874-2400
Fax: (207) 775-4029

Chain of Custody

Client:	Contact:	Phone #:	Fax #:
ATI INC.	**David Nelson**	410-992-3424	( )
Address: 9220 Rumsey Road, Suite 100	City: Columbia	State: MD	Zip Code: 21045
Purchase Order #:	Proj. Name/No.:		Katahdin Quote #:
Bill (if different than above):		Address:	
Sampler (Print/Sign): Alex Hedgepath - HGL / Stuart Cameron - ATI			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY

Work Order #:
Katahdin Project Number

Remarks:

Shipping Info: FEDEX UPS CLIENT
Airbill No:
Temp C Temp Blank Intact Not Intact

	Sample Description	Time Collected	Date Collected	Matrix	No. of Containers	Analysis and Container Type Preservatives: VOCs (8260) Filt. N	Explosives (8330B) Filt. N	Metals (6020) Filt. N	Metals (6020) Field Filtered Filt. Y	PAHs (8270C-SIM) Filt. N	CrVI (7196A) Filt. N	CrVI (7196A) Field filtered Filt. N	SPLP Metals (1312) Filt. N		Page 1 of 6
1	CHAAP-TB-050318-DPT ✓	900	5/3/2018	W	3	X									
2	CHAAP-19C-UGIA-DPT19 ✓	935	5/3/2018	W	3	X									
3	CHAAP-19C-LGIA-DPT20 ✓	940	5/3/2018	W	3	X									
4	CHAAP-19C-LGIA-DPT24 ✓	1120	5/3/2018	W	3	X									
5	CHAAP-19C-UGIA-DPT23 ✓	1140	5/3/2018	W	3	X		X							
6	CHAAP-19C-LGIA-DPT16 ✓	1415	5/3/2018	W	5	X		X			X				
7	CHAAP-19C-LGIA-DPT16-FF ✓	1415	5/3/2018	W	2				X			X			
8	CHAAP-19C-LGIA-DPT116 ✓	1200	5/3/2018	W	5	X		X			X				
9	CHAAP-19C-LGIA-DPT116-FF ✓	1200	5/3/2018	W	2				X			X			
10	CHAAP-19C-UGIA-DPT15 ✓	1420	5/3/2018	W	5	X		X			X				
11	CHAAP-19C-UGIA-DPT15-FF ✓	1420	5/3/2018	W	2				X			X			
12	CHAAP-19C-LGIA-DPT12 ✓	1550	5/3/2018	W	5	X		X			X				
13	CHAAP-19C-LGIA-DPT12-FF ✓	1550	5/3/2018	W	2				X			X			
14	CHAAP-19C-UGIA-DPT11 ✓	1555	5/3/2018	W	3	X									
15	CHAAP-EB-050318 ✓	1615	5/3/2018	W	3	X									
	-END OF SAMPLES														

COMMENTS:

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath (HGL)	5/3/2018 1715	5.4.18 900			
Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:

All laboratory and field work shall be governed by KATAHDIN's Standard Terms and Conditions, except where a Purchase Order or Contract supersede.

SL34841

Katahdin ANALYTICAL SERVICES
600 Technology Way
P.O. Box 540
Scarborough, ME 04070
Tel: (207) 874-2400
Fax: (207) 775-4029

Chain of Custody

Client:	Contact:	Phone #:	Fax #:
ATI INC.	**David Nelson**	410-992-3424	( )
Address: 9220 Rumsey Road, Suite 100	City: Columbia	State: MD	Zip Code: 21045
Purchase Order #:	Proj. Name/No.:		Katahdin Quote #:
Bill (if different than above):		Address:	
Sampler (Print/Sign): Alex Hedgepath - HGL / Stuart Cameron - ATI			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY | Work Order #: Katahdin Project Number

Remarks:

Shipping Info: FEDEX UPS CLIENT
Airbill No:
Temp C: Temp Blank: Intact / Not Intact

	Sample Description	Time Collected	Date Collected	Matrix	No. of Containers	VOCs (8260) Filt. N	Explosives (8330B) Filt. N	Metals (6020) Filt. N	Metals (6020) Field Filtered Filt. Y	PAHs (8270C-SIM) Filt. N	CrVI (7196A) Filt. N	CrVI (7196A) Field filtered Filt. N	SPLP Metals (1312) Filt. N		Page 2 of 6
1	CHAAP-19C-UGIA-DPT19 ✓	935	5/3/2018	W	4		X			X					
2	CHAAP-19C-LGIA-DPT20 ✓	940	5/3/2018	W	4		X			X					
3	CHAAP-19C-UGIA-DPT11 ✓	1555	5/3/2018	W	1			X							
4	CHAAP-19C-UGIA-DPT11-FF ✓	1555	5/3/2018	W	1				X						
	-END OF SAMPLES														

COMMENTS:

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath (HGL)	5/3/2018 1715				
Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:

All laboratory and field work shall be governed by KATAHDIN's Standard Terms and Conditions, except where a Purchase Order or Contract supersede.

SL3841

Katahdin ANALYTICAL SERVICES
600 Technology Way
P.O. Box 540
Scarborough, ME 04070
Tel: (207) 874-2400
Fax: (207) 775-4029

Chain of Custody

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ATI INC.	**David Nelson**	410-992-3424	( )
Address: 9220 Rumsey Road, Suite 100	City: Columbia	State: MD	Zip Code: 21045
Purchase Order #:	Proj. Name/No.:		Katahdin Quote #:
Bill (if different than above):		Address:	
Sampler (Print/Sign): Alex Hedgepath - HGL / Stuart Cameron - ATI			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY

Work Order #:
Katahdin Project Number

Remarks:

Shipping Info: FEDEX UPS CLIENT
Airbill No:
Temp C Temp Blank Intact Not Intact

	Sample Description	Time Collected	Date Collected	Matrix	No. of Containers	Analysis and Container Type Preservatives: VOCs (8260) Filt. N	Explosives (8330B) Filt. N	Metals (6020) Filt. N	Metals (6020) Field Filtered Filt. Y	PAHs (8270C-SIM) Filt. N	CrVI (7196A) Filt. N	CrVI (7196A) Field filtered Filt. N	SPLP Metals (1312) Filt. N	Filt. N
1	CHAAP-19C-UGIA-DPT15 ✓	1420	5/3/2018	W	4		X			X				
2	CHAAP-19C-LGIA-DPT12 ✓	1550	5/3/2018	W	4		X			X				
	CHAAP-19C-UGIA-DPT23 ✓	1140	5/3/2018	W	1			X						
	CHAAP-19C-UGIA-DPT23-FF ✓	1140	5/3/2018	W	1				X					
	-END OF SAMPLES													

Page 5 of 6

COMMENTS:

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath (HGL)	5/3/2018 1715				
Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:

All laboratory and field work shall be governed by KATAHDIN's Standard Terms and Conditions, except where a Purchase Order or Contract supersede.

513841

Katahdin ANALYTICAL SERVICES
600 Technology Way
P.O. Box 540
Scarborough, ME 04070
Tel: (207) 874-2400
Fax: (207) 775-4029

Chain of Custody

Client:	Contact:	Phone #:	Fax #:
ATI INC.	**David Nelson**	410-992-3424	( )
Address: 9220 Rumsey Road, Suite 100	City: Columbia	State: MD	Zip Code: 21045
Purchase Order #:	Proj. Name/No.:		Katahdin Quote #:
Bill (if different than above):		Address:	
Sampler (Print/Sign): Alex Hedgepath - HGL / Stuart Cameron - ATI			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY

Work Order #:
Katahdin Project Number

Remarks:

Shipping Info: FEDEX UPS CLIENT
Airbill No:
Temp C Temp Blank Intact Not Intact

	Sample Description	Time Collected	Date Collected	Matrix	No. of Containers	Analysis and Container Type Preservatives: VOCs (8260) Filt. N	Explosives (8330B) Filt. N	Metals (6020) Filt. N	Metals (6020) Field Filtered Filt. Y	PAHs (8270C-SIM) Filt. N	CrVI (7196A) Filt. N	CrVI (7196A) Field filtered Filt. N	SPLP Metals (1312) Filt. N		Page 4 of 7
1	CHAAP-19C-LGIA-DPT16 ✓	1415	5/3/2018	W	4		X			X					
2	CHAAP-19C-LGIA-DPT116 ✓	1200	5/3/2018	W	4		X			X					
3	CHAAP-19C-LGIA-DPT20 ✓	940	5/3/2018	W	1			X							
4	CHAAP-19C-LGIA-DPT20-FF ✓	940	5/3/2018	W	1				X						
5	CHAAP-19C-LGIA-DPT24 ✓	1120	5/3/2018	W	1			X							
	-END OF SAMPLES														

COMMENTS:

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath (HGL)	5/3/2018 1715				
Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:

All laboratory and field work shall be governed by KATAHDIN's Standard Terms and Conditions, except where a Purchase Order or Contract supersede.

SL3841

Katahdin ANALYTICAL SERVICES
600 Technology Way
P.O. Box 540
Scarborough, ME 04070
Tel: (207) 874-2400
Fax: (207) 775-4029

Chain of Custody

Client: ATI INC.	Contact: David Nelson	Phone #: 410-992-3424	Fax #: ( )
Address: 9220 Rumsey Road, Suite 100	City: Columbia	State: MD	Zip Code: 21045
Purchase Order #:	Proj. Name/No.:		Katahdin Quote #:
Bill (if different than above):		Address:	
Sampler (Print/Sign): Alex Hedgepath - HGL / Stuart Cameron - ATI			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY

Work Order #: Katahdin Project Number

Remarks:

Shipping Info: FEDEX UPS CLIENT

Airbill No:

Temp C Temp Blank Intact Not Intact

	Sample Description	Time Collected	Date Collected	Matrix	No. of Containers	VOCs (8260) Filt. N	Explosives (8330B) Filt. N	Metals (6020) Filt. N	Metals (6020) Field Filtered Filt. Y	PAHs (8270C-SIM) Filt. N	CrVI (7196A) Filt. N	CrVI (7196A) Field filtered Filt. N	SPLP Metals (1312) Filt. N	
						Analysis and Container Type Preservatives								Page 3 of 6
1	CHAAP-19C-LGIA-DPT24 ✓	1120	5/3/2018	W	4		X			X				
2	CHAAP-19C-UGIA-DPT23 ✓	1140	5/3/2018	W	4		X			X				
3	CHAAP-19C-UGIA-DPT19 ✓	935	5/3/2018	W	1			X						
4	CHAAP-19C-UGIA-DPT19-FF ✓	935	5/3/2018	W	1				X					
	-END OF SAMPLES													

COMMENTS:

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath (HGL)	5/3/2018 1715				
Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:

All laboratory and field work shall be governed by KATAHDIN's Standard Terms and Conditions, except where a Purchase Order or Contract supersede.

523841

Katahdin ANALYTICAL SERVICES
600 Technology Way
P.O. Box 540
Scarborough, ME 04070
Tel: (207) 874-2400
Fax: (207) 775-4029

Chain of Custody

Client:	Contact:	Phone #:	Fax #:
ATI INC.	**David Nelson**	410-992-3424	( )
Address: 9220 Rumsey Road, Suite 100	City: Columbia	State: MD	Zip Code: 21045
Purchase Order #:	Proj. Name/No.:		Katahdin Quote #:
Bill (if different than above):		Address:	
Sampler (Print/Sign): Alex Hedgepath - HGL / Stuart Cameron - ATI			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY — Work Order #: Katahdin Project Number

Remarks:

Shipping Info: FEDEX UPS CLIENT
Airbill No:
Temp C: Temp Blank: Intact Not Intact

	Sample Description	Time Collected	Date Collected	Matrix	No. of Containers	VOCs (8260) Filt. N	Explosives (8330B) Filt. N	Metals (6020) Filt. N	Metals (6020) Field Filtered Filt. Y	PAHs (8270C-SIM) Filt. N	CrVI (7196A) Filt. N	CrVI (7196A) Field filtered Filt. N	SPLP Metals (1312) Filt. N		Page 6 of 6
						Analysis and Container Type Preservatives									
1	CHAAP-19C-UGIA-DPT11 ✓	1555	5/3/2018	W	4		X			X					
2	CHAAP-EB-050318 ✓	1615	5/3/2018	W	5		X	X		X					
	-END OF SAMPLES														

COMMENTS:

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath (HGL)	5/3/2018 1715				
Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:

All laboratory and field work shall be governed by KATAHDIN's Standard Terms and Conditions, except where a Purchase Order or Contract supersede.

Katahdin ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

May. 04, 2018
03:40 PM

Login Number: SL3841

Account: ATI001 Web
ATI, Inc.

Project: ATI-CORN-AAP
Cornhusker Army Ammunition Plant

Primary Report Address:
David Nelson
ATI, Inc.
9220 Rumsey Road
Suite 100
Columbia,MD 21045
david.nelson@atiinc.com

Primary Invoice Address:
David Nelson
ATI, Inc.
9220 Rumsey Road
Suite 100
Columbia,MD 21045

Report CC Addresses:
Invoice CC Addresses:

Quote/Incoming: ATI-CORN-AAP

Login Information:

ANALYSIS INSTRUCTIONS	:	FDS, DOD 5.0, ND to LOD w/ J flags. Report all valid runs. Summary needs all forms. GC/MS IS eval window +/- 10s. Metals ICSA - 2 sigfigs. Flag dilutions w/ "D" qualifier. Include any excedences in the case narrative. Limits in KIMS match QAPP. Hold extracts for 60 days. 8260B, 8270DSIM, 8330B, 6020A/7471A/7471B. No explo soil prep needed (8330B Mod). Reprep failing hex cr matrix QC & parent samples, include info in narrative.
CHECK NO.	:	
CLIENT PO#	:	PN:16-027
CLIENT PROJECT MANAGE	:	
CONTRACT	:	W9182F-16-D-0014
COOLER TEMPERATURE	:	0.9, 2.7, 3.4, 0.6, 1.8, 3.0
DELIVERY SERVICES	:	FedEx
EDD FORMAT	:	ATI-(ERIS)
LOGIN INITIALS	:	JCB
PM	:	HHM
PROJECT NAME	:	Cornhusker Army Ammunition Plant
QC LEVEL	:	IV
REPORT INSTRUCTIONS	:	SDS needs all forms. Check EDD, if errors, fix them or contact client (Jeff Martin703-736-4533 jmartin@hgl.com). Upload PDF & EDD to SDS. Email david.nelson@atiinc.com, seichelberger@hgl.com, rsullivan@hgl.com, Teresa.offner@atiinc.com, jspies@hgl.com to tell them report is uploaded. Email invoice to jspies@hgl.com, david.nelson@atiinc.com and seichelberger@hgl.com.
SDG ID	:	
SDG STATUS	:	
VERBAL TAT	:	

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL3841-1	CHAAP-TB-050318-DPT	03-MAY-18 09:00	04-MAY-18			16-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	17-MAY-18	40mL Vial+HCl		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL3841-2	CHAAP-19C-UGIA-DPT19	03-MAY-18 09:35	04-MAY-18			16-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8270SIMPAH-S	10-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	10-MAY-18	1L N-Amber Glass	5	**All 3 VOA vials were received broken. Client will resample VOA vials.**
Aqueous	P	TAL-MET-SW846-ICPMS				

SW3010MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7470-MERCURY

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL3841-3	CHAAP-19C-UGIA-DPT19-FF	03-MAY-18 09:35	04-MAY-18			16-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	P	TAL-MET-SW846-DISS				

SW3010-PREP	SW6010-ALUMINUM-DIS	SW6010-ANTIMONY-DIS
SW6010-ARSENIC-DIS	SW6010-BARIUM-DIS	SW6010-BERYLLIUM-DIS
SW6010-CADMIUM-DIS	SW6010-CALCIUM-DIS	SW6010-CHROMIUM-DIS
SW6010-COBALT-DIS	SW6010-COPPER-DIS	SW6010-IRON-DIS
SW6010-LEAD-DIS	SW6010-MAGNESIUM-DIS	SW6010-MANGANESE-DIS
SW6010-NICKEL-DIS	SW6010-POTASSIUM-DIS	SW6010-SELENIUM-DIS
SW6010-SILVER-DIS	SW6010-SODIUM-DIS	SW6010-THALLIUM-DIS
SW6010-VANADIUM-DIS	SW6010-ZINC-DIS	SW7470-MERCURY-DIS

AMH 5/4/18

Login Number: SL3841

Quote/Incoming: ATI-CORN-AAP

Account: ATI001 Web

ATI, Inc.

Project: ATI-CORN-AAP

Cornhusker Army Ammunition Plant

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL3841-4	CHAAP-19C-LGIA-DPT20	03-MAY-18 09:40	04-MAY-18			16-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	17-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	10-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	10-MAY-18	1L N-Amber Glass		
Aqueous	P	TAL-MET-SW846-ICPMS				

SW3010MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7470-MERCURY

SL3841-5	CHAAP-19C-LGIA-DPT20-FF	03-MAY-18 09:40	04-MAY-18			16-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	P	TAL-MET-SW846-DISS				

SW3010-PREP	SW6010-ALUMINUM-DIS	SW6010-ANTIMONY-DIS
SW6010-ARSENIC-DIS	SW6010-BARIUM-DIS	SW6010-BERYLLIUM-DIS
SW6010-CADMIUM-DIS	SW6010-CALCIUM-DIS	SW6010-CHROMIUM-DIS
SW6010-COBALT-DIS	SW6010-COPPER-DIS	SW6010-IRON-DIS
SW6010-LEAD-DIS	SW6010-MAGNESIUM-DIS	SW6010-MANGANESE-DIS
SW6010-NICKEL-DIS	SW6010-POTASSIUM-DIS	SW6010-SELENIUM-DIS
SW6010-SILVER-DIS	SW6010-SODIUM-DIS	SW6010-THALLIUM-DIS
SW6010-VANADIUM-DIS	SW6010-ZINC-DIS	SW7470-MERCURY-DIS

SL3841-6	CHAAP-19C-LGIA-DPT24	03-MAY-18 11:20	04-MAY-18			16-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	17-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	10-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	10-MAY-18	1L N-Amber Glass		
Aqueous	P	TAL-MET-SW846-ICPMS				

SW3010MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7470-MERCURY

SL3841-8	CHAAP-19C-UGIA-DPT23	03-MAY-18 11:40	04-MAY-18			16-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	17-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	10-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	10-MAY-18	1L N-Amber Glass		
Aqueous	P	TAL-MET-SW846-ICPMS				

SW3010MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7470-MERCURY

AMH 5/4/18

Login Number: SL3841

Quote/Incoming: ATI-CORN-AAP

Account: ATI001 Web

ATI, Inc.

Project: ATI-CORN-AAP

Cornhusker Army Ammunition Plant

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL3841-9	CHAAP-19C-UGIA-DPT23-FF	03-MAY-18 11:40	04-MAY-18			16-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	P	TAL-MET-SW846-DISS				

SW3010-PREP	SW6010-ALUMINUM-DIS	SW6010-ANTIMONY-DIS
SW6010-ARSENIC-DIS	SW6010-BARIUM-DIS	SW6010-BERYLLIUM-DIS
SW6010-CADMIUM-DIS	SW6010-CALCIUM-DIS	SW6010-CHROMIUM-DIS
SW6010-COBALT-DIS	SW6010-COPPER-DIS	SW6010-IRON-DIS
SW6010-LEAD-DIS	SW6010-MAGNESIUM-DIS	SW6010-MANGANESE-DIS
SW6010-NICKEL-DIS	SW6010-POTASSIUM-DIS	SW6010-SELENIUM-DIS
SW6010-SILVER-DIS	SW6010-SODIUM-DIS	SW6010-THALLIUM-DIS
SW6010-VANADIUM-DIS	SW6010-ZINC-DIS	SW7470-MERCURY-DIS

SL3841-10	CHAAP-19C-LGIA-DPT16	03-MAY-18 14:15	04-MAY-18		16-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW7196A-CRVI	04-MAY-18	250mL Plastic		
Aqueous	S	SW8260-S	17-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	10-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	10-MAY-18	1L N-Amber Glass		
Aqueous	P	TAL-MET-SW846-ICPMS				

SW3010MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7470-MERCURY

SL3841-11	CHAAP-19C-LGIA-DPT16-FF	03-MAY-18 14:15	04-MAY-18		16-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW7196A-CRVI	04-MAY-18	250mL Plastic		
Aqueous	P	TAL-MET-SW846-DISS				

SW3010-PREP	SW6010-ALUMINUM-DIS	SW6010-ANTIMONY-DIS
SW6010-ARSENIC-DIS	SW6010-BARIUM-DIS	SW6010-BERYLLIUM-DIS
SW6010-CADMIUM-DIS	SW6010-CALCIUM-DIS	SW6010-CHROMIUM-DIS
SW6010-COBALT-DIS	SW6010-COPPER-DIS	SW6010-IRON-DIS
SW6010-LEAD-DIS	SW6010-MAGNESIUM-DIS	SW6010-MANGANESE-DIS
SW6010-NICKEL-DIS	SW6010-POTASSIUM-DIS	SW6010-SELENIUM-DIS
SW6010-SILVER-DIS	SW6010-SODIUM-DIS	SW6010-THALLIUM-DIS
SW6010-VANADIUM-DIS	SW6010-ZINC-DIS	SW7470-MERCURY-DIS

SL3841-12	CHAAP-19C-LGIA-DPT116	03-MAY-18 12:00	04-MAY-18		16-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW7196A-CRVI	04-MAY-18	250mL Plastic		
Aqueous	S	SW8260-S	17-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	10-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	10-MAY-18	1L N-Amber Glass		
Aqueous	P	TAL-MET-SW846-ICPMS				

SW3010MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7470-MERCURY

AMH 5/4/18

Login Number: SL3841

Quote/Incoming: ATI-CORN-AAP

Account: ATI001 Web

ATI, Inc.

Project: ATI-CORN-AAP

Cornhusker Army Ammunition Plant

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL3841-13	CHAAP-19C-LGIA-DPT116-FF	03-MAY-18 12:00	04-MAY-18			16-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW7196A-CRVI	04-MAY-18	250mL Plastic		
Aqueous	P	TAL-MET-SW846-DISS				

SW3010-PREP	SW6010-ALUMINUM-DIS	SW6010-ANTIMONY-DIS
SW6010-ARSENIC-DIS	SW6010-BARIUM-DIS	SW6010-BERYLLIUM-DIS
SW6010-CADMIUM-DIS	SW6010-CALCIUM-DIS	SW6010-CHROMIUM-DIS
SW6010-COBALT-DIS	SW6010-COPPER-DIS	SW6010-IRON-DIS
SW6010-LEAD-DIS	SW6010-MAGNESIUM-DIS	SW6010-MANGANESE-DIS
SW6010-NICKEL-DIS	SW6010-POTASSIUM-DIS	SW6010-SELENIUM-DIS
SW6010-SILVER-DIS	SW6010-SODIUM-DIS	SW6010-THALLIUM-DIS
SW6010-VANADIUM-DIS	SW6010-ZINC-DIS	SW7470-MERCURY-DIS

SL3841-14	CHAAP-19C-UGIA-DPT15	03-MAY-18 14:20	04-MAY-18		16-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW7196A-CRVI	04-MAY-18	250mL Plastic		
Aqueous	S	SW8260-S	17-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	10-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	10-MAY-18	1L N-Amber Glass		
Aqueous	P	TAL-MET-SW846-ICPMS				

SW3010MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7470-MERCURY

SL3841-15	CHAAP-19C-UGIA-DPT15-FF	03-MAY-18 14:20	04-MAY-18		16-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW7196A-CRVI	04-MAY-18	250mL Plastic		
Aqueous	P	TAL-MET-SW846-DISS				

SW3010-PREP	SW6010-ALUMINUM-DIS	SW6010-ANTIMONY-DIS
SW6010-ARSENIC-DIS	SW6010-BARIUM-DIS	SW6010-BERYLLIUM-DIS
SW6010-CADMIUM-DIS	SW6010-CALCIUM-DIS	SW6010-CHROMIUM-DIS
SW6010-COBALT-DIS	SW6010-COPPER-DIS	SW6010-IRON-DIS
SW6010-LEAD-DIS	SW6010-MAGNESIUM-DIS	SW6010-MANGANESE-DIS
SW6010-NICKEL-DIS	SW6010-POTASSIUM-DIS	SW6010-SELENIUM-DIS
SW6010-SILVER-DIS	SW6010-SODIUM-DIS	SW6010-THALLIUM-DIS
SW6010-VANADIUM-DIS	SW6010-ZINC-DIS	SW7470-MERCURY-DIS

SL3841-16	CHAAP-19C-LGIA-DPT12	03-MAY-18 15:50	04-MAY-18		16-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW7196A-CRVI	04-MAY-18	250mL Plastic		
Aqueous	S	SW8260-S	17-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	10-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	10-MAY-18	1L N-Amber Glass		
Aqueous	P	TAL-MET-SW846-ICPMS				

SW3010MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7470-MERCURY

AMH 5/4/18

Katahdin ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

May. 04, 2018
03:40 PM

Login Number: SL3841 **Quote/Incoming:** ATI-CORN-AAP

Account: ATI001 Web
ATI, Inc.

Project: ATI-CORN-AAP
Cornhusker Army Ammunition Plant

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL3841-17	CHAAP-19C-LGIA-DPT12-FF	03-MAY-18 15:50	04-MAY-18			16-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW7196A-CRVI	04-MAY-18	250mL Plastic		
Aqueous	P	TAL-MET-SW846-DISS				

SW3010-PREP	SW6010-ALUMINUM-DIS	SW6010-ANTIMONY-DIS
SW6010-ARSENIC-DIS	SW6010-BARIUM-DIS	SW6010-BERYLLIUM-DIS
SW6010-CADMIUM-DIS	SW6010-CALCIUM-DIS	SW6010-CHROMIUM-DIS
SW6010-COBALT-DIS	SW6010-COPPER-DIS	SW6010-IRON-DIS
SW6010-LEAD-DIS	SW6010-MAGNESIUM-DIS	SW6010-MANGANESE-DIS
SW6010-NICKEL-DIS	SW6010-POTASSIUM-DIS	SW6010-SELENIUM-DIS
SW6010-SILVER-DIS	SW6010-SODIUM-DIS	SW6010-THALLIUM-DIS
SW6010-VANADIUM-DIS	SW6010-ZINC-DIS	SW7470-MERCURY-DIS

SL3841-18	CHAAP-19C-UGIA-DPT11	03-MAY-18 15:55	04-MAY-18		16-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	17-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	10-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	10-MAY-18	1L N-Amber Glass		
Aqueous	P	TAL-MET-SW846-ICPMS				

SW3010MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7470-MERCURY

SL3841-19	CHAAP-19C-UGIA-DPT11-FF	03-MAY-18 15:55	04-MAY-18		16-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	P	TAL-MET-SW846-DISS				

SW3010-PREP	SW6010-ALUMINUM-DIS	SW6010-ANTIMONY-DIS
SW6010-ARSENIC-DIS	SW6010-BARIUM-DIS	SW6010-BERYLLIUM-DIS
SW6010-CADMIUM-DIS	SW6010-CALCIUM-DIS	SW6010-CHROMIUM-DIS
SW6010-COBALT-DIS	SW6010-COPPER-DIS	SW6010-IRON-DIS
SW6010-LEAD-DIS	SW6010-MAGNESIUM-DIS	SW6010-MANGANESE-DIS
SW6010-NICKEL-DIS	SW6010-POTASSIUM-DIS	SW6010-SELENIUM-DIS
SW6010-SILVER-DIS	SW6010-SODIUM-DIS	SW6010-THALLIUM-DIS
SW6010-VANADIUM-DIS	SW6010-ZINC-DIS	SW7470-MERCURY-DIS

SL3841-20	CHAAP-EB-050318	03-MAY-18 16:15	04-MAY-18		16-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	17-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	10-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	10-MAY-18	1L N-Amber Glass		
Aqueous	P	TAL-MET-SW846-ICPMS				

SW3010MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7470-MERCURY

AMH 5/4/18

Total Samples: ***19*** ***Total Analyses:*** ***56***

SAMPLE DATA SUMMARY PACKAGE

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	The pre-digestion spiked sample recovery is not within control limits.
*	The duplicate sample analysis relative percent difference (RPD) is not within control limits.
B	Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.
A	The post-digestion spiked sample recovery is not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ) (previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.
J	The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).
Q	One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV).

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1 - pH H2 - DO H3 - sulfite H4 - residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

MCL	Maximum Contaminant Level	NL	No limit
NFL	No Free Liquid Present	FLP	Free Liquid Present
NOD	No Odor Detected	TON	Threshold Odor Number

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is 'qualified' because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-1
Client ID: CHAAP-TB-050318-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: P5552.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-1
Client ID: CHAAP-TB-050318-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: P5552.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		104.	%					
1,2-Dichloroethane-d4		107.	%					
Toluene-d8		103.	%					
P-Bromofluorobenzene		96.7	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-4
Client ID: CHAAP-19C-LGIA-DPT20
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1334.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-4
Client ID: CHAAP-19C-LGIA-DPT20
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1334.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		110.	%					
1,2-Dichloroethane-d4	*	126.	%					
Toluene-d8		98.9	%					
P-Bromofluorobenzene		99.9	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-6
Client ID: CHAAP-19C-LGIA-DPT24
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1335.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-6
Client ID: CHAAP-19C-LGIA-DPT24
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1335.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		109.	%					
1,2-Dichloroethane-d4	*	123.	%					
Toluene-d8		99.5	%					
P-Bromofluorobenzene		100.	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-8
Client ID: CHAAP-19C-UGIA-DPT23
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1336.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-8
Client ID: CHAAP-19C-UGIA-DPT23
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1336.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		110.	%					
1,2-Dichloroethane-d4	*	126.	%					
Toluene-d8		99.0	%					
P-Bromofluorobenzene		101.	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-10
Client ID: CHAAP-19C-LGIA-DPT16
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1337.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-10
Client ID: CHAAP-19C-LGIA-DPT16
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1337.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		109.	%					
1,2-Dichloroethane-d4	*	126.	%					
Toluene-d8		99.8	%					
P-Bromofluorobenzene		102.	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-12
Client ID: CHAAP-19C-LGIA-DPT116
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1338.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-12
Client ID: CHAAP-19C-LGIA-DPT116
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1338.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		109.	%					
1,2-Dichloroethane-d4	*	126.	%					
Toluene-d8		99.6	%					
P-Bromofluorobenzene		100.	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-14
Client ID: CHAAP-19C-UGIA-DPT15
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1339.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	J	0.91	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-14
Client ID: CHAAP-19C-UGIA-DPT15
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1339.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		109.	%					
1,2-Dichloroethane-d4	*	124.	%					
Toluene-d8		99.5	%					
P-Bromofluorobenzene		99.5	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-16
Client ID: CHAAP-19C-LGIA-DPT12
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1340.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-16
Client ID: CHAAP-19C-LGIA-DPT12
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1340.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		111.	%					
1,2-Dichloroethane-d4	*	125.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		101.	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-18
Client ID: CHAAP-19C-UGIA-DPT11
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1341.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-18
Client ID: CHAAP-19C-UGIA-DPT11
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1341.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		110.	%					
1,2-Dichloroethane-d4	*	125.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		102.	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-20
Client ID: CHAAP-EB-050318
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: P5553.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-20
Client ID: CHAAP-EB-050318
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: P5553.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	J	0.63	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		104.	%					
1,2-Dichloroethane-d4		106.	%					
Toluene-d8		103.	%					
P-Bromofluorobenzene		95.2	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG228421-2
Client ID: Method Blank Sample
Project:
SDG: SL3841
Lab File ID: D1331.D

Sample Date:
Received Date:
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG228421-2
Client ID: Method Blank Sample
Project:
SDG: SL3841
Lab File ID: D1331.D

Sample Date:
Received Date:
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		108.	%					
1,2-Dichloroethane-d4		119.	%					

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Report of Analytical Results

Client:
Lab ID: WG228421-2
Client ID: Method Blank Sample
Project:
SDG: SL3841
Lab File ID: D1331.D

Sample Date:
Received Date:
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		99.2	%					
P-Bromofluorobenzene		98.7	%					

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Report of Analytical Results

Client:
Lab ID: WG227763-2
Client ID: Method Blank Sample
Project:
SDG: SL3841
Lab File ID: P5548.D

Sample Date:
Received Date:
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client:
Lab ID: WG227763-2
Client ID: Method Blank Sample
Project:
SDG: SL3841
Lab File ID: P5548.D

Sample Date:
Received Date:
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		98.4	%					
1,2-Dichloroethane-d4		102.	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227763-2
Client ID: Method Blank Sample
Project:
SDG: SL3841
Lab File ID: P5548.D

Sample Date:
Received Date:
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		101.	%					
P-Bromofluorobenzene		96.5	%					

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** AQ
Lab Code: KAS **SDG:** SL3841

Client Sample ID	Lab Sample ID	Col. ID	BFB	#	DBF	#	DCA	#	TOL	#
CHAAP-TB-050318-DPT	SL3841-1		96.7		104.		107.		103.	
CHAAP-19C-LGIA-DPT16	SL3841-10		102.		109.		126.	*	99.8	
CHAAP-19C-LGIA-DPT11	SL3841-12		100.		109.		126.	*	99.6	
CHAAP-19C-UGIA-DPT15	SL3841-14		99.5		109.		124.	*	99.5	
CHAAP-19C-LGIA-DPT12	SL3841-16		101.		111.		125.	*	100.	
CHAAP-19C-UGIA-DPT11	SL3841-18		102.		110.		125.	*	100.	
CHAAP-EB-050318	SL3841-20		95.2		104.		106.		103.	
CHAAP-19C-LGIA-DPT20	SL3841-4		99.9		110.		126.	*	98.9	
CHAAP-19C-LGIA-DPT24	SL3841-6		100.		109.		123.	*	99.5	
CHAAP-19C-UGIA-DPT23	SL3841-8		101.		110.		126.	*	99.0	
Laboratory Control S	WG227763-1		104.		98.2		98.4		101.	
Method Blank Sample	WG227763-2		96.5		98.4		102.		101.	
Laboratory Control S	WG228421-1		101.		104.		110.		99.7	
Method Blank Sample	WG228421-2		98.7		108.		119.		99.2	

		QC Limits
TOL	TOLUENE-D8	89-120
DCA	1,2-DICHLOROETHANE-D4	81-120
DBF	DIBROMOFLUOROMETHANE	80-120
BFB	P-BROMOFLUOROBENZENE	85-120

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG228421-1
Client ID: LCS
Project:
SDG: SL3841
LCS File ID: D1329.D

Sample Date:
Received Date:
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	98.8	50.0	49.4	ug/L	78-125
1,1,1-Trichloroethane	98.8	50.0	49.4	ug/L	74-131
1,1,2,2-Tetrachloroethane	97.4	50.0	48.7	ug/L	71-121
Freon-113	85.6	50.0	42.8	ug/L	70-136
1,1,2-Trichloroethane	96.6	50.0	48.3	ug/L	80-120
1,1-Dichloroethane	104.	50.0	52.0	ug/L	77-125
1,1-Dichloroethene	96.0	50.0	48.0	ug/L	71-131
1,1-Dichloropropene	95.0	50.0	47.5	ug/L	79-125
1,2,3-Trichlorobenzene	98.0	50.0	49.0	ug/L	69-129
1,2,3-Trichloropropane	98.0	50.0	49.0	ug/L	73-122
1,2,4-Trichlorobenzene	98.8	50.0	49.4	ug/L	69-130
1,2,4-Trimethylbenzene	98.4	50.0	49.2	ug/L	76-124
1,2-Dibromo-3-Chloropropane	103.	50.0	51.7	ug/L	62-128
1,2-Dichlorobenzene	94.2	50.0	47.1	ug/L	80-120
1,2-Dichloroethane	100.	50.0	50.0	ug/L	73-128
1,2-Dichloropropane	97.0	50.0	48.5	ug/L	78-122
1,3,5-Trimethylbenzene	98.2	50.0	49.1	ug/L	75-124
1,3-Dichlorobenzene	94.0	50.0	47.0	ug/L	80-120
1,3-Dichloropropane	94.4	50.0	47.2	ug/L	80-120
1,4-Dichlorobenzene	91.8	50.0	45.9	ug/L	79-120
2,2-Dichloropropane	95.8	50.0	47.9	ug/L	60-139
2-Butanone	102.	50.0	50.9	ug/L	56-143
2-Chlorotoluene	96.4	50.0	48.2	ug/L	79-122
2-Hexanone	103.	50.0	51.6	ug/L	57-139
4-Chlorotoluene	97.6	50.0	48.8	ug/L	78-122
P-Isopropyltoluene	101.	50.0	50.7	ug/L	77-127
4-Methyl-2-Pentanone	104.	50.0	51.8	ug/L	67-130
Acetone	104.	50.0	52.0	ug/L	39-160
Benzene	93.8	50.0	46.9	ug/L	79-120
Bromobenzene	92.0	50.0	46.0	ug/L	80-120
Bromoform	94.8	50.0	47.4	ug/L	66-130
Bromomethane	100.	50.0	50.0	ug/L	53-141
Carbon Disulfide	97.6	50.0	48.8	ug/L	64-133
Carbon Tetrachloride	98.2	50.0	49.1	ug/L	72-136
Chlorobenzene	92.8	50.0	46.4	ug/L	82-120

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LCS Recovery Report

Client:
Lab ID: WG228421-1
Client ID: LCS
Project:
SDG: SL3841
LCS File ID: D1329.D

Sample Date:
Received Date:
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	98.0	50.0	49.0	ug/L	78-123
Dibromochloromethane	104.	50.0	51.9	ug/L	74-126
Chloroethane	114.	50.0	56.9	ug/L	60-138
Chloroform	98.4	50.0	49.2	ug/L	79-124
Chloromethane	112.	50.0	56.2	ug/L	50-139
cis-1,2-Dichloroethene	93.6	50.0	46.8	ug/L	78-123
cis-1,3-Dichloropropene	99.8	50.0	49.9	ug/L	75-124
Dibromomethane	102.	50.0	51.0	ug/L	79-123
Bromodichloromethane	104.	50.0	52.2	ug/L	79-125
Dichlorodifluoromethane	127.	50.0	63.6	ug/L	32-152
Ethylbenzene	94.8	50.0	47.4	ug/L	79-121
1,2-Dibromoethane	98.6	50.0	49.3	ug/L	77-121
Hexachlorobutadiene	103.	50.0	51.6	ug/L	66-134
Isopropylbenzene	102.	50.0	51.1	ug/L	72-131
Methyl tert-butyl Ether	96.6	50.0	48.3	ug/L	71-124
Methylene Chloride	94.0	50.0	47.0	ug/L	74-124
m+p-Xylenes	96.1	100.	96.1	ug/L	80-121
Naphthalene	91.4	50.0	45.7	ug/L	61-128
N-Butylbenzene	106.	50.0	53.2	ug/L	75-128
N-Propylbenzene	95.8	50.0	47.9	ug/L	76-126
o-Xylene	98.0	50.0	49.0	ug/L	78-122
sec-Butylbenzene	100.	50.0	50.2	ug/L	77-126
Styrene	99.6	50.0	49.8	ug/L	78-123
tert-Butylbenzene	98.8	50.0	49.4	ug/L	78-124
Tetrachloroethene	91.0	50.0	45.5	ug/L	74-129
Toluene	92.6	50.0	46.3	ug/L	80-121
trans-1,2-Dichloroethene	91.4	50.0	45.7	ug/L	75-124
trans-1,3-Dichloropropene	107.	50.0	53.6	ug/L	73-127
Trichloroethene	94.6	50.0	47.3	ug/L	79-123
Trichlorofluoromethane	102.	50.0	51.0	ug/L	65-141
Vinyl Chloride	107.	50.0	53.7	ug/L	58-137
Dibromofluoromethane	104.				80-120
1,2-Dichloroethane-d4	110.				81-120
Toluene-d8	99.7				89-120
P-Bromofluorobenzene	101.				85-120

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LCS Recovery Report

Client:
Lab ID: WG227763-1
Client ID: LCS
Project:
SDG: SL3841
LCS File ID: P5546.D

Sample Date:
Received Date:
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	91.8	50.0	45.9	ug/L	78-125
1,1,1-Trichloroethane	96.6	50.0	48.3	ug/L	74-131
1,1,2,2-Tetrachloroethane	102.	50.0	50.8	ug/L	71-121
Freon-113	95.2	50.0	47.6	ug/L	70-136
1,1,2-Trichloroethane	98.6	50.0	49.3	ug/L	80-120
1,1-Dichloroethane	100.	50.0	50.2	ug/L	77-125
1,1-Dichloroethene	92.2	50.0	46.1	ug/L	71-131
1,1-Dichloropropene	95.2	50.0	47.6	ug/L	79-125
1,2,3-Trichlorobenzene	111.	50.0	55.4	ug/L	69-129
1,2,3-Trichloropropane	96.8	50.0	48.4	ug/L	73-122
1,2,4-Trichlorobenzene	95.6	50.0	47.8	ug/L	69-130
1,2,4-Trimethylbenzene	96.8	50.0	48.4	ug/L	76-124
1,2-Dibromo-3-Chloropropane	102.	50.0	51.2	ug/L	62-128
1,2-Dichlorobenzene	96.0	50.0	48.0	ug/L	80-120
1,2-Dichloroethane	93.8	50.0	46.9	ug/L	73-128
1,2-Dichloropropane	100.	50.0	50.1	ug/L	78-122
1,3,5-Trimethylbenzene	96.2	50.0	48.1	ug/L	75-124
1,3-Dichlorobenzene	96.8	50.0	48.4	ug/L	80-120
1,3-Dichloropropane	95.8	50.0	47.9	ug/L	80-120
1,4-Dichlorobenzene	94.0	50.0	47.0	ug/L	79-120
2,2-Dichloropropane	106.	50.0	52.8	ug/L	60-139
2-Butanone	115.	50.0	57.3	ug/L	56-143
2-Chlorotoluene	93.4	50.0	46.7	ug/L	79-122
2-Hexanone	114.	50.0	56.8	ug/L	57-139
4-Chlorotoluene	92.0	50.0	46.0	ug/L	78-122
P-Isopropyltoluene	98.2	50.0	49.1	ug/L	77-127
4-Methyl-2-Pentanone	112.	50.0	55.9	ug/L	67-130
Acetone	110.	50.0	55.2	ug/L	39-160
Benzene	97.0	50.0	48.5	ug/L	79-120
Bromobenzene	94.0	50.0	47.0	ug/L	80-120
Bromoform	107.	50.0	53.6	ug/L	66-130
Bromomethane	114.	50.0	56.9	ug/L	53-141
Carbon Disulfide	91.4	50.0	45.7	ug/L	64-133
Carbon Tetrachloride	98.4	50.0	49.2	ug/L	72-136
Chlorobenzene	96.0	50.0	48.0	ug/L	82-120

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LCS Recovery Report

Client:
Lab ID: WG227763-1
Client ID: LCS
Project:
SDG: SL3841
LCS File ID: P5546.D

Sample Date:
Received Date:
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	96.0	50.0	48.0	ug/L	78-123
Dibromochloromethane	100.	50.0	50.2	ug/L	74-126
Chloroethane	99.2	50.0	49.6	ug/L	60-138
Chloroform	98.0	50.0	49.0	ug/L	79-124
Chloromethane	105.	50.0	52.3	ug/L	50-139
cis-1,2-Dichloroethene	98.0	50.0	49.0	ug/L	78-123
cis-1,3-Dichloropropene	101.	50.0	50.3	ug/L	75-124
Dibromomethane	106.	50.0	52.8	ug/L	79-123
Bromodichloromethane	103.	50.0	51.4	ug/L	79-125
Dichlorodifluoromethane	92.0	50.0	46.0	ug/L	32-152
Ethylbenzene	96.4	50.0	48.2	ug/L	79-121
1,2-Dibromoethane	108.	50.0	53.8	ug/L	77-121
Hexachlorobutadiene	90.8	50.0	45.4	ug/L	66-134
Isopropylbenzene	98.4	50.0	49.2	ug/L	72-131
Methyl tert-butyl Ether	98.2	50.0	49.1	ug/L	71-124
Methylene Chloride	93.0	50.0	46.5	ug/L	74-124
m+p-Xylenes	97.2	100.	97.2	ug/L	80-121
Naphthalene	107.	50.0	53.5	ug/L	61-128
N-Butylbenzene	99.4	50.0	49.7	ug/L	75-128
N-Propylbenzene	95.4	50.0	47.7	ug/L	76-126
o-Xylene	98.8	50.0	49.4	ug/L	78-122
sec-Butylbenzene	97.4	50.0	48.7	ug/L	77-126
Styrene	102.	50.0	51.2	ug/L	78-123
tert-Butylbenzene	96.0	50.0	48.0	ug/L	78-124
Tetrachloroethene	96.8	50.0	48.4	ug/L	74-129
Toluene	98.8	50.0	49.4	ug/L	80-121
trans-1,2-Dichloroethene	94.4	50.0	47.2	ug/L	75-124
trans-1,3-Dichloropropene	96.8	50.0	48.4	ug/L	73-127
Trichloroethene	96.6	50.0	48.3	ug/L	79-123
Trichlorofluoromethane	94.6	50.0	47.3	ug/L	65-141
Vinyl Chloride	101.	50.0	50.7	ug/L	58-137
Dibromofluoromethane	98.2				80-120
1,2-Dichloroethane-d4	98.4				81-120
Toluene-d8	101.				89-120
P-Bromofluorobenzene	104.				85-120

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : D1331.D
Instrument ID : GCMS-D
Heated Purge : No

SDG : SL3841
Lab Sample ID : WG228421-2
Date Analyzed : 16-MAY-18
Time Analyzed : 14:47

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG228421-1	D1329.D	05/16/18	13:32
CHAAP-19C-LGIA-DPT20	SL3841-4	D1334.D	05/16/18	16:34
CHAAP-19C-LGIA-DPT24	SL3841-6	D1335.D	05/16/18	17:10
CHAAP-19C-UGIA-DPT23	SL3841-8	D1336.D	05/16/18	17:45
CHAAP-19C-LGIA-DPT16	SL3841-10	D1337.D	05/16/18	18:21
CHAAP-19C-LGIA-DPT116	SL3841-12	D1338.D	05/16/18	18:56
CHAAP-19C-UGIA-DPT15	SL3841-14	D1339.D	05/16/18	19:32
CHAAP-19C-LGIA-DPT12	SL3841-16	D1340.D	05/16/18	20:08
CHAAP-19C-UGIA-DPT11	SL3841-18	D1341.D	05/16/18	20:43

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : P5548.D
Instrument ID : GCMS-P
Heated Purge : No

SDG : SL3841
Lab Sample ID : WG227763-2
Date Analyzed : 07-MAY-18
Time Analyzed : 10:51

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG227763-1	P5546.D	05/07/18	09:38
CHAAP-TB-050318-DPT	SL3841-1	P5552.D	05/07/18	13:08
CHAAP-EB-050318	SL3841-20	P5553.D	05/07/18	13:42

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB173A.D
Instrument ID : GCMS-D

SDG : SL3841
Date Analyzed : 10-MAY-18
Time Analyzed : 07:31
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	20.5		
75	30.0 - 60.0% of mass 95	50.9		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.3		
173	Less than 2.0% of mass 174	0.4	0.51	1
174	Greater than 50.0% of mass 95	73.1		
175	5.0 - 9.0% of mass 174	4.9	6.77	1
176	95.0 - 101.0% of mass 174	70.3	96.24	1
177	5.0 - 9.0% of mass 176	5.1	7.24	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG227999-4	D1259.D	05/10/18	08:36
Initial Calibration	WG227999-3	D1260.D	05/10/18	09:12
Initial Calibration	WG227999-2	D1261.D	05/10/18	09:47
Initial Calibration	WG227999-1	D1262.D	05/10/18	10:22
Initial Calibration	WG227999-6	D1263.D	05/10/18	10:58
Initial Calibration	WG227999-5	D1264.D	05/10/18	11:34

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB179A.D
Instrument ID : GCMS-D

SDG : SL3841
Date Analyzed : 16-MAY-18
Time Analyzed : 12:14
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	23.3		
75	30.0 - 60.0% of mass 95	55.0		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	7.2		
173	Less than 2.0% of mass 174	0.0	0.0	1
174	Greater than 50.0% of mass 95	67.0		
175	5.0 - 9.0% of mass 174	5.3	7.95	1
176	95.0 - 101.0% of mass 174	67.0	100.09	1
177	5.0 - 9.0% of mass 176	5.1	7.58	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG228421-4	D1328.D	05/16/18	12:40
Laboratory Control S	WG228421-1	D1329.D	05/16/18	13:32
Method Blank Sample	WG228421-2	D1331.D	05/16/18	14:47
CHAAP-19C-LGIA-DPT20	SL3841-4	D1334.D	05/16/18	16:34
CHAAP-19C-LGIA-DPT24	SL3841-6	D1335.D	05/16/18	17:10
CHAAP-19C-UGIA-DPT23	SL3841-8	D1336.D	05/16/18	17:45
CHAAP-19C-LGIA-DPT16	SL3841-10	D1337.D	05/16/18	18:21
CHAAP-19C-LGIA-DPT116	SL3841-12	D1338.D	05/16/18	18:56
CHAAP-19C-UGIA-DPT15	SL3841-14	D1339.D	05/16/18	19:32
CHAAP-19C-LGIA-DPT12	SL3841-16	D1340.D	05/16/18	20:08
CHAAP-19C-UGIA-DPT11	SL3841-18	D1341.D	05/16/18	20:43
Continuing Calibrati	WG228421-5	D1345.D	05/16/18	23:06

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : PB018A.D
Instrument ID : GCMS-P

SDG : SL3841
Date Analyzed : 03-MAY-18
Time Analyzed : 12:30
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	22.6		
75	30.0 - 60.0% of mass 95	56.0		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	5.6		
173	Less than 2.0% of mass 174	0.8	1.02	1
174	Greater than 50.0% of mass 95	76.6		
175	5.0 - 9.0% of mass 174	5.2	6.78	1
176	95.0 - 101.0% of mass 174	73.1	95.46	1
177	5.0 - 9.0% of mass 176	5.3	7.29	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG227568-4	P5508.D	05/03/18	12:56
Initial Calibration	WG227568-3	P5509.D	05/03/18	13:30
Initial Calibration	WG227568-2	P5510.D	05/03/18	14:04
Initial Calibration	WG227568-1	P5511.D	05/03/18	14:39
Initial Calibration	WG227568-6	P5512.D	05/03/18	15:13
Initial Calibration	WG227568-5	P5513.D	05/03/18	15:47

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : PB021A.D
Instrument ID : GCMS-P

SDG : SL3841
Date Analyzed : 07-MAY-18
Time Analyzed : 07:45
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	21.3		
75	30.0 - 60.0% of mass 95	58.4		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.8		
173	Less than 2.0% of mass 174	0.2	0.19	1
174	Greater than 50.0% of mass 95	88.5		
175	5.0 - 9.0% of mass 174	6.9	7.75	1
176	95.0 - 101.0% of mass 174	86.3	97.50	1
177	5.0 - 9.0% of mass 176	6.2	7.21	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG227763-4	P5545.D	05/07/18	08:50
Laboratory Control S	WG227763-1	P5546.D	05/07/18	09:38
Method Blank Sample	WG227763-2	P5548.D	05/07/18	10:51
CHAAP-TB-050318-DPT	SL3841-1	P5552.D	05/07/18	13:08
CHAAP-EB-050318	SL3841-20	P5553.D	05/07/18	13:42
Continuing Calibrati	WG227763-5	P5562.D	05/07/18	18:51

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SL3841
Project : Cornhusker Army Ammunition Plant **Instrument ID:** GCMS-D
Lab File IDs : D1262.d D1261.d D1260.d D1259.d D1264.d D1263.d **Column ID:**
Calibration Date(s): 10-MAY-18 08:36 10-MAY-18 11:34

	1.0000 Level 1	5.0000 Level 2	20.0000 Level 3	50.0000 Level 4	100.0000 Level 5	150.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Dichlorodifluoromethane	0.56036	0.59912	0.62483	0.60950	0.62453	0.61277	AVG		0.60519		3.96777	15.00000	O
Chloromethane	0.71127	0.68264	0.67802	0.59645	0.63672	0.59762	AVG		0.65045		7.33830	15.00000	O
Vinyl chloride	0.46959	0.49687	0.51239	0.48848	0.56664	0.51577	AVG		0.50829		6.52407	15.00000	O
Bromomethane	0.30260	0.26788	0.26498	0.23963	0.24674	0.25289	AVG		0.26245		8.53203	15.00000	O
Chloroethane	0.23847	0.26206	0.25226	0.22731	0.18302	+++++	AVG		0.23262		13.2063	15.00000	O
Trichlorofluoromethane	0.76041	0.78015	0.80338	0.79947	0.79324	0.79504	AVG		0.78861		2.01768	15.00000	O
1,1-Dichloroethene	0.34469	0.32839	0.33955	0.33016	0.34879	0.33647	AVG		0.33801		2.36567	15.00000	O
Carbon Disulfide	0.99826	0.97103	1.06246	1.03232	1.12397	1.08371	AVG		1.04529		5.38727	15.00000	O
Freon-113	0.30122	0.29262	0.30001	0.28888	0.30027	0.29087	AVG		0.29565		1.84828	15.00000	O
Methylene Chloride	0.61362	0.55548	0.57546	0.53776	0.55687	0.54615	AVG		0.56422		4.83685	15.00000	O
Acetone	0.17382	0.14952	0.15679	0.15230	0.15231	0.15542	AVG		0.15669		5.59790	15.00000	O
trans-1,2-Dichloroethene	0.53235	0.50919	0.52822	0.49421	0.53192	0.50130	AVG		0.51620		3.25004	15.00000	O
Methyl tert-butyl ether	1.17857	1.21878	1.34740	1.37229	1.46092	1.43232	AVG		1.33505		8.53040	15.00000	O
1,1-Dichloroethane	0.96520	0.94646	0.98243	0.94643	0.99564	0.95460	AVG		0.96513		2.09263	15.00000	O
cis-1,2-Dichloroethene	0.54551	0.52174	0.56593	0.53592	0.57367	0.55414	AVG		0.54948		3.49762	15.00000	O
2,2-Dichloropropane	0.51306	0.56999	0.66803	0.68445	0.69207	0.68747	AVG		0.63584		11.9021	15.00000	O
Bromochloromethane	0.25010	0.27752	0.28551	0.27723	0.28805	0.24706	AVG		0.27091		6.58674	15.00000	O
Chloroform	1.04357	0.98020	1.02330	0.98855	1.03325	1.00142	AVG		1.01172		2.51944	15.00000	O
Carbon Tetrachloride	0.37895	0.39537	0.44336	0.44346	0.46738	0.45689	AVG		0.43090		8.22438	15.00000	O
1,1,1-Trichloroethane	0.78735	0.78923	0.84489	0.82921	0.88442	0.85946	AVG		0.83243		4.65205	15.00000	O
1,1-Dichloropropene	0.43243	0.43097	0.47757	0.45493	0.48549	0.46283	AVG		0.45737		4.94117	15.00000	O
2-Butanone	0.21658	0.23388	0.24827	0.25015	0.25362	0.25502	AVG		0.24292		6.15404	15.00000	O
Benzene	1.19928	1.19823	1.27774	1.22214	1.26810	1.23664	AVG		1.23369		2.73880	15.00000	O
1,2-Dichloroethane	0.59710	0.48606	0.51110	0.51053	0.49204	0.49744	AVG		0.51571		7.96933	15.00000	O
Trichloroethene	0.33988	0.33083	0.34805	0.33016	0.34010	0.32904	AVG		0.33634		2.24769	15.00000	O
Dibromomethane	0.21127	0.21183	0.23563	0.23446	0.23435	0.23663	AVG		0.22736		5.40021	15.00000	O
1,2-Dichloropropane	0.30665	0.31790	0.34807	0.33817	0.34525	0.34515	AVG		0.33353		5.14493	15.00000	O
Bromodichloromethane	0.43827	0.41371	0.47751	0.46910	0.48560	0.48922	AVG		0.46224		6.47849	15.00000	O
cis-1,3-dichloropropene	0.40927	0.46214	0.57360	0.58801	0.60037	0.59327	AVG		0.53778		15.1155	15.00000	W
Toluene	0.76506	0.74235	0.77132	0.74148	0.76806	0.73442	AVG		0.75378		2.13553	15.00000	O
4-methyl-2-pentanone	0.26774	0.29231	0.32726	0.32637	0.30872	0.30419	AVG		0.30443		7.36532	15.00000	O
Tetrachloroethene	0.26361	0.27417	0.27963	0.26259	0.28530	0.27048	AVG		0.27263		3.27508	15.00000	O
trans-1,3-Dichloropropene	0.35692	0.40341	0.49142	0.51215	0.51535	0.51716	AVG		0.46607		14.7546	15.00000	O
1,1,2-Trichloroethane	0.26522	0.25564	0.26624	0.27058	0.26863	0.26663	AVG		0.26549		1.95539	15.00000	O
Dibromochloromethane	0.30045	0.33006	0.38445	0.40073	0.41646	0.42129	AVG		0.37557		13.1454	15.00000	O
1,3-Dichloropropane	0.57494	0.59960	0.63036	0.61601	0.62439	0.62201	AVG		0.61122		3.37716	15.00000	O
1,2-Dibromoethane	0.29121	0.29925	0.32787	0.33305	0.33514	0.33418	AVG		0.32012		6.12463	15.00000	O

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

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ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3841
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-D
Lab File IDs : D1262.d D1261.d D1260.d D1259.d D1264.d D1263.d
Column ID:
Calibration Date(s): 10-MAY-18 08:36 10-MAY-18 11:34

2-Hexanone	0.17592	0.21419	0.24851	0.25061	0.24841	0.24695	AVG		0.23077		13.0938	15.00000	O
Chlorobenzene	0.94896	0.92088	0.94262	0.89588	0.93169	0.90524	AVG		0.92421		2.25981	15.00000	O
Ethylbenzene	1.53365	1.56731	1.65724	1.56248	1.61363	1.56803	AVG		1.58372		2.79162	15.00000	O
1,1,1,2-Tetrachloroethane	0.28742	0.30973	0.34276	0.33853	0.35068	0.34685	AVG		0.32933		7.64384	15.00000	O
m+p-Xylenes	1.11930	1.22345	1.27593	1.20484	1.22419	1.17647	AVG		1.20403		4.37803	15.00000	O
o-Xylene	1.03413	1.15571	1.29155	1.24563	1.29555	1.26663	AVG		1.21487		8.40901	15.00000	O
Styrene	0.72024	0.89322	0.98448	0.96404	0.99464	0.95801	AVG		0.91910		11.2786	15.00000	O
Bromoform	1584	9268	45859	120673	252742	364795	LNR	0.02359	0.25784		0.99968	0.99000	O
Isopropylbenzene	2.17850	2.61226	2.81289	2.72321	2.87585	2.72617	AVG		2.65481		9.41391	15.00000	O
Bromobenzene	0.75667	0.73016	0.76879	0.73878	0.76032	0.73115	AVG		0.74765		2.19406	15.00000	O
N-Propylbenzene	3.29934	3.43179	3.63045	3.44994	3.61382	3.40826	AVG		3.47227		3.66998	15.00000	O
1,1,2,2-Tetrachloroethane	0.85905	0.85152	0.88887	0.86825	0.88535	0.86536	AVG		0.86973		1.68771	15.00000	O
1,3,5-Trimethylbenzene	2.06442	2.25303	2.42670	2.33047	2.44030	2.30345	AVG		2.30306		5.96370	15.00000	O
2-Chlorotoluene	1.97476	2.02601	2.17288	2.08126	2.16779	2.05598	AVG		2.07978		3.78004	15.00000	O
1,2,3-Trichloropropane	0.75585	0.73651	0.76927	0.75552	0.74559	0.73112	AVG		0.74898		1.87631	15.00000	O
4-Chlorotoluene	2.13480	2.15903	2.31262	2.19625	2.27703	2.17938	AVG		2.20985		3.16148	15.00000	O
tert-Butylbenzene	1.84017	2.12417	2.30255	2.21466	2.31209	2.21065	AVG		2.16738		8.05122	15.00000	O
1,2,4-Trimethylbenzene	2.04309	2.33581	2.54040	2.41743	2.55079	2.42936	AVG		2.38615		7.81732	15.00000	O
P-Isopropyltoluene	1.82971	2.14413	2.36353	2.27462	2.40797	2.30971	AVG		2.22161		9.54932	15.00000	O
1,3-Dichlorobenzene	1.37362	1.31865	1.35917	1.29679	1.35357	1.29820	AVG		1.33333		2.48399	15.00000	O
1,4-Dichlorobenzene	1.50533	1.35595	1.40068	1.33379	1.38029	1.32567	AVG		1.38362		4.76389	15.00000	O
N-Butylbenzene	1.81494	1.96843	2.16719	2.10347	2.22662	2.14011	AVG		2.07013		7.33830	15.00000	O
sec-Butylbenzene	2.44542	2.68142	2.87797	2.75294	2.90061	2.74913	AVG		2.73458		6.01129	15.00000	O
1,2-Dichlorobenzene	1.21625	1.20840	1.30227	1.26609	1.31735	1.27885	AVG		1.26487		3.51843	15.00000	O
1,2-Dibromo-3-Chloropropane	0.11325	0.11876	0.13743	0.14316	0.15391	0.16240	AVG		0.13815		13.9524	15.00000	O
Hexachlorobutadiene	0.33751	0.28488	0.29239	0.27408	0.30171	0.29236	AVG		0.29715		7.33877	15.00000	O
1,2,4-Trichlorobenzene	0.68629	0.68828	0.75962	0.74157	0.80620	0.78164	AVG		0.74393		6.57699	15.00000	O
Naphthalene	5588	33699	172641	424409	938571	1336967	LNR	0.02224	1.84187		0.99939	0.99000	O
1,2,3-Trichlorobenzene	0.55970	0.58317	0.62336	0.60235	0.64596	0.63136	AVG		0.60765		5.30849	15.00000	O
Dibromofluoromethane	0.59327	0.58023	0.58757	0.58775	0.58840	0.58990	AVG		0.58785		0.72990	15.00000	
1,2-Dichloroethane-D4	0.76439	0.74846	0.73661	0.74720	0.71646	0.74655	AVG		0.74328		2.13794	15.00000	
Toluene-D8	1.21612	1.19459	1.22020	1.22926	1.22849	1.22746	AVG		1.21935		1.08305	15.00000	
P-Bromofluorobenzene	0.48224	0.47486	0.49316	0.48863	0.48436	0.49716	AVG		0.48673		1.64465	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

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ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3841
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-P
Lab File IDs : P5511a.D P5510a.D P5509a.D P5508a.D P5513a.D P5512a.D
Column ID:
Calibration Date(s): 03-MAY-18 12:56 03-MAY-18 15:47

	1.0000 Level 1	5.0000 Level 2	20.0000 Level 3	50.0000 Level 4	100.0000 Level 5	150.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Dichlorodifluoromethane	0.48415	0.45282	0.39107	0.43996	0.41195	0.40756	AVG		0.43125		7.95758	15.00000	O
Chloromethane	0.46988	0.42974	0.37716	0.40724	0.37963	0.41423	AVG		0.41298		8.35157	15.00000	O
Vinyl chloride	0.49456	0.49536	0.40340	0.45136	0.41679	0.44827	AVG		0.45162		8.46432	15.00000	O
Bromomethane	3898	16615	79029	211364	566905	842644	QUA	0.02063	5.10911	-1.54031	0.99945	0.99000	O
Chloroethane	0.30946	0.27357	0.23622	0.24417	0.21907	0.23431	AVG		0.25280		13.0845	15.00000	O
Trichlorofluoromethane	0.93088	0.84439	0.71426	0.80644	0.74433	0.76347	AVG		0.80063		9.82262	15.00000	O
1,1-Dichloroethene	0.32240	0.39978	0.31812	0.33055	0.30350	0.32441	AVG		0.33313		10.1741	15.00000	O
Freon-113	0.32302	0.30775	0.31238	0.33618	0.32405	0.32080	AVG		0.32070		3.09707	15.00000	O
Carbon Disulfide	1.02531	1.24786	1.05788	1.17585	1.08533	1.16717	AVG		1.12657		7.47525	15.00000	O
Methylene Chloride	0.46811	0.46967	0.40581	0.42344	0.39818	0.41004	AVG		0.42921		7.41304	15.00000	O
Acetone	0.09783	0.11349	0.10274	0.10905	0.09612	0.09910	AVG		0.10305		6.66596	15.00000	O
trans-1,2-Dichloroethene	0.34327	0.48236	0.38656	0.40457	0.38841	0.39941	AVG		0.40076		11.3439	15.00000	O
Methyl tert-butyl ether	1.01118	1.22205	1.19149	1.24489	1.19014	1.17513	AVG		1.17248		7.07431	15.00000	O
1,1-Dichloroethane	0.69374	0.86030	0.76181	0.78712	0.73922	0.76436	AVG		0.76776		7.20017	15.00000	O
cis-1,2-Dichloroethene	0.37549	0.46083	0.42582	0.43739	0.43334	0.44208	AVG		0.42916		6.71034	15.00000	O
2,2-Dichloropropane	0.45890	0.59293	0.56724	0.59901	0.51563	0.51090	AVG		0.54077		10.1425	15.00000	O
Bromochloromethane	0.18939	0.21069	0.19185	0.19921	0.17751	0.17577	AVG		0.19074		6.92362	15.00000	O
Chloroform	0.67412	0.83030	0.73054	0.77353	0.74782	0.76352	AVG		0.75331		6.83652	15.00000	O
Carbon Tetrachloride	0.27668	0.37507	0.35325	0.36074	0.36644	0.36628	AVG		0.34975		10.4395	15.00000	O
1,1,1-Trichloroethane	0.57152	0.75593	0.66477	0.69426	0.66901	0.68455	AVG		0.67334		8.87212	15.00000	O
2-Butanone	0.13804	0.17748	0.17332	0.18002	0.16381	0.16944	AVG		0.16702		9.17409	15.00000	O
1,1-Dichloropropene	0.34138	0.42390	0.36893	0.37558	0.37918	0.38933	AVG		0.37972		7.11343	15.00000	O
Benzene	0.89113	1.18125	1.04885	1.05323	1.06047	1.08477	AVG		1.05328		8.87923	15.00000	O
1,2-Dichloroethane	0.43322	0.43964	0.40234	0.40003	0.39405	0.40096	AVG		0.41171		4.72817	15.00000	O
Trichloroethene	0.23496	0.28491	0.25344	0.25631	0.25729	0.27065	AVG		0.25959		6.50084	15.00000	O
Dibromomethane	0.13465	0.16481	0.15942	0.15931	0.16224	0.16153	AVG		0.15699		7.09038	15.00000	O
1,2-Dichloropropane	0.23187	0.27314	0.26261	0.26707	0.27209	0.28466	AVG		0.26524		6.76588	15.00000	O
Bromodichloromethane	0.30356	0.37567	0.36134	0.37422	0.37479	0.38973	AVG		0.36322		8.41857	15.00000	O
cis-1,3-dichloropropene	0.33747	0.44867	0.47483	0.48153	0.47911	0.50618	AVG		0.45463		13.2522	15.00000	O
Toluene	0.58715	0.72063	0.66125	0.65692	0.66076	0.68683	AVG		0.66226		6.64541	15.00000	O
Tetrachloroethene	0.19198	0.22640	0.19547	0.19938	0.19782	0.20180	AVG		0.20214		6.10876	15.00000	O
4-methyl-2-pentanone	0.16676	0.23088	0.24317	0.24161	0.23658	0.24157	AVG		0.22676		13.1153	15.00000	O
trans-1,3-Dichloropropene	9096	69335	288952	778870	1702360	2431609	LNR	0.02365	0.45292		0.99927	0.99000	O
1,1,2-Trichloroethane	4369	35212	140800	346680	780934	1104065	LNR	0.01782	0.20554		0.99942	0.99000	O
Dibromochloromethane	0.21896	0.25566	0.24562	0.26249	0.26592	0.27393	AVG		0.25376		7.70536	15.00000	O
1,3-Dichloropropane	0.42370	0.48710	0.46560	0.47138	0.46456	0.47641	AVG		0.46479		4.67999	15.00000	O
1,2-Dibromoethane	0.20405	0.25019	0.24259	0.25028	0.24915	0.25297	AVG		0.24154		7.73740	15.00000	O

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3841
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-P
Lab File IDs : P5511a.D P5510a.D P5509a.D P5508a.D P5513a.D P5512a.D
Column ID:
Calibration Date(s): 03-MAY-18 12:56 03-MAY-18 15:47

2-Hexanone	0.10673	0.15002	0.15829	0.16489	0.16035	0.16158	AVG		0.15031		14.5869(	15.00000	O
Chlorobenzene	0.66630	0.80756	0.73688	0.76033	0.75762	0.76227	AVG		0.74849		6.20723	15.00000	O
Ethylbenzene	0.35921	0.44476	0.41083	0.41509	0.41168	0.42514	AVG		0.41112		6.91355	15.00000	O
1,1,1,2-Tetrachloroethane	5661	46537	180453	458484	1021606	1495615	LNR	0.01852	0.26450		0.99914	0.99000	O
m+p-Xylenes	0.41915	0.54476	0.49159	0.51112	0.51119	0.52024	AVG		0.49968		8.61714	15.00000	O
o-Xylene	0.36541	0.51989	0.48138	0.49070	0.49966	0.51270	AVG		0.47829		11.9293(	15.00000	O
Styrene	0.58132	0.86367	0.82079	0.85577	0.86085	0.88201	AVG		0.81074		14.0799-	15.00000	O
Bromoform	0.13656	0.17364	0.17141	0.18554	0.19897	0.20559	AVG		0.17862		13.7939(	15.00000	O
Isopropylbenzene	1.75498	2.45866	2.19300	2.13560	2.10859	2.04916	AVG		2.11666		10.7439:	15.00000	O
Bromobenzene	0.51351	0.59805	0.55527	0.54169	0.56339	0.55985	AVG		0.55530		4.99461	15.00000	O
N-Propylbenzene	2.27628	2.96486	2.66605	2.59267	2.48369	2.33070	AVG		2.55237		9.83042	15.00000	O
1,1,2,2-Tetrachloroethane	0.50673	0.60137	0.55660	0.54313	0.53938	0.54729	AVG		0.54908		5.59363	15.00000	O
2-Chlorotoluene	1.39419	1.71319	1.59475	1.54149	1.53444	1.51623	AVG		1.54905		6.73115	15.00000	O
1,2,3-Trichloropropane	0.47172	0.52817	0.50976	0.49702	0.50169	0.51366	AVG		0.50367		3.77330	15.00000	O
1,3,5-Trimethylbenzene	1.44491	1.99231	1.89669	1.86215	1.83349	1.80854	AVG		1.80635		10.42307	15.00000	O
4-Chlorotoluene	1.49906	1.83507	1.71234	1.64142	1.62500	1.59456	AVG		1.65124		6.88809	15.00000	O
tert-Butylbenzene	1.42646	1.92423	1.77374	1.76359	1.79673	1.77918	AVG		1.74399		9.54672	15.00000	O
1,2,4-Trimethylbenzene	1.49761	2.10980	1.94838	1.91693	1.90177	1.83704	AVG		1.86859		10.8786(	15.00000	O
sec-Butylbenzene	1.89856	2.55893	2.25977	2.23925	2.18238	2.08922	AVG		2.20469		9.88054	15.00000	O
P-Isopropyltoluene	1.44098	2.02828	1.85464	1.86710	1.86115	1.82068	AVG		1.81214		10.8074(	15.00000	O
1,3-Dichlorobenzene	0.89897	1.04003	0.99085	0.98183	0.99242	1.00308	AVG		0.98453		4.73244	15.00000	O
1,4-Dichlorobenzene	0.98362	1.12126	1.06209	1.02155	1.03897	1.05132	AVG		1.04647		4.37673	15.00000	O
N-Butylbenzene	1.33547	1.84559	1.66597	1.67046	1.63287	1.61097	AVG		1.62689		10.1548:	15.00000	O
1,2-Dichlorobenzene	0.95904	0.98903	0.93035	0.94005	0.95821	0.95615	AVG		0.95547		2.10129	15.00000	O
1,2-Dibromo-3-Chloropropane	1033	9790	43098	110420	260996	375489	LNR	0.02403	0.11519		0.99938	0.99000	O
Hexachlorobutadiene	0.23699	0.26379	0.24452	0.24434	0.26145	0.26211	AVG		0.25220		4.59092	15.00000	O
1,2,4-Trichlorobenzene	7299	56264	242871	606814	1462057	2118253	LNR	0.02705	0.64853		0.99895	0.99000	O
Naphthalene	13965	98475	496939	1258877	3078609	4197177	LNR	0.01897	1.30717		0.99867	0.99000	O
1,2,3-Trichlorobenzene	0.36761	0.42169	0.45905	0.44194	0.49967	0.49326	AVG		0.44720		10.9673:	15.00000	O
Dibromofluoromethane	0.49361	0.49416	0.49036	0.51055	0.48733	0.49096	AVG		0.49449		1.66656	15.00000	
1,2-Dichloroethane-D4	0.66680	0.66321	0.64872	0.66920	0.61538	0.64908	AVG		0.65206		3.06784	15.00000	
Toluene-D8	1.19049	1.18445	1.18696	1.18577	1.16923	1.18999	AVG		1.18448		0.66128	15.00000	
P-Bromofluorobenzene	0.50963	0.51551	0.52872	0.53277	0.52553	0.53899	AVG		0.52519		2.07942	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG228421-4
Analytical Date: 05/16/18 12:40
Lab File ID : D1328.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.60519	0.53303	0.53303	0.010	-11.92245	20.00000	Averaged
2	Chloromethane	0.65045	0.54891	0.54891	0.100	-15.61161	20.00000	Averaged
3	Vinyl chloride	0.50829	0.43637	0.43637	0.010	-14.14954	20.00000	Averaged
4	Bromomethane	0.26245	0.23425	0.23425	0.010	-10.74617	20.00000	Averaged
5	Chloroethane	0.23262	0.22738	0.22738	0.010	-2.25246	20.00000	Averaged
6	Trichlorofluoromethane	0.78861	0.78561	0.78561	0.010	-0.38159	20.00000	Averaged
9	1,1-Dichloroethene	0.33801	0.31379	0.31379	0.100	-7.16449	20.00000	Averaged
10	Carbon Disulfide	1.04529	1.02317	1.02317	0.010	-2.11594	20.00000	Averaged
11	Freon-113	0.29565	0.26661	0.26661	0.010	-9.82240	20.00000	Averaged
14	Methylene Chloride	0.56422	0.52059	0.52059	0.010	-7.73264	20.00000	Averaged
15	Acetone	0.15669	0.15702	0.15702	0.010	0.20446	20.00000	Averaged
17	trans-1,2-Dichloroethene	0.51620	0.44846	0.44846	0.010	-13.12190	20.00000	Averaged
19	Methyl tert-butyl ether	1.33505	1.26299	1.26299	0.010	-5.39692	20.00000	Averaged
25	1,1-Dichloroethane	0.96513	0.93797	0.93797	0.100	-2.81362	20.00000	Averaged
29	cis-1,2-Dichloroethene	0.54948	0.50149	0.50149	0.010	-8.73424	20.00000	Averaged
32	2,2-Dichloropropane	0.63584	0.64708	0.64708	0.010	1.76649	20.00000	Averaged
33	Bromochloromethane	0.27091	0.27305	0.27305	0.010	0.79009	20.00000	Averaged
34	Chloroform	1.01172	0.98547	0.98547	0.010	-2.59430	20.00000	Averaged
35	Carbon Tetrachloride	0.43090	0.42931	0.42931	0.010	-0.36991	20.00000	Averaged
38	1,1,1-Trichloroethane	0.83243	0.80782	0.80782	0.010	-2.95648	20.00000	Averaged
39	1,1-Dichloropropene	0.45737	0.42830	0.42830	0.010	-6.35534	20.00000	Averaged
40	2-Butanone	0.24292	0.24519	0.24519	0.010	0.93303	20.00000	Averaged
41	Benzene	1.23369	1.16635	1.16635	0.010	-5.45818	20.00000	Averaged
47	1,2-Dichloroethane	0.51571	0.53512	0.53512	0.010	3.76352	20.00000	Averaged
48	Trichloroethene	0.33634	0.32526	0.32526	0.010	-3.29443	20.00000	Averaged
50	Dibromomethane	0.22736	0.23347	0.23347	0.010	2.68479	20.00000	Averaged
51	1,2-Dichloropropane	0.33353	0.33342	0.33342	0.010	-0.03393	20.00000	Averaged
52	Bromodichloromethane	0.46224	0.48351	0.48351	0.010	4.60208	20.00000	Averaged
53	cis-1,3-dichloropropene	0.53778	0.57369	0.57369	0.010	6.67874	20.00000	Averaged
57	Toluene	0.75378	0.71044	0.71044	0.010	-5.75013	20.00000	Averaged
58	4-methyl-2-pentanone	0.30443	0.33067	0.33067	0.010	8.61868	20.00000	Averaged
59	Tetrachloroethene	0.27263	0.24162	0.24162	0.010	-11.37635	20.00000	Averaged
60	trans-1,3-Dichloropropene	0.46607	0.51111	0.51111	0.010	9.66344	20.00000	Averaged
61	1,1,2-Trichloroethane	0.26549	0.26781	0.26781	0.010	0.87185	20.00000	Averaged
62	Dibromochloromethane	0.37557	0.39008	0.39008	0.010	3.86230	20.00000	Averaged
63	1,3-Dichloropropane	0.61122	0.60305	0.60305	0.010	-1.33676	20.00000	Averaged
64	1,2-Dibromoethane	0.32012	0.32822	0.32822	0.010	2.53157	20.00000	Averaged
65	2-Hexanone	0.23077	0.24687	0.24687	0.010	6.97963	20.00000	Averaged
67	Chlorobenzene	0.92421	0.87029	0.87029	0.300	-5.83455	20.00000	Averaged
68	Ethylbenzene	1.58372	1.52744	1.52744	0.010	-3.55369	20.00000	Averaged
69	1,1,1,2-Tetrachloroethane	0.32933	0.32987	0.32987	0.010	0.16426	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG228421-4
Analytical Date: 05/16/18 12:40
Lab File ID : D1328.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71 m+p-Xylenes	1.20403	1.19491	1.19491	0.010	-0.75766	20.00000	Averaged
72 o-Xylene	1.21487	1.22054	1.22054	0.010	0.46687	20.00000	Averaged
73 Styrene	0.91910	0.92417	0.92417	0.010	0.55170	20.00000	Averaged
74 Bromoform	50.00000	47.40218	0.23836	0.100	-5.19565	20.00000	Linear
75 Isopropylbenzene	2.65481	2.62134	2.62134	0.010	-1.26092	20.00000	Averaged
79 Bromobenzene	0.74765	0.71006	0.71006	0.010	-5.02755	20.00000	Averaged
80 N-Propylbenzene	3.47227	3.40901	3.40901	0.010	-1.82172	20.00000	Averaged
81 1,1,2,2-Tetrachloroethane	0.86973	0.84133	0.84133	0.300	-3.26616	20.00000	Averaged
82 1,3,5-Trimethylbenzene	2.30306	2.29349	2.29349	0.010	-0.41538	20.00000	Averaged
83 2-Chlorotoluene	2.07978	2.04979	2.04979	0.010	-1.44191	20.00000	Averaged
84 1,2,3-Trichloropropane	0.74898	0.76212	0.76212	0.010	1.75472	20.00000	Averaged
85 4-Chlorotoluene	2.20985	2.20690	2.20690	0.010	-0.13351	20.00000	Averaged
86 tert-Butylbenzene	2.16738	2.18181	2.18181	0.010	0.66563	20.00000	Averaged
88 1,2,4-Trimethylbenzene	2.38615	2.40040	2.40040	0.010	0.59731	20.00000	Averaged
89 P-Isopropyltoluene	2.22161	2.28489	2.28489	0.010	2.84839	20.00000	Averaged
90 1,3-Dichlorobenzene	1.33333	1.27266	1.27266	0.010	-4.55018	20.00000	Averaged
92 1,4-Dichlorobenzene	1.38362	1.31708	1.31708	0.010	-4.80934	20.00000	Averaged
93 N-Butylbenzene	2.07013	2.20955	2.20955	0.010	6.73505	20.00000	Averaged
94 sec-Butylbenzene	2.73458	2.75778	2.75778	0.010	0.84833	20.00000	Averaged
95 1,2-Dichlorobenzene	1.26487	1.23143	1.23143	0.010	-2.64331	20.00000	Averaged
96 1,2-Dibromo-3-Chloropropane	0.13815	0.14609	0.14609	0.010	5.74574	20.00000	Averaged
98 Hexachlorobutadiene	0.29715	0.31414	0.31414	0.010	5.71704	20.00000	Averaged
99 1,2,4-Trichlorobenzene	0.74393	0.74647	0.74647	0.010	0.34120	20.00000	Averaged
101 Naphthalene	50.00000	44.41119	1.59504	0.010	-11.17762	20.00000	Linear
102 1,2,3-Trichlorobenzene	0.60765	0.59154	0.59154	0.010	-2.65219	20.00000	Averaged
37 Dibromofluoromethane	0.58785	0.60162	0.60162	0.010	2.34136	20.00000	Averaged
45 1,2-Dichloroethane-D4	0.74328	0.83134	0.83134	0.010	11.84838	20.00000	Averaged
55 Toluene-D8	1.21935	1.22307	1.22307	0.010	0.30519	20.00000	Averaged
76 P-Bromofluorobenzene	0.48673	0.51370	0.51370	0.010	5.54087	20.00000	Averaged

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG228421-4
Lab File ID : D1328.d
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34

SDG: SL3841
Analytical Date: 05/16/18 12:40
Instrument ID: GCMS-D
Column ID:

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG228421-5
Analytical Date: 05/16/18 23:06
Lab File ID : D1345.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

	Compound	$\overline{\text{RRF}}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.60519	0.59577	0.59577	0.010	-1.55610	20.00000	Averaged
2	Chloromethane	0.65045	0.56160	0.56160	0.100	-13.65956	20.00000	Averaged
3	Vinyl chloride	0.50829	0.48318	0.48318	0.010	-4.94131	20.00000	Averaged
4	Bromomethane	0.26245	0.21930	0.21930	0.010	-16.44063	20.00000	Averaged
5	Chloroethane	0.23262	0.24872	0.24872	0.010	6.92243	20.00000	Averaged
6	Trichlorofluoromethane	0.78861	0.91590	0.91590	0.010	16.14029	20.00000	Averaged
9	1,1-Dichloroethene	0.33801	0.35829	0.35829	0.100	6.00040	20.00000	Averaged
10	Carbon Disulfide	1.04529	1.15862	1.15862	0.010	10.84181	20.00000	Averaged
11	Freon-113	0.29565	0.29457	0.29457	0.010	-0.36322	20.00000	Averaged
14	Methylene Chloride	0.56422	0.53622	0.53622	0.010	-4.96242	20.00000	Averaged
15	Acetone	0.15669	0.16654	0.16654	0.010	6.28067	20.00000	Averaged
17	trans-1,2-Dichloroethene	0.51620	0.48525	0.48525	0.010	-5.99598	20.00000	Averaged
19	Methyl tert-butyl ether	1.33505	1.31029	1.31029	0.010	-1.85436	20.00000	Averaged
25	1,1-Dichloroethane	0.96513	1.01851	1.01851	0.100	5.53110	20.00000	Averaged
29	cis-1,2-Dichloroethene	0.54948	0.53058	0.53058	0.010	-3.44103	20.00000	Averaged
32	2,2-Dichloropropane	0.63584	0.55140	0.55140	0.010	-13.28030	20.00000	Averaged
33	Bromochloromethane	0.27091	0.28487	0.28487	0.010	5.15141	20.00000	Averaged
34	Chloroform	1.01172	1.06508	1.06508	0.010	5.27501	20.00000	Averaged
35	Carbon Tetrachloride	0.43090	0.47040	0.47040	0.010	9.16657	20.00000	Averaged
38	1,1,1-Trichloroethane	0.83243	0.90851	0.90851	0.010	9.14008	20.00000	Averaged
39	1,1-Dichloropropene	0.45737	0.46691	0.46691	0.010	2.08521	20.00000	Averaged
40	2-Butanone	0.24292	0.26046	0.26046	0.010	7.21776	20.00000	Averaged
41	Benzene	1.23369	1.22592	1.22592	0.010	-0.62938	20.00000	Averaged
47	1,2-Dichloroethane	0.51571	0.57183	0.57183	0.010	10.88148	20.00000	Averaged
48	Trichloroethene	0.33634	0.34633	0.34633	0.010	2.96928	20.00000	Averaged
50	Dibromomethane	0.22736	0.23990	0.23990	0.010	5.51493	20.00000	Averaged
51	1,2-Dichloropropane	0.33353	0.35175	0.35175	0.010	5.46243	20.00000	Averaged
52	Bromodichloromethane	0.46224	0.50853	0.50853	0.010	10.01494	20.00000	Averaged
53	cis-1,3-dichloropropene	0.53778	0.57683	0.57683	0.010	7.26184	20.00000	Averaged
57	Toluene	0.75378	0.74858	0.74858	0.010	-0.68944	20.00000	Averaged
58	4-methyl-2-pentanone	0.30443	0.34200	0.34200	0.010	12.33871	20.00000	Averaged
59	Tetrachloroethene	0.27263	0.26081	0.26081	0.010	-4.33492	20.00000	Averaged
60	trans-1,3-Dichloropropene	0.46607	0.52359	0.52359	0.010	12.34193	20.00000	Averaged
61	1,1,2-Trichloroethane	0.26549	0.26828	0.26828	0.010	1.05133	20.00000	Averaged
62	Dibromochloromethane	0.37557	0.40579	0.40579	0.010	8.04663	20.00000	Averaged
63	1,3-Dichloropropane	0.61122	0.63023	0.63023	0.010	3.11146	20.00000	Averaged
64	1,2-Dibromoethane	0.32012	0.33557	0.33557	0.010	4.82806	20.00000	Averaged
65	2-Hexanone	0.23077	0.26312	0.26312	0.010	14.02154	20.00000	Averaged
67	Chlorobenzene	0.92421	0.91981	0.91981	0.300	-0.47587	20.00000	Averaged
68	Ethylbenzene	1.58372	1.64374	1.64374	0.010	3.78959	20.00000	Averaged
69	1,1,1,2-Tetrachloroethane	0.32933	0.35771	0.35771	0.010	8.61906	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG228421-5
Analytical Date: 05/16/18 23:06
Lab File ID : D1345.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71 m+p-Xylenes	1.20403	1.27359	1.27359	0.010	5.77717	20.00000	Averaged
72 o-Xylene	1.21487	1.31072	1.31072	0.010	7.89028	20.00000	Averaged
73 Styrene	0.91910	0.97457	0.97457	0.010	6.03437	20.00000	Averaged
74 Bromoform	50.00000	48.18603	0.24241	0.100	-3.62794	20.00000	Linear
75 Isopropylbenzene	2.65481	2.79038	2.79038	0.010	5.10645	20.00000	Averaged
79 Bromobenzene	0.74765	0.73090	0.73090	0.010	-2.23999	20.00000	Averaged
80 N-Propylbenzene	3.47227	3.63675	3.63675	0.010	4.73692	20.00000	Averaged
81 1,1,2,2-Tetrachloroethane	0.86973	0.85604	0.85604	0.300	-1.57414	20.00000	Averaged
82 1,3,5-Trimethylbenzene	2.30306	2.44729	2.44729	0.010	6.26252	20.00000	Averaged
83 2-Chlorotoluene	2.07978	2.15852	2.15852	0.010	3.78594	20.00000	Averaged
84 1,2,3-Trichloropropane	0.74898	0.77812	0.77812	0.010	3.89109	20.00000	Averaged
85 4-Chlorotoluene	2.20985	2.32031	2.32031	0.010	4.99836	20.00000	Averaged
86 tert-Butylbenzene	2.16738	2.31640	2.31640	0.010	6.87543	20.00000	Averaged
88 1,2,4-Trimethylbenzene	2.38615	2.52388	2.52388	0.010	5.77244	20.00000	Averaged
89 P-Isopropyltoluene	2.22161	2.38625	2.38625	0.010	7.41080	20.00000	Averaged
90 1,3-Dichlorobenzene	1.33333	1.32598	1.32598	0.010	-0.55162	20.00000	Averaged
92 1,4-Dichlorobenzene	1.38362	1.36379	1.36379	0.010	-1.43324	20.00000	Averaged
93 N-Butylbenzene	2.07013	2.33338	2.33338	0.010	12.71695	20.00000	Averaged
94 sec-Butylbenzene	2.73458	2.94270	2.94270	0.010	7.61064	20.00000	Averaged
95 1,2-Dichlorobenzene	1.26487	1.27796	1.27796	0.010	1.03542	20.00000	Averaged
96 1,2-Dibromo-3-Chloropropane	0.13815	0.14648	0.14648	0.010	6.03239	20.00000	Averaged
98 Hexachlorobutadiene	0.29715	0.32489	0.32489	0.010	9.33365	20.00000	Averaged
99 1,2,4-Trichlorobenzene	0.74393	0.75299	0.75299	0.010	1.21769	20.00000	Averaged
101 Naphthalene	50.00000	45.03403	1.61798	0.010	-9.93194	20.00000	Linear
102 1,2,3-Trichlorobenzene	0.60765	0.61231	0.61231	0.010	0.76657	20.00000	Averaged
37 Dibromofluoromethane	0.58785	0.62104	0.62104	0.010	5.64590	20.00000	Averaged
45 1,2-Dichloroethane-D4	0.74328	0.85996	0.85996	0.010	15.69889	20.00000	Averaged
55 Toluene-D8	1.21935	1.21661	1.21661	0.010	-0.22455	20.00000	Averaged
76 P-Bromofluorobenzene	0.48673	0.50961	0.50961	0.010	4.69906	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG228421-5
Lab File ID : D1345.d
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34

SDG: SL3841
Analytical Date: 05/16/18 23:06
Instrument ID: GCMS-D
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG227763-4
Analytical Date: 05/07/18 08:50
Lab File ID : P5545.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.43125	0.35442	0.35442	0.010	-17.81504	20.00000	Averaged	
2	Chloromethane	0.41298	0.40232	0.40232	0.100	-2.58034	20.00000	Averaged	
3	Vinyl chloride	0.45162	0.44138	0.44138	0.010	-2.26727	20.00000	Averaged	
4	Bromomethane	50.00000	58.56231	0.24301	0.010	17.12461	20.00000	Quadratic	
5	Chloroethane	0.25280	0.24041	0.24041	0.010	-4.90201	20.00000	Averaged	
6	Trichlorofluoromethane	0.80063	0.76700	0.76700	0.010	-4.20023	20.00000	Averaged	
8	1,1-Dichloroethene	0.33313	0.29954	0.29954	0.100	-10.08293	20.00000	Averaged	
9	Freon-113	0.32070	0.29020	0.29020	0.010	-9.51029	20.00000	Averaged	
10	Carbon Disulfide	1.12657	1.09108	1.09108	0.010	-3.14996	20.00000	Averaged	
14	Methylene Chloride	0.42921	0.38839	0.38839	0.010	-9.51048	20.00000	Averaged	
15	Acetone	0.10305	0.11632	0.11632	0.010	12.87089	20.00000	Averaged	
16	trans-1,2-Dichloroethene	0.40076	0.36220	0.36220	0.010	-9.62296	20.00000	Averaged	
18	Methyl tert-butyl ether	1.17248	1.18610	1.18610	0.010	1.16155	20.00000	Averaged	
23	1,1-Dichloroethane	0.76776	0.70410	0.70410	0.100	-8.29201	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.42916	0.41507	0.41507	0.010	-3.28212	20.00000	Averaged	
28	2,2-Dichloropropane	0.54077	0.55215	0.55215	0.010	2.10445	20.00000	Averaged	
29	Bromochloromethane	0.19074	0.18709	0.18709	0.010	-1.91073	20.00000	Averaged	
31	Chloroform	0.75331	0.70742	0.70742	0.010	-6.09139	20.00000	Averaged	
32	Carbon Tetrachloride	0.34975	0.32571	0.32571	0.010	-6.87293	20.00000	Averaged	
35	1,1,1-Trichloroethane	0.67334	0.62079	0.62079	0.010	-7.80361	20.00000	Averaged	
36	2-Butanone	0.16702	0.20142	0.20142	0.010	20.59773	20.00000	Averaged	*
37	1,1-Dichloropropene	0.37972	0.35396	0.35396	0.010	-6.78279	20.00000	Averaged	
38	Benzene	1.05328	0.99835	0.99835	0.010	-5.21487	20.00000	Averaged	
44	1,2-Dichloroethane	0.41171	0.38357	0.38357	0.010	-6.83424	20.00000	Averaged	
47	Trichloroethene	0.25959	0.24719	0.24719	0.010	-4.77841	20.00000	Averaged	
49	Dibromomethane	0.15699	0.16372	0.16372	0.010	4.28386	20.00000	Averaged	
50	1,2-Dichloropropane	0.26524	0.26396	0.26396	0.010	-0.48287	20.00000	Averaged	
51	Bromodichloromethane	0.36322	0.35533	0.35533	0.010	-2.17311	20.00000	Averaged	
57	cis-1,3-dichloropropene	0.45463	0.46942	0.46942	0.010	3.25242	20.00000	Averaged	
59	Toluene	0.66226	0.64142	0.64142	0.010	-3.14592	20.00000	Averaged	
60	Tetrachloroethene	0.20214	0.17465	0.17465	0.010	-13.59882	20.00000	Averaged	
61	4-methyl-2-pentanone	0.22676	0.27874	0.27874	0.010	22.92228	20.00000	Averaged	*
62	trans-1,3-Dichloropropene	50.00000	48.79748	0.43132	0.010	-2.40504	20.00000	Linear	
63	1,1,2-Trichloroethane	50.00000	50.09516	0.20227	0.010	0.19032	20.00000	Linear	
64	Dibromochloromethane	0.25376	0.24864	0.24864	0.010	-2.01961	20.00000	Averaged	
65	1,3-Dichloropropane	0.46479	0.45824	0.45824	0.010	-1.40939	20.00000	Averaged	
66	1,2-Dibromoethane	0.24154	0.26864	0.26864	0.010	11.22198	20.00000	Averaged	
67	2-Hexanone	0.15031	0.18355	0.18355	0.010	22.11369	20.00000	Averaged	*
69	Chlorobenzene	0.74849	0.71542	0.71542	0.300	-4.41875	20.00000	Averaged	
71	Ethylbenzene	0.41112	0.39094	0.39094	0.010	-4.90715	20.00000	Averaged	
72	1,1,1,2-Tetrachloroethane	50.00000	45.92400	0.23804	0.010	-8.15200	20.00000	Linear	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG227763-4
Analytical Date: 05/07/18 08:50
Lab File ID : P5545.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.49968	0.47842	0.47842	0.010	-4.25406	20.00000	Averaged
74 o-Xylene	0.47829	0.45856	0.45856	0.010	-4.12501	20.00000	Averaged
75 Styrene	0.81074	0.80520	0.80520	0.010	-0.68295	20.00000	Averaged
76 Bromoform	0.17862	0.18903	0.18903	0.100	5.82809	20.00000	Averaged
77 Isopropylbenzene	2.11666	1.97337	1.97337	0.010	-6.76981	20.00000	Averaged
80 Bromobenzene	0.55530	0.51066	0.51066	0.010	-8.03871	20.00000	Averaged
81 N-Propylbenzene	2.55237	2.42182	2.42182	0.010	-5.11514	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.54908	0.57669	0.57669	0.300	5.02686	20.00000	Averaged
83 2-Chlorotoluene	1.54905	1.41332	1.41332	0.010	-8.76199	20.00000	Averaged
84 1,2,3-Trichloropropane	0.50367	0.52157	0.52157	0.010	3.55444	20.00000	Averaged
85 1,3,5-Trimethylbenzene	1.80635	1.70983	1.70983	0.010	-5.34320	20.00000	Averaged
87 4-Chlorotoluene	1.65124	1.54045	1.54045	0.010	-6.70936	20.00000	Averaged
88 tert-Butylbenzene	1.74399	1.64034	1.64034	0.010	-5.94307	20.00000	Averaged
90 1,2,4-Trimethylbenzene	1.86859	1.80059	1.80059	0.010	-3.63903	20.00000	Averaged
91 sec-Butylbenzene	2.20469	2.09561	2.09561	0.010	-4.94722	20.00000	Averaged
92 P-Isopropyltoluene	1.81214	1.74905	1.74905	0.010	-3.48165	20.00000	Averaged
93 1,3-Dichlorobenzene	0.98453	0.94197	0.94197	0.010	-4.32257	20.00000	Averaged
95 1,4-Dichlorobenzene	1.04647	0.98257	0.98257	0.010	-6.10563	20.00000	Averaged
97 N-Butylbenzene	1.62689	1.56923	1.56923	0.010	-3.54385	20.00000	Averaged
99 1,2-Dichlorobenzene	0.95547	0.90521	0.90521	0.010	-5.26045	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	54.51037	0.12281	0.010	9.02075	20.00000	Linear
102 Hexachlorobutadiene	0.25220	0.23289	0.23289	0.010	-7.65828	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	46.70621	0.58826	0.010	-6.58757	20.00000	Linear
104 Naphthalene	50.00000	55.00245	1.41315	0.010	10.00490	20.00000	Linear
105 1,2,3-Trichlorobenzene	0.44720	0.49369	0.49369	0.010	10.39547	20.00000	Averaged
34 Dibromofluoromethane	0.49449	0.48168	0.48168	0.010	-2.59051	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.65206	0.64805	0.64805	0.010	-0.61582	20.00000	Averaged
58 Toluene-D8	1.18448	1.21111	1.21111	0.010	2.24781	20.00000	Averaged
78 P-Bromofluorobenzene	0.52519	0.54815	0.54815	0.010	4.37187	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227763-4
Lab File ID : P5545.D
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47

SDG: SL3841
Analytical Date: 05/07/18 08:50
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG227763-5
Analytical Date: 05/07/18 18:51
Lab File ID : P5562.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.43125	0.37216	0.37216	0.010	-13.70283	20.00000	Averaged	
2	Chloromethane	0.41298	0.42619	0.42619	0.100	3.19917	20.00000	Averaged	
3	Vinyl chloride	0.45162	0.46592	0.46592	0.010	3.16566	20.00000	Averaged	
4	Bromomethane	50.00000	54.16164	0.22297	0.010	8.32328	20.00000	Quadratic	
5	Chloroethane	0.25280	0.26537	0.26537	0.010	4.97179	20.00000	Averaged	
6	Trichlorofluoromethane	0.80063	0.79928	0.79928	0.010	-0.16844	20.00000	Averaged	
8	1,1-Dichloroethene	0.33313	0.32331	0.32331	0.100	-2.94828	20.00000	Averaged	
9	Freon-113	0.32070	0.31875	0.31875	0.010	-0.60833	20.00000	Averaged	
10	Carbon Disulfide	1.12657	1.15757	1.15757	0.010	2.75222	20.00000	Averaged	
14	Methylene Chloride	0.42921	0.41335	0.41335	0.010	-3.69563	20.00000	Averaged	
15	Acetone	0.10305	0.12174	0.12174	0.010	18.13362	20.00000	Averaged	
16	trans-1,2-Dichloroethene	0.40076	0.38581	0.38581	0.010	-3.73087	20.00000	Averaged	
18	Methyl tert-butyl ether	1.17248	1.16075	1.16075	0.010	-0.99994	20.00000	Averaged	
23	1,1-Dichloroethane	0.76776	0.73307	0.73307	0.100	-4.51783	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.42916	0.42466	0.42466	0.010	-1.04825	20.00000	Averaged	
28	2,2-Dichloropropane	0.54077	0.39884	0.39884	0.010	-26.24601	20.00000	Averaged	*
29	Bromochloromethane	0.19074	0.18127	0.18127	0.010	-4.96107	20.00000	Averaged	
31	Chloroform	0.75331	0.74056	0.74056	0.010	-1.69245	20.00000	Averaged	
32	Carbon Tetrachloride	0.34975	0.31589	0.31589	0.010	-9.67948	20.00000	Averaged	
35	1,1,1-Trichloroethane	0.67334	0.64690	0.64690	0.010	-3.92623	20.00000	Averaged	
36	2-Butanone	0.16702	0.20775	0.20775	0.010	24.38891	20.00000	Averaged	*
37	1,1-Dichloropropene	0.37972	0.36307	0.36307	0.010	-4.38482	20.00000	Averaged	
38	Benzene	1.05328	1.04056	1.04056	0.010	-1.20744	20.00000	Averaged	
44	1,2-Dichloroethane	0.41171	0.38815	0.38815	0.010	-5.72182	20.00000	Averaged	
47	Trichloroethene	0.25959	0.25324	0.25324	0.010	-2.44607	20.00000	Averaged	
49	Dibromomethane	0.15699	0.16737	0.16737	0.010	6.60939	20.00000	Averaged	
50	1,2-Dichloropropane	0.26524	0.26436	0.26436	0.010	-0.33350	20.00000	Averaged	
51	Bromodichloromethane	0.36322	0.35691	0.35691	0.010	-1.73815	20.00000	Averaged	
57	cis-1,3-dichloropropene	0.45463	0.43924	0.43924	0.010	-3.38458	20.00000	Averaged	
59	Toluene	0.66226	0.65872	0.65872	0.010	-0.53468	20.00000	Averaged	
60	Tetrachloroethene	0.20214	0.18805	0.18805	0.010	-6.97044	20.00000	Averaged	
61	4-methyl-2-pentanone	0.22676	0.28429	0.28429	0.010	25.37150	20.00000	Averaged	*
62	trans-1,3-Dichloropropene	50.00000	45.63025	0.40263	0.010	-8.73951	20.00000	Linear	
63	1,1,2-Trichloroethane	50.00000	50.94836	0.20578	0.010	1.89671	20.00000	Linear	
64	Dibromochloromethane	0.25376	0.25175	0.25175	0.010	-0.79497	20.00000	Averaged	
65	1,3-Dichloropropane	0.46479	0.46580	0.46580	0.010	0.21787	20.00000	Averaged	
66	1,2-Dibromoethane	0.24154	0.26769	0.26769	0.010	10.82760	20.00000	Averaged	
67	2-Hexanone	0.15031	0.19150	0.19150	0.010	27.40204	20.00000	Averaged	*
69	Chlorobenzene	0.74849	0.73996	0.73996	0.300	-1.13921	20.00000	Averaged	
71	Ethylbenzene	0.41112	0.39822	0.39822	0.010	-3.13770	20.00000	Averaged	
72	1,1,1,2-Tetrachloroethane	50.00000	46.29868	0.24002	0.010	-7.40264	20.00000	Linear	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG227763-5
Analytical Date: 05/07/18 18:51
Lab File ID : P5562.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.49968	0.50275	0.50275	0.010	0.61588	20.00000	Averaged
74 o-Xylene	0.47829	0.48346	0.48346	0.010	1.08088	20.00000	Averaged
75 Styrene	0.81074	0.84478	0.84478	0.010	4.19902	20.00000	Averaged
76 Bromoform	0.17862	0.18510	0.18510	0.100	3.63084	20.00000	Averaged
77 Isopropylbenzene	2.11666	2.04357	2.04357	0.010	-3.45312	20.00000	Averaged
80 Bromobenzene	0.55530	0.53545	0.53545	0.010	-3.57305	20.00000	Averaged
81 N-Propylbenzene	2.55237	2.49382	2.49382	0.010	-2.29417	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.54908	0.59487	0.59487	0.300	8.33846	20.00000	Averaged
83 2-Chlorotoluene	1.54905	1.46915	1.46915	0.010	-5.15783	20.00000	Averaged
84 1,2,3-Trichloropropane	0.50367	0.53722	0.53722	0.010	6.66085	20.00000	Averaged
85 1,3,5-Trimethylbenzene	1.80635	1.76277	1.76277	0.010	-2.41268	20.00000	Averaged
87 4-Chlorotoluene	1.65124	1.57919	1.57919	0.010	-4.36330	20.00000	Averaged
88 tert-Butylbenzene	1.74399	1.68518	1.68518	0.010	-3.37199	20.00000	Averaged
90 1,2,4-Trimethylbenzene	1.86859	1.86089	1.86089	0.010	-0.41161	20.00000	Averaged
91 sec-Butylbenzene	2.20469	2.11753	2.11753	0.010	-3.95323	20.00000	Averaged
92 P-Isopropyltoluene	1.81214	1.74673	1.74673	0.010	-3.60943	20.00000	Averaged
93 1,3-Dichlorobenzene	0.98453	0.98024	0.98024	0.010	-0.43599	20.00000	Averaged
95 1,4-Dichlorobenzene	1.04647	1.00845	1.00845	0.010	-3.63305	20.00000	Averaged
97 N-Butylbenzene	1.62689	1.52097	1.52097	0.010	-6.51065	20.00000	Averaged
99 1,2-Dichlorobenzene	0.95547	0.94084	0.94084	0.010	-1.53131	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	54.90158	0.12372	0.010	9.80316	20.00000	Linear
102 Hexachlorobutadiene	0.25220	0.21132	0.21132	0.010	-16.21075	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	47.53538	0.59902	0.010	-4.92925	20.00000	Linear
104 Naphthalene	50.00000	59.42205	1.52870	0.010	18.84411	20.00000	Linear
105 1,2,3-Trichlorobenzene	0.44720	0.50921	0.50921	0.010	13.86552	20.00000	Averaged
34 Dibromofluoromethane	0.49449	0.48104	0.48104	0.010	-2.72000	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.65206	0.65051	0.65051	0.010	-0.23786	20.00000	Averaged
58 Toluene-D8	1.18448	1.18950	1.18950	0.010	0.42386	20.00000	Averaged
78 P-Bromofluorobenzene	0.52519	0.53258	0.53258	0.010	1.40727	20.00000	Averaged

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227763-5
Lab File ID : P5562.D
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47

SDG: SL3841
Analytical Date: 05/07/18 18:51
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
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ANALYTICAL SERVICES

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227999-4
Lab File ID : D1259.d

SDG: SL3841
Analytical Date: 05/10/18 08:36
Instrument ID: GCMS-D

		PENTAFLUOROBENZENE			1,4-DIFLUOROBENZENE			CHLOROBENZENE-D5		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	336775		7.32		538592		8.10		490295		11.54	
	Upper Limit	673550		7.48		1077184		8.26		980590		11.70	
	Lower Limit	168387.5		7.15		269296		7.93		245147.5		11.37	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG228421-4	277120		7.32		444991		8.10		414738		11.54	
Laboratory Control S	WG228421-1	287009		7.32		471055		8.10		425102		11.54	
Method Blank Sample	WG228421-2	258692		7.32		435671		8.10		395426		11.54	
CHAAP-19C-LGIA-DI	SL3841-4	241657		7.32		410845		8.10		375292		11.54	
CHAAP-19C-LGIA-DI	SL3841-6	241959		7.32		405926		8.10		369852		11.54	
CHAAP-19C-UGIA-DI	SL3841-8	237394		7.32		405786		8.10		368590		11.54	
CHAAP-19C-LGIA-DI	SL3841-10	235181		7.32		397624		8.10		364054		11.54	
CHAAP-19C-LGIA-DI	SL3841-12	232753		7.32		394396		8.10		358659		11.55	
CHAAP-19C-UGIA-DI	SL3841-14	238121		7.32		398430		8.10		363083		11.54	
CHAAP-19C-LGIA-DI	SL3841-16	230475		7.32		390438		8.10		359212		11.54	
CHAAP-19C-UGIA-DI	SL3841-18	229888		7.32		384288		8.10		355182		11.54	
Continuing Calibrati	WG228421-5	256348		7.32		420867		8.10		389349		11.54	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227999-4
Lab File ID : D1259.d

SDG: SL3841
Analytical Date: 05/10/18 08:36
Instrument ID: GCMS-D

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	249538		13.88	
	Upper Limit	499076		14.04	
	Lower Limit	124769		13.71	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG228421-4	213967		13.88	
Laboratory Control S	WG228421-1	218190		13.88	
Method Blank Sample	WG228421-2	192344		13.88	
CHAAP-19C-LGIA-DI	SL3841-4	183534		13.88	
CHAAP-19C-LGIA-DI	SL3841-6	182947		13.88	
CHAAP-19C-UGIA-DI	SL3841-8	181582		13.88	
CHAAP-19C-LGIA-DI	SL3841-10	177490		13.88	
CHAAP-19C-LGIA-DI	SL3841-12	176614		13.88	
CHAAP-19C-UGIA-DI	SL3841-14	178854		13.88	
CHAAP-19C-LGIA-DI	SL3841-16	176396		13.88	
CHAAP-19C-UGIA-DI	SL3841-18	174460		13.88	
Continuing Calibrati	WG228421-5	203879		13.88	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227568-4
Lab File ID : P5508.D

SDG: SL3841
Analytical Date: 05/03/18 12:56
Instrument ID: GCMS-P

		PENTAFLUOROBENZENE				1,4-DIFLUOROBENZENE				CHLOROBENZENE-D5			
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	1074176		6.44		1785427		7.38		1800386		11.80	
	Upper Limit	2148352		6.61		3570854		7.55		3600772		11.96	
	Lower Limit	537088		6.28		892713.5		7.21		900193		11.63	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG227763-4	914402		6.44		1473084		7.38		1580139		11.80	
Laboratory Control S	WG227763-1	958436		6.44		1552546		7.38		1623933		11.81	
Method Blank Sample	WG227763-2	808263		6.45		1322931		7.38		1360309		11.81	
CHAAP-TB-050318-D	SL3841-1	684149		6.45		1167404		7.39		1212867		11.80	
CHAAP-EB-050318	SL3841-20	669713		6.44		1138803		7.38		1191293		11.80	
Continuing Calibrati	WG227763-5	938642		6.44		1529437		7.38		1613599		11.80	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227568-4
Lab File ID : P5508.D

SDG: SL3841
Analytical Date: 05/03/18 12:56
Instrument ID: GCMS-P

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	1047820		14.77	
	Upper Limit	2095640		14.93	
	Lower Limit	523910		14.60	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG227763-4	926121		14.77	
Laboratory Control S	WG227763-1	958018		14.77	
Method Blank Sample	WG227763-2	728553		14.77	
CHAAP-TB-050318-D	SL3841-1	658214		14.77	
CHAAP-EB-050318	SL3841-20	634615		14.77	
Continuing Calibrati	WG227763-5	945636		14.77	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-2RA2
Client ID: CHAAP-19C-UGIA-DPT19
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: N8589.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.061	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	J	0.050	ug/L	1	.2	0.20	0.046	0.10
Chrysene	J	0.064	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene-D10		62.8	%					
Fluorene-D10		60.4	%					
Pyrene-D10		68.8	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-4RA
Client ID: CHAAP-19C-LGIA-DPT20
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: N8590.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
2-Methylnaphthalene	U	0.097	ug/L	1	.2	0.19	0.075	0.097
Acenaphthylene	U	0.097	ug/L	1	.2	0.19	0.052	0.097
Acenaphthene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
Fluorene	U	0.097	ug/L	1	.2	0.19	0.059	0.097
Phenanthrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Anthracene	U	0.097	ug/L	1	.2	0.19	0.043	0.097
Fluoranthene	U	0.097	ug/L	1	.2	0.19	0.071	0.097
Pyrene	U	0.097	ug/L	1	.2	0.19	0.057	0.097
Benzo(a)anthracene	U	0.097	ug/L	1	.2	0.19	0.045	0.097
Chrysene	J	0.051	ug/L	1	.2	0.19	0.035	0.097
Benzo(b)Fluoranthene	U	0.097	ug/L	1	.2	0.19	0.086	0.097
Benzo(k)fluoranthene	U	0.097	ug/L	1	.2	0.19	0.048	0.097
Benzo(a)pyrene	U	0.097	ug/L	1	.2	0.19	0.064	0.097
Indeno(1,2,3-cd)pyrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Dibenzo(a,h)anthracene	U	0.097	ug/L	1	.2	0.19	0.068	0.097
Benzo(g,h,i)perylene	U	0.097	ug/L	1	.2	0.19	0.063	0.097
2-Methylnaphthalene-D10		80.4	%					
Fluorene-D10		77.3	%					
Pyrene-D10		91.7	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-6RA
Client ID: CHAAP-19C-LGIA-DPT24
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: N8591.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
2-Methylnaphthalene	U	0.095	ug/L	1	.2	0.19	0.073	0.095
Acenaphthylene	U	0.095	ug/L	1	.2	0.19	0.051	0.095
Acenaphthene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
Fluorene	U	0.095	ug/L	1	.2	0.19	0.058	0.095
Phenanthrene	U	0.095	ug/L	1	.2	0.19	0.048	0.095
Anthracene	U	0.095	ug/L	1	.2	0.19	0.042	0.095
Fluoranthene	U	0.095	ug/L	1	.2	0.19	0.070	0.095
Pyrene	U	0.095	ug/L	1	.2	0.19	0.056	0.095
Benzo(a)anthracene	J	0.044	ug/L	1	.2	0.19	0.044	0.095
Chrysene	J	0.057	ug/L	1	.2	0.19	0.034	0.095
Benzo(b)Fluoranthene	U	0.095	ug/L	1	.2	0.19	0.085	0.095
Benzo(k)fluoranthene	U	0.095	ug/L	1	.2	0.19	0.047	0.095
Benzo(a)pyrene	U	0.095	ug/L	1	.2	0.19	0.063	0.095
Indeno(1,2,3-cd)pyrene	U	0.095	ug/L	1	.2	0.19	0.050	0.095
Dibenzo(a,h)anthracene	U	0.095	ug/L	1	.2	0.19	0.067	0.095
Benzo(g,h,i)perylene	U	0.095	ug/L	1	.2	0.19	0.062	0.095
2-Methylnaphthalene-D10		76.5	%					
Fluorene-D10		71.4	%					
Pyrene-D10		85.2	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-8RA
Client ID: CHAAP-19C-UGIA-DPT23
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: N8592.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.094	ug/L	1	.2	0.19	0.060	0.094
2-Methylnaphthalene	U	0.094	ug/L	1	.2	0.19	0.073	0.094
Acenaphthylene	U	0.094	ug/L	1	.2	0.19	0.051	0.094
Acenaphthene	U	0.094	ug/L	1	.2	0.19	0.060	0.094
Fluorene	U	0.094	ug/L	1	.2	0.19	0.058	0.094
Phenanthrene	U	0.094	ug/L	1	.2	0.19	0.048	0.094
Anthracene	U	0.094	ug/L	1	.2	0.19	0.042	0.094
Fluoranthene	U	0.094	ug/L	1	.2	0.19	0.069	0.094
Pyrene	U	0.094	ug/L	1	.2	0.19	0.056	0.094
Benzo(a)anthracene	U	0.094	ug/L	1	.2	0.19	0.043	0.094
Chrysene	J	0.052	ug/L	1	.2	0.19	0.034	0.094
Benzo(b)Fluoranthene	U	0.094	ug/L	1	.2	0.19	0.084	0.094
Benzo(k)fluoranthene	U	0.094	ug/L	1	.2	0.19	0.046	0.094
Benzo(a)pyrene	U	0.094	ug/L	1	.2	0.19	0.062	0.094
Indeno(1,2,3-cd)pyrene	U	0.094	ug/L	1	.2	0.19	0.049	0.094
Dibenzo(a,h)anthracene	U	0.094	ug/L	1	.2	0.19	0.066	0.094
Benzo(g,h,i)perylene	U	0.094	ug/L	1	.2	0.19	0.061	0.094
2-Methylnaphthalene-D10		66.7	%					
Fluorene-D10		62.0	%					
Pyrene-D10		70.0	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-10RA2
Client ID: CHAAP-19C-LGIA-DPT16
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: N8593.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.061	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.046	0.10
Chrysene	J	0.053	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene-D10		65.6	%					
Fluorene-D10		64.9	%					
Pyrene-D10		77.8	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-12RA
Client ID: CHAAP-19C-LGIA-DPT116
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: N8594.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
2-Methylnaphthalene	U	0.097	ug/L	1	.2	0.19	0.075	0.097
Acenaphthylene	U	0.097	ug/L	1	.2	0.19	0.052	0.097
Acenaphthene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
Fluorene	U	0.097	ug/L	1	.2	0.19	0.059	0.097
Phenanthrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Anthracene	U	0.097	ug/L	1	.2	0.19	0.043	0.097
Fluoranthene	U	0.097	ug/L	1	.2	0.19	0.071	0.097
Pyrene	U	0.097	ug/L	1	.2	0.19	0.057	0.097
Benzo(a)anthracene	U	0.097	ug/L	1	.2	0.19	0.045	0.097
Chrysene	J	0.061	ug/L	1	.2	0.19	0.035	0.097
Benzo(b)Fluoranthene	U	0.097	ug/L	1	.2	0.19	0.086	0.097
Benzo(k)fluoranthene	U	0.097	ug/L	1	.2	0.19	0.048	0.097
Benzo(a)pyrene	U	0.097	ug/L	1	.2	0.19	0.064	0.097
Indeno(1,2,3-cd)pyrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Dibenzo(a,h)anthracene	U	0.097	ug/L	1	.2	0.19	0.068	0.097
Benzo(g,h,i)perylene	U	0.097	ug/L	1	.2	0.19	0.063	0.097
2-Methylnaphthalene-D10		76.7	%					
Fluorene-D10		71.6	%					
Pyrene-D10		79.5	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-14RA
Client ID: CHAAP-19C-UGIA-DPT15
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: N8595.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.11	ug/L	1	.2	0.22	0.069	0.11
2-Methylnaphthalene	U	0.11	ug/L	1	.2	0.22	0.083	0.11
Acenaphthylene	U	0.11	ug/L	1	.2	0.22	0.058	0.11
Acenaphthene	U	0.11	ug/L	1	.2	0.22	0.069	0.11
Fluorene	U	0.11	ug/L	1	.2	0.22	0.066	0.11
Phenanthrene	U	0.11	ug/L	1	.2	0.22	0.055	0.11
Anthracene	U	0.11	ug/L	1	.2	0.22	0.047	0.11
Fluoranthene	U	0.11	ug/L	1	.2	0.22	0.078	0.11
Pyrene	U	0.11	ug/L	1	.2	0.22	0.063	0.11
Benzo(a)anthracene	U	0.11	ug/L	1	.2	0.22	0.049	0.11
Chrysene	J	0.053	ug/L	1	.2	0.22	0.039	0.11
Benzo(b)Fluoranthene	U	0.11	ug/L	1	.2	0.22	0.096	0.11
Benzo(k)fluoranthene	U	0.11	ug/L	1	.2	0.22	0.053	0.11
Benzo(a)pyrene	U	0.11	ug/L	1	.2	0.22	0.071	0.11
Indeno(1,2,3-cd)pyrene	U	0.11	ug/L	1	.2	0.22	0.056	0.11
Dibenzo(a,h)anthracene	U	0.11	ug/L	1	.2	0.22	0.075	0.11
Benzo(g,h,i)perylene	U	0.11	ug/L	1	.2	0.22	0.070	0.11
2-Methylnaphthalene-D10		72.6	%					
Fluorene-D10		68.1	%					
Pyrene-D10		74.6	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-16RA
Client ID: CHAAP-19C-LGIA-DPT12
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: N8596.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.098	ug/L	1	.2	0.20	0.063	0.098
2-Methylnaphthalene	U	0.098	ug/L	1	.2	0.20	0.075	0.098
Acenaphthylene	U	0.098	ug/L	1	.2	0.20	0.053	0.098
Acenaphthene	U	0.098	ug/L	1	.2	0.20	0.063	0.098
Fluorene	U	0.098	ug/L	1	.2	0.20	0.060	0.098
Phenanthrene	U	0.098	ug/L	1	.2	0.20	0.050	0.098
Anthracene	U	0.098	ug/L	1	.2	0.20	0.043	0.098
Fluoranthene	U	0.098	ug/L	1	.2	0.20	0.072	0.098
Pyrene	U	0.098	ug/L	1	.2	0.20	0.058	0.098
Benzo(a)anthracene	U	0.098	ug/L	1	.2	0.20	0.045	0.098
Chrysene	J	0.050	ug/L	1	.2	0.20	0.035	0.098
Benzo(b)Fluoranthene	U	0.098	ug/L	1	.2	0.20	0.087	0.098
Benzo(k)fluoranthene	U	0.098	ug/L	1	.2	0.20	0.048	0.098
Benzo(a)pyrene	U	0.098	ug/L	1	.2	0.20	0.065	0.098
Indeno(1,2,3-cd)pyrene	U	0.098	ug/L	1	.2	0.20	0.051	0.098
Dibenzo(a,h)anthracene	U	0.098	ug/L	1	.2	0.20	0.069	0.098
Benzo(g,h,i)perylene	U	0.098	ug/L	1	.2	0.20	0.064	0.098
2-Methylnaphthalene-D10		78.4	%					
Fluorene-D10		73.9	%					
Pyrene-D10		87.6	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-18RA
Client ID: CHAAP-19C-UGIA-DPT11
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: N8597.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.078	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.062	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.074	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.060	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.046	0.10
Chrysene	J	0.041	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.090	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.067	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.071	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
2-Methylnaphthalene-D10		78.0	%					
Fluorene-D10		75.6	%					
Pyrene-D10		87.4	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-20RA
Client ID: CHAAP-EB-050318
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: N8598.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.11	ug/L	1	.2	0.21	0.068	0.11
2-Methylnaphthalene	U	0.11	ug/L	1	.2	0.21	0.082	0.11
Acenaphthylene	U	0.11	ug/L	1	.2	0.21	0.057	0.11
Acenaphthene	U	0.11	ug/L	1	.2	0.21	0.068	0.11
Fluorene	U	0.11	ug/L	1	.2	0.21	0.065	0.11
Phenanthrene	U	0.11	ug/L	1	.2	0.21	0.054	0.11
Anthracene	U	0.11	ug/L	1	.2	0.21	0.047	0.11
Fluoranthene	U	0.11	ug/L	1	.2	0.21	0.078	0.11
Pyrene	U	0.11	ug/L	1	.2	0.21	0.063	0.11
Benzo(a)anthracene	J	0.052	ug/L	1	.2	0.21	0.049	0.11
Chrysene	J	0.076	ug/L	1	.2	0.21	0.038	0.11
Benzo(b)Fluoranthene	U	0.11	ug/L	1	.2	0.21	0.095	0.11
Benzo(k)fluoranthene	U	0.11	ug/L	1	.2	0.21	0.052	0.11
Benzo(a)pyrene	U	0.11	ug/L	1	.2	0.21	0.070	0.11
Indeno(1,2,3-cd)pyrene	U	0.11	ug/L	1	.2	0.21	0.055	0.11
Dibenzo(a,h)anthracene	U	0.11	ug/L	1	.2	0.21	0.074	0.11
Benzo(g,h,i)perylene	U	0.11	ug/L	1	.2	0.21	0.069	0.11
2-Methylnaphthalene-D10		73.6	%					
Fluorene-D10		68.7	%					
Pyrene-D10		86.8	%					

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Report of Analytical Results

Client:
Lab ID: WG227847-1RA3
Client ID: Method Blank Sample
Project:
SDG: SL3841
Lab File ID: N8613.D

Sample Date:
Received Date:
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 21-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.061	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.046	0.10
Chrysene	U	0.10	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene-D10		69.1	%					
Fluorene-D10		66.2	%					
Pyrene-D10		79.4	%					

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** AQ
Lab Code: KAS **SDG:** SL3841

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
CHAAP-19C-LGIA-DPT16	SL3841-10RA2		65.6		64.9		77.8	
CHAAP-19C-LGIA-DPT11	SL3841-12RA		76.7		71.6		79.5	
CHAAP-19C-UGIA-DPT15	SL3841-14RA		72.6		68.1		74.6	
CHAAP-19C-LGIA-DPT12	SL3841-16RA		78.4		73.9		87.6	
CHAAP-19C-UGIA-DPT11	SL3841-18RA		78.0		75.6		87.4	
CHAAP-EB-050318	SL3841-20RA		73.6		68.7		86.8	
CHAAP-19C-UGIA-DPT19	SL3841-2RA2		62.8		60.4		68.8	
CHAAP-19C-LGIA-DPT20	SL3841-4RA		80.4		77.3		91.7	
CHAAP-19C-LGIA-DPT24	SL3841-6RA		76.5		71.4		85.2	
CHAAP-19C-UGIA-DPT23	SL3841-8RA		66.7		62.0		70.0	
Method Blank Sample	WG227847-1RA		69.1		66.2		79.4	
Laboratory Control S	WG227847-2RA		74.2		69.8		71.1	

		QC Limits
FLO	FLUORENE-D10	29-120
PYR	PYRENE-D10	53-166
2MN	2-METHYLNAPHTHALENE-D10	43-120

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227847-2RA
Client ID: LCS
Project:
SDG: SL3841
LCS File ID: N8588.D

Sample Date:
Received Date:
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Naphthalene	76.0	2.00	1.52	ug/L	43-120
2-Methylnaphthalene	76.0	2.00	1.52	ug/L	39-120
Acenaphthylene	72.0	2.00	1.44	ug/L	35-121
Acenaphthene	74.5	2.00	1.49	ug/L	48-120
Fluorene	74.0	2.00	1.48	ug/L	50-120
Phenanthrene	74.0	2.00	1.48	ug/L	53-120
Anthracene	74.5	2.00	1.49	ug/L	53-120
Fluoranthene	82.0	2.00	1.64	ug/L	58-120
Pyrene	76.5	2.00	1.53	ug/L	53-121
Benzo(a)anthracene	82.0	2.00	1.64	ug/L	59-120
Chrysene	84.0	2.00	1.68	ug/L	57-120
Benzo(b)Fluoranthene	75.5	2.00	1.51	ug/L	53-126
Benzo(k)fluoranthene	83.0	2.00	1.66	ug/L	54-125
Benzo(a)pyrene	79.0	2.00	1.58	ug/L	53-120
Indeno(1,2,3-cd)pyrene	76.5	2.00	1.53	ug/L	48-130
Dibenzo(a,h)anthracene	76.5	2.00	1.53	ug/L	44-131
Benzo(g,h,i)perylene	77.0	2.00	1.54	ug/L	44-128
2-Methylnaphthalene-D10	74.2				43-120
Fluorene-D10	69.8				29-120
Pyrene-D10	71.1				53-166

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : N8613.D
Instrument ID : GCMS-N
Matrix : AQ

SDG : SL3841
Lab Sample ID : WG227847-1RA3
Date Extracted : 08-MAY-18
Date Analyzed : 21-MAY-18
Time Analyzed : 12:10

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG227847-2RA	N8588.D	05/18/18	16:58
CHAAP-19C-UGIA-DPT19	SL3841-2RA2	N8589.D	05/18/18	17:29
CHAAP-19C-LGIA-DPT20	SL3841-4RA	N8590.D	05/18/18	18:01
CHAAP-19C-LGIA-DPT24	SL3841-6RA	N8591.D	05/18/18	18:32
CHAAP-19C-UGIA-DPT23	SL3841-8RA	N8592.D	05/18/18	19:04
CHAAP-19C-LGIA-DPT16	SL3841-10RA2	N8593.D	05/18/18	19:36
CHAAP-19C-LGIA-DPT116	SL3841-12RA	N8594.D	05/18/18	20:09
CHAAP-19C-UGIA-DPT15	SL3841-14RA	N8595.D	05/18/18	20:41
CHAAP-19C-LGIA-DPT12	SL3841-16RA	N8596.D	05/18/18	21:13
CHAAP-19C-UGIA-DPT11	SL3841-18RA	N8597.D	05/18/18	21:45
CHAAP-EB-050318	SL3841-20RA	N8598.D	05/18/18	22:17

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ANALYTICAL SERVICES

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : ND519.D
Instrument ID : GCMS-N

SDG : SL3841
Date Analyzed : 18-MAY-18
Time Analyzed : 12:30

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	40.9		
68	Less than 2.0% of mass 69	0.7	1.53	1
69	Less than 100.0% of mass 198	44.8		
70	Less than 2.0% of mass 69	0.3	0.63	1
127	40.0 - 60.0% of mass 198	57.7		
197	Less than 1.0% of mass 198	0.5		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	7.0		
275	10.0 - 30.0% of mass 198	25.0		
365	1.0 - 100.0% of mass 198	3.1		
441	0.0 - 100.0% of mass 443	10.2	74.10	2
442	40.0 - 100.0% of mass 198	68.8		
443	17.0 - 23.0% of mass 442	13.8	19.99	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG228639-4	N8580.D	05/18/18	12:47
Initial Calibration	WG228639-2	N8581.D	05/18/18	13:18
Initial Calibration	WG228639-3	N8582.D	05/18/18	13:49
Initial Calibration	WG228639-5	N8583.D	05/18/18	14:21
Initial Calibration	WG228639-6	N8584.D	05/18/18	14:52
Initial Calibration	WG228639-7	N8585.D	05/18/18	15:24
Independent Source	WG228639-8	N8586.D	05/18/18	15:55
Laboratory Control S	WG227847-2RA	N8588.D	05/18/18	16:58
CHAAP-19C-UGIA-DPT19	SL3841-2RA2	N8589.D	05/18/18	17:29
CHAAP-19C-LGIA-DPT20	SL3841-4RA	N8590.D	05/18/18	18:01
CHAAP-19C-LGIA-DPT24	SL3841-6RA	N8591.D	05/18/18	18:32
CHAAP-19C-UGIA-DPT23	SL3841-8RA	N8592.D	05/18/18	19:04
CHAAP-19C-LGIA-DPT16	SL3841-10RA2	N8593.D	05/18/18	19:36
CHAAP-19C-LGIA-DPT116	SL3841-12RA	N8594.D	05/18/18	20:09
CHAAP-19C-UGIA-DPT15	SL3841-14RA	N8595.D	05/18/18	20:41
CHAAP-19C-LGIA-DPT12	SL3841-16RA	N8596.D	05/18/18	21:13
CHAAP-19C-UGIA-DPT11	SL3841-18RA	N8597.D	05/18/18	21:45
CHAAP-EB-050318	SL3841-20RA	N8598.D	05/18/18	22:17
Continuing Calibrati	WG228639-9	N8601.D	05/18/18	23:53

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Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : ND520.D
Instrument ID : GCMS-N

SDG : SL3841
Date Analyzed : 21-MAY-18
Time Analyzed : 10:50

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	32.4		
68	Less than 2.0% of mass 69	0.4	0.98	1
69	Less than 100.0% of mass 198	41.2		
70	Less than 2.0% of mass 69	0.0	0.09	1
127	40.0 - 60.0% of mass 198	58.7		
197	Less than 1.0% of mass 198	0.3		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.9		
275	10.0 - 30.0% of mass 198	24.4		
365	1.0 - 100.0% of mass 198	3.1		
441	0.0 - 100.0% of mass 443	10.4	72.36	2
442	40.0 - 100.0% of mass 198	72.5		
443	17.0 - 23.0% of mass 442	14.4	19.81	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG228771-2	N8611.D	05/21/18	11:07
Method Blank Sample	WG227847-1RA3	N8613.D	05/21/18	12:10
Continuing Calibrati	WG228771-3	N8633.D	05/21/18	22:44
Continuing Calibrati	WG228771-4	N8634.D	05/21/18	23:16
Continuing Calibrati	WG228771-5	N8635.D	05/21/18	23:49

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3841
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-N
Lab File IDs : N8581.D N8582.D N8580.D N8583.D N8584.D N8585.D
Column ID:
Calibration Date(s): 18-MAY-18 12:47, 18-MAY-18 15:24

	0.200000(Level 1	0.500000(Level 2	2.0000 Level 3	7.0000 Level 4	10.0000 Level 5	15.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Naphthalene	0.99439	1.01918	1.03259	0.99876	1.03513	0.97057	AVG		1.00844		2.48374	15.00000	O
2-Methylnaphthalene	0.61288	0.61409	0.64340	0.62270	0.65406	0.60707	AVG		0.62570		3.00919	15.00000	O
Acenaphthylene	1.95594	2.12025	2.19410	2.17395	2.19751	2.14139	AVG		2.13052		4.25641	15.00000	O
Acenaphthene	1.30331	1.37665	1.39882	1.37707	1.41434	1.39314	AVG		1.37722		2.82351	15.00000	O
Fluorene	1.30306	1.41426	1.44386	1.43602	1.47896	1.48512	AVG		1.42688		4.64521	15.00000	O
Phenanthrene	1.18885	1.23709	1.19607	1.17020	1.19669	1.15589	AVG		1.19080		2.33089	15.00000	O
Anthracene	1.02386	1.09190	1.16970	1.17488	1.21454	1.12596	AVG		1.13347		6.03514	15.00000	O
Fluoranthene	1.06825	1.08750	1.17806	1.17846	1.23166	1.09571	AVG		1.13994		5.71153	15.00000	O
Pyrene	3.18810	2.95793	2.53166	2.44690	2.47227	2.48776	AVG		2.68077		11.69973	15.00000	O
Benzo(a)anthracene	1.53180	1.37833	1.42782	1.37086	1.43873	1.38653	AVG		1.42234		4.23593	15.00000	O
Chrysene	1.92863	1.60357	1.45301	1.37891	1.42869	1.36222	AVG		1.52584		14.09842	15.00000	O
Benzo(b)fluoranthene	1.68690	1.36156	1.40834	1.46232	1.63705	1.56118	AVG		1.51956		8.53712	15.00000	O
Benzo(k)fluoranthene	9384	21625	110390	348754	476521	632232	LNR	-0.20709	1.81376		0.99835	0.99000	O
Benzo(a)pyrene	1.13243	1.29705	1.16115	1.27629	1.33367	1.32421	AVG		1.25413		6.86161	15.00000	O
Indeno(1,2,3-cd)pyrene	2469	2850	21416	84364	140688	215483	QUA	0.12790	4.16525	-0.18526	0.99745	0.99000	O
Dibenzo(a,h)anthracene	1163	3504	23439	98456	149488	226618	QUA	0.18187	1.92431	-0.03212	0.99938	0.99000	O
Benzo(g,h,i)perylene	1.02358	0.74875	0.76085	0.91965	0.95268	0.99193	AVG		0.89957		13.0702(	15.00000	O
2-Methylnaphthalene-D10	0.48116	0.48741	0.50883	0.49470	0.51171	0.47576	AVG		0.49326		2.96820	15.00000	
Fluorene-D10	0.97974	1.03907	1.06538	1.07320	1.08216	1.05830	AVG		1.04964		3.54753	15.00000	
Pyrene-D10	1.85868	1.71219	1.53524	1.48519	1.51808	1.53551	AVG		1.60748		9.11803	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
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ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG228639-9
Analytical Date: 05/18/18 23:53
Lab File ID : N8601.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 05/18/18 12:47 05/18/18 15:24
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
27 Naphthalene	1.00844	1.02414	1.02414	0.010	1.55704	20.00000	Averaged
33 2-Methylnaphthalene	0.62570	0.65001	0.65001	0.010	3.88583	20.00000	Averaged
45 Acenaphthylene	2.13052	2.14428	2.14428	0.010	0.64572	20.00000	Averaged
48 Acenaphthene	1.37722	1.36044	1.36044	0.010	-1.21853	20.01000	Averaged
56 Fluorene	1.42688	1.41702	1.41702	0.010	-0.69104	20.00000	Averaged
66 Phenanthrene	1.19080	1.22292	1.22292	0.010	2.69721	20.00000	Averaged
67 Anthracene	1.13347	1.13751	1.13751	0.010	0.35624	20.00000	Averaged
70 Fluoranthene	1.13994	1.13626	1.13626	0.010	-0.32237	20.01000	Averaged
72 Pyrene	2.68077	2.71977	2.71977	0.010	1.45462	20.00000	Averaged
75 Benzo(a)anthracene	1.42234	1.36943	1.36943	0.010	-3.72013	20.00000	Averaged
77 Chrysene	1.52584	1.44394	1.44394	0.010	-5.36728	20.00000	Averaged
80 Benzo(b)fluoranthene	1.51956	1.40385	1.40385	0.010	-7.61439	20.00000	Averaged
81 Benzo(k)fluoranthene	2.00000	1.81562	1.79679	0.010	-9.21899	20.00000	Linear
82 Benzo(a)pyrene	1.25413	1.21813	1.21813	0.010	-2.87109	20.01000	Averaged
84 Indeno(1,2,3-cd)pyrene	2.00000	2.22679	0.26270	0.010	11.33935	20.00000	Quadratic
85 Dibenzo(a,h)anthracene	2.00000	2.02900	0.49982	0.010	1.44988	20.00000	Quadratic
86 Benzo(g,h,i)perylene	0.89957	0.97617	0.97617	0.010	8.51444	20.00000	Averaged
32 2-Methylnaphthalene-D10	0.49326	0.50778	0.50778	0.010	2.94387	20.00000	Averaged
55 Fluorene-D10	1.04964	1.02308	1.02308	0.010	-2.53052	20.00000	Averaged
71 Pyrene-D10	1.60748	1.68802	1.68802	0.010	5.01055	20.00000	Averaged

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG228771-2
Analytical Date: 05/21/18 11:07
Lab File ID : N8611.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 05/18/18 12:47 05/18/18 15:24
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
27 Naphthalene	1.00844	0.96376	0.96376	0.010	-4.43001	20.00000	Averaged
33 2-Methylnaphthalene	0.62570	0.60594	0.60594	0.010	-3.15777	20.00000	Averaged
45 Acenaphthylene	2.13052	1.89583	1.89583	0.010	-11.01577	20.00000	Averaged
48 Acenaphthene	1.37722	1.25030	1.25030	0.010	-9.21594	20.01000	Averaged
56 Fluorene	1.42688	1.31379	1.31379	0.010	-7.92536	20.00000	Averaged
66 Phenanthrene	1.19080	1.07698	1.07698	0.010	-9.55850	20.00000	Averaged
67 Anthracene	1.13347	1.03381	1.03381	0.010	-8.79303	20.00000	Averaged
70 Fluoranthene	1.13994	1.04233	1.04233	0.010	-8.56245	20.01000	Averaged
72 Pyrene	2.68077	2.24557	2.24557	0.010	-16.23419	20.00000	Averaged
75 Benzo(a)anthracene	1.42234	1.27051	1.27051	0.010	-10.67489	20.00000	Averaged
77 Chrysene	1.52584	1.29711	1.29711	0.010	-14.99012	20.00000	Averaged
80 Benzo(b)fluoranthene	1.51956	1.23084	1.23084	0.010	-19.00004	20.00000	Averaged
81 Benzo(k)fluoranthene	2.00000	1.62740	1.62610	0.010	-18.63004	20.00000	Linear
82 Benzo(a)pyrene	1.25413	1.04636	1.04636	0.010	-16.56677	20.01000	Averaged
84 Indeno(1,2,3-cd)pyrene	2.00000	2.05947	0.24142	0.010	2.97374	20.00000	Quadratic
85 Dibenzo(a,h)anthracene	2.00000	1.79987	0.43786	0.010	-10.00638	20.00000	Quadratic
86 Benzo(g,h,i)perylene	0.89957	0.74142	0.74142	0.010	-17.58049	20.00000	Averaged
32 2-Methylnaphthalene-D10	0.49326	0.49141	0.49141	0.010	-0.37665	20.00000	Averaged
55 Fluorene-D10	1.04964	0.98622	0.98622	0.010	-6.04238	20.00000	Averaged
71 Pyrene-D10	1.60748	1.42048	1.42048	0.010	-11.63327	20.00000	Averaged

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG228771-3
Analytical Date: 05/21/18 22:44
Lab File ID : N8633.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 05/18/18 12:47 05/18/18 15:24
Column ID:

	Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
27	Naphthalene	1.00844	0.94580	0.94580	0.010	-6.21151	20.00000	Averaged	
33	2-Methylnaphthalene	0.62570	0.60341	0.60341	0.010	-3.56244	20.00000	Averaged	
45	Acenaphthylene	2.13052	1.97137	1.97137	0.010	-7.47031	20.00000	Averaged	
48	Acenaphthene	1.37722	1.26027	1.26027	0.010	-8.49189	20.01000	Averaged	
56	Fluorene	1.42688	1.37271	1.37271	0.010	-3.79634	20.00000	Averaged	
66	Phenanthrene	1.19080	1.05804	1.05804	0.010	-11.14894	20.00000	Averaged	
67	Anthracene	1.13347	1.10902	1.10902	0.010	-2.15760	20.00000	Averaged	
70	Fluoranthene	1.13994	1.13847	1.13847	0.010	-0.12848	20.01000	Averaged	
72	Pyrene	2.68077	2.26365	2.26365	0.010	-15.55977	20.00000	Averaged	
75	Benzo(a)anthracene	1.42234	1.24181	1.24181	0.010	-12.69276	20.00000	Averaged	
77	Chrysene	1.52584	1.31565	1.31565	0.010	-13.77557	20.00000	Averaged	
80	Benzo(b)fluoranthene	1.51956	1.18989	1.18989	0.010	-21.69518	20.00000	Averaged	*
81	Benzo(k)fluoranthene	2.00000	1.65980	1.65548	0.010	-17.01017	20.00000	Linear	
82	Benzo(a)pyrene	1.25413	1.17353	1.17353	0.010	-6.42724	20.01000	Averaged	
84	Indeno(1,2,3-cd)pyrene	2.00000	3.04421	0.36822	0.010	52.21075	20.00000	Quadratic	*
85	Dibenzo(a,h)anthracene	2.00000	2.74676	0.69611	0.010	37.33779	20.00000	Quadratic	*
86	Benzo(g,h,i)perylene	0.89957	0.88461	0.88461	0.010	-1.66381	20.00000	Averaged	
32	2-Methylnaphthalene-D10	0.49326	0.48828	0.48828	0.010	-1.01035	20.00000	Averaged	
55	Fluorene-D10	1.04964	1.01965	1.01965	0.010	-2.85717	20.00000	Averaged	
71	Pyrene-D10	1.60748	1.37888	1.37888	0.010	-14.22087	20.00000	Averaged	

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG228771-4
Analytical Date: 05/21/18 23:16
Lab File ID : N8634.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 05/18/18 12:47 05/18/18 15:24
Column ID:

	Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
27	Naphthalene	1.00844	0.96703	0.96703	0.010	-4.10607	20.00000	Averaged	
33	2-Methylnaphthalene	0.62570	0.61416	0.61416	0.010	-1.84441	20.00000	Averaged	
45	Acenaphthylene	2.13052	1.93537	1.93537	0.010	-9.16006	20.00000	Averaged	
48	Acenaphthene	1.37722	1.23731	1.23731	0.010	-10.15904	20.01000	Averaged	
56	Fluorene	1.42688	1.35776	1.35776	0.010	-4.84402	20.00000	Averaged	
66	Phenanthrene	1.19080	1.04101	1.04101	0.010	-12.57901	20.00000	Averaged	
67	Anthracene	1.13347	1.06764	1.06764	0.010	-5.80837	20.00000	Averaged	
70	Fluoranthene	1.13994	1.09369	1.09369	0.010	-4.05698	20.01000	Averaged	
72	Pyrene	2.68077	2.50534	2.50534	0.010	-6.54395	20.00000	Averaged	
75	Benzo(a)anthracene	1.42234	1.25379	1.25379	0.010	-11.85039	20.00000	Averaged	
77	Chrysene	1.52584	1.34822	1.34822	0.010	-11.64060	20.00000	Averaged	
80	Benzo(b)fluoranthene	1.51956	1.16273	1.16273	0.010	-23.48253	20.00000	Averaged	*
81	Benzo(k)fluoranthene	2.00000	1.78051	1.76495	0.010	-10.97441	20.00000	Linear	
82	Benzo(a)pyrene	1.25413	1.17105	1.17105	0.010	-6.62483	20.01000	Averaged	
84	Indeno(1,2,3-cd)pyrene	2.00000	2.33024	0.27591	0.010	16.51205	20.00000	Quadratic	
85	Dibenzo(a,h)anthracene	2.00000	2.66785	0.67437	0.010	33.39225	20.00000	Quadratic	*
86	Benzo(g,h,i)perylene	0.89957	0.88585	0.88585	0.010	-1.52564	20.00000	Averaged	
32	2-Methylnaphthalene-D10	0.49326	0.49492	0.49492	0.010	0.33570	20.00000	Averaged	
55	Fluorene-D10	1.04964	1.01103	1.01103	0.010	-3.67848	20.00000	Averaged	
71	Pyrene-D10	1.60748	1.54553	1.54553	0.010	-3.85382	20.00000	Averaged	

*** = Compound out of QC criteria**

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Tel:(207) 874-2400 Fax:(207) 775-4029
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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG228771-5
Analytical Date: 05/21/18 23:49
Lab File ID : N8635.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 05/18/18 12:47 05/18/18 15:24
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
27 Naphthalene	1.00844	0.95704	0.95704	0.010	-5.09651	20.00000	Averaged	
33 2-Methylnaphthalene	0.62570	0.59256	0.59256	0.010	-5.29574	20.00000	Averaged	
45 Acenaphthylene	2.13052	1.96872	1.96872	0.010	-7.59446	20.00000	Averaged	
48 Acenaphthene	1.37722	1.25496	1.25496	0.010	-8.87729	20.01000	Averaged	
56 Fluorene	1.42688	1.34287	1.34287	0.010	-5.88760	20.00000	Averaged	
66 Phenanthrene	1.19080	1.03523	1.03523	0.010	-13.06441	20.00000	Averaged	
67 Anthracene	1.13347	1.07631	1.07631	0.010	-5.04291	20.00000	Averaged	
70 Fluoranthene	1.13994	1.07617	1.07617	0.010	-5.59414	20.01000	Averaged	
72 Pyrene	2.68077	2.27104	2.27104	0.010	-15.28413	20.00000	Averaged	
75 Benzo(a)anthracene	1.42234	1.19346	1.19346	0.010	-16.09204	20.00000	Averaged	
77 Chrysene	1.52584	1.32358	1.32358	0.010	-13.25570	20.00000	Averaged	
80 Benzo(b)fluoranthene	1.51956	1.13563	1.13563	0.010	-25.26609	20.00000	Averaged	*
81 Benzo(k)fluoranthene	2.00000	1.77789	1.76257	0.010	-11.10565	20.00000	Linear	
82 Benzo(a)pyrene	1.25413	1.19201	1.19201	0.010	-4.95360	20.01000	Averaged	
84 Indeno(1,2,3-cd)pyrene	2.00000	2.53391	0.30203	0.010	26.69562	20.00000	Quadratic	*
85 Dibenzo(a,h)anthracene	2.00000	2.62906	0.66369	0.010	31.45298	20.00000	Quadratic	*
86 Benzo(g,h,i)perylene	0.89957	0.94304	0.94304	0.010	4.83172	20.00000	Averaged	
32 2-Methylnaphthalene-D10	0.49326	0.48129	0.48129	0.010	-2.42742	20.00000	Averaged	
55 Fluorene-D10	1.04964	1.00189	1.00189	0.010	-4.54973	20.00000	Averaged	
71 Pyrene-D10	1.60748	1.39225	1.39225	0.010	-13.38948	20.00000	Averaged	

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG228639-4
Lab File ID : N8580.D

SDG: SL3841
Analytical Date: 05/18/18 12:47
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4				NAPHTHALENE-D8				ACENAPHTHENE-D10			
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	40620		7.48		122433		9.11		51505		11.44	
	Upper Limit	81240		7.65		244866		9.28		103010		11.61	
	Lower Limit	20310		7.31		61216.5		8.94		25752.5		11.28	
Client Sample ID	Lab Sample ID												
Laboratory Control S	WG227847-2RA	32745		7.48		101415		9.11		44646		11.44	
CHAAP-19C-UGIA-DI	SL3841-2RA2	29612		7.48		94176		9.11		40941		11.44	
CHAAP-19C-LGIA-DI	SL3841-4RA	31139		7.48		99420		9.11		43777		11.44	
CHAAP-19C-LGIA-DI	SL3841-6RA	30337		7.48		93847		9.11		40608		11.44	
CHAAP-19C-UGIA-DI	SL3841-8RA	32253		7.48		102602		9.11		44862		11.44	
CHAAP-19C-LGIA-DI	SL3841-10RA2	33120		7.48		105091		9.11		45695		11.44	
CHAAP-19C-LGIA-DI	SL3841-12RA	32138		7.48		99103		9.11		42907		11.44	
CHAAP-19C-UGIA-DI	SL3841-14RA	34069		7.48		109006		9.11		47065		11.44	
CHAAP-19C-LGIA-DI	SL3841-16RA	32949		7.48		107571		9.11		47907		11.44	
CHAAP-19C-UGIA-DI	SL3841-18RA	35611		7.48		113814		9.11		49557		11.44	
CHAAP-EB-050318	SL3841-20RA	29953		7.48		89932		9.11		36643		11.44	
Continuing Calibrati	WG228639-9	33684		7.48		102776		9.11		44350		11.44	
Continuing Calibrati	WG228771-2	48948		7.47		159326		9.10		73241		11.43	
Method Blank Sample	WG227847-1RA3	49918		7.48		159137		9.11		70613		11.44	
Continuing Calibrati	WG228771-3	47808		7.47		163087		9.10		73786		11.43	
Continuing Calibrati	WG228771-4	47792		7.47		169901		9.10		81863		11.43	
Continuing Calibrati	WG228771-5	46171		7.47		154869		9.10		68518		11.43	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG228639-4
Lab File ID : N8580.D

SDG: SL3841
Analytical Date: 05/18/18 12:47
Instrument ID: GCMS-N

		PHENANTHRENE-D10			CHRYSENE-D12			PERYLENE-D12		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	83835		13.42		40695		17.24		22745		20.24	
	Upper Limit	167670		13.59		81390		17.40		45490		20.41	
	Lower Limit	41917.5		13.25		20347.5		17.07		11372.5		20.08	
Client Sample ID	Lab Sample ID												
Laboratory Control S	WG227847-2RA	72941		13.42		34703		17.23		19797		20.24	
CHAAP-19C-UGIA-DI	SL3841-2RA2	65041		13.42		25532		17.23		14170		20.24	
CHAAP-19C-LGIA-DI	SL3841-4RA	71419		13.42		27862		17.23		14663		20.24	
CHAAP-19C-LGIA-DI	SL3841-6RA	63815		13.42		24305		17.23		13385		20.24	
CHAAP-19C-UGIA-DI	SL3841-8RA	73465		13.42		29583		17.23		16187		20.24	
CHAAP-19C-LGIA-DI	SL3841-10RA2	76362		13.42		31173		17.23		15866		20.24	
CHAAP-19C-LGIA-DI	SL3841-12RA	67829		13.42		29271		17.23		16876		20.24	
CHAAP-19C-UGIA-DI	SL3841-14RA	79051		13.42		32113		17.23		16371		20.24	
CHAAP-19C-LGIA-DI	SL3841-16RA	78491		13.42		31379		17.23		17170		20.24	
CHAAP-19C-UGIA-DI	SL3841-18RA	82839		13.42		34185		17.23		19350		20.24	
CHAAP-EB-050318	SL3841-20RA	54402		13.42		21013		17.23		12476		20.24	
Continuing Calibrati	WG228639-9	67585		13.42		29010		17.23		17279		20.24	
Continuing Calibrati	WG228771-2	120646		13.42		57631		17.23		36015		20.23	
Method Blank Sample	WG227847-1RA3	117351		13.42		45572		17.23		24574		20.23	
Continuing Calibrati	WG228771-3	130924		13.42		66980		17.23		40706		20.24	
Continuing Calibrati	WG228771-4	146822		13.42		65550		17.23		36296		20.24	
Continuing Calibrati	WG228771-5	118090		13.42		57738		17.23		35238		20.24	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-2
Client ID: CHAAP-19C-UGIA-DPT19
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: HLE10293.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		94.4	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-4
Client ID: CHAAP-19C-LGIA-DPT20
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: HLE10294.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		92.6	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-6
Client ID: CHAAP-19C-LGIA-DPT24
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: HLE10295.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		92.8	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-8
Client ID: CHAAP-19C-UGIA-DPT23
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: HLE10296.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		93.5	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-10
Client ID: CHAAP-19C-LGIA-DPT16
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: HLE10297.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		94.6	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-12
Client ID: CHAAP-19C-LGIA-DPT116
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: HLE10298.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		94.5	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-14
Client ID: CHAAP-19C-UGIA-DPT15
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: HLE10299.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		92.6	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-16
Client ID: CHAAP-19C-LGIA-DPT12
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: HLE10300.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		93.0	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-18
Client ID: CHAAP-19C-UGIA-DPT11
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: HLE10301.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		94.0	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-20
Client ID: CHAAP-EB-050318
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: HLE10302.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		94.0	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227925-1
Client ID: Method Blank Sample
Project:
SDG: SL3841
Lab File ID: HLE10282.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		90.7	%					

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** AQ
Lab Code: KAS **SDG:** SL3841

Client Sample ID	Lab Sample ID	Col. ID	DNB	#
CHAAP-19C-LGIA-DPT16	SL3841-10	B	94.6	
CHAAP-19C-LGIA-DPT11	SL3841-12	B	94.5	
CHAAP-19C-UGIA-DPT15	SL3841-14	B	92.6	
CHAAP-19C-LGIA-DPT12	SL3841-16	B	93.0	
CHAAP-19C-UGIA-DPT11	SL3841-18	B	94.0	
CHAAP-19C-UGIA-DPT19	SL3841-2	B	94.4	
CHAAP-EB-050318	SL3841-20	B	94.0	
CHAAP-19C-LGIA-DPT20	SL3841-4	B	92.6	
CHAAP-19C-LGIA-DPT24	SL3841-6	B	92.8	
CHAAP-19C-UGIA-DPT23	SL3841-8	B	93.5	
Method Blank Sample	WG227925-1	B	90.7	
Laboratory Control S	WG227925-2	B	94.5	

		QC Limits
DNB	1,2-DINITROBENZENE	83-120

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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LCS Recovery Report

Client:
Lab ID: WG227925-2
Client ID: LCS
Project:
SDG: SL3841
LCS File ID: HLE10283.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
HMX	101.	5.00	5.04	ug/L	65-135
RDX	103.	5.00	5.16	ug/L	68-130
1,3,5-Trinitrobenzene	106.	5.00	5.29	ug/L	73-125
1,3-Dinitrobenzene	105.	5.00	5.24	ug/L	78-120
Tetryl	122.	5.00	6.11	ug/L	64-128
Nitrobenzene	98.8	5.00	4.94	ug/L	65-134
2,4,6-Trinitrotoluene	109.	5.00	5.44	ug/L	71-123
4-Am-DNT	111.	5.00	5.53	ug/L	76-125
2-Am-DNT	106.	5.00	5.29	ug/L	79-120
2,6-Dinitrotoluene	101.	5.00	5.06	ug/L	77-127
2,4-Dinitrotoluene	107.	5.00	5.33	ug/L	78-120
2-Nitrotoluene	105.	5.00	5.24	ug/L	70-127
4-Nitrotoluene	107.	5.00	5.35	ug/L	71-127
3-Nitrotoluene	102.	5.00	5.09	ug/L	73-125
Nitroglycerin	98.5	20.0	19.7	ug/L	74-127
PETN	96.5	20.0	19.3	ug/L	73-127
1,2-Dinitrobenzene	94.5				83-120

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLE10282.D
Instrument ID : HPLC02
Matrix : AQ

SDG : SL3841
Lab Sample ID : WG227925-1
Date Extracted : 09-MAY-18
Date Analyzed : 10-MAY-18
Time Analyzed : 08:08

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG227925-2	HLE10283.	05/10/18	08:39
CHAAP-19C-UGIA-DPT19	SL3841-2	HLE10293.	05/10/18	13:49
CHAAP-19C-LGIA-DPT20	SL3841-4	HLE10294.	05/10/18	14:20
CHAAP-19C-LGIA-DPT24	SL3841-6	HLE10295.	05/10/18	14:51
CHAAP-19C-UGIA-DPT23	SL3841-8	HLE10296.	05/10/18	15:22
CHAAP-19C-LGIA-DPT16	SL3841-10	HLE10297.	05/10/18	15:53
CHAAP-19C-LGIA-DPT116	SL3841-12	HLE10298.	05/10/18	16:24
CHAAP-19C-UGIA-DPT15	SL3841-14	HLE10299.	05/10/18	16:55
CHAAP-19C-LGIA-DPT12	SL3841-16	HLE10300.	05/10/18	17:26
CHAAP-19C-UGIA-DPT11	SL3841-18	HLE10301.	05/10/18	17:57
CHAAP-EB-050318	SL3841-20	HLE10302.	05/10/18	18:28

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLE10556.D
Instrument ID : HPLC02
Matrix : AQ

SDG : SL3841
Lab Sample ID : WG227925-1C
Date Extracted : 09-MAY-18
Date Analyzed : 17-MAY-18
Time Analyzed : 21:27

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
CHAAP-19C-UGIA-DPT15	SL3841-14C	HLE10557.	05/17/18	22:16

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3841
Project : Cornhusker Army Ammunition Plant
Instrument ID: HPLC02
Lab File IDs : HKH10014.I HKH10013.I HKH10012.I HKH10011.I HKH10010.I HKH10009.I HKH10008.I
Calibration Date(s): 01-AUG-17 09:37 01-AUG-17 14:33

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7		Crv				Max	
	0.025000(	0.050000(	0.100000(	0.250000(	0.500000(	1.0000	2.0000		New	b	m1	%RSD	%RSD	
HMX	143	204	424	1108	2190	4103	8448		LNR	-0.00406	4200	0.99963	0.99000	O
RDX	92.00000	202	389	1038	2084	3920	8183		LNR	0.00215	4071	0.99952	0.99000	O
1,3,5-trinitrobenzene	222	508	1024	2674	5383	10154	20806		LNR	-0.00071	10372	0.99973	0.99000	O
1,3-dinitrobenzene	264	581	1148	2994	6045	11405	23270		LNR	-0.00176	11603	0.99976	0.99000	O
TETRYL	98.00000	244	482	1267	2545	4803	9244		LNR	-0.01222	4644	0.99914	0.99000	O
nitrobenzene	142	331	655	1720	3466	6563	13345		LNR	-0.00158	6659	0.99979	0.99000	O
2,4,6-trinitrotoluene	135	313	627	1624	3260	6187	12320		LNR	-0.00578	6161	0.99976	0.99000	O
4-AM-DNT	63.00000	118	244	663	1299	2450	4682		LNR	-0.01508	2353	0.99890	0.99000	O
2-AM-DNT	65.00000	171	311	854	1698	3193	6303		LNR	-0.00832	3155	0.99955	0.99000	O
2,6-dinitrotoluene	76.00000	172	369	981	1970	3749	7493		LNR	-0.00306	3750	0.99978	0.99000	O
2,4-dinitrotoluene	136	329	692	1809	3639	6925	13785		LNR	-0.00420	6900	0.99976	0.99000	O
2-nitrotoluene	63.00000	115	257	686	1382	2659	5246		LNR	-0.00402	2630	0.99976	0.99000	O
4-nitrotoluene	101	120	227	531	1075	2023	3902		LNR	-0.02177	1947	0.99936	0.99000	O
3-nitrotoluene	72.00000	124	256	701	1390	2617	5111		LNR	-0.01061	2561	0.99942	0.99000	O
1,2-dinitrobenzene	117	263	530	1379	2756	5196	10604		LNR	-0.00227	5286	0.99974	0.99000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3841
Project : Cornhusker Army Ammunition Plant
Instrument ID: HPLC02
Lab File IDs : HLC10037.D, HLC10036.D, HLC10035.D, HLC10034.D, HLC10033.D, HLC10032.D, HLC10031.D
Calibration Date(s): 20-MAR-18 14:54, 20-MAR-18 18:05

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7		Crv				Max	
	0.025000(	0.050000(	0.100000(	0.250000(	0.500000(	1.0000	2.0000		New	b	m1	%RSD	%RSD	
NITROGLYCERIN	5440	5685	5280	5392	5454	5917	5425		AVG		5513	3.90686	20.00000	O
PETN	3020	2970	2465	3064	2834	3010	2768		AVG		2876	7.31282	15.00000	O

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3841
Project : Cornhusker Army Ammunition Plant
Instrument ID: HPLC02
Lab File IDs : HLC10037.D HLC10036.D HLC10035.D HLC10034.D HLC10033.D HLC10032.D HLC10031.D
Calibration Date(s): 20-MAR-18 14:54 20-MAR-18 18:05

	0.025000(Level 1	0.050000(Level 2	0.100000(Level 3	0.250000(Level 4	0.5000000 Level 5	1.0000 Level 6	2.0000 Level 7		New Crv	b	m1	%RSD	Max %RSD	
HMX	5320	5440	5140	5296	5378	5810	5351		AVG		5391	3.83807	20.00000	O
RDX	75.00000	225	466	1287	2694	5888	10895		LNR	0.00587	5552	0.99828	0.99000	O
1,3,5-trinitrobenzene	3240	3680	3770	3628	3744	4074	3686		AVG		3689	6.66990	20.00000	O
1,3-dinitrobenzene	6680	7280	7410	7508	7512	8198	7518		AVG		7444	5.99405	20.00000	O
TETRYL	2240	2660	2530	2424	2550	2797	2541		AVG		2535	6.90733	20.00000	O
nitrobenzene	6760	6820	6610	6736	6892	7418	6831		AVG		6867	3.77157	20.00000	O
2,4,6-trinitrotoluene	2600	2520	2510	2460	2478	2672	2445		AVG		2526	3.24744	20.00000	O
4-AM-DNT	4200	4040	4240	4260	4366	4695	4318		AVG		4303	4.68155	20.00000	O
2-AM-DNT	5360	5700	5640	5720	5838	6280	5787		AVG		5761	4.78978	20.00000	O
2,6-dinitrotoluene	101	175	345	733	1390	3147	5661		LNR	-0.01275	2869	0.99714	0.99000	O
2,4-dinitrotoluene	4280	4700	4560	4552	4620	5008	4610		AVG		4619	4.68458	20.00000	O
2-nitrotoluene	2520	2760	2900	2944	2952	3214	2937		AVG		2890	7.31192	20.00000	O
4-nitrotoluene	2280	1980	2350	2484	2298	2635	2370		AVG		2342	8.60342	20.00000	O
3-nitrotoluene	3360	3180	3390	3404	3136	3585	3225		AVG		3326	4.69272	20.00000	O
1,2-dinitrobenzene	4680	4500	4480	4532	4640	4978	4582		AVG		4627	3.69030	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG227995-1
Lab File ID : HLE10281.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3841
Analytical Date: 05/10/18 06:58
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150 NITROGLYCERIN	5513	5322	0.010	-3.46798	20.00000	Averaged
155 PETN	2876	3040	0.010	5.69089	20.00000	Averaged

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG227995-1
Analytical Date: 05/10/18 06:58
Lab File ID : HLE10281.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{\text{RRF}}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5336	5336	0.010	-1.01366	20.00000	Averaged
4	RDX	0.50000	0.49310	5410	0.010	-1.37968	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3810	3810	0.010	3.28402	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7616	7616	0.010	2.31451	20.00000	Averaged
7	nitrobenzene	6867	6754	6754	0.010	-1.64044	20.00000	Averaged
9	TETRYL	2535	2780	2780	0.010	9.68324	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2538	2538	0.010	0.46086	20.00000	Averaged
11	4-AM-DNT	4303	4360	4360	0.010	1.33139	20.00000	Averaged
12	2-AM-DNT	5761	5886	5886	0.010	2.17483	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.49028	2886	0.010	-1.94471	20.00000	Linear
14	2,4-dinitrotoluene	4619	4730	4730	0.010	2.41420	20.00000	Averaged
15	2-nitrotoluene	2890	2970	2970	0.010	2.78341	20.00000	Averaged
16	4-nitrotoluene	2342	2428	2428	0.010	3.65311	20.00000	Averaged
17	3-nitrotoluene	3326	3314	3314	0.010	-0.35009	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4808	4808	0.010	3.90220	20.00000	Averaged

*** = Compound out of QC criteria**

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P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG227995-2
Lab File ID : HLE10292.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3841
Analytical Date: 05/10/18 13:18
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150 NITROGLYCERIN	5513	5222	0.010	-5.28181	20.00000	Averaged
155 PETN	2876	2999	0.010	4.28260	20.00000	Averaged

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG227995-2
Analytical Date: 05/10/18 13:18
Lab File ID : HLE10292.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{\text{RRF}}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5236	5236	0.010	-2.86873	20.00000	Averaged
4	RDX	0.25000	0.24381	5284	0.010	-2.47473	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3772	3772	0.010	2.25389	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7564	7564	0.010	1.61594	20.00000	Averaged
7	nitrobenzene	6867	6608	6608	0.010	-3.76666	20.00000	Averaged
9	TETRYL	2535	2568	2568	0.010	1.31890	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2484	2484	0.010	-1.67661	20.00000	Averaged
11	4-AM-DNT	4303	4248	4248	0.010	-1.27162	20.00000	Averaged
12	2-AM-DNT	5761	5736	5736	0.010	-0.42901	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.23267	2816	0.010	-6.93393	20.00000	Linear
14	2,4-dinitrotoluene	4619	4628	4628	0.010	0.20569	20.00000	Averaged
15	2-nitrotoluene	2890	2944	2944	0.010	1.88362	20.00000	Averaged
16	4-nitrotoluene	2342	2628	2628	0.010	12.19125	20.00000	Averaged
17	3-nitrotoluene	3326	3584	3584	0.010	7.76864	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4732	4732	0.010	2.25982	20.00000	Averaged

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG227995-3
Lab File ID : HLE10303.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3841
Analytical Date: 05/10/18 18:59
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150 NITROGLYCERIN	5513	5328	0.010	-3.35915	20.00000	Averaged
155 PETN	2876	3035	0.010	5.53441	20.00000	Averaged

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG227995-3
Analytical Date: 05/10/18 18:59
Lab File ID : HLE10303.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5354	5354	0.010	-0.67975	20.00000	Averaged
4	RDX	0.50000	0.49526	5434	0.010	-0.94738	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3856	3856	0.010	4.53102	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7674	7674	0.010	3.09369	20.00000	Averaged
7	nitrobenzene	6867	6742	6742	0.010	-1.81519	20.00000	Averaged
9	TETRYL	2535	2748	2748	0.010	8.42070	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2542	2542	0.010	0.61919	20.00000	Averaged
11	4-AM-DNT	4303	4382	4382	0.010	1.84269	20.00000	Averaged
12	2-AM-DNT	5761	5900	5900	0.010	2.41785	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.49028	2886	0.010	-1.94471	20.00000	Linear
14	2,4-dinitrotoluene	4619	4732	4732	0.010	2.45751	20.00000	Averaged
15	2-nitrotoluene	2890	2980	2980	0.010	3.12948	20.00000	Averaged
16	4-nitrotoluene	2342	2468	2468	0.010	5.36074	20.00000	Averaged
17	3-nitrotoluene	3326	3338	3338	0.010	0.37157	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4828	4828	0.010	4.33440	20.00000	Averaged

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG227995-20
Analytical Date: 05/17/18 15:43
Lab File ID : HLE10549.D
Instrument ID: HPLC02
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	0.50000	0.46788	3964	0.010	-6.42305	20.00000	Linear
4	RDX	0.50000	0.47208	3826	0.010	-5.58430	20.00000	Linear
5	1,3,5-trinitrobenzene	0.50000	0.47420	9852	0.010	-5.16014	20.00000	Linear
6	1,3-dinitrobenzene	0.50000	0.47465	11056	0.010	-5.07017	20.00000	Linear
7	nitrobenzene	0.50000	0.47985	6412	0.010	-4.02988	20.00000	Linear
9	TETRYL	0.50000	0.50540	4808	0.010	1.08022	20.00000	Linear
10	2,4,6-trinitrotoluene	0.50000	0.47224	5890	0.010	-5.55151	20.00000	Linear
11	4-AM-DNT	0.50000	0.46263	2248	0.010	-7.47450	20.00000	Linear
12	2-AM-DNT	0.50000	0.47815	3070	0.010	-4.37072	20.00000	Linear
13	2,6-dinitrotoluene	0.50000	0.47509	3586	0.010	-4.98177	20.00000	Linear
14	2,4-dinitrotoluene	0.50000	0.47608	6628	0.010	-4.78436	20.00000	Linear
15	2-nitrotoluene	0.50000	0.47770	2534	0.010	-4.46041	20.00000	Linear
16	4-nitrotoluene	0.50000	0.50225	2040	0.010	0.44967	20.00000	Linear
17	3-nitrotoluene	0.50000	0.46530	2438	0.010	-6.94049	20.00000	Linear
2	1,2-dinitrobenzene	0.50000	0.46592	4950	0.010	-6.81693	20.00000	Linear

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG227995-21
Analytical Date: 05/18/18 00:43
Lab File ID : HLE10560.D
Instrument ID: HPLC02
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	0.25000	0.22762	3892	0.010	-8.95044	20.00000	Linear
4	RDX	0.25000	0.22889	3692	0.010	-8.44551	20.00000	Linear
5	1,3,5-trinitrobenzene	0.25000	0.23115	9620	0.010	-7.53936	20.00000	Linear
6	1,3-dinitrobenzene	0.25000	0.22989	10752	0.010	-8.04226	20.00000	Linear
7	nitrobenzene	0.25000	0.23073	6188	0.010	-7.70963	20.00000	Linear
9	TETRYL	0.25000	0.22872	4476	0.010	-8.51235	20.00000	Linear
10	2,4,6-trinitrotoluene	0.25000	0.22454	5676	0.010	-10.18211	20.00000	Linear
11	4-AM-DNT	0.25000	0.21910	2204	0.010	-12.36126	20.00000	Linear
12	2-AM-DNT	0.25000	0.22715	2972	0.010	-9.14062	20.00000	Linear
13	2,6-dinitrotoluene	0.25000	0.22895	3480	0.010	-8.42002	20.00000	Linear
14	2,4-dinitrotoluene	0.25000	0.22884	6432	0.010	-8.46520	20.00000	Linear
15	2-nitrotoluene	0.25000	0.22676	2428	0.010	-9.29554	20.00000	Linear
16	4-nitrotoluene	0.25000	0.24692	2092	0.010	-1.23210	20.00000	Linear
17	3-nitrotoluene	0.25000	0.21817	2344	0.010	-12.73131	20.00000	Linear
2	1,2-dinitrobenzene	0.25000	0.22738	4856	0.010	-9.04858	20.00000	Linear

*** = Compound out of QC criteria**

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Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
SDG : SL3841
Project : Cornhusker Army Ammunition Plant
Column ID : B
Instrument ID : HPLC02

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	DNB	
Initial Calibration	WG225143-7	03/20/18	14:54	8.575	
Initial Calibration	WG225143-6	03/20/18	15:26	8.57	
Initial Calibration	WG225143-5	03/20/18	15:58	8.57	
Initial Calibration	WG225143-4	03/20/18	16:30	8.57	
Initial Calibration	WG225143-3	03/20/18	17:01	8.57	
Initial Calibration	WG225143-2	03/20/18	17:33	8.574	
Initial Calibration	WG225143-1	03/20/18	18:05	8.587	
Independent Source	WG225143-8	03/20/18	18:37		
Continuing Calibrati	WG227995-1	05/10/18	06:58	8.54	
Method Blank Sample	WG227925-1	05/10/18	08:08	8.554	
Laboratory Control S	WG227925-2	05/10/18	08:39	8.547	
Continuing Calibrati	WG227995-2	05/10/18	13:18	8.546	
CHAAP-19C-UGIA-DPT19	SL3841-2	05/10/18	13:49	8.55	
CHAAP-19C-LGIA-DPT20	SL3841-4	05/10/18	14:20	8.552	
CHAAP-19C-LGIA-DPT24	SL3841-6	05/10/18	14:51	8.559	
CHAAP-19C-UGIA-DPT23	SL3841-8	05/10/18	15:22	8.544	
CHAAP-19C-LGIA-DPT16	SL3841-10	05/10/18	15:53	8.537	
CHAAP-19C-LGIA-DPT11	SL3841-12	05/10/18	16:24	8.545	
CHAAP-19C-UGIA-DPT15	SL3841-14	05/10/18	16:55	8.548	
CHAAP-19C-LGIA-DPT12	SL3841-16	05/10/18	17:26	8.546	
CHAAP-19C-UGIA-DPT11	SL3841-18	05/10/18	17:57	8.546	
CHAAP-EB-050318	SL3841-20	05/10/18	18:28	8.538	
Continuing Calibrati	WG227995-3	05/10/18	18:59	8.532	

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Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
SDG : SL3841
Project : Cornhusker Army Ammunition Plant
Column ID : B
Instrument ID : HPLC02

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	DNB	
Initial Calibration	WG210620-15	08/01/17	09:37	13.49	
Initial Calibration	WG210620-14	08/01/17	10:27	13.48	
Initial Calibration	WG210620-13	08/01/17	11:16	13.48	
Initial Calibration	WG210620-12	08/01/17	12:05	13.47	
Initial Calibration	WG210620-11	08/01/17	12:54	13.47	
Initial Calibration	WG210620-10	08/01/17	13:44	13.47	
Initial Calibration	WG210620-9	08/01/17	14:33	13.46	
Independent Source	WG210620-16	08/01/17	17:01		
Continuing Calibrati	WG227995-20	05/17/18	15:43	13.37	
Method Blank Sample	WG227925-1C	05/17/18	21:27	13.4	
CHAAP-19C-UGIA-DPT15	SL3841-14C	05/17/18	22:16	13.39	
Continuing Calibrati	WG227995-21	05/18/18	00:43	13.39	

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INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT19

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-002

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	7380			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.631	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	24.7			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	272			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.427	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.576	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	250000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	46.1			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	3.64			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	33.6			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	15100			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	27.8			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	41000			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1170			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.027	J		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	17.8			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	16400			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	2.81	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	200000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.099	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	20.8			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	83.8			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT19-FF

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-003

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	12	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.13	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	19			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	35.5			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	212000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	2.33	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.46	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	0.84	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	2990			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	37200			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	770			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	5.19			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	13700			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.1	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	189000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	1.1	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	15			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT20

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-004

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	14800			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.580	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	12			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	261			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.594	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.062	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	368000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	57.8			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	7.66			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	31.8			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	25000			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	23.9			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	74500			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1470			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	26.6			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	21300			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	2.26	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.057	J		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	300000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.22	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	38.0			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	170			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT20-FF

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-005

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	10	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.12	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	9.3			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	32.7			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	364000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	2.2	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.606	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.7	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	7560			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	72800			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1350			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	3.82			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	18000			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.5	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	322000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	0.87	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	26			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT24

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-006

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	3420			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.23	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	10			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	82.4			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.15	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	356000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	30.2			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	2.18			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	9.24			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	10400			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	6.09			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	68500			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1380			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	13.9			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	17400			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	2.58	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	302000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	9.28			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	46.9			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT23

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-008

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	34800			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.926	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	23.0			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	551			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	1.66			MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.325	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	228000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	135			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	17.8			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	52.6			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	44200			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	47.5			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	41300			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1100			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.032	J		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	61.2			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	21200			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	2.40	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.13	J		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	196000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.59	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	115			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	153			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT23-FF

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-009

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	12	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.11	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	13			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	33.2			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	182000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	1.9	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.31	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.0	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	2850			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	31000			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	595			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	1.1	J		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	13200			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.8	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	187000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	0.51	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	6.3	J		MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-010

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	2900			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.22	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	9.9			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	73.9			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.20	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.065	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	380000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	34.2			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	2.64			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	18.2			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	13600			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	7.07			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	89200			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1360			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U	A	CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	13.3			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	21300			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	1.95	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	365000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	9.96			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	76.4			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16-FF

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-011

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	9.8	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.081	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	8.3			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	30.8			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	377000		NA	MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	1.9	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.600	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.6	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	7920		A	MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	88800		NA	MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1300		A	MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	2.52			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	20700			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.2	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	353000		NA	MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	1.4	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	18			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT116

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-012

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	9400			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.32	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	11			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	188			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.396	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.058	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	399000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	50.8			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	4.78			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	21.0			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	19000			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	9.30			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	96100			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1440			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	19.2			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	24000			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	2.97	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	377000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.12	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	24.7			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	89.8			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT116-FF

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-013

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	10	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.087	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	8.4			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	32.6			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	380000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	1.9	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.619	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	2.63	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	7690			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	90800			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1290			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	1.86	J		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	20900			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.7	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	362000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	1.0	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	15			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT15

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-014

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	45900			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.54	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	38.8			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	598			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	2.55			MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.628	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	198000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	139			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	20.6			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	50.6			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	56300			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	38.3			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	41200			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	2460			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.021	J		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	82.0			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	28300			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	3.41	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.18	J		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	67200			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.771	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	110			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	183			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT15-FF

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-015

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	16	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.18	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	9.1			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	55.8			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	130000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	1.1	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.26	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.3	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	1600			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	24600			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	842			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	1.3	J		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	18400			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	2.14	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	67500			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	0.86	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	7.4	J		MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT12

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-016

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	3020			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.15	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	9.4			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	71.1			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.16	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	377000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	39.3			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	1.98			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	13.6			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	12400			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	6.24			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	94800			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1280			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	13.9			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	23300			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	2.37	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	378000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	9.82			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	58.2			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT12-FF

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-017

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	11	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.10	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	9.5			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	32.6			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	384000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	2.2	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.58	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	16.1			MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	7780			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.751	J		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	98100			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1260			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	2.21			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	23000			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.99	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	388000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	0.74	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	24			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT11

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-018

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	18400			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.798	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	37.4			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	430			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.907	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.716	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	351000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	71.7			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	21.8			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	37.6			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	31900			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	33.8			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	68300			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1980			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.039	J		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	41.7			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	25000			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	3.45	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.086	J		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	243000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.44	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	45.4			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	126			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT11-FF

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-019

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	12	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.098	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	21			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	66.6			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	318000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	1.4	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.59	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.6	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	4250			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	62500			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1400			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	1.3	J		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	20900			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.5	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	247000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	1.0	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	11			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-EB-050318

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-020

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	16	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.071	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	4.0	U		MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	1.0	U		MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	79	J		MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	1.2	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	0.30	U		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	0.72	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	37	J		MS	5	100	13	60
7439-92-1	LEAD, TOTAL	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	22	J		MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	0.53	J		MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	1.2	U		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	400	U		MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	0.49	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	78	J		MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	0.80	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	8.0	U		MS	5	10	3.9	8.0

Comments:

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: ICV

File: HLE07A May 07, 2018 12:13

Analyte	True	Found	%R (1)
MERCURY	6.0	5.74	95.7

SAMPLE: CCV

File: HLE07A May 07, 2018 12:19

Analyte	True	Found	%R (1)
MERCURY	5.0	4.84	96.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: HLE07A May 07, 2018 12:42

Analyte	True	Found	%R (1)
MERCURY	5.0	4.89	97.8

SAMPLE: CCV

File: HLE07A May 07, 2018 13:08

Analyte	True	Found	%R (1)
MERCURY	5.0	4.83	96.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: HLE07A May 07, 2018 13:34

Analyte	True	Found	%R (1)
MERCURY	5.0	4.78	95.6

SAMPLE: CCV

File: HLE07A May 07, 2018 14:01

Analyte	True	Found	%R (1)
MERCURY	5.0	4.67	93.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: HLE07A May 07, 2018 14:27

Analyte	True	Found	%R (1)
MERCURY	5.0	4.66	93.2

SAMPLE: CCV

File: HLE07A May 07, 2018 14:57

Analyte	True	Found	%R (1)
MERCURY	5.0	4.65	93.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: HLE07A May 07, 2018 15:26

Analyte	True	Found	%R (1)
MERCURY	5.0	4.61	92.2

SAMPLE: CCV

File: HLE07A May 07, 2018 15:52

Analyte	True	Found	%R (1)
MERCURY	5.0	4.59	91.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: HLE07A May 07, 2018 16:18

Analyte	True	Found	%R (1)
MERCURY	5.0	4.53	90.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: ICV

File: JLE14A May 14, 2018 15:20

Analyte	True	Found	%R (1)
ALUMINUM	400.0	412.60	103.2
ANTIMONY	20.0	19.92	99.6
BARIUM	20.0	19.88	99.4
CALCIUM	4000.0	3999.00	100.0
IRON	4000.0	3963.00	99.1
LEAD	20.0	19.34	96.7
MAGNESIUM	4000.0	4031.00	100.8
MOLYBDENUM	40.0	37.59	94.0
POTASSIUM	4000.0	3962.00	99.1
SODIUM	4000.0	4031.00	100.8
THALLIUM	20.0	19.76	98.8

SAMPLE: CCV

File: JLE14A May 14, 2018 16:00

Analyte	True	Found	%R (1)
ALUMINUM	500.0	507.10	101.4
ANTIMONY	25.0	25.82	103.3
BARIUM	25.0	25.39	101.6
CALCIUM	5000.0	5012.00	100.2
IRON	5000.0	4950.00	99.0
LEAD	25.0	24.55	98.2
MAGNESIUM	5000.0	5259.00	105.2
MOLYBDENUM	25.0	23.94	95.8
POTASSIUM	5000.0	4848.00	97.0
SODIUM	5000.0	5302.00	106.0
THALLIUM	25.0	24.42	97.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 14, 2018 16:45

Analyte	True	Found	%R (1)
ALUMINUM	500.0	503.30	100.7
ANTIMONY	25.0	24.99	100.0
BARIUM	25.0	24.76	99.0
CALCIUM	5000.0	4893.00	97.9
IRON	5000.0	4931.00	98.6
LEAD	25.0	24.44	97.8
MAGNESIUM	5000.0	5149.00	103.0
MOLYBDENUM	25.0	23.98	95.9
POTASSIUM	5000.0	4878.00	97.6
SODIUM	5000.0	5107.00	102.1
THALLIUM	25.0	24.57	98.3

SAMPLE: CCV

File: JLE14A May 14, 2018 17:32

Analyte	True	Found	%R (1)
ALUMINUM	500.0	506.00	101.2
ANTIMONY	25.0	25.34	101.4
BARIUM	25.0	25.80	103.2
CALCIUM	5000.0	4998.00	100.0
IRON	5000.0	5048.00	101.0
LEAD	25.0	24.62	98.5
MAGNESIUM	5000.0	5154.00	103.1
MOLYBDENUM	25.0	24.29	97.2
POTASSIUM	5000.0	4993.00	99.9
SODIUM	5000.0	5166.00	103.3
THALLIUM	25.0	24.62	98.5

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 14, 2018 18:20

Analyte	True	Found	%R (1)
ALUMINUM	500.0	494.30	98.9
ANTIMONY	25.0	25.61	102.4
BARIUM	25.0	25.53	102.1
CALCIUM	5000.0	4984.00	99.7
IRON	5000.0	4996.00	99.9
LEAD	25.0	24.71	98.8
MAGNESIUM	5000.0	5172.00	103.4
MOLYBDENUM	25.0	24.03	96.1
POTASSIUM	5000.0	4926.00	98.5
SODIUM	5000.0	5178.00	103.6
THALLIUM	25.0	24.63	98.5

SAMPLE: CCV

File: JLE14A May 14, 2018 19:09

Analyte	True	Found	%R (1)
ALUMINUM	500.0	510.50	102.1
ANTIMONY	25.0	25.50	102.0
BARIUM	25.0	25.50	102.0
CALCIUM	5000.0	5012.00	100.2
IRON	5000.0	4965.00	99.3
LEAD	25.0	24.89	99.6
MAGNESIUM	5000.0	5289.00	105.8
MOLYBDENUM	25.0	23.71	94.8
POTASSIUM	5000.0	4923.00	98.5
SODIUM	5000.0	5316.00	106.3
THALLIUM	25.0	24.93	99.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 14, 2018 19:59

Analyte	True	Found	%R (1)
ALUMINUM	500.0	454.70	90.9
ANTIMONY	25.0	24.19	96.8
BARIUM	25.0	24.39	97.6
CALCIUM	5000.0	5001.00	100.0
IRON	5000.0	5021.00	100.4
LEAD	25.0	24.89	99.6
MAGNESIUM	5000.0	4572.00	91.4
MOLYBDENUM	25.0	25.79	103.2
POTASSIUM	5000.0	4776.00	95.5
SODIUM	5000.0	4536.00	90.7
THALLIUM	25.0	24.49	98.0

SAMPLE: CCV

File: JLE14A May 14, 2018 20:49

Analyte	True	Found	%R (1)
ALUMINUM	500.0	462.60	92.5
ANTIMONY	25.0	23.87	95.5
BARIUM	25.0	24.17	96.7
CALCIUM	5000.0	5012.00	100.2
IRON	5000.0	4952.00	99.0
LEAD	25.0	25.06	100.2
MAGNESIUM	5000.0	4604.00	92.1
MOLYBDENUM	25.0	26.10	104.4
POTASSIUM	5000.0	4649.00	93.0
SODIUM	5000.0	4412.00	88.2•
THALLIUM	25.0	24.81	99.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 14, 2018 21:40

Analyte	True	Found	%R (1)
ALUMINUM	500.0	469.40	93.9
ANTIMONY	25.0	23.62	94.5
BARIUM	25.0	24.17	96.7
CALCIUM	5000.0	5035.00	100.7
IRON	5000.0	5023.00	100.5
LEAD	25.0	24.99	100.0
MAGNESIUM	5000.0	4663.00	93.3
MOLYBDENUM	25.0	25.76	103.0
POTASSIUM	5000.0	4803.00	96.1
SODIUM	5000.0	4447.00	88.9•
THALLIUM	25.0	24.53	98.1

SAMPLE: CCV

File: JLE14A May 14, 2018 22:31

Analyte	True	Found	%R (1)
ALUMINUM	500.0	455.90	91.2
ANTIMONY	25.0	23.84	95.4
BARIUM	25.0	24.07	96.3
CALCIUM	5000.0	5011.00	100.2
IRON	5000.0	4988.00	99.8
LEAD	25.0	24.49	98.0
MAGNESIUM	5000.0	4466.00	89.3•
MOLYBDENUM	25.0	25.80	103.2
POTASSIUM	5000.0	4736.00	94.7
SODIUM	5000.0	4250.00	85.0•
THALLIUM	25.0	24.29	97.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 14, 2018 23:21

Analyte	True	Found	%R (1)
ALUMINUM	500.0	468.60	93.7
ANTIMONY	25.0	23.94	95.8
BARIUM	25.0	24.18	96.7
CALCIUM	5000.0	4966.00	99.3
IRON	5000.0	4954.00	99.1
LEAD	25.0	24.47	97.9
MAGNESIUM	5000.0	4626.00	92.5
MOLYBDENUM	25.0	25.55	102.2
POTASSIUM	5000.0	4809.00	96.2
SODIUM	5000.0	4486.00	89.7
THALLIUM	25.0	24.14	96.6

SAMPLE: CCV

File: JLE14A May 15, 2018 0:12

Analyte	True	Found	%R (1)
ALUMINUM	500.0	474.10	94.8
ANTIMONY	25.0	24.05	96.2
BARIUM	25.0	24.32	97.3
CALCIUM	5000.0	5021.00	100.4
IRON	5000.0	5090.00	101.8
LEAD	25.0	24.79	99.2
MAGNESIUM	5000.0	4725.00	94.5
MOLYBDENUM	25.0	25.61	102.4
POTASSIUM	5000.0	4811.00	96.2
SODIUM	5000.0	4576.00	91.5
THALLIUM	25.0	24.40	97.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 15, 2018 1:03

Analyte	True	Found	%R (1)
ALUMINUM	500.0	463.80	92.8
ANTIMONY	25.0	23.61	94.4
BARIUM	25.0	23.87	95.5
CALCIUM	5000.0	5034.00	100.7
IRON	5000.0	5023.00	100.5
LEAD	25.0	24.63	98.5
MAGNESIUM	5000.0	4707.00	94.1
MOLYBDENUM	25.0	25.70	102.8
POTASSIUM	5000.0	4821.00	96.4
SODIUM	5000.0	4599.00	92.0
THALLIUM	25.0	24.24	97.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: ICV

File: JLE15C May 15, 2018 18:44

Analyte	True	Found	%R (1)
ALUMINUM	400.0	400.10	100.0
ARSENIC	20.0	20.14	100.7
BERYLLIUM	20.0	20.02	100.1
CADMIUM	20.0	20.08	100.4
CALCIUM	4000.0	4046.00	101.2
CHROMIUM	20.0	19.51	97.5
COBALT	20.0	20.05	100.3
COPPER	20.0	19.96	99.8
IRON	4000.0	3993.00	99.8
MAGNESIUM	4000.0	3846.00	96.2
MANGANESE	20.0	19.59	98.0
MOLYBDENUM	40.0	38.80	97.0
NICKEL	20.0	20.07	100.4
POTASSIUM	4000.0	3913.00	97.8
SELENIUM	20.0	20.39	102.0
SILVER	20.0	19.93	99.6
SODIUM	4000.0	3902.00	97.5
VANADIUM	20.0	19.62	98.1
ZINC	20.0	20.48	102.4

SAMPLE: CCV

File: JLE15C May 15, 2018 19:29

Analyte	True	Found	%R (1)
ALUMINUM	500.0	490.70	98.1
ARSENIC	25.0	24.92	99.7
BERYLLIUM	25.0	25.37	101.5
CADMIUM	25.0	24.93	99.7
CALCIUM	5000.0	4941.00	98.8
CHROMIUM	25.0	24.81	99.2
COBALT	25.0	24.93	99.7
COPPER	25.0	24.93	99.7
IRON	5000.0	4942.00	98.8
MAGNESIUM	5000.0	4845.00	96.9
MANGANESE	25.0	24.52	98.1
MOLYBDENUM	25.0	24.72	98.9
NICKEL	25.0	24.56	98.2
POTASSIUM	5000.0	4833.00	96.7
SELENIUM	25.0	25.33	101.3
SILVER	25.0	24.80	99.2
SODIUM	5000.0	4828.00	96.6
VANADIUM	25.0	24.51	98.0
ZINC	25.0	24.60	98.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: JLE15C May 15, 2018 20:19

Analyte	True	Found	%R (1)
ALUMINUM	500.0	479.70	95.9
ARSENIC	25.0	24.72	98.9
BERYLLIUM	25.0	24.66	98.6
CADMIUM	25.0	24.98	99.9
CALCIUM	5000.0	4918.00	98.4
CHROMIUM	25.0	24.45	97.8
COBALT	25.0	24.49	98.0
COPPER	25.0	24.50	98.0
IRON	5000.0	4875.00	97.5
MAGNESIUM	5000.0	4686.00	93.7
MANGANESE	25.0	24.21	96.8
MOLYBDENUM	25.0	24.66	98.6
NICKEL	25.0	24.60	98.4
POTASSIUM	5000.0	4757.00	95.1
SELENIUM	25.0	25.41	101.6
SILVER	25.0	24.95	99.8
SODIUM	5000.0	4618.00	92.4
VANADIUM	25.0	24.04	96.2
ZINC	25.0	24.97	99.9

SAMPLE: CCV

File: JLE15C May 15, 2018 21:09

Analyte	True	Found	%R (1)
ALUMINUM	500.0	498.70	99.7
ARSENIC	25.0	24.61	98.4
BERYLLIUM	25.0	25.11	100.4
CADMIUM	25.0	24.53	98.1
CALCIUM	5000.0	4924.00	98.5
CHROMIUM	25.0	24.44	97.8
COBALT	25.0	24.20	96.8
COPPER	25.0	24.54	98.2
IRON	5000.0	4884.00	97.7
MAGNESIUM	5000.0	4897.00	97.9
MANGANESE	25.0	24.44	97.8
MOLYBDENUM	25.0	24.22	96.9
NICKEL	25.0	24.70	98.8
POTASSIUM	5000.0	4848.00	97.0
SELENIUM	25.0	25.19	100.8
SILVER	25.0	24.61	98.4
SODIUM	5000.0	4816.00	96.3
VANADIUM	25.0	24.16	96.6
ZINC	25.0	24.76	99.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: JLE15C May 15, 2018 21:59

Analyte	True	Found	%R (1)
ALUMINUM	500.0	494.30	98.9
ARSENIC	25.0	24.69	98.8
BERYLLIUM	25.0	24.84	99.4
CADMIUM	25.0	24.33	97.3
CALCIUM	5000.0	4870.00	97.4
CHROMIUM	25.0	24.43	97.7
COBALT	25.0	24.26	97.0
COPPER	25.0	24.18	96.7
IRON	5000.0	4840.00	96.8
MAGNESIUM	5000.0	4900.00	98.0
MANGANESE	25.0	24.20	96.8
MOLYBDENUM	25.0	24.17	96.7
NICKEL	25.0	24.47	97.9
POTASSIUM	5000.0	4812.00	96.2
SELENIUM	25.0	24.95	99.8
SILVER	25.0	24.49	98.0
SODIUM	5000.0	4835.00	96.7
VANADIUM	25.0	24.27	97.1
ZINC	25.0	24.60	98.4

SAMPLE: CCV

File: JLE15C May 15, 2018 22:49

Analyte	True	Found	%R (1)
ALUMINUM	500.0	488.70	97.7
ARSENIC	25.0	24.31	97.2
BERYLLIUM	25.0	24.94	99.8
CADMIUM	25.0	24.29	97.2
CALCIUM	5000.0	4898.00	98.0
CHROMIUM	25.0	24.50	98.0
COBALT	25.0	24.11	96.4
COPPER	25.0	24.27	97.1
IRON	5000.0	4806.00	96.1
MAGNESIUM	5000.0	4900.00	98.0
MANGANESE	25.0	24.05	96.2
MOLYBDENUM	25.0	23.96	95.8
NICKEL	25.0	24.46	97.8
POTASSIUM	5000.0	4846.00	96.9
SELENIUM	25.0	24.99	100.0
SILVER	25.0	24.21	96.8
SODIUM	5000.0	4891.00	97.8
VANADIUM	25.0	24.14	96.6
ZINC	25.0	24.40	97.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: JLE15C May 15, 2018 23:41

Analyte	True	Found	%R (1)
ALUMINUM	500.0	489.10	97.8
ARSENIC	25.0	24.31	97.2
BERYLLIUM	25.0	23.42	93.7
CADMIUM	25.0	24.21	96.8
CALCIUM	5000.0	4943.00	98.9
CHROMIUM	25.0	24.65	98.6
COBALT	25.0	24.31	97.2
COPPER	25.0	24.49	98.0
IRON	5000.0	4880.00	97.6
MAGNESIUM	5000.0	4819.00	96.4
MANGANESE	25.0	24.36	97.4
MOLYBDENUM	25.0	24.21	96.8
NICKEL	25.0	24.75	99.0
POTASSIUM	5000.0	4888.00	97.8
SELENIUM	25.0	24.83	99.3
SILVER	25.0	24.02	96.1
SODIUM	5000.0	4907.00	98.1
VANADIUM	25.0	24.85	99.4
ZINC	25.0	24.60	98.4

SAMPLE: CCV

File: JLE15C May 16, 2018 0:31

Analyte	True	Found	%R (1)
ALUMINUM	500.0	507.30	101.5
ARSENIC	25.0	24.39	97.6
BERYLLIUM	25.0	22.92	91.7
CADMIUM	25.0	23.73	94.9
CALCIUM	5000.0	4954.00	99.1
CHROMIUM	25.0	24.74	99.0
COBALT	25.0	24.32	97.3
COPPER	25.0	24.50	98.0
IRON	5000.0	4902.00	98.0
MAGNESIUM	5000.0	5096.00	101.9
MANGANESE	25.0	24.28	97.1
MOLYBDENUM	25.0	23.88	95.5
NICKEL	25.0	24.47	97.9
POTASSIUM	5000.0	4851.00	97.0
SELENIUM	25.0	24.55	98.2
SILVER	25.0	23.76	95.0
SODIUM	5000.0	5041.00	100.8
VANADIUM	25.0	24.42	97.7
ZINC	25.0	24.10	96.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: JLE15C May 16, 2018 1:21

Analyte	True	Found	%R (1)
ALUMINUM	500.0	514.70	102.9
ARSENIC	25.0	24.35	97.4
BERYLLIUM	25.0	24.72	98.9
CADMIUM	25.0	23.76	95.0
CALCIUM	5000.0	4967.00	99.3
CHROMIUM	25.0	24.73	98.9
COBALT	25.0	24.42	97.7
COPPER	25.0	24.61	98.4
IRON	5000.0	4926.00	98.5
MAGNESIUM	5000.0	5062.00	101.2
MANGANESE	25.0	24.50	98.0
MOLYBDENUM	25.0	24.03	96.1
NICKEL	25.0	24.57	98.3
POTASSIUM	5000.0	4771.00	95.4
SELENIUM	25.0	24.30	97.2
SILVER	25.0	24.08	96.3
SODIUM	5000.0	5009.00	100.2
VANADIUM	25.0	24.92	99.7
ZINC	25.0	24.43	97.7

SAMPLE: CCV

File: JLE15C May 16, 2018 2:12

Analyte	True	Found	%R (1)
ALUMINUM	500.0	501.90	100.4
ARSENIC	25.0	24.42	97.7
BERYLLIUM	25.0	23.98	95.9
CADMIUM	25.0	23.78	95.1
CALCIUM	5000.0	4857.00	97.1
CHROMIUM	25.0	24.65	98.6
COBALT	25.0	24.04	96.2
COPPER	25.0	24.15	96.6
IRON	5000.0	4865.00	97.3
MAGNESIUM	5000.0	4933.00	98.7
MANGANESE	25.0	24.25	97.0
MOLYBDENUM	25.0	23.75	95.0
NICKEL	25.0	24.44	97.8
POTASSIUM	5000.0	4833.00	96.7
SELENIUM	25.0	24.43	97.7
SILVER	25.0	23.86	95.4
SODIUM	5000.0	4936.00	98.7
VANADIUM	25.0	24.55	98.2
ZINC	25.0	24.39	97.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: PQL

File: HLE07A May 07, 2018 12:17

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.23	115.0

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: PQL

File: JLE14A May 14, 2018 15:26

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	20.37	101.8
ANTIMONY	0.2	0.22	110.0
BARIUM	0.4	0.42	105.0
CALCIUM	20.0	20.40	102.0
IRON	20.0	19.66	98.3
LEAD	0.2	0.22	110.0
MAGNESIUM	20.0	20.57	102.8
MOLYBDENUM	1.0	1.00	100.0
POTASSIUM	200.0	198.10	99.0
SODIUM	200.0	211.10	105.5
THALLIUM	0.2	0.22	110.0

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: PQL

File: JLE15C May 15, 2018 18:52

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	19.29	96.4
ARSENIC	1.0	0.99	99.0
BERYLLIUM	0.2	0.21	105.0
CADMIUM	0.2	0.20	100.0
CALCIUM	20.0	19.83	99.1
CHROMIUM	1.0	0.92	92.0
COBALT	0.2	0.19	95.0
COPPER	0.6	0.60	100.0
IRON	20.0	19.56	97.8
MAGNESIUM	20.0	19.19	96.0
MANGANESE	0.4	0.38	95.0
MOLYBDENUM	1.0	0.97	97.0
NICKEL	0.4	0.38	95.0
POTASSIUM	200.0	191.10	95.5
SELENIUM	1.0	1.16	116.0
SILVER	0.2	0.20	100.0
SODIUM	200.0	194.10	97.0
VANADIUM	1.0	1.03	103.0
ZINC	2.0	2.13	106.5

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: ICB

File: HLE07A May 07, 2018 12:15

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB

File: HLE07A May 07, 2018 12:21

Analyte	Result	C
MERCURY	0.027	J

SAMPLE: CCB

File: HLE07A May 07, 2018 12:44

Analyte	Result	C
MERCURY	0.025	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCB
File: HLE07A May 07, 2018 13:10

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB
File: HLE07A May 07, 2018 13:36

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB
File: HLE07A May 07, 2018 14:03

Analyte	Result	C
MERCURY	0.025	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCB

File: HLE07A May 07, 2018 14:29

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB

File: HLE07A May 07, 2018 14:59

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB

File: HLE07A May 07, 2018 15:28

Analyte	Result	C
MERCURY	0.025	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCB

File: HLE07A May 07, 2018 15:54

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB

File: HLE07A May 07, 2018 16:20

Analyte	Result	C
MERCURY	0.025	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: ICB

File: JLE14A May 14, 2018 15:23

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	-0.017	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.075	J
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.009	J

SAMPLE: CCB

File: JLE14A May 14, 2018 16:03

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.012	J
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	-0.039	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.066	J
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.008	U

SAMPLE: CCB

File: JLE14A May 14, 2018 16:49

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	J
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	-0.022	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.039	J
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.008	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCB
File: JLE14A May 14, 2018 17:36

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.007	J
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	-0.023	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.009	J

SAMPLE: CCB
File: JLE14A May 14, 2018 18:24

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	-0.022	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.008	U

SAMPLE: CCB
File: JLE14A May 14, 2018 19:13

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	J
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	0.116	B
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.008	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCB
File: JLE14A May 14, 2018 20:03

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.007	J
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	0.080	J
MAGNESIUM	1.300	U
MOLYBDENUM	0.039	J
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.008	U

SAMPLE: CCB
File: JLE14A May 14, 2018 20:53

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.010	J
BARIUM	0.075	U
CALCIUM	7.151	J
IRON	4.300	U
LEAD	0.094	J
MAGNESIUM	1.509	J
MOLYBDENUM	0.036	J
POTASSIUM	7.900	U
SODIUM	8.908	J
THALLIUM	0.008	U

SAMPLE: CCB
File: JLE14A May 14, 2018 21:44

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.008	J
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	0.082	J
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.008	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCB
File: JLE14A May 14, 2018 22:35

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.009	J
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	0.096	J
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.008	U

SAMPLE: CCB
File: JLE14A May 14, 2018 23:25

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.010	J
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	0.098	J
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.008	U

SAMPLE: CCB
File: JLE14A May 15, 2018 0:16

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	0.091	J
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.008	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCB

File: JLE14A May 15, 2018 1:07

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	0.091	J
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.008	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: ICB

File: JLE15C May 15, 2018 18:48

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.056	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.004	J
SODIUM	4.400	U
VANADIUM	0.110	J
ZINC	0.270	U

SAMPLE: CCB

File: JLE15C May 15, 2018 19:33

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.282	J
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.051	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	J
SODIUM	4.400	U
VANADIUM	0.067	J
ZINC	0.270	U

SAMPLE: CCB

File: JLE15C May 15, 2018 20:23

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.004	J
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCB
File: JLE15C May 15, 2018 21:13

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.041	J
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.937	J
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE15C May 15, 2018 22:03

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.042	J
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	J
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE15C May 15, 2018 22:53

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.060	J
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCB
File: JLE15C May 15, 2018 23:45

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.070	J
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE15C May 16, 2018 0:35

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.048	J
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE15C May 16, 2018 1:25

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.060	J
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.028	J
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	J
SODIUM	5.475	J
VANADIUM	0.065	J
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCB

File: JLE15C May 16, 2018 2:16

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.057	J
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWLE07HGW4

Matrix: WATER **SDG Name:** SL3841

QC Batch ID: LE07HGW4

Concentration Units : ug/L

Analyte	RESULT	C
MERCURY	0.10	U

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWLE07IMW2

Matrix: WATER **SDG Name:** SL3841

QC Batch ID: LE07IMW2

Concentration Units : ug/L

Analyte	RESULT	C
ALUMINUM	7.0	J
ANTIMONY	0.50	U
ARSENIC	4.0	U
BARIUM	1.0	U
BERYLLIUM	0.20	U
CADMIUM	0.20	U
CALCIUM	80	U
CHROMIUM	4.0	U
COBALT	0.30	U
COPPER	0.45	J
IRON	60	U
LEAD	0.50	U
MAGNESIUM	10	J
MANGANESE	1.0	U
NICKEL	1.2	U
POTASSIUM	400	U
SELENIUM	0.27	J
SILVER	0.40	U
SODIUM	400	U
THALLIUM	0.40	U
VANADIUM	4.0	U
ZINC	8.0	U

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: ICSA

File: JLE14A May 14, 2018 15:34

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	99860.00	99.9
ANTIMONY	0	0.04	
BARIUM	0	0.09	
CALCIUM	100000.00	97280.00	97.3
IRON	100000.00	92940.00	92.9
LEAD	0	0.06	
MAGNESIUM	100000.00	99940.00	99.9
MOLYBDENUM	2000.00	1890.00	94.5
POTASSIUM	100000.00	99380.00	99.4
SODIUM	100000.00	102200.00	102.2
THALLIUM	0	0.01	

SAMPLE: ICSAB

File: JLE14A May 14, 2018 15:38

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	100600.00	100.6
ANTIMONY	20.00	21.00	105.0
BARIUM	21.00	21.12	100.0
CALCIUM	100000.00	96790.00	96.8
IRON	100000.00	93950.00	94.0
LEAD	20.00	21.15	105.0
MAGNESIUM	100000.00	101300.00	101.3
MOLYBDENUM	2000.00	1912.00	95.6
POTASSIUM	100000.00	98850.00	98.9
SODIUM	100000.00	105400.00	105.4
THALLIUM	20.00	21.27	105.0

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: ICSA

File: JLE15C May 15, 2018 19:00

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	91500.00	91.5
ARSENIC	0	0.29	
BERYLLIUM	0	0.00	
CADMIUM	0	0.04	
CALCIUM	100000.00	95500.00	95.5
CHROMIUM	0	0.93	
COBALT	0	0.10	
COPPER	0	1.00	
IRON	100000.00	90640.00	90.6
MAGNESIUM	100000.00	89100.00	89.1
MANGANESE	0	0.38	
MOLYBDENUM	2000.00	1911.00	95.5
NICKEL	0	-0.31	
POTASSIUM	100000.00	95450.00	95.5
SELENIUM	0	0.25	
SILVER	0	0.02	
SODIUM	100000.00	92410.00	92.4
VANADIUM	0	0.22	
ZINC	0	2.48	

SAMPLE: ICSAB

File: JLE15C May 15, 2018 19:04

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	93940.00	93.9
ARSENIC	20.00	19.62	100.0
BERYLLIUM	20.00	21.05	105.0
CADMIUM	20.00	18.49	90.0
CALCIUM	100000.00	96200.00	96.2
CHROMIUM	20.00	20.13	100.0
COBALT	20.00	19.25	95.0
COPPER	20.00	19.39	95.0
IRON	100000.00	91150.00	91.1
MAGNESIUM	100000.00	91850.00	91.8
MANGANESE	20.00	19.54	100.0
MOLYBDENUM	2000.00	1960.00	98.0
NICKEL	20.00	18.31	90.0
POTASSIUM	100000.00	97210.00	97.2
SELENIUM	20.00	19.32	95.0
SILVER	20.00	18.35	90.0
SODIUM	100000.00	94170.00	94.2
VANADIUM	20.00	19.81	100.0
ZINC	20.00	20.19	100.0

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16S

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-010P

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
MERCURY, TOTAL	0.885		0.10	U	1	88.5		82	119	CV

Comments:

FORM V (Part 1) - IN

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16S

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-010S

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
MERCURY, TOTAL	0.894		0.10	U	1	89.4		82	119	CV

Comments:

FORM V (Part 1) - IN

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16-FFS

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-011P

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, DISSOLVED	2180		9.8	J	2000	108.5		84	117	MS
ANTIMONY, DISSOLVED	95.6		0.081	J	100	95.6		85	117	MS
ARSENIC, DISSOLVED	109		8.3		100	100.7		84	116	MS
BARIUM, DISSOLVED	1980		30.8		2000	97.7		86	114	MS
BERYLLIUM, DISSOLVED	49.1		0.20	U	50	98.1		83	121	MS
CADMIUM, DISSOLVED	231		0.20	U	250	92.4		87	115	MS
CALCIUM, DISSOLVED	371000		377000		2500	-224.0	N	87	118	MS
CHROMIUM, DISSOLVED	201		1.9	J	200	99.4		85	116	MS
COBALT, DISSOLVED	509		0.600	J	500	101.7		86	115	MS
COPPER, DISSOLVED	242		1.6	J	250	96.2		85	118	MS
IRON, DISSOLVED	8800		7920		1000	87.5		87	118	MS
LEAD, DISSOLVED	102		0.50	U	100	101.7		88	115	MS
MAGNESIUM, DISSOLVED	92700		88800		5000	78.0	N	83	118	MS
MANGANESE, DISSOLVED	1770		1300		500	93.5		87	115	MS
NICKEL, DISSOLVED	485		2.52		500	96.6		85	117	MS
POTASSIUM, DISSOLVED	30000		20700		10000	92.5		87	115	MS
SELENIUM, DISSOLVED	97.4		1.2	J	100	96.2		80	120	MS
SILVER, DISSOLVED	46.6		0.40	U	50	93.1		85	116	MS
SODIUM, DISSOLVED	361000		353000		7500	108.7		85	117	MS
THALLIUM, DISSOLVED	101		0.40	U	100	100.8		82	116	MS
VANADIUM, DISSOLVED	530		1.4	J	500	105.7		86	115	MS
ZINC, DISSOLVED	472		18		500	90.9		83	119	MS

Comments:

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16-FFS

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-011S

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, DISSOLVED	2160		9.8	J	2000	107.5		84	117	MS
ANTIMONY, DISSOLVED	102		0.081	J	100	101.5		85	117	MS
ARSENIC, DISSOLVED	114		8.3		100	105.5		84	116	MS
BARIUM, DISSOLVED	2040		30.8		2000	100.6		86	114	MS
BERYLLIUM, DISSOLVED	48.9		0.20	U	50	97.9		83	121	MS
CADMIUM, DISSOLVED	239		0.20	U	250	95.5		87	115	MS
CALCIUM, DISSOLVED	381000		377000		2500	166.0	N	87	118	MS
CHROMIUM, DISSOLVED	207		1.9	J	200	102.5		85	116	MS
COBALT, DISSOLVED	516		0.600	J	500	103.1		86	115	MS
COPPER, DISSOLVED	244		1.6	J	250	96.9		85	118	MS
IRON, DISSOLVED	8940		7920		1000	102.5		87	118	MS
LEAD, DISSOLVED	108		0.50	U	100	107.6		88	115	MS
MAGNESIUM, DISSOLVED	95000		88800		5000	123.0	N	83	118	MS
MANGANESE, DISSOLVED	1790		1300		500	98.8		87	115	MS
NICKEL, DISSOLVED	499		2.52		500	99.3		85	117	MS
POTASSIUM, DISSOLVED	30600		20700		10000	99.5		87	115	MS
SELENIUM, DISSOLVED	101		1.2	J	100	99.5		80	120	MS
SILVER, DISSOLVED	47.5		0.40	U	50	95.1		85	116	MS
SODIUM, DISSOLVED	364000		353000		7500	143.3	N	85	117	MS
THALLIUM, DISSOLVED	108		0.40	U	100	107.7		82	116	MS
VANADIUM, DISSOLVED	552		1.4	J	500	110.0		86	115	MS
ZINC, DISSOLVED	488		18		500	94.0		83	119	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16S

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-010A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
MERCURY, TOTAL	0.774		0.013	U	1	77.4	A	80	120	CV

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16-FFS

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-011A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, DISSOLVED	213		2.0	J	200	105.5		80	120	MS
ANTIMONY, DISSOLVED	1.94		0.016	J	2	96.2		80	120	MS
ARSENIC, DISSOLVED	11.3		1.6		10	97.0		80	120	MS
BARIUM, DISSOLVED	10.0		6.16		4	97.3		80	120	MS
BERYLLIUM, DISSOLVED	1.91		0.0067	U	2	95.7		80	120	MS
CADMIUM, DISSOLVED	1.83		0.0059	U	2	91.5		80	120	MS
CALCIUM, DISSOLVED	73300		75300		200	-985.0	A	80	120	MS
CHROMIUM, DISSOLVED	10.2		0.39	J	10	98.3		80	120	MS
COBALT, DISSOLVED	2.06		0.120	J	2	97.0		80	120	MS
COPPER, DISSOLVED	5.98		0.31	J	6	94.5		80	120	MS
IRON, DISSOLVED	1670		1580		200	46.5	A	80	120	MS
LEAD, DISSOLVED	2.05		0.015	U	2	102.5		80	120	MS
MAGNESIUM, DISSOLVED	17700		17800		200	-35.0	A	80	120	MS
MANGANESE, DISSOLVED	251		261		4	-245.0	A	80	120	MS
NICKEL, DISSOLVED	4.33		0.504		4	95.6		80	120	MS
POTASSIUM, DISSOLVED	5960		4140		2000	90.8		80	120	MS
SELENIUM, DISSOLVED	9.32		0.24	J	10	90.8		80	120	MS
SILVER, DISSOLVED	1.88		0.010	U	2	94.1		80	120	MS
SODIUM, DISSOLVED	70600		70700		2000	-3.5	A	80	120	MS
THALLIUM, DISSOLVED	2.05		0.012	U	2	102.7		80	120	MS
VANADIUM, DISSOLVED	10.1		0.27	J	10	98.3		80	120	MS
ZINC, DISSOLVED	21.4		3.6		20	89.1		80	120	MS

Comments:

5D

SPIKE DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-010

Concentration Units : ug/L

Analyte	Control Limits	Spike Result	C	Spike Dup. Result	C	RPD	Q	M
MERCURY, TOTAL		0.894		0.885		1.0		CV

Comments:

FORM VD - IN

5D

SPIKE DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16-FF

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-011

Concentration Units : ug/L

Analyte	Control Limits	Spike Result	C	Spike Dup. Result	C	RPD	Q	M
ALUMINUM, DISSOLVED		2160		2180		0.9		MS
ANTIMONY, DISSOLVED		102		95.6		6.0		MS
ARSENIC, DISSOLVED		114		109		4.3		MS
BARIUM, DISSOLVED		2040		1980		2.9		MS
BERYLLIUM, DISSOLVED		48.9		49.1		0.3		MS
CADMIUM, DISSOLVED		239		231		3.3		MS
CALCIUM, DISSOLVED		381000		371000		2.6		MS
CHROMIUM, DISSOLVED		207		201		3.0		MS
COBALT, DISSOLVED		516		509		1.4		MS
COPPER, DISSOLVED		244		242		0.7		MS
IRON, DISSOLVED		8940		8800		1.7		MS
LEAD, DISSOLVED		108		102		5.6		MS
MAGNESIUM, DISSOLVED		95000		92700		2.4		MS
MANGANESE, DISSOLVED		1790		1770		1.5		MS
NICKEL, DISSOLVED		499		485		2.8		MS
POTASSIUM, DISSOLVED		30600		30000		2.3		MS
SELENIUM, DISSOLVED		101		97.4		3.3		MS
SILVER, DISSOLVED		47.5		46.6		2.1		MS
SODIUM, DISSOLVED		364000		361000		0.7		MS
THALLIUM, DISSOLVED		108		101		6.6		MS
VANADIUM, DISSOLVED		552		530		4.0		MS
ZINC, DISSOLVED		488		472		3.2		MS

Comments:

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWLE07HGW4

Matrix: WATER **SDG Name:** SL3841

QC Batch ID: LE07HGW4

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	5.00	4.28	85.8	82	119

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWLE07IMW2

Matrix: WATER **SDG Name:** SL3841

QC Batch ID: LE07IMW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	2000	2100	105.0	84	117
ANTIMONY	100	97.4	97.4	85	117
ARSENIC	100	101	101.0	84	116
BARIUM	2000	2000	99.8	86	114
BERYLLIUM	50.0	45.1	90.3	83	121
CADMIUM	250	249	99.5	87	115
CALCIUM	2500	2580	103.4	87	118
CHROMIUM	200	206	103.0	85	116
COBALT	500	528	105.7	86	115
COPPER	250	257	102.9	85	118
IRON	1000	1040	104.0	87	118
LEAD	100	104	103.9	88	115
MAGNESIUM	5000	5300	105.9	83	118
MANGANESE	500	517	103.4	87	115
NICKEL	500	520	103.9	85	117
POTASSIUM	10000	9960	99.6	87	115
SELENIUM	100	99.6	99.6	80	120
SILVER	50.0	51.6	103.1	85	116
SODIUM	7500	7660	102.2	85	117
THALLIUM	100	103	103.5	82	116
VANADIUM	500	528	105.7	86	115
ZINC	500	496	99.3	83	119

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16L

Matrix: WATER **SDG Name:** SL3841

Lab Sample ID: SL3841-010L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
MERCURY, TOTAL	0.013	U	0.065	U			CV

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16-FFL

Matrix: WATER **SDG Name:** SL3841

Lab Sample ID: SL3841-011L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, DISSOLVED	2.0	J	4.5	J	125.0		MS
ANTIMONY, DISSOLVED	0.016	J	0.055	U	100.0		MS
ARSENIC, DISSOLVED	1.6		2.4	J	50.0		MS
BARIUM, DISSOLVED	6.16		6.38		3.6		MS
BERYLLIUM, DISSOLVED	0.0067	U	0.034	U			MS
CADMIUM, DISSOLVED	0.0059	U	0.029	U			MS
CALCIUM, DISSOLVED	75300		76200		1.2		MS
CHROMIUM, DISSOLVED	0.39	J	0.22	U	100.0		MS
COBALT, DISSOLVED	0.120	J	0.11	J	8.3		MS
COPPER, DISSOLVED	0.31	J	0.48	J	54.8		MS
IRON, DISSOLVED	1580		1600		1.3		MS
LEAD, DISSOLVED	0.015	U	0.29	J			MS
MAGNESIUM, DISSOLVED	17800		18700		5.1		MS
MANGANESE, DISSOLVED	261		268		2.7		MS
NICKEL, DISSOLVED	0.504		0.59	J	17.1		MS
POTASSIUM, DISSOLVED	4140		4040		2.4		MS
SELENIUM, DISSOLVED	0.24	J	1.1	J	358.3		MS
SILVER, DISSOLVED	0.010	U	0.050	U			MS
SODIUM, DISSOLVED	70700		73100		3.4		MS
THALLIUM, DISSOLVED	0.012	U	0.060	U			MS
VANADIUM, DISSOLVED	0.27	J	0.50	U	100.0		MS
ZINC, DISSOLVED	3.6		4.1	J	13.9		MS

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 4/6/2018

Concentration Units: ug/L

Analyte	PQL/LOQ	IDL	M
MERCURY	0.20	0.025	CV

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/15/2018

Concentration Units: ug/L

Analyte	PQL/LOQ	IDL	M
ALUMINUM	20	1.9	MS
ANTIMONY	0.20	0.0056	MS
ARSENIC	1.0	0.18	MS
BARIUM	0.40	0.075	MS
BERYLLIUM	0.20	0.0037	MS
CADMIUM	0.20	0.0069	MS
CALCIUM	20	5.3	MS
CHROMIUM	1.0	0.062	MS
COBALT	0.20	0.0062	MS
COPPER	0.60	0.030	MS
IRON	20	4.3	MS
LEAD	0.20	0.010	MS
MAGNESIUM	20	1.3	MS
MANGANESE	0.40	0.021	MS
MOLYBDENUM	1.0	0.034	MS
NICKEL	0.40	0.018	MS
POTASSIUM	200	7.9	MS
SELENIUM	1.0	0.47	MS
SILVER	0.20	0.0030	MS
SODIUM	200	4.4	MS
THALLIUM	0.20	0.0084	MS
VANADIUM	1.0	0.063	MS
ZINC	2.0	0.27	MS

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 2/9/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
MERCURY	0.10	ug/L	CV	SW846 7470A / SW846 7470A

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ALUMINUM	8.0	ug/L	MS	SW846 3010A / SW846 6020A
ANTIMONY	0.10	ug/L	MS	SW846 3010A / SW846 6020A
ARSENIC	0.80	ug/L	MS	SW846 3010A / SW846 6020A
BARIUM	0.20	ug/L	MS	SW846 3010A / SW846 6020A
BERYLLIUM	0.040	ug/L	MS	SW846 3010A / SW846 6020A
CADMIUM	0.040	ug/L	MS	SW846 3010A / SW846 6020A
CALCIUM	16	ug/L	MS	SW846 3010A / SW846 6020A
CHROMIUM	0.80	ug/L	MS	SW846 3010A / SW846 6020A
COBALT	0.060	ug/L	MS	SW846 3010A / SW846 6020A
COPPER	0.40	ug/L	MS	SW846 3010A / SW846 6020A
IRON	12	ug/L	MS	SW846 3010A / SW846 6020A
LEAD	0.10	ug/L	MS	SW846 3010A / SW846 6020A
MAGNESIUM	16	ug/L	MS	SW846 3010A / SW846 6020A
MANGANESE	0.20	ug/L	MS	SW846 3010A / SW846 6020A
NICKEL	0.24	ug/L	MS	SW846 3010A / SW846 6020A
POTASSIUM	80	ug/L	MS	SW846 3010A / SW846 6020A
SELENIUM	0.60	ug/L	MS	SW846 3010A / SW846 6020A
SILVER	0.080	ug/L	MS	SW846 3010A / SW846 6020A
SODIUM	80	ug/L	MS	SW846 3010A / SW846 6020A
THALLIUM	0.080	ug/L	MS	SW846 3010A / SW846 6020A
VANADIUM	0.80	ug/L	MS	SW846 3010A / SW846 6020A
ZINC	1.6	ug/L	MS	SW846 3010A / SW846 6020A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 2/9/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
MERCURY	0.013	ug/L	CV	SW846 7470A / SW846 7470A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.88	ug/L	MS	SW846 3010A / SW846 6020A
ANTIMONY	0.011	ug/L	MS	SW846 3010A / SW846 6020A
ARSENIC	0.45	ug/L	MS	SW846 3010A / SW846 6020A
BARIUM	0.054	ug/L	MS	SW846 3010A / SW846 6020A
BERYLLIUM	0.0067	ug/L	MS	SW846 3010A / SW846 6020A
CADMIUM	0.0059	ug/L	MS	SW846 3010A / SW846 6020A
CALCIUM	4.1	ug/L	MS	SW846 3010A / SW846 6020A
CHROMIUM	0.044	ug/L	MS	SW846 3010A / SW846 6020A
COBALT	0.012	ug/L	MS	SW846 3010A / SW846 6020A
COPPER	0.037	ug/L	MS	SW846 3010A / SW846 6020A
IRON	2.6	ug/L	MS	SW846 3010A / SW846 6020A
LEAD	0.015	ug/L	MS	SW846 3010A / SW846 6020A
MAGNESIUM	1.6	ug/L	MS	SW846 3010A / SW846 6020A
MANGANESE	0.070	ug/L	MS	SW846 3010A / SW846 6020A
NICKEL	0.030	ug/L	MS	SW846 3010A / SW846 6020A
POTASSIUM	6.1	ug/L	MS	SW846 3010A / SW846 6020A
SELENIUM	0.037	ug/L	MS	SW846 3010A / SW846 6020A
SILVER	0.010	ug/L	MS	SW846 3010A / SW846 6020A
SODIUM	3.7	ug/L	MS	SW846 3010A / SW846 6020A
THALLIUM	0.012	ug/L	MS	SW846 3010A / SW846 6020A
VANADIUM	0.10	ug/L	MS	SW846 3010A / SW846 6020A
ZINC	0.78	ug/L	MS	SW846 3010A / SW846 6020A

ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/31/2018

Concentration Units: ug/L

Analyte	Integration Time (sec)	Linear Range	M
ALUMINUM	0.01	200000	MS
ANTIMONY	0.10	1000	MS
ARSENIC	0.30	1000	MS
BARIUM	0.10	2000	MS
BERYLLIUM	0.30	100	MS
CADMIUM	0.10	1000	MS
CALCIUM	0.03	200000	MS
CHROMIUM	0.10	2000	MS
COBALT	0.10	1000	MS
COPPER	0.10	2000	MS
IRON	0.03	100000	MS
LEAD	0.10	2000	MS
MAGNESIUM	0.05	200000	MS
MANGANESE	0.10	2000	MS
MOLYBDENUM	0.10	1000	MS
NICKEL	0.10	1000	MS
POTASSIUM	0.01	200000	MS
SELENIUM	0.30	1000	MS
SILVER	0.10	100	MS
SODIUM	0.01	200000	MS
THALLIUM	0.10	1000	MS
VANADIUM	0.10	1000	MS
ZINC	0.10	2000	MS

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LE07HGW4

Matrix: WATER **SDG Name:** SL3841

Method: CV **Prep Date:** 05/07/2018

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWLE07HGW4	LCSWLE07HGW4	0.025	0.025	
PBWLE07HGW4	PBWLE07HGW4	0.025	0.025	
CHAAP-19C-UGIA-DPT19	SL3841-002	0.025	0.025	D
CHAAP-19C-UGIA-DPT19-FF	SL3841-003	0.025	0.025	A
CHAAP-19C-LGIA-DPT20	SL3841-004	0.025	0.025	D
CHAAP-19C-LGIA-DPT20-FF	SL3841-005	0.025	0.025	A
CHAAP-19C-LGIA-DPT24	SL3841-006	0.025	0.025	D
CHAAP-19C-UGIA-DPT23	SL3841-008	0.025	0.025	D
CHAAP-19C-UGIA-DPT23-FF	SL3841-009	0.025	0.025	A
CHAAP-19C-LGIA-DPT16	SL3841-010	0.025	0.025	D
CHAAP-19C-LGIA-DPT16P	SL3841-010P	0.025	0.025	D
CHAAP-19C-LGIA-DPT16S	SL3841-010S	0.025	0.025	D
CHAAP-19C-LGIA-DPT16-FF	SL3841-011	0.025	0.025	A
CHAAP-19C-LGIA-DPT116	SL3841-012	0.025	0.025	D
CHAAP-19C-LGIA-DPT116-FF	SL3841-013	0.025	0.025	A
CHAAP-19C-UGIA-DPT15	SL3841-014	0.025	0.025	D
CHAAP-19C-UGIA-DPT15-FF	SL3841-015	0.025	0.025	A
CHAAP-19C-LGIA-DPT12	SL3841-016	0.025	0.025	D
CHAAP-19C-LGIA-DPT12-FF	SL3841-017	0.025	0.025	A
CHAAP-19C-UGIA-DPT11	SL3841-018	0.025	0.025	D
CHAAP-19C-UGIA-DPT11-FF	SL3841-019	0.025	0.025	A
CHAAP-EB-050318	SL3841-020	0.025	0.025	D

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LE07IMW2

Matrix: WATER **SDG Name:** SL3841

Method: MS **Prep Date:** 05/07/2018

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWLE07IMW2	LCSWLE07IMW2	0.05	0.05	
PBWLE07IMW2	PBWLE07IMW2	0.05	0.05	
CHAAP-19C-UGIA-DPT19	SL3841-002	0.05	0.05	A
CHAAP-19C-UGIA-DPT19-FF	SL3841-003	0.05	0.05	D
CHAAP-19C-LGIA-DPT20	SL3841-004	0.05	0.05	A
CHAAP-19C-LGIA-DPT20-FF	SL3841-005	0.05	0.05	D
CHAAP-19C-LGIA-DPT24	SL3841-006	0.05	0.05	A
CHAAP-19C-UGIA-DPT23	SL3841-008	0.05	0.05	D
CHAAP-19C-UGIA-DPT23-FF	SL3841-009	0.05	0.05	A
CHAAP-19C-LGIA-DPT16	SL3841-010	0.05	0.05	D
CHAAP-19C-LGIA-DPT16-FF	SL3841-011	0.05	0.05	A
CHAAP-19C-LGIA-DPT16-FFP	SL3841-011P	0.05	0.05	A
CHAAP-19C-LGIA-DPT16-FFS	SL3841-011S	0.05	0.05	A
CHAAP-19C-LGIA-DPT116	SL3841-012	0.05	0.05	D
CHAAP-19C-LGIA-DPT116-FF	SL3841-013	0.05	0.05	A
CHAAP-19C-UGIA-DPT15	SL3841-014	0.05	0.05	D
CHAAP-19C-UGIA-DPT15-FF	SL3841-015	0.05	0.05	A
CHAAP-19C-LGIA-DPT12	SL3841-016	0.05	0.05	D
CHAAP-19C-LGIA-DPT12-FF	SL3841-017	0.05	0.05	A
CHAAP-19C-UGIA-DPT11	SL3841-018	0.05	0.05	D
CHAAP-19C-UGIA-DPT11-FF	SL3841-019	0.05	0.05	A
CHAAP-EB-050318	SL3841-020	0.05	0.05	D

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: CETAC M6100 **File Name:** HLE07A

Date: 5/7/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	12:00	Hg
Standard #1 (0.2 ppb		1	12:02	Hg
Standard #2 (0.5 ppb		1	12:04	Hg
Standard #3 (1.0 ppb		1	12:06	Hg
Standard #4 (5.0 ppb		1	12:08	Hg
Standard #5 (10.0 pp		1	12:10	Hg
ICV		1	12:13	HG
ICB		1	12:15	HG
PQL		1	12:17	HG
CCV		1	12:19	HG
CCB		1	12:21	HG
ZZZZZZ		1	12:23	
ZZZZZZ		1	12:25	
ZZZZZZ		1	12:27	
ZZZZZZ		1	12:29	
ZZZZZZ		1	12:32	
ZZZZZZ		1	12:34	
ZZZZZZ		5	12:36	
ZZZZZZ		1	12:38	
ZZZZZZ		1	12:40	
CCV		1	12:42	HG
CCB		1	12:44	HG
ZZZZZZ		1	12:47	
ZZZZZZ		1	12:49	
ZZZZZZ		1	12:51	
ZZZZZZ		1	12:53	
ZZZZZZ		1	12:55	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: CETAC M6100 **File Name:** HLE07A

Date: 5/7/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	12:57	
ZZZZZZ		1	12:59	
ZZZZZZ		1	13:01	
ZZZZZZ		1	13:04	
ZZZZZZ		1	13:06	
CCV		1	13:08	HG
CCB		1	13:10	HG
ZZZZZZ		1	13:12	
ZZZZZZ		1	13:14	
ZZZZZZ		1	13:16	
ZZZZZZ		5	13:19	
ZZZZZZ		1	13:21	
ZZZZZZ		1	13:23	
ZZZZZZ		1	13:25	
ZZZZZZ		1	13:27	
ZZZZZZ		1	13:29	
ZZZZZZ		1	13:32	
CCV		1	13:34	HG
CCB		1	13:36	HG
ZZZZZZ		1	13:38	
ZZZZZZ		1	13:40	
ZZZZZZ		1	13:42	
ZZZZZZ		1	13:44	
ZZZZZZ		1	13:47	
ZZZZZZ		1	13:49	
ZZZZZZ		1	13:52	
ZZZZZZ		1	13:54	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: CETAC M6100 **File Name:** HLE07A

Date: 5/7/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	13:56	
ZZZZZZ		1	13:59	
CCV		1	14:01	HG
CCB		1	14:03	HG
ZZZZZZ		1	14:05	
ZZZZZZ		1	14:07	
ZZZZZZ		1	14:09	
ZZZZZZ		5	14:12	
ZZZZZZ		1	14:14	
ZZZZZZ		1	14:16	
ZZZZZZ		1	14:18	
ZZZZZZ		1	14:20	
ZZZZZZ		5	14:22	
ZZZZZZ		1	14:25	
CCV		1	14:27	HG
CCB		1	14:29	HG
ZZZZZZ		1	14:31	
ZZZZZZ		1	14:35	
ZZZZZZ		1	14:37	
ZZZZZZ		1	14:39	
ZZZZZZ		1	14:41	
ZZZZZZ		1	14:43	
ZZZZZZ		1	14:46	
ZZZZZZ		1	14:48	
ZZZZZZ		1	14:50	
ZZZZZZ		1	14:52	
CCV		1	14:57	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: CETAC M6100 **File Name:** HLE07A

Date: 5/7/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
CCB		1	14:59	HG
ZZZZZZ		1	15:01	
PBWLE07HGW4		1	15:03	HG
LCSWLE07HGW4		1	15:05	HG
SL3841-002	CHAAP-19C-UGIA-DPT19	1	15:07	HG
SL3841-003	CHAAP-19C-UGIA-DPT19-FF	1	15:10	HG
SL3841-004	CHAAP-19C-LGIA-DPT20	1	15:15	HG
SL3841-005	CHAAP-19C-LGIA-DPT20-FF	1	15:18	HG
SL3841-006	CHAAP-19C-LGIA-DPT24	1	15:20	HG
SL3841-008	CHAAP-19C-UGIA-DPT23	1	15:22	HG
SL3841-009	CHAAP-19C-UGIA-DPT23-FF	1	15:24	HG
CCV		1	15:26	HG
CCB		1	15:28	HG
SL3841-010	CHAAP-19C-LGIA-DPT16	1	15:30	HG
SL3841-010L	CHAAP-19C-LGIA-DPT16L	5	15:33	HG
SL3841-010A	CHAAP-19C-LGIA-DPT16A	1	15:35	HG
SL3841-010S	CHAAP-19C-LGIA-DPT16S	1	15:37	HG
SL3841-010P	CHAAP-19C-LGIA-DPT16P	1	15:39	HG
SL3841-011	CHAAP-19C-LGIA-DPT16-FF	1	15:41	HG
SL3841-012	CHAAP-19C-LGIA-DPT116	1	15:43	HG
SL3841-013	CHAAP-19C-LGIA-DPT116-FF	1	15:45	HG
SL3841-014	CHAAP-19C-UGIA-DPT15	1	15:48	HG
SL3841-015	CHAAP-19C-UGIA-DPT15-FF	1	15:50	HG
CCV		1	15:52	HG
CCB		1	15:54	HG
SL3841-016	CHAAP-19C-LGIA-DPT12	1	15:56	HG
SL3841-017	CHAAP-19C-LGIA-DPT12-FF	1	15:58	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: CETAC M6100 **File Name:** HLE07A

Date: 5/7/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
SL3841-018	CHAAP-19C-UGIA-DPT11	1	16:00	HG
SL3841-019	CHAAP-19C-UGIA-DPT11-FF	1	16:03	HG
SL3841-020	CHAAP-EB-050318	1	16:05	HG
ZZZZZZ		1	16:07	
ZZZZZZ		1	16:09	
ZZZZZZ		1	16:11	
ZZZZZZ		1	16:13	
ZZZZZZ		1	16:16	
CCV		1	16:18	HG
CCB		1	16:20	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements										
6020 TUNE		1	14:23											
200.8 TUNE		1	14:26											
Cal Blank		1	15:12	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
Cal Std		1	15:16	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
ICV		1	15:20	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
ICB		1	15:23	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
PQL		1	15:26	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
ZZZZZZ		1	15:30											
ICSA		1	15:34	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
ICSAB		1	15:38	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
ZZZZZZ		1	15:41											
ZZZZZZ		1	15:45											
ZZZZZZ		1	15:48											
ZZZZZZ		1	15:52											
ZZZZZZ		1	15:56											
CCV		1	16:00	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
CCB		1	16:03	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
ZZZZZZ		1	16:07											
ZZZZZZ		1	16:11											
ZZZZZZ		1	16:14											
ZZZZZZ		5	16:18											
ZZZZZZ		1	16:22											
ZZZZZZ		25	16:26											
ZZZZZZ		1	16:30											
ZZZZZZ		1	16:33											
ZZZZZZ		5	16:37											
ZZZZZZ		5	16:41											

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
CCV		1	16:45	Al Sb Ba Ca Fe Pb Mg Mo K Na Tl
CCB		1	16:49	Al Sb Ba Ca Fe Pb Mg Mo K Na Tl
ZZZZZZ		10	16:52	
ZZZZZZ		10	16:56	
ZZZZZZ		10	17:00	
ZZZZZZ		10	17:04	
ZZZZZZ		10	17:08	
ZZZZZZ		10	17:12	
ZZZZZZ		1	17:16	
ZZZZZZ		5	17:20	
ZZZZZZ		5	17:24	
ZZZZZZ		5	17:28	
CCV		1	17:32	Al Sb Ba Ca Fe Pb Mg Mo K Na Tl
CCB		1	17:36	Al Sb Ba Ca Fe Pb Mg Mo K Na Tl
ZZZZZZ		5	17:40	
ZZZZZZ		5	17:44	
ZZZZZZ		5	17:48	
ZZZZZZ		5	17:52	
ZZZZZZ		5	17:56	
ZZZZZZ		5	18:00	
ZZZZZZ		10	18:04	
ZZZZZZ		10	18:08	
ZZZZZZ		50	18:12	
ZZZZZZ		10	18:16	
CCV		1	18:20	Al Sb Ba Ca Fe Pb Mg Mo K Na Tl
CCB		1	18:24	Al Sb Ba Ca Fe Pb Mg Mo K Na Tl
ZZZZZZ		10	18:28	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements									
ZZZZZZ		10	18:32										
ZZZZZZ		10	18:37										
ZZZZZZ		1	18:41										
ZZZZZZ		1	18:45										
ZZZZZZ		5	18:49										
ZZZZZZ		1	18:53										
ZZZZZZ		1	18:57										
ZZZZZZ		1	19:01										
ZZZZZZ		1	19:05										
CCV		1	19:09	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
CCB		1	19:13	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
ZZZZZZ		1	19:17										
ZZZZZZ		1	19:22										
ZZZZZZ		5	19:26										
ZZZZZZ		5	19:30										
ZZZZZZ		5	19:34										
ZZZZZZ		5	19:38										
ZZZZZZ		5	19:42										
ZZZZZZ		25	19:47										
ZZZZZZ		5	19:51										
ZZZZZZ		5	19:55										
CCV		1	19:59	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
CCB		1	20:03	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
ZZZZZZ		5	20:07										
ZZZZZZ		5	20:11										
ZZZZZZ		25	20:16										
ZZZZZZ		5	20:20										

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		5	20:24	
ZZZZZZ		5	20:28	
ZZZZZZ		5	20:33	
ZZZZZZ		5	20:37	
ZZZZZZ		5	20:41	
ZZZZZZ		5	20:45	
CCV		1	20:49	Al Sb Ba Ca Fe Pb Mg Mo K Na Tl
CCB		1	20:53	Al Sb Ba Ca Fe Pb Mg Mo K Na Tl
ZZZZZZ		5	20:58	
ZZZZZZ		5	21:02	
ZZZZZZ		5	21:06	
ZZZZZZ		5	21:10	
ZZZZZZ		5	21:14	
ZZZZZZ		5	21:19	
ZZZZZZ		5	21:23	
ZZZZZZ		5	21:27	
ZZZZZZ		5	21:31	
ZZZZZZ		1	21:36	
CCV		1	21:40	Al Sb Ba Ca Fe Pb Mg Mo K Na Tl
CCB		1	21:44	Al Sb Ba Ca Fe Pb Mg Mo K Na Tl
ZZZZZZ		5	21:48	
ZZZZZZ		5	21:52	
ZZZZZZ		5	21:56	
ZZZZZZ		25	22:01	
ZZZZZZ		5	22:05	
ZZZZZZ		5	22:09	
ZZZZZZ		5	22:13	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements											
ZZZZZZ		5	22:18												
ZZZZZZ		5	22:22												
ZZZZZZ		1	22:26												
CCV		1	22:31	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl	
CCB		1	22:35	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl	
ZZZZZZ		5	22:39												
ZZZZZZ		5	22:43												
ZZZZZZ		5	22:48												
ZZZZZZ		5	22:52												
ZZZZZZ		1	22:56												
PBWLE07IMW2		5	23:00		Sb	Ba			Pb					Tl	
LCSWLE07IMW2		5	23:04		Sb	Ba			Pb					Tl	
SL3841-002	CHAAP-19C-UGIA-DPT19	5	23:09		Sb	Ba			Pb					Tl	
SL3841-003	CHAAP-19C-UGIA-DPT19-FF	5	23:13		Sb	Ba			Pb					Tl	
SL3841-004	CHAAP-19C-LGIA-DPT20	5	23:17		Sb	Ba			Pb					Tl	
CCV		1	23:21	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl	
CCB		1	23:25	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl	
SL3841-005	CHAAP-19C-LGIA-DPT20-FF	5	23:30		Sb	Ba			Pb					Tl	
SL3841-006	CHAAP-19C-LGIA-DPT24	5	23:34		Sb	Ba			Pb					Tl	
SL3841-010	CHAAP-19C-LGIA-DPT16	5	23:38		Sb	Ba			Pb					Tl	
SL3841-011	CHAAP-19C-LGIA-DPT16-FF	5	23:42		Sb	Ba			Pb					Tl	
SL3841-011L	CHAAP-19C-LGIA-DPT16-FFL	25	23:47		Sb	Ba			Pb					Tl	
SL3841-011A	HAAP-19C-LGIA-DPT16-FFA	5	23:51		Sb	Ba			Pb					Tl	
SL3841-011S	HAAP-19C-LGIA-DPT16-FFS	5	23:55		Sb	Ba			Pb					Tl	
SL3841-011P	HAAP-19C-LGIA-DPT16-FFP	5	23:59		Sb	Ba			Pb					Tl	
SL3841-012	CHAAP-19C-LGIA-DPT116	5	0:04		Sb	Ba			Pb					Tl	
SL3841-013	CHAAP-19C-LGIA-DPT116-FF	5	0:08		Sb	Ba			Pb					Tl	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/15/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements										
CCV		1	0:12	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
CCB		1	0:16	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
SL3841-014	CHAAP-19C-UGIA-DPT15	5	0:21		Sb	Ba			Pb					Tl
SL3841-015	CHAAP-19C-UGIA-DPT15-FF	5	0:25		Sb	Ba			Pb					Tl
SL3841-016	CHAAP-19C-LGIA-DPT12	5	0:29		Sb	Ba			Pb					Tl
SL3841-018	CHAAP-19C-UGIA-DPT11	5	0:33		Sb	Ba			Pb					Tl
SL3841-019	CHAAP-19C-UGIA-DPT11-FF	5	0:38		Sb	Ba			Pb					Tl
SL3841-020	CHAAP-EB-050318	5	0:42		Sb	Ba			Pb					Tl
SL3841-008	CHAAP-19C-UGIA-DPT23	5	0:46		Sb	Ba			Pb					Tl
SL3841-009	CHAAP-19C-UGIA-DPT23-FF	5	0:50		Sb	Ba			Pb					Tl
SL3841-017	CHAAP-19C-LGIA-DPT12-FF	5	0:55		Sb	Ba			Pb					Tl
ZZZZZZ		1	0:59											
CCV		1	1:03	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
CCB		1	1:07	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE15C

Date: 5/15/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
6020 TUNE		1	14:18	
200.8 TUNE		1	14:21	
Cal Blank		1	18:36	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
Cal Std		1	18:40	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ICV		1	18:44	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ICB		1	18:48	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
PQL		1	18:52	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	18:56	
ICSA		1	19:00	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ICSAB		1	19:04	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	19:08	
ZZZZZZ		1	19:13	
ZZZZZZ		1	19:16	
ZZZZZZ		1	19:21	
ZZZZZZ		1	19:25	
CCV		1	19:29	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	19:33	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	19:37	
ZZZZZZ		5	19:41	
ZZZZZZ		1	19:45	
ZZZZZZ		1	19:50	
ZZZZZZ		5	19:54	
ZZZZZZ		5	19:58	
ZZZZZZ		1	20:02	
ZZZZZZ		5	20:07	
ZZZZZZ		5	20:11	
ZZZZZZ		5	20:15	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE15C

Date: 5/15/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements																			
CCV		1	20:19	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	V	Zn
CCB		1	20:23	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	V	Zn
ZZZZZZ		5	20:27																				
ZZZZZZ		5	20:31																				
ZZZZZZ		25	20:36																				
ZZZZZZ		5	20:40																				
ZZZZZZ		5	20:44																				
ZZZZZZ		5	20:48																				
ZZZZZZ		5	20:52																				
ZZZZZZ		25	20:56																				
ZZZZZZ		5	21:01																				
ZZZZZZ		5	21:05																				
CCV		1	21:09	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	V	Zn
CCB		1	21:13	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	V	Zn
ZZZZZZ		5	21:17																				
ZZZZZZ		5	21:21																				
ZZZZZZ		5	21:25																				
ZZZZZZ		5	21:30																				
ZZZZZZ		5	21:34																				
ZZZZZZ		5	21:38																				
ZZZZZZ		5	21:42																				
ZZZZZZ		5	21:47																				
ZZZZZZ		5	21:51																				
ZZZZZZ		1	21:55																				
CCV		1	21:59	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	V	Zn
CCB		1	22:03	Al	As	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	V	Zn
ZZZZZZ		5	22:07																				

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE15C

Date: 5/15/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		5	22:12	
ZZZZZZ		5	22:16	
ZZZZZZ		5	22:20	
ZZZZZZ		5	22:24	
ZZZZZZ		5	22:28	
ZZZZZZ		1	22:33	
ZZZZZZ		1	22:37	
ZZZZZZ		5	22:41	
ZZZZZZ		5	22:45	
CCV		1	22:49	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	22:53	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		5	22:58	
ZZZZZZ		25	23:02	
ZZZZZZ		5	23:06	
ZZZZZZ		5	23:10	
ZZZZZZ		5	23:15	
ZZZZZZ		5	23:19	
ZZZZZZ		5	23:23	
ZZZZZZ		5	23:28	
ZZZZZZ		5	23:32	
ZZZZZZ		5	23:36	
CCV		1	23:41	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	23:45	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		5	23:49	
ZZZZZZ		5	23:53	
ZZZZZZ		1	23:57	
PBWLE07IMW2		5	0:02	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE15C

Date: 5/16/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
LCSWLE07IMW2		5	0:06	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-002	CHAAP-19C-UGIA-DPT19	5	0:10	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-003	CHAAP-19C-UGIA-DPT19-FF	5	0:14	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-004	CHAAP-19C-LGIA-DPT20	5	0:18	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-005	CHAAP-19C-LGIA-DPT20-FF	5	0:23	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
ZZZZZZ		1	0:27	
CCV		1	0:31	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	0:35	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
SL3841-006	CHAAP-19C-LGIA-DPT24	5	0:39	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-008	CHAAP-19C-UGIA-DPT23	5	0:43	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-009	CHAAP-19C-UGIA-DPT23-FF	5	0:48	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-010	CHAAP-19C-LGIA-DPT16	5	0:52	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-011	CHAAP-19C-LGIA-DPT16-FF	5	0:56	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-011L	CHAAP-19C-LGIA-DPT16-FFL	25	1:00	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-011A	CHAAP-19C-LGIA-DPT16-FFA	5	1:05	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-011S	CHAAP-19C-LGIA-DPT16-FFS	5	1:09	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-011P	CHAAP-19C-LGIA-DPT16-FFP	5	1:13	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
ZZZZZZ		1	1:17	
CCV		1	1:21	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	1:25	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
SL3841-012	CHAAP-19C-LGIA-DPT116	5	1:30	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-013	CHAAP-19C-LGIA-DPT116-FF	5	1:34	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-014	CHAAP-19C-UGIA-DPT15	5	1:38	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-015	CHAAP-19C-UGIA-DPT15-FF	5	1:42	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-016	CHAAP-19C-LGIA-DPT12	5	1:47	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-017	CHAAP-19C-LGIA-DPT12-FF	5	1:51	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-018	CHAAP-19C-UGIA-DPT11	5	1:55	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE15C

Date: 5/16/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
SL3841-019	CHAAP-19C-UGIA-DPT11-FF	5	1:59	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-020	CHAAP-EB-050318	5	2:04	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
ZZZZZZ		1	2:08	
CCV		1	2:12	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	2:16	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3841-10
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3841

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-LGIA-DPT16	AQ	03-MAY-18 14:15:00	04-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.016 mg/L	0.12	0.0038	0.062	SW846 7196A	WG227685	04-MAY-18 11:56:22	N/A	N/A	M1

Katahdin Analytical Services A0002207

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3841-11
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3841

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-LGIA-DPT16-FF	AQ	03-MAY-18 14:15:00	04-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.0085 mg/L	0.025	0.00076	.0125	SW846 7196A	WG227685	04-MAY-18 11:39:59	N/A	N/A	

Katahdin Analytical Services A0002208

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3841-12
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3841

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-LGIA-DPT116	AQ	03-MAY-18 12:00:00	04-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.0064 mg/L	0.025	0.00076	.0125	SW846 7196A	WG227685	04-MAY-18 11:40:00	N/A	N/A	

Katahdin Analytical Services A0002209

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3841-13
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3841

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-LGIA-DPT116-FF	AQ	03-MAY-18 12:00:00	04-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.0083 mg/L	0.025	0.00076	.0125	SW846 7196A	WG227685	04-MAY-18 11:40:01	N/A	N/A	

Katahdin Analytical Services A0002210

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3841-14
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3841

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-UGIA-DPT15	AQ	03-MAY-18 14:20:00	04-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U.0125 mg/L	0.025	0.00076	.0125	SW846 7196A	WG227685	04-MAY-18 11:40:02	N/A	N/A	

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P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3841-15
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3841

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-UGIA-DPT15-FF	AQ	03-MAY-18 14:20:00	04-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.0045 mg/L	0.025	0.00076	.0125	SW846 7196A	WG227685	04-MAY-18 11:40:03	N/A	N/A	

Katahdin Analytical Services A0002212

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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3841-16
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3841

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-LGIA-DPT12	AQ	03-MAY-18 15:50:00	04-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.0061 mg/L	0.025	0.00076	.0125	SW846 7196A	WG227685	04-MAY-18 11:40:04	N/A	N/A	

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600 Technology Way
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Tel:(207) 874-2400 Fax:(207) 775-4029
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Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3841-17
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3841

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-LGIA-DPT12-FF	AQ	03-MAY-18 15:50:00	04-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.0058 mg/L	0.025	0.00076	.0125	SW846 7196A	WG227685	04-MAY-18 11:43:53	N/A	N/A	

Katahdin Analytical Services A0002214

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Cert No E87604

Quality Control Report

Blank Sample Summary Report

Chromium, Hexavalent

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG227685	SW846 7196A	04-MAY-18	N/A	J 0.0028 mg/L	0.025 mg/L	.0125

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Quality Control Report

Laboratory Control Sample Summary Report

Chromium, Hexavalent

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG227685-2	LCS	WG227685	04-MAY-18	N/A	mg/L	.5	0.51	102	85-115	

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Quality Control Report

Duplicate Sample Summary Report

Chromium, Hexavalent

Duplicate Sample ID	Original Sample ID	QC Batch	Analysis Date	Result Units	Sample Result	Duplicate Result	RPD(%)	RPD Limit
WG227685-3	SL3841-10	WG227685	04-MAY-18	mg/L	J 0.016	U 0.12	NC	20

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Quality Control Report

Matrix Spike Sample Summary Report

Chromium, Hexavalent

Matrix Spike Sample ID	Sample Type	Original Sample ID	QC Batch	Analysis Date	Result Units	Spike Amount	Sample Result	MS Result	Recovery (%)	Recovery Limit
WG227685-4	MS	SL3841-10	WG227685	04-MAY-18	mg/L	2.5	J 0.016	0.68	26*	85 - 115

Katahdin Analytical Services A0000218

VOLATILES DATA

QC Summary Section

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** AQ
Lab Code: KAS **SDG:** SL3841

Client Sample ID	Lab Sample ID	Col. ID	BFB	#	DBF	#	DCA	#	TOL	#
CHAAP-TB-050318-DPT	SL3841-1		96.7		104.		107.		103.	
CHAAP-19C-LGIA-DPT16	SL3841-10		102.		109.		126.	*	99.8	
CHAAP-19C-LGIA-DPT11	SL3841-12		100.		109.		126.	*	99.6	
CHAAP-19C-UGIA-DPT15	SL3841-14		99.5		109.		124.	*	99.5	
CHAAP-19C-LGIA-DPT12	SL3841-16		101.		111.		125.	*	100.	
CHAAP-19C-UGIA-DPT11	SL3841-18		102.		110.		125.	*	100.	
CHAAP-EB-050318	SL3841-20		95.2		104.		106.		103.	
CHAAP-19C-LGIA-DPT20	SL3841-4		99.9		110.		126.	*	98.9	
CHAAP-19C-LGIA-DPT24	SL3841-6		100.		109.		123.	*	99.5	
CHAAP-19C-UGIA-DPT23	SL3841-8		101.		110.		126.	*	99.0	
Laboratory Control S	WG227763-1		104.		98.2		98.4		101.	
Method Blank Sample	WG227763-2		96.5		98.4		102.		101.	
Laboratory Control S	WG228421-1		101.		104.		110.		99.7	
Method Blank Sample	WG228421-2		98.7		108.		119.		99.2	

		QC Limits
TOL	TOLUENE-D8	89-120
DCA	1,2-DICHLOROETHANE-D4	81-120
DBF	DIBROMOFLUOROMETHANE	80-120
BFB	P-BROMOFLUOROBENZENE	85-120

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : D1331.D
Instrument ID : GCMS-D
Heated Purge : No

SDG : SL3841
Lab Sample ID : WG228421-2
Date Analyzed : 16-MAY-18
Time Analyzed : 14:47

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG228421-1	D1329.D	05/16/18	13:32
CHAAP-19C-LGIA-DPT20	SL3841-4	D1334.D	05/16/18	16:34
CHAAP-19C-LGIA-DPT24	SL3841-6	D1335.D	05/16/18	17:10
CHAAP-19C-UGIA-DPT23	SL3841-8	D1336.D	05/16/18	17:45
CHAAP-19C-LGIA-DPT16	SL3841-10	D1337.D	05/16/18	18:21
CHAAP-19C-LGIA-DPT116	SL3841-12	D1338.D	05/16/18	18:56
CHAAP-19C-UGIA-DPT15	SL3841-14	D1339.D	05/16/18	19:32
CHAAP-19C-LGIA-DPT12	SL3841-16	D1340.D	05/16/18	20:08
CHAAP-19C-UGIA-DPT11	SL3841-18	D1341.D	05/16/18	20:43

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : P5548.D
Instrument ID : GCMS-P
Heated Purge : No

SDG : SL3841
Lab Sample ID : WG227763-2
Date Analyzed : 07-MAY-18
Time Analyzed : 10:51

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG227763-1	P5546.D	05/07/18	09:38
CHAAP-TB-050318-DPT	SL3841-1	P5552.D	05/07/18	13:08
CHAAP-EB-050318	SL3841-20	P5553.D	05/07/18	13:42

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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ANALYTICAL SERVICES

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB173A.D
Instrument ID : GCMS-D

SDG : SL3841
Date Analyzed : 10-MAY-18
Time Analyzed : 07:31
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	20.5		
75	30.0 - 60.0% of mass 95	50.9		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.3		
173	Less than 2.0% of mass 174	0.4	0.51	1
174	Greater than 50.0% of mass 95	73.1		
175	5.0 - 9.0% of mass 174	4.9	6.77	1
176	95.0 - 101.0% of mass 174	70.3	96.24	1
177	5.0 - 9.0% of mass 176	5.1	7.24	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG227999-4	D1259.D	05/10/18	08:36
Initial Calibration	WG227999-3	D1260.D	05/10/18	09:12
Initial Calibration	WG227999-2	D1261.D	05/10/18	09:47
Initial Calibration	WG227999-1	D1262.D	05/10/18	10:22
Initial Calibration	WG227999-6	D1263.D	05/10/18	10:58
Initial Calibration	WG227999-5	D1264.D	05/10/18	11:34

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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ANALYTICAL SERVICES

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB179A.D
Instrument ID : GCMS-D

SDG : SL3841
Date Analyzed : 16-MAY-18
Time Analyzed : 12:14
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	23.3		
75	30.0 - 60.0% of mass 95	55.0		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	7.2		
173	Less than 2.0% of mass 174	0.0	0.0	1
174	Greater than 50.0% of mass 95	67.0		
175	5.0 - 9.0% of mass 174	5.3	7.95	1
176	95.0 - 101.0% of mass 174	67.0	100.09	1
177	5.0 - 9.0% of mass 176	5.1	7.58	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG228421-4	D1328.D	05/16/18	12:40
Laboratory Control S	WG228421-1	D1329.D	05/16/18	13:32
Method Blank Sample	WG228421-2	D1331.D	05/16/18	14:47
CHAAP-19C-LGIA-DPT20	SL3841-4	D1334.D	05/16/18	16:34
CHAAP-19C-LGIA-DPT24	SL3841-6	D1335.D	05/16/18	17:10
CHAAP-19C-UGIA-DPT23	SL3841-8	D1336.D	05/16/18	17:45
CHAAP-19C-LGIA-DPT16	SL3841-10	D1337.D	05/16/18	18:21
CHAAP-19C-LGIA-DPT116	SL3841-12	D1338.D	05/16/18	18:56
CHAAP-19C-UGIA-DPT15	SL3841-14	D1339.D	05/16/18	19:32
CHAAP-19C-LGIA-DPT12	SL3841-16	D1340.D	05/16/18	20:08
CHAAP-19C-UGIA-DPT11	SL3841-18	D1341.D	05/16/18	20:43
Continuing Calibrati	WG228421-5	D1345.D	05/16/18	23:06

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : PB018A.D
Instrument ID : GCMS-P

SDG : SL3841
Date Analyzed : 03-MAY-18
Time Analyzed : 12:30
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	22.6		
75	30.0 - 60.0% of mass 95	56.0		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	5.6		
173	Less than 2.0% of mass 174	0.8	1.02	1
174	Greater than 50.0% of mass 95	76.6		
175	5.0 - 9.0% of mass 174	5.2	6.78	1
176	95.0 - 101.0% of mass 174	73.1	95.46	1
177	5.0 - 9.0% of mass 176	5.3	7.29	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG227568-4	P5508.D	05/03/18	12:56
Initial Calibration	WG227568-3	P5509.D	05/03/18	13:30
Initial Calibration	WG227568-2	P5510.D	05/03/18	14:04
Initial Calibration	WG227568-1	P5511.D	05/03/18	14:39
Initial Calibration	WG227568-6	P5512.D	05/03/18	15:13
Initial Calibration	WG227568-5	P5513.D	05/03/18	15:47

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : PB021A.D
Instrument ID : GCMS-P

SDG : SL3841
Date Analyzed : 07-MAY-18
Time Analyzed : 07:45
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	21.3		
75	30.0 - 60.0% of mass 95	58.4		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.8		
173	Less than 2.0% of mass 174	0.2	0.19	1
174	Greater than 50.0% of mass 95	88.5		
175	5.0 - 9.0% of mass 174	6.9	7.75	1
176	95.0 - 101.0% of mass 174	86.3	97.50	1
177	5.0 - 9.0% of mass 176	6.2	7.21	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG227763-4	P5545.D	05/07/18	08:50
Laboratory Control S	WG227763-1	P5546.D	05/07/18	09:38
Method Blank Sample	WG227763-2	P5548.D	05/07/18	10:51
CHAAP-TB-050318-DPT	SL3841-1	P5552.D	05/07/18	13:08
CHAAP-EB-050318	SL3841-20	P5553.D	05/07/18	13:42
Continuing Calibrati	WG227763-5	P5562.D	05/07/18	18:51

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227999-4
Lab File ID : D1259.d

SDG: SL3841
Analytical Date: 05/10/18 08:36
Instrument ID: GCMS-D

		PENTAFLUOROBENZENE			1,4-DIFLUOROBENZENE			CHLOROBENZENE-D5		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	336775		7.32		538592		8.10		490295		11.54	
	Upper Limit	673550		7.48		1077184		8.26		980590		11.70	
	Lower Limit	168387.5		7.15		269296		7.93		245147.5		11.37	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG228421-4	277120		7.32		444991		8.10		414738		11.54	
Laboratory Control S	WG228421-1	287009		7.32		471055		8.10		425102		11.54	
Method Blank Sample	WG228421-2	258692		7.32		435671		8.10		395426		11.54	
CHAAP-19C-LGIA-DI	SL3841-4	241657		7.32		410845		8.10		375292		11.54	
CHAAP-19C-LGIA-DI	SL3841-6	241959		7.32		405926		8.10		369852		11.54	
CHAAP-19C-UGIA-DI	SL3841-8	237394		7.32		405786		8.10		368590		11.54	
CHAAP-19C-LGIA-DI	SL3841-10	235181		7.32		397624		8.10		364054		11.54	
CHAAP-19C-LGIA-DI	SL3841-12	232753		7.32		394396		8.10		358659		11.55	
CHAAP-19C-UGIA-DI	SL3841-14	238121		7.32		398430		8.10		363083		11.54	
CHAAP-19C-LGIA-DI	SL3841-16	230475		7.32		390438		8.10		359212		11.54	
CHAAP-19C-UGIA-DI	SL3841-18	229888		7.32		384288		8.10		355182		11.54	
Continuing Calibrati	WG228421-5	256348		7.32		420867		8.10		389349		11.54	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227999-4
Lab File ID : D1259.d

SDG: SL3841
Analytical Date: 05/10/18 08:36
Instrument ID: GCMS-D

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	249538		13.88	
	Upper Limit	499076		14.04	
	Lower Limit	124769		13.71	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG228421-4	213967		13.88	
Laboratory Control S	WG228421-1	218190		13.88	
Method Blank Sample	WG228421-2	192344		13.88	
CHAAP-19C-LGIA-DI	SL3841-4	183534		13.88	
CHAAP-19C-LGIA-DI	SL3841-6	182947		13.88	
CHAAP-19C-UGIA-DI	SL3841-8	181582		13.88	
CHAAP-19C-LGIA-DI	SL3841-10	177490		13.88	
CHAAP-19C-LGIA-DI	SL3841-12	176614		13.88	
CHAAP-19C-UGIA-DI	SL3841-14	178854		13.88	
CHAAP-19C-LGIA-DI	SL3841-16	176396		13.88	
CHAAP-19C-UGIA-DI	SL3841-18	174460		13.88	
Continuing Calibrati	WG228421-5	203879		13.88	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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sales@katahdinlab.com

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227568-4
Lab File ID : P5508.D

SDG: SL3841
Analytical Date: 05/03/18 12:56
Instrument ID: GCMS-P

		PENTAFLUOROBENZENE				1,4-DIFLUOROBENZENE				CHLOROBENZENE-D5			
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	1074176		6.44		1785427		7.38		1800386		11.80	
	Upper Limit	2148352		6.61		3570854		7.55		3600772		11.96	
	Lower Limit	537088		6.28		892713.5		7.21		900193		11.63	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG227763-4	914402		6.44		1473084		7.38		1580139		11.80	
Laboratory Control S	WG227763-1	958436		6.44		1552546		7.38		1623933		11.81	
Method Blank Sample	WG227763-2	808263		6.45		1322931		7.38		1360309		11.81	
CHAAP-TB-050318-D	SL3841-1	684149		6.45		1167404		7.39		1212867		11.80	
CHAAP-EB-050318	SL3841-20	669713		6.44		1138803		7.38		1191293		11.80	
Continuing Calibrati	WG227763-5	938642		6.44		1529437		7.38		1613599		11.80	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Katahdin
ANALYTICAL SERVICES

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227568-4
Lab File ID : P5508.D

SDG: SL3841
Analytical Date: 05/03/18 12:56
Instrument ID: GCMS-P

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	1047820		14.77	
	Upper Limit	2095640		14.93	
	Lower Limit	523910		14.60	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG227763-4	926121		14.77	
Laboratory Control S	WG227763-1	958018		14.77	
Method Blank Sample	WG227763-2	728553		14.77	
CHAAP-TB-050318-D	SL3841-1	658214		14.77	
CHAAP-EB-050318	SL3841-20	634615		14.77	
Continuing Calibrati	WG227763-5	945636		14.77	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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http://katahdinlab.com
sales@katahdinlab.com

Sample Data Section

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-1
Client ID: CHAAP-TB-050318-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: P5552.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-1
Client ID: CHAAP-TB-050318-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: P5552.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		104.	%					
1,2-Dichloroethane-d4		107.	%					
Toluene-d8		103.	%					
P-Bromofluorobenzene		96.7	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5552.D
Report Date: 21-May-2018 08:14

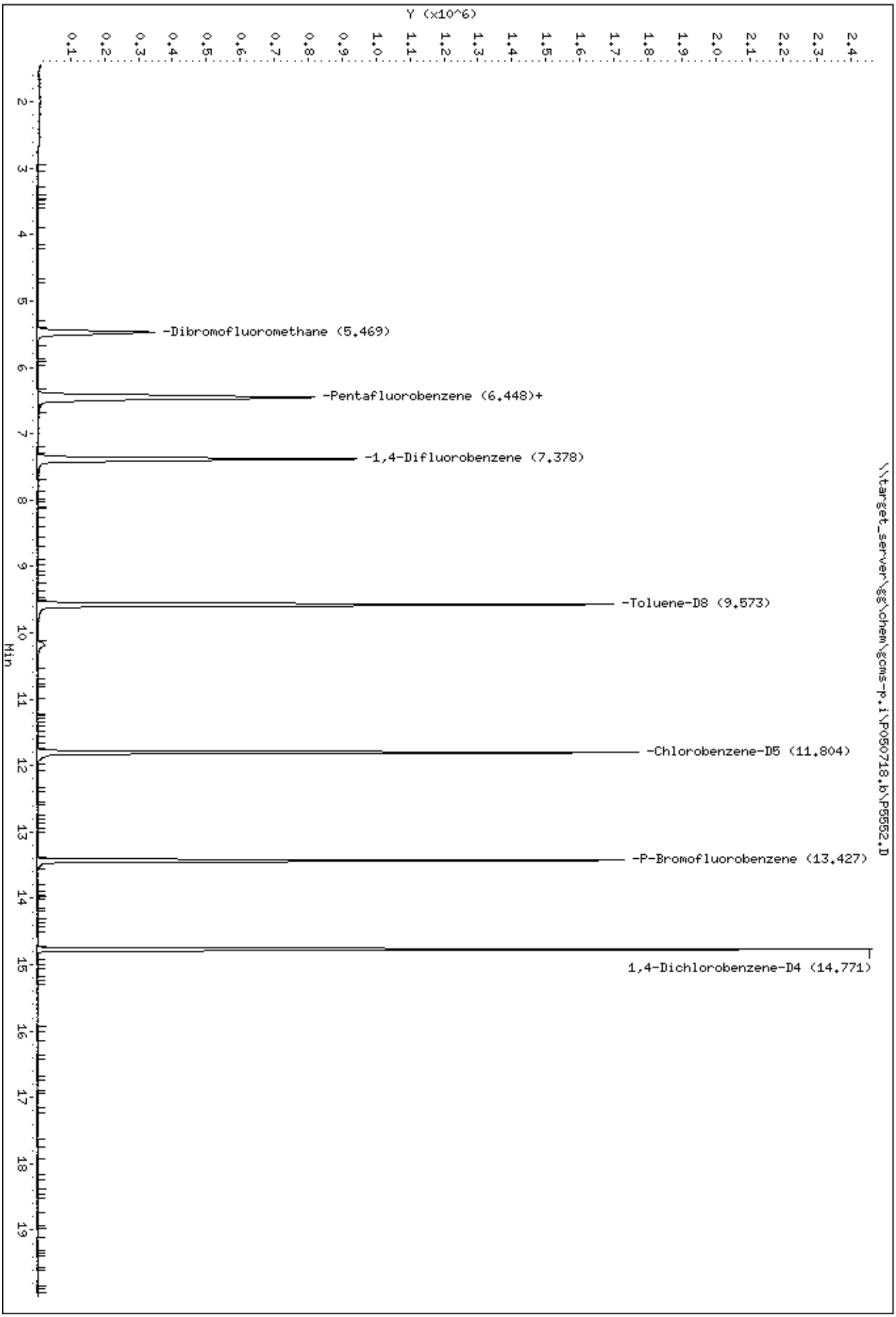
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050718.b\P5552.D
Lab Smp Id: SL3841-1
Inj Date : 07-MAY-2018 13:08 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL3841-1
Misc Info : WG227763,WG227568-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-p.i\P050718.b\P8A05(68)D.m
Meth Date : 21-May-2018 08:13 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$	34 Dibromofluoromethane	113	5.475	5.469	(0.849)	352631	52.1169	52.1	
*	41 Pentafluorobenzene	168	6.448	6.441	(1.000)	684149	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.462	6.470	(1.002)	478906	53.6759	53.7	
*	48 1,4-Difluorobenzene	114	7.385	7.385	(1.000)	1167404	50.0000		
$	58 Toluene-D8	98	9.573	9.573	(1.296)	1424960	51.5256	51.5	
*	68 Chlorobenzene-D5	117	11.803	11.804	(1.000)	1212867	50.0000		
$	78 P-Bromofluorobenzene	95	13.426	13.427	(1.818)	593132	48.3707	48.4	
*	94 1,4-Dichlorobenzene-D4	152	14.771	14.771	(1.000)	658214	50.0000		


Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5552.D
Date : 07-MAY-2018 13:08
Client ID:
Sample Info: SL3841-1
Instrument: gcms-p.i
\\target_server\gg\chem\gcms-p.i\P050718.b\P5552.D
Y (x10^6)
Min
-Dibromofluoromethane (5.469)
-Pentafluorobenzene (6.448)+
-1,4-Difluorobenzene (7.378)
-Toluene-D8 (9.573)
-Chlorobenzene-D5 (11.804)
-P-Bromofluorobenzene (13.427)
1,4-Dichlorobenzene-D4 (14.771)

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-4
Client ID: CHAAP-19C-LGIA-DPT20
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1334.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-4
Client ID: CHAAP-19C-LGIA-DPT20
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1334.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		110.	%					
1,2-Dichloroethane-d4	*	126.	%					
Toluene-d8		98.9	%					
P-Bromofluorobenzene		99.9	%					

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Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1334.d
Report Date: 21-May-2018 08:12

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051618B.b\D1334.d
Lab Smp Id: SL3841-4
Inj Date : 16-MAY-2018 16:34 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : SL3841-4
Misc Info : WG228421,WG227999-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-d.i\D051618B.b\D8A05(21)D.m
Meth Date : 21-May-2018 08:09 gcms-d.i Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

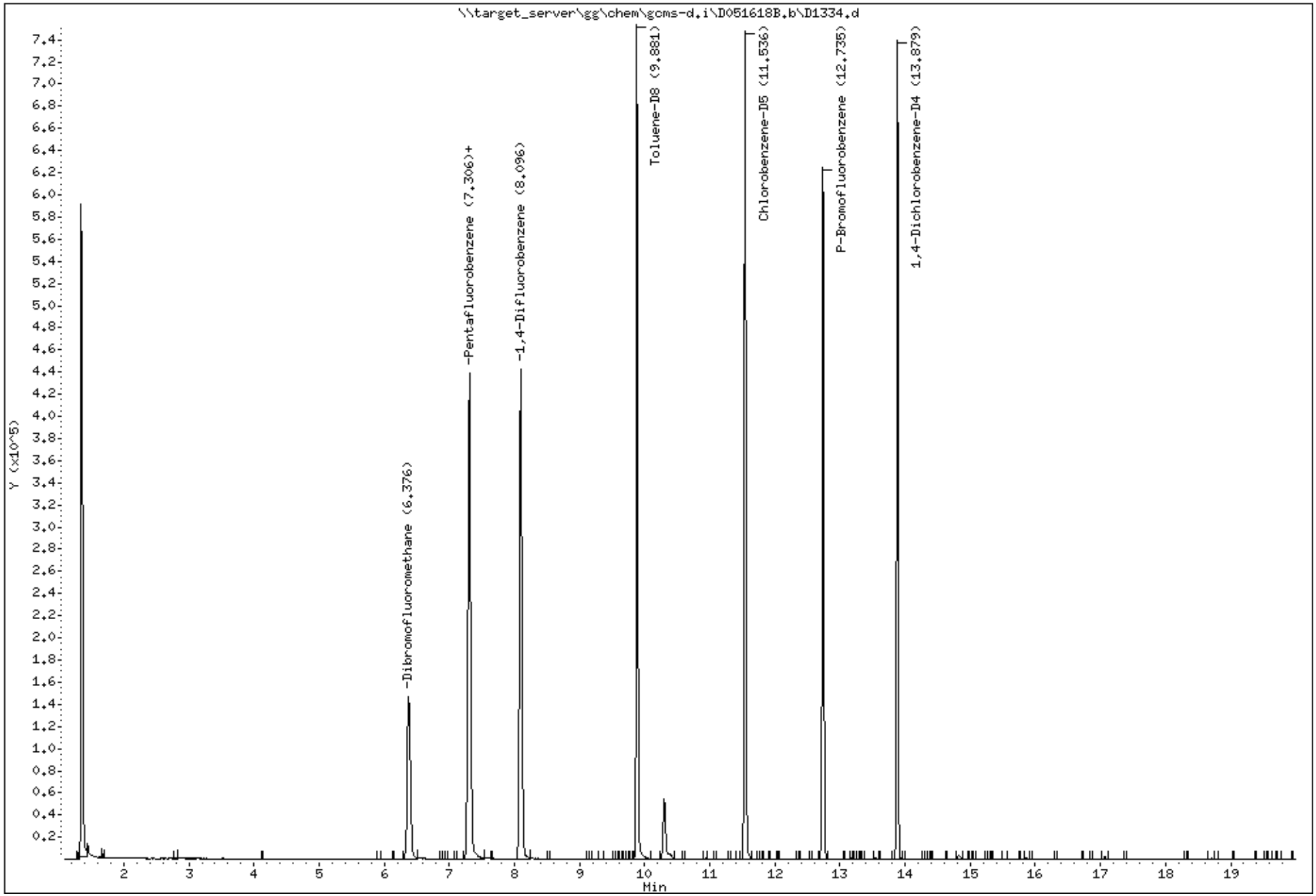
Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
$ 37 Dibromofluoromethane	113	6.376	6.376	(0.872)	155594	54.7640	54.8	
* 42 Pentafluorobenzene	168	7.315	7.315	(1.000)	241657	50.0000		
$ 45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	226434	63.0320	63.0	
* 49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	410845	50.0000		
$ 55 Toluene-D8	98	9.881	9.881	(1.220)	495574	49.4619	49.5	
* 66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	375292	50.0000		
$ 76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	199760	49.9470	49.9	
* 91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	183534	50.0000		

Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1334.d
Date : 16-MAY-2018 16:34
Client ID:
Sample Info: SL3841-4

Instrument: gcms-d.i



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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-6
Client ID: CHAAP-19C-LGIA-DPT24
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1335.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-6
Client ID: CHAAP-19C-LGIA-DPT24
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1335.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		109.	%					
1,2-Dichloroethane-d4	*	123.	%					
Toluene-d8		99.5	%					
P-Bromofluorobenzene		100.	%					

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Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1335.d
Report Date: 21-May-2018 08:12

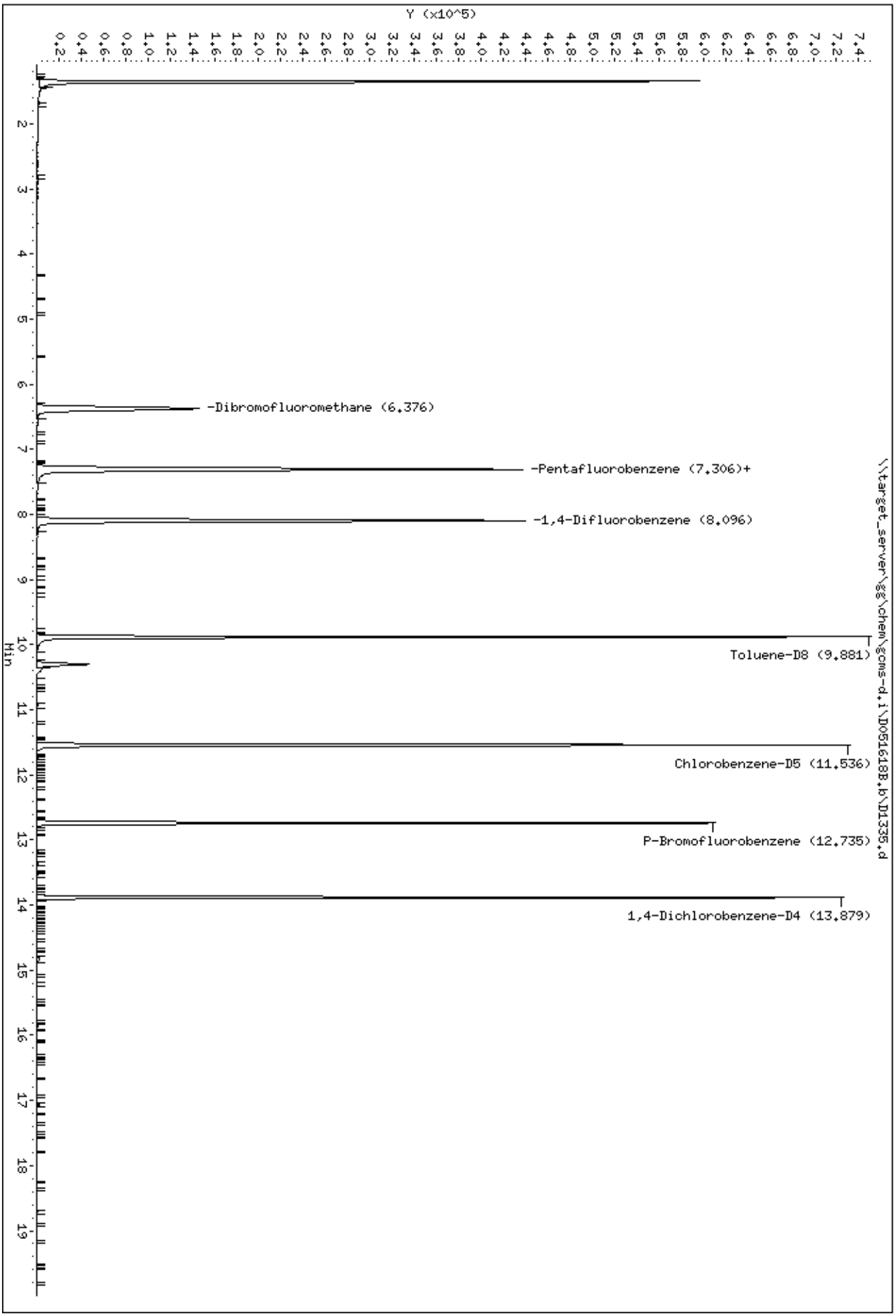
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051618B.b\D1335.d
Lab Smp Id: SL3841-6
Inj Date : 16-MAY-2018 17:10 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : SL3841-6
Misc Info : WG228421,WG227999-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-d.i\D051618B.b\D8A05(21)D.m
Meth Date : 21-May-2018 08:09 gcms-d.i Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$ 37 Dibromofluoromethane	113	6.376	6.376	(0.872)	154808	54.4193	54.4	
* 42 Pentafluorobenzene	168	7.315	7.315	(1.000)	241959	50.0000		
$ 45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	221014	61.4465	61.4	
* 49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	405926	50.0000		
$ 55 Toluene-D8	98	9.881	9.881	(1.220)	492532	49.7540	49.8	
* 66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	369852	50.0000		
$ 76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	198685	50.2802	50.3	
* 91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	182947	50.0000		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Sample Info: SL3841-6
Instrument: gcms-d.i
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Min
-Dibromofluoromethane (6.376)
-Pentafluorobenzene (7.306)+
-1,4-Difluorobenzene (8.096)
Toluene-D8 (9.881)
Chlorobenzene-D5 (11.536)
P-Bromofluorobenzene (12.735)
1,4-Dichlorobenzene-D4 (13.879)
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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-8
Client ID: CHAAP-19C-UGIA-DPT23
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1336.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-8
Client ID: CHAAP-19C-UGIA-DPT23
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1336.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		110.	%					
1,2-Dichloroethane-d4	*	126.	%					
Toluene-d8		99.0	%					
P-Bromofluorobenzene		101.	%					

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Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1336.d
Report Date: 21-May-2018 08:12

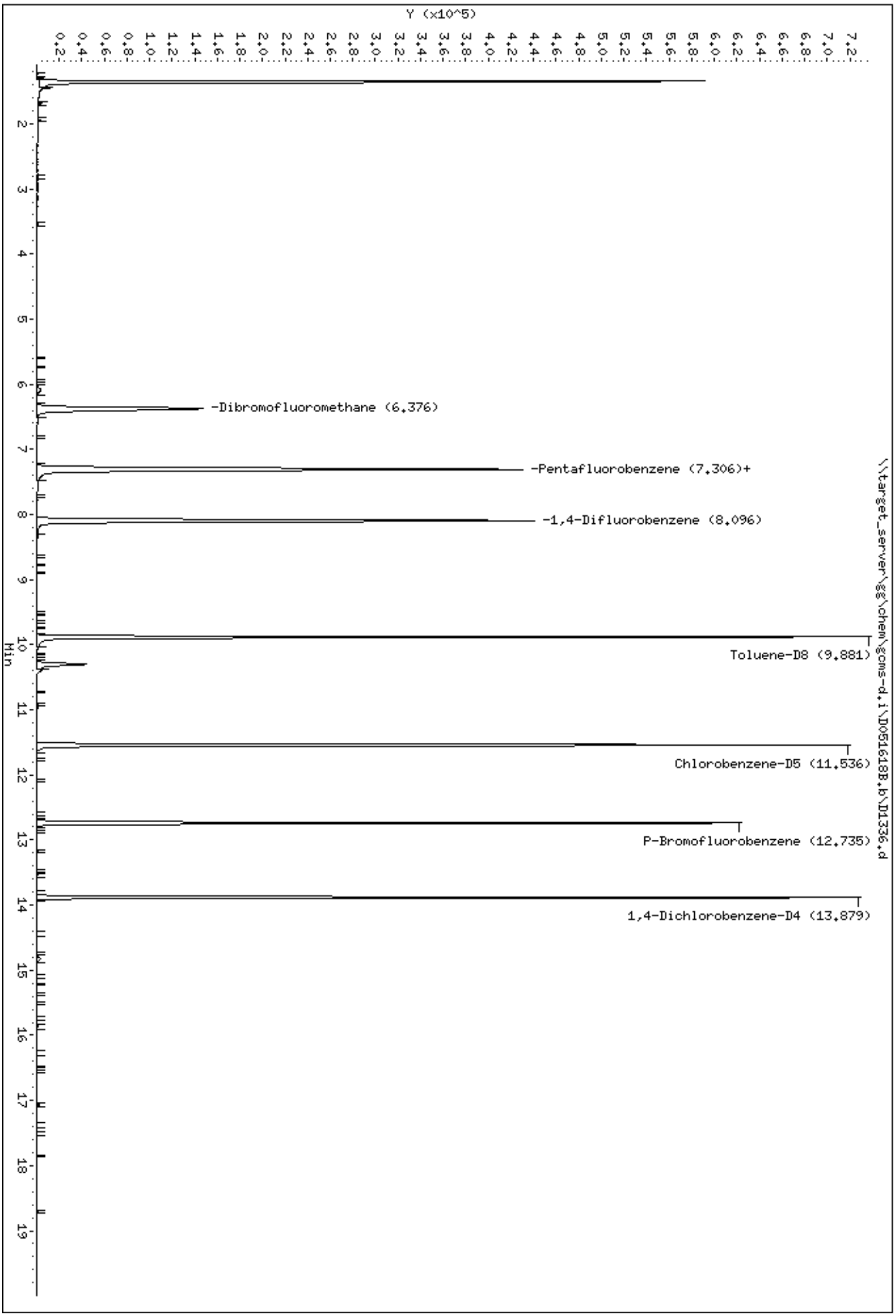
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051618B.b\D1336.d
Lab Smp Id: SL3841-8
Inj Date : 16-MAY-2018 17:45 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : SL3841-8
Misc Info : WG228421,WG227999-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-d.i\D051618B.b\D8A05(21)D.m
Meth Date : 21-May-2018 08:09 gcms-d.i Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$ 37 Dibromofluoromethane	113	6.376	6.376	(0.872)	153841	55.1193	55.1	
* 42 Pentafluorobenzene	168	7.315	7.315	(1.000)	237394	50.0000		
$ 45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	223382	63.2991	63.3	
* 49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	405786	50.0000		
$ 55 Toluene-D8	98	9.881	9.881	(1.220)	489955	49.5108	49.5	
* 66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	368590	50.0000		
$ 76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	198709	50.3036	50.3	
* 91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	181582	50.0000		


Y (x10^5)
Min
-Dibromofluoromethane (6.376)
-Pentafluorobenzene (7.306)+
-1,4-Difluorobenzene (8.096)
Toluene-D8 (9.881)
Chlorobenzene-D5 (11.536)
P-Bromofluorobenzene (12.735)
1,4-Dichlorobenzene-D4 (13.879)
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Date : 16-MAY-2018 17:45
Client ID:
Sample Info: SL3841-8
Instrument: gcms-d.i

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-10
Client ID: CHAAP-19C-LGIA-DPT16
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1337.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-10
Client ID: CHAAP-19C-LGIA-DPT16
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1337.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		109.	%					
1,2-Dichloroethane-d4	*	126.	%					
Toluene-d8		99.8	%					
P-Bromofluorobenzene		102.	%					

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Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1337.d
Report Date: 21-May-2018 08:12

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051618B.b\D1337.d
Lab Smp Id: SL3841-10
Inj Date : 16-MAY-2018 18:21 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : SL3841-10
Misc Info : WG228421,WG227999-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-d.i\D051618B.b\D8A05(21)D.m
Meth Date : 21-May-2018 08:09 gcms-d.i Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

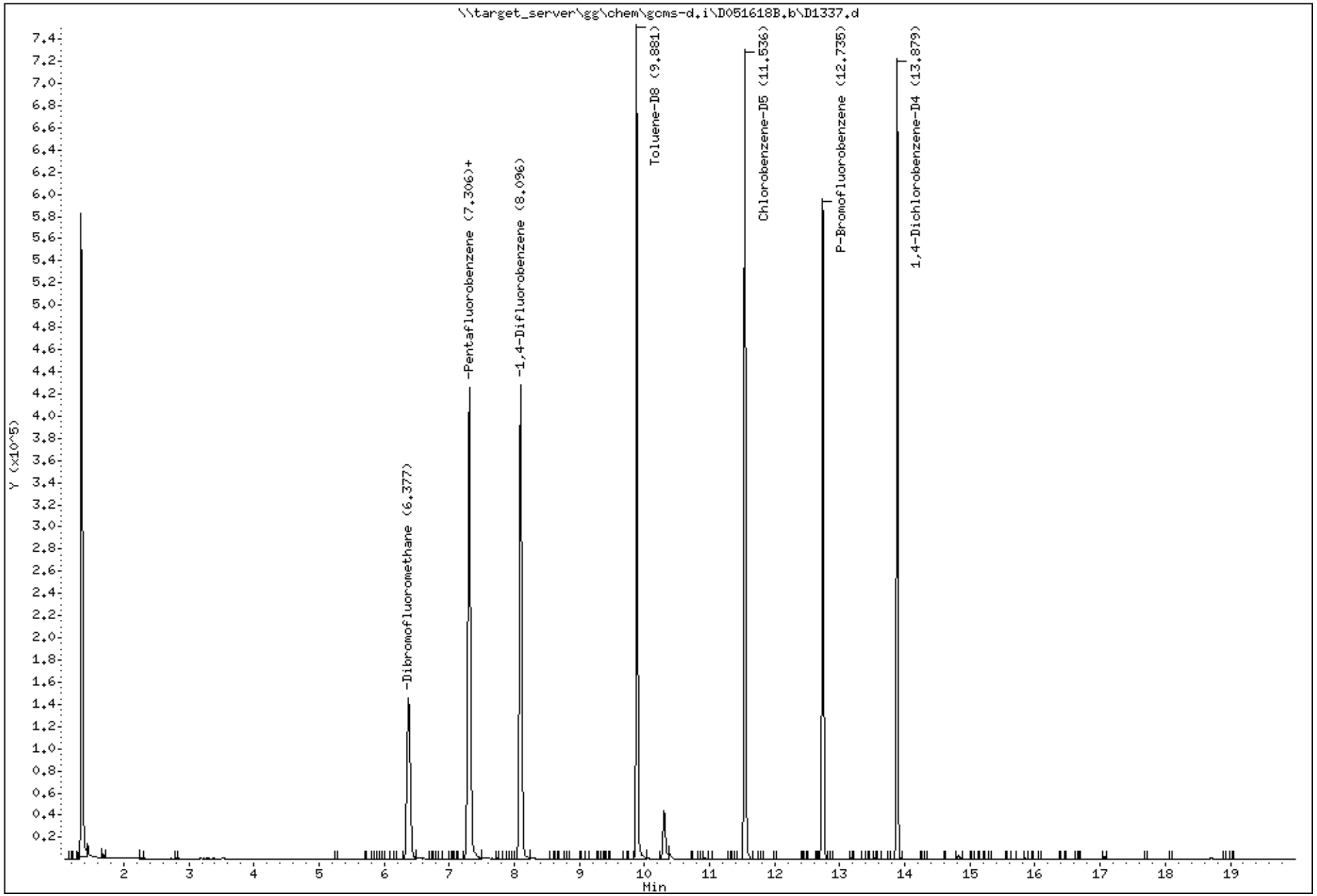
Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$ 37 Dibromofluoromethane	113	6.376	6.376	(0.872)	150629	54.4763	54.5	
* 42 Pentafluorobenzene	168	7.315	7.315	(1.000)	235181	50.0000		
$ 45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	219683	62.8367	62.8	
* 49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	397624	50.0000		
$ 55 Toluene-D8	98	9.881	9.881	(1.220)	484141	49.9275	49.9	
* 66 Chlorobenzene-D5	117	11.536	11.536	(1.000)	364054	50.0000		
$ 76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	196501	50.7658	50.8	
* 91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	177490	50.0000		

Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1337.d
Date : 16-MAY-2018 18:21
Client ID:
Sample Info: SL3841-10

Instrument: gcms-d.i



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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-12
Client ID: CHAAP-19C-LGIA-DPT116
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1338.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-12
Client ID: CHAAP-19C-LGIA-DPT116
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1338.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		109.	%					
1,2-Dichloroethane-d4	*	126.	%					
Toluene-d8		99.6	%					
P-Bromofluorobenzene		100.	%					

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Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1338.d
Report Date: 21-May-2018 08:12

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051618B.b\D1338.d
Lab Smp Id: SL3841-12
Inj Date : 16-MAY-2018 18:56 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : SL3841-12
Misc Info : WG228421,WG227999-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-d.i\D051618B.b\D8A05(21)D.m
Meth Date : 21-May-2018 08:09 gcms-d.i Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

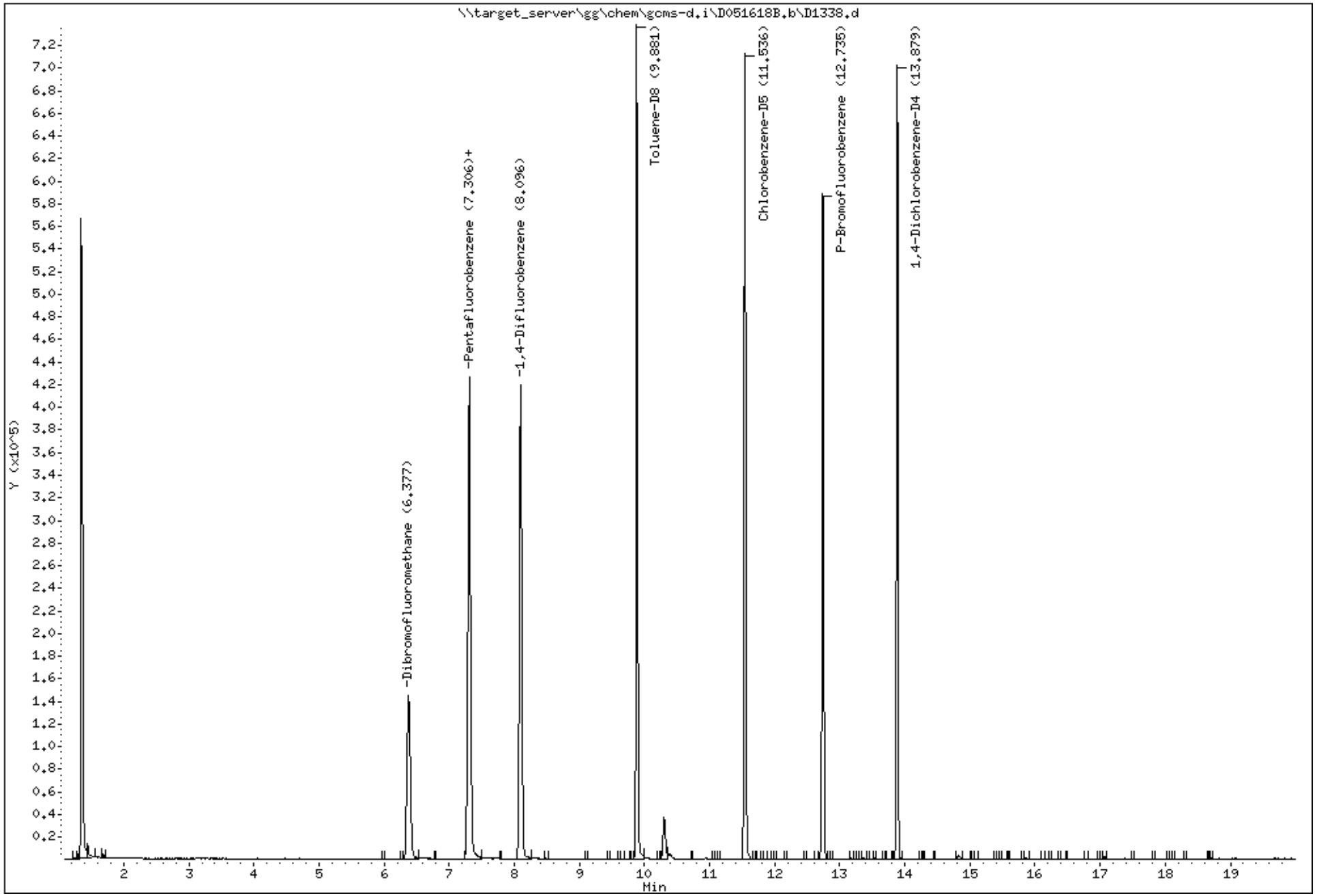
Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$ 37 Dibromofluoromethane	113	6.376	6.376	(0.872)	149558	54.6532	54.6	
* 42 Pentafluorobenzene	168	7.315	7.315	(1.000)	232753	50.0000		
$ 45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	217742	62.9312	62.9	
* 49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	394396	50.0000		
$ 55 Toluene-D8	98	9.881	9.881	(1.220)	478853	49.7864	49.8	
* 66 Chlorobenzene-D5	117	11.545	11.536	(1.000)	358659	50.0000		
$ 76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	192633	50.1738	50.2	
* 91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	176614	50.0000		

Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1338.d
Date : 16-MAY-2018 18:56
Client ID:
Sample Info: SL3841-12

Instrument: gcms-d.i



Katahdin Analytical Services 1000040

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-14
Client ID: CHAAP-19C-UGIA-DPT15
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1339.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	J	0.91	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-14
Client ID: CHAAP-19C-UGIA-DPT15
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1339.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		109.	%					
1,2-Dichloroethane-d4	*	124.	%					
Toluene-d8		99.5	%					
P-Bromofluorobenzene		99.5	%					

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Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1339.d
Report Date: 21-May-2018 08:12

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051618B.b\D1339.d
Lab Smp Id: SL3841-14
Inj Date : 16-MAY-2018 19:32 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : SL3841-14
Misc Info : WG228421,WG227999-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-d.i\D051618B.b\D8A05(21)D.m
Meth Date : 21-May-2018 08:09 gcms-d.i Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	10 Carbon Disulfide	76	2.806	2.807	(0.384)	4539	0.91179	0.91(a)	
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	152313	54.4052	54.4	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	238121	50.0000		
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	219889	62.1191	62.1	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	398430	50.0000		
$	55 Toluene-D8	98	9.881	9.881	(1.220)	483226	49.7323	49.7	
*	66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	363083	50.0000		
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	193045	49.7720	49.8	
*	91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	178854	50.0000		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

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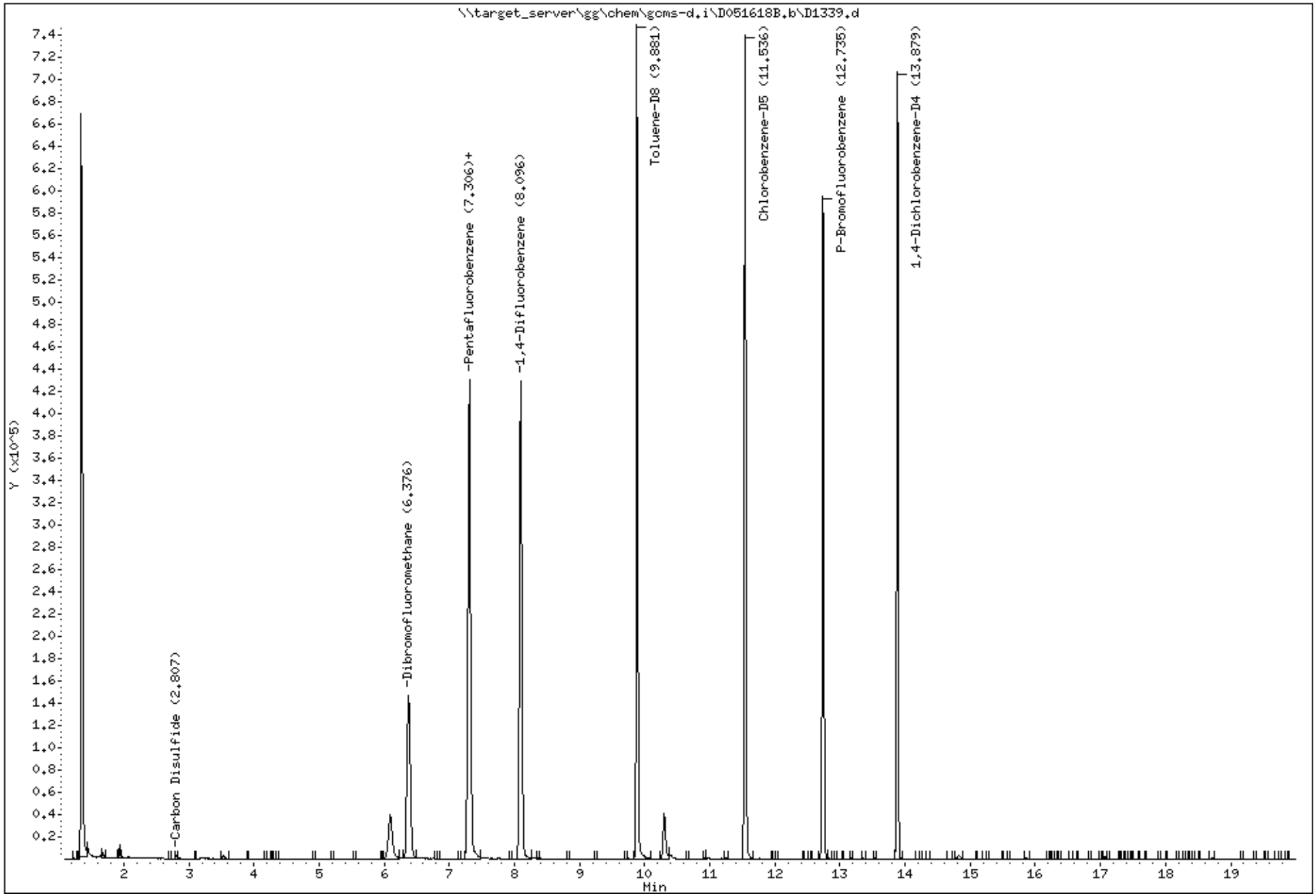
Date : 16-MAY-2018 19:32
Client ID:
Instrument: gcms-d.i
Sample Info: SL3841-14



Katahdin Analytical Services 1000044

Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1339.d

Date : 16-MAY-2018 19:32

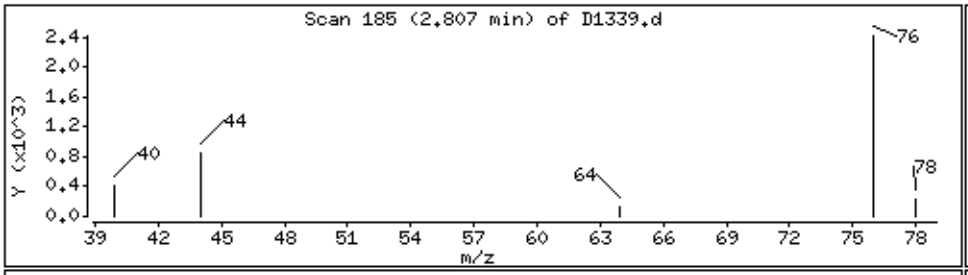
Client ID:

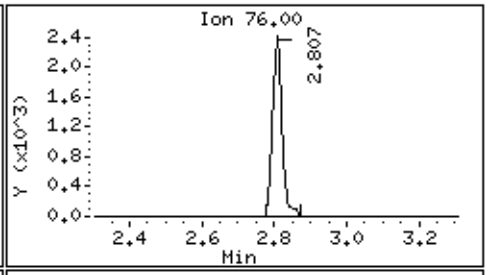
Instrument: gcms-d.i

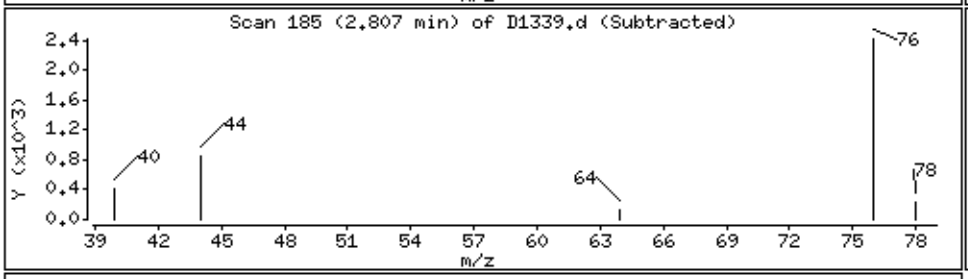
Sample Info: SL3841-14

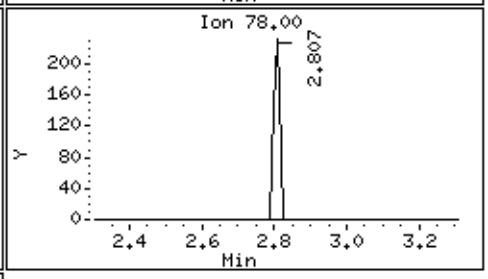
10 Carbon Disulfide

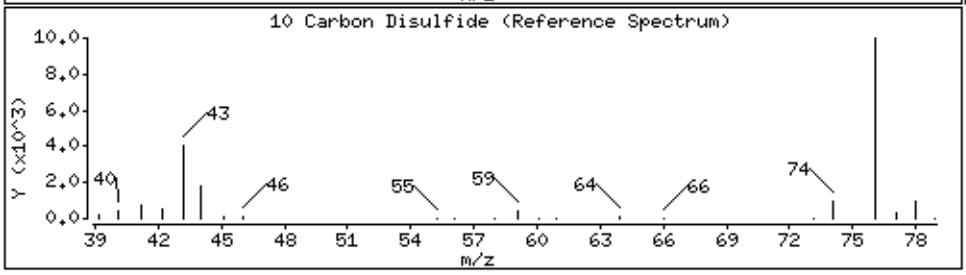
Concentration: 0.91 ug/l











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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-16
Client ID: CHAAP-19C-LGIA-DPT12
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1340.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-16
Client ID: CHAAP-19C-LGIA-DPT12
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1340.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		111.	%					
1,2-Dichloroethane-d4	*	125.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		101.	%					

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Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1340.d
Report Date: 21-May-2018 08:12

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051618B.b\D1340.d
Lab Smp Id: SL3841-16
Inj Date : 16-MAY-2018 20:08 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : SL3841-16
Misc Info : WG228421,WG227999-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-d.i\D051618B.b\D8A05(21)D.m
Meth Date : 21-May-2018 08:09 gcms-d.i Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

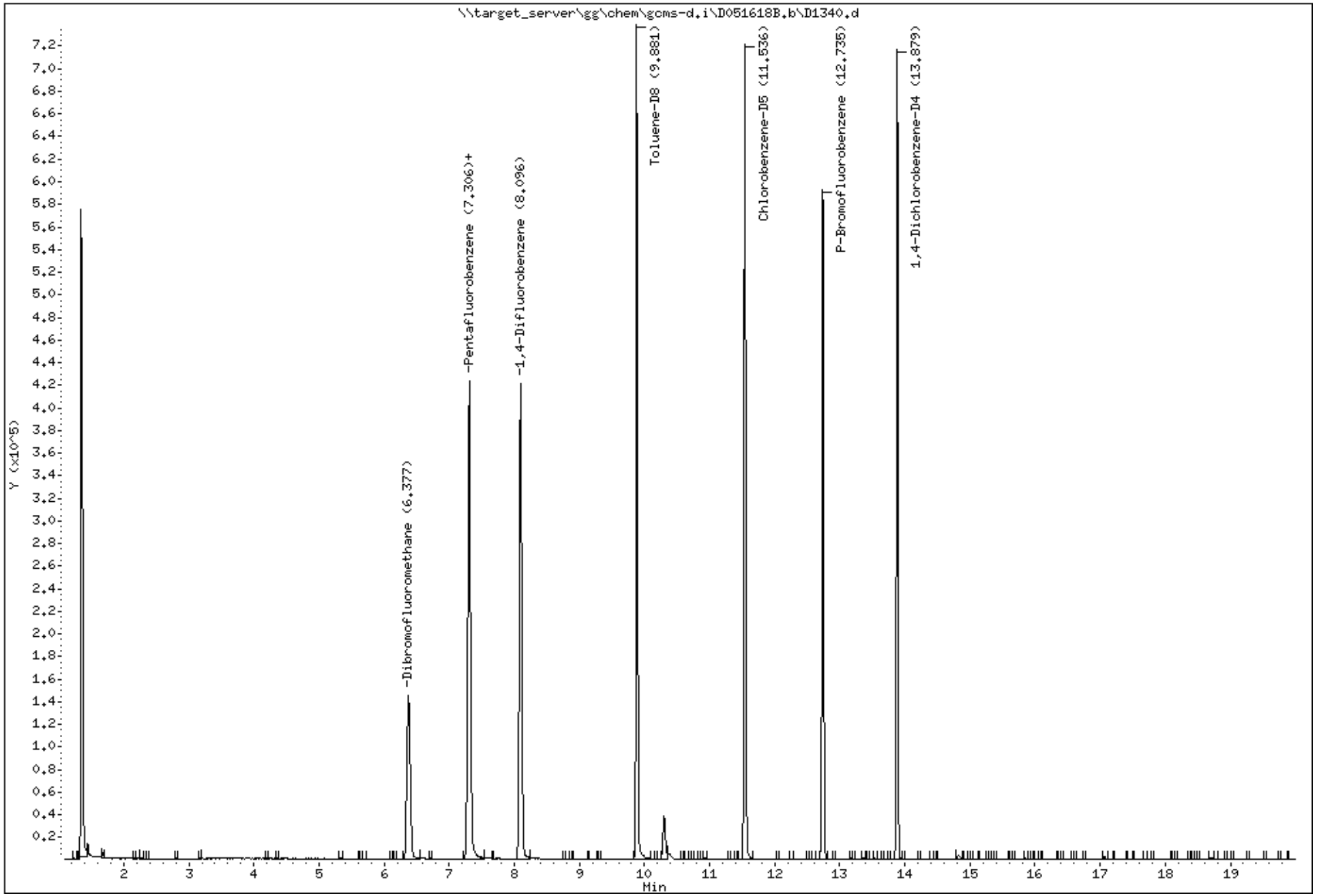
Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
$ 37 Dibromofluoromethane	113	6.376	6.376	(0.872)	150125	55.4027	55.4	
* 42 Pentafluorobenzene	168	7.315	7.315	(1.000)	230475	50.0000		
$ 45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	213557	62.3317	62.3	
* 49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	390438	50.0000		
$ 55 Toluene-D8	98	9.881	9.881	(1.220)	477313	50.1293	50.1	
* 66 Chlorobenzene-D5	117	11.536	11.536	(1.000)	359212	50.0000		
$ 76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	191720	50.4422	50.4	
* 91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	176396	50.0000		

Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1340.d
Date : 16-MAY-2018 20:08
Client ID:
Sample Info: SL3841-16

Instrument: gcms-d.i



Katahdin Analytical Services 1000049

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-18
Client ID: CHAAP-19C-UGIA-DPT11
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1341.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-18
Client ID: CHAAP-19C-UGIA-DPT11
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: D1341.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		110.	%					
1,2-Dichloroethane-d4	*	125.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		102.	%					

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Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1341.d
Report Date: 21-May-2018 08:12

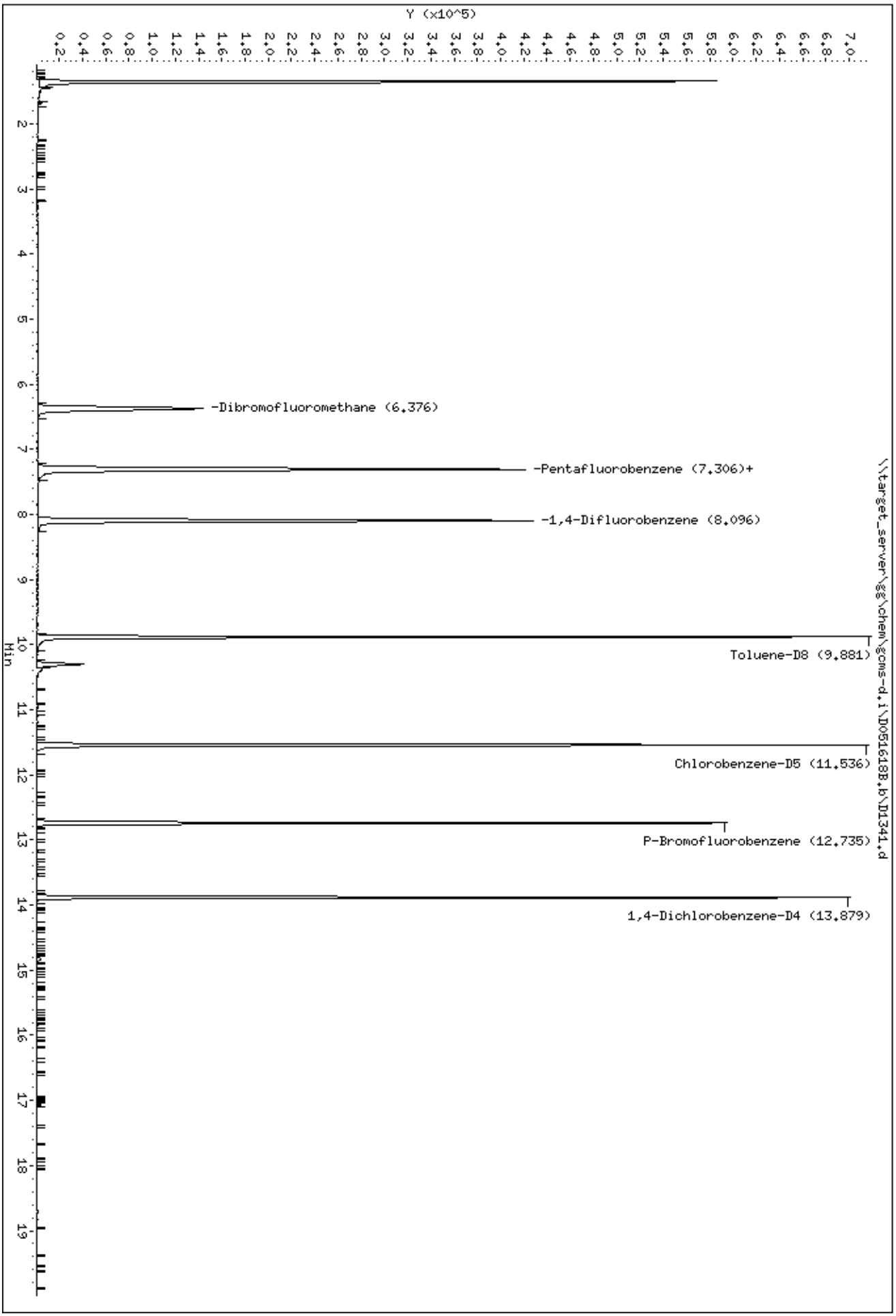
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051618B.b\D1341.d
Lab Smp Id: SL3841-18
Inj Date : 16-MAY-2018 20:43 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : SL3841-18
Misc Info : WG228421,WG227999-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-d.i\D051618B.b\D8A05(21)D.m
Meth Date : 21-May-2018 08:09 gcms-d.i Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 14
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$ 37 Dibromofluoromethane	113	6.376	6.376	(0.872)	148033	54.7701	54.8	
* 42 Pentafluorobenzene	168	7.315	7.315	(1.000)	229888	50.0000		
$ 45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	214248	62.6931	62.7	
* 49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	384288	50.0000		
$ 55 Toluene-D8	98	9.881	9.881	(1.220)	471001	50.2580	50.2	
* 66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	355182	50.0000		
$ 76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	190055	50.8044	50.8	
* 91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	174460	50.0000		



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Date : 16-MAY-2018 20:43
Client ID:
Sample Info: SL3841-18

Instrument: gcms-d.i

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-20
Client ID: CHAAP-EB-050318
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: P5553.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-20
Client ID: CHAAP-EB-050318
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: P5553.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	J	0.63	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		104.	%					
1,2-Dichloroethane-d4		106.	%					
Toluene-d8		103.	%					
P-Bromofluorobenzene		95.2	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5553.D
Report Date: 21-May-2018 08:14

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050718.b\P5553.D
Lab Smp Id: SL3841-20
Inj Date : 07-MAY-2018 13:42 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL3841-20
Misc Info : WG227763,WG227568-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-p.i\P050718.b\P8A05(68)D.m
Meth Date : 21-May-2018 08:13 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

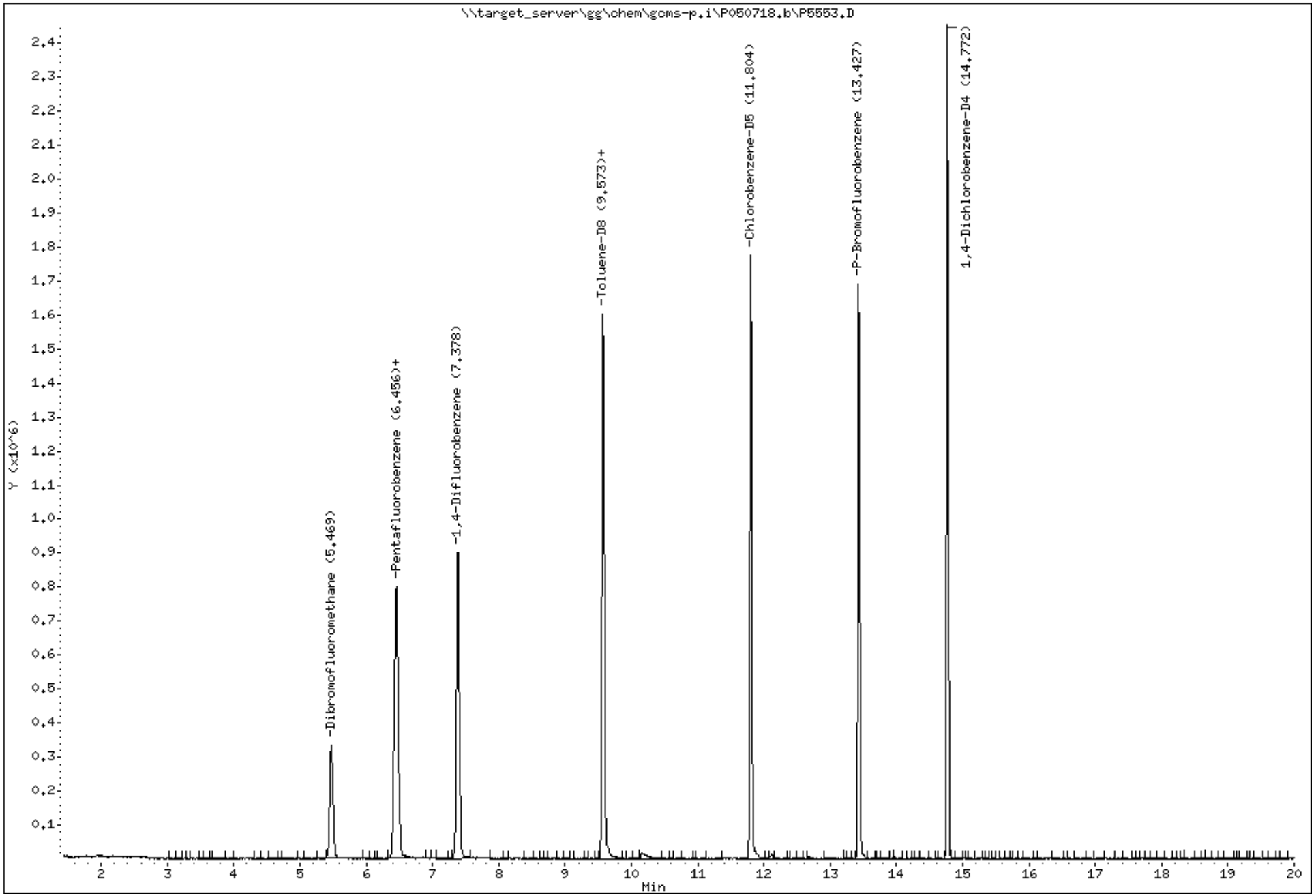
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$ 34 Dibromofluoromethane	113	5.469	5.469	(0.849)	344696	52.0423	52.0	
* 41 Pentafluorobenzene	168	6.441	6.441	(1.000)	669713	50.0000		
$ 42 1,2-Dichloroethane-D4	65	6.470	6.470	(1.004)	464989	53.2395	53.2	
* 48 1,4-Difluorobenzene	114	7.378	7.385	(1.000)	1138803	50.0000		
$ 58 Toluene-D8	98	9.573	9.573	(1.298)	1390940	51.5586	51.6	
59 Toluene	92	9.652	9.652	(1.308)	9492	0.62929	0.63(a)	
* 68 Chlorobenzene-D5	117	11.804	11.804	(1.000)	1191293	50.0000		
$ 78 P-Bromofluorobenzene	95	13.427	13.427	(1.820)	569521	47.6117	47.6	
* 94 1,4-Dichlorobenzene-D4	152	14.771	14.771	(1.000)	634615	50.0000		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5553.D
Date : 07-MAY-2018 13:42
Client ID:
Sample Info: SL3841-20

Instrument: gcms-p.i



Katahdin Analytical Services 1000057

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5553.D

Date : 07-MAY-2018 13:42

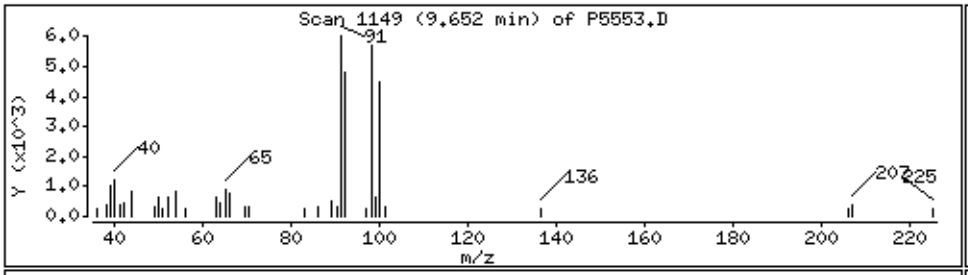
Client ID:

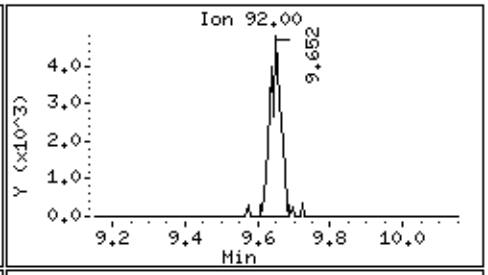
Instrument: gcms-p.i

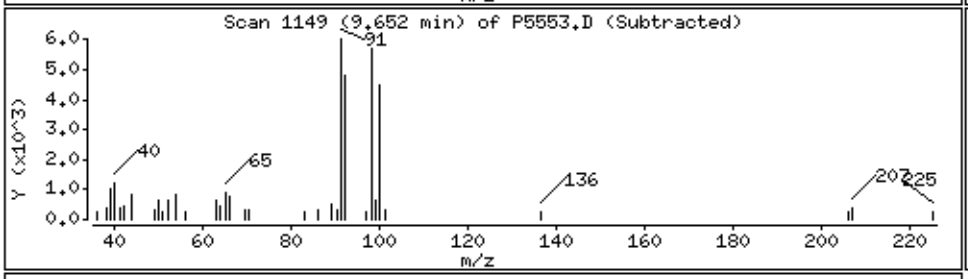
Sample Info: SL3841-20

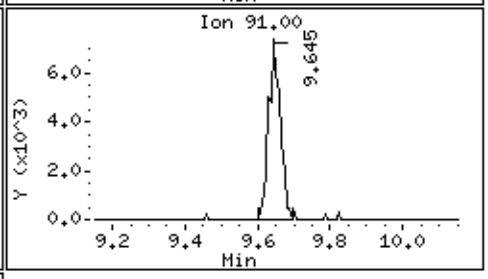
59 Toluene

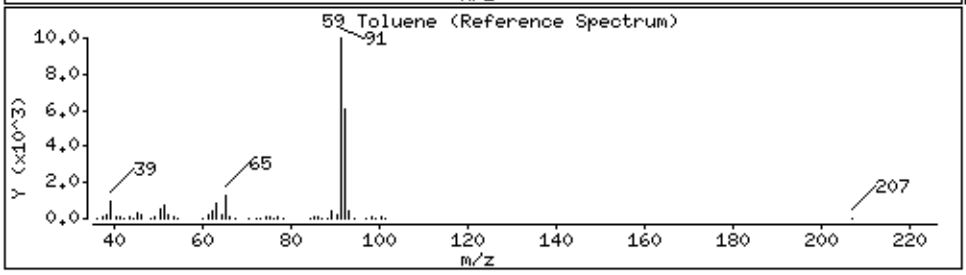
Concentration: 0.63 ug/l











Standards Data Section

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SL3841
Project : Cornhusker Army Ammunition Plant **Instrument ID:** GCMS-D
Lab File IDs : D1262.d D1261.d D1260.d D1259.d D1264.d D1263.d **Column ID:**
Calibration Date(s): 10-MAY-18 08:36 10-MAY-18 11:34

	1.0000 Level 1	5.0000 Level 2	20.0000 Level 3	50.0000 Level 4	100.0000 Level 5	150.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Dichlorodifluoromethane	0.56036	0.59912	0.62483	0.60950	0.62453	0.61277	AVG		0.60519		3.96777	15.00000	O
Chloromethane	0.71127	0.68264	0.67802	0.59645	0.63672	0.59762	AVG		0.65045		7.33830	15.00000	O
Vinyl chloride	0.46959	0.49687	0.51239	0.48848	0.56664	0.51577	AVG		0.50829		6.52407	15.00000	O
Bromomethane	0.30260	0.26788	0.26498	0.23963	0.24674	0.25289	AVG		0.26245		8.53203	15.00000	O
Chloroethane	0.23847	0.26206	0.25226	0.22731	0.18302	+++++	AVG		0.23262		13.2063	15.00000	O
Trichlorofluoromethane	0.76041	0.78015	0.80338	0.79947	0.79324	0.79504	AVG		0.78861		2.01768	15.00000	O
1,1-Dichloroethene	0.34469	0.32839	0.33955	0.33016	0.34879	0.33647	AVG		0.33801		2.36567	15.00000	O
Carbon Disulfide	0.99826	0.97103	1.06246	1.03232	1.12397	1.08371	AVG		1.04529		5.38727	15.00000	O
Freon-113	0.30122	0.29262	0.30001	0.28888	0.30027	0.29087	AVG		0.29565		1.84828	15.00000	O
Methylene Chloride	0.61362	0.55548	0.57546	0.53776	0.55687	0.54615	AVG		0.56422		4.83685	15.00000	O
Acetone	0.17382	0.14952	0.15679	0.15230	0.15231	0.15542	AVG		0.15669		5.59790	15.00000	O
trans-1,2-Dichloroethene	0.53235	0.50919	0.52822	0.49421	0.53192	0.50130	AVG		0.51620		3.25004	15.00000	O
Methyl tert-butyl ether	1.17857	1.21878	1.34740	1.37229	1.46092	1.43232	AVG		1.33505		8.53040	15.00000	O
1,1-Dichloroethane	0.96520	0.94646	0.98243	0.94643	0.99564	0.95460	AVG		0.96513		2.09263	15.00000	O
cis-1,2-Dichloroethene	0.54551	0.52174	0.56593	0.53592	0.57367	0.55414	AVG		0.54948		3.49762	15.00000	O
2,2-Dichloropropane	0.51306	0.56999	0.66803	0.68445	0.69207	0.68747	AVG		0.63584		11.9021	15.00000	O
Bromochloromethane	0.25010	0.27752	0.28551	0.27723	0.28805	0.24706	AVG		0.27091		6.58674	15.00000	O
Chloroform	1.04357	0.98020	1.02330	0.98855	1.03325	1.00142	AVG		1.01172		2.51944	15.00000	O
Carbon Tetrachloride	0.37895	0.39537	0.44336	0.44346	0.46738	0.45689	AVG		0.43090		8.22438	15.00000	O
1,1,1-Trichloroethane	0.78735	0.78923	0.84489	0.82921	0.88442	0.85946	AVG		0.83243		4.65205	15.00000	O
1,1-Dichloropropene	0.43243	0.43097	0.47757	0.45493	0.48549	0.46283	AVG		0.45737		4.94117	15.00000	O
2-Butanone	0.21658	0.23388	0.24827	0.25015	0.25362	0.25502	AVG		0.24292		6.15404	15.00000	O
Benzene	1.19928	1.19823	1.27774	1.22214	1.26810	1.23664	AVG		1.23369		2.73880	15.00000	O
1,2-Dichloroethane	0.59710	0.48606	0.51110	0.51053	0.49204	0.49744	AVG		0.51571		7.96933	15.00000	O
Trichloroethene	0.33988	0.33083	0.34805	0.33016	0.34010	0.32904	AVG		0.33634		2.24769	15.00000	O
Dibromomethane	0.21127	0.21183	0.23563	0.23446	0.23435	0.23663	AVG		0.22736		5.40021	15.00000	O
1,2-Dichloropropane	0.30665	0.31790	0.34807	0.33817	0.34525	0.34515	AVG		0.33353		5.14493	15.00000	O
Bromodichloromethane	0.43827	0.41371	0.47751	0.46910	0.48560	0.48922	AVG		0.46224		6.47849	15.00000	O
cis-1,3-dichloropropene	0.40927	0.46214	0.57360	0.58801	0.60037	0.59327	AVG		0.53778		15.1155	15.00000	W
Toluene	0.76506	0.74235	0.77132	0.74148	0.76806	0.73442	AVG		0.75378		2.13553	15.00000	O
4-methyl-2-pentanone	0.26774	0.29231	0.32726	0.32637	0.30872	0.30419	AVG		0.30443		7.36532	15.00000	O
Tetrachloroethene	0.26361	0.27417	0.27963	0.26259	0.28530	0.27048	AVG		0.27263		3.27508	15.00000	O
trans-1,3-Dichloropropene	0.35692	0.40341	0.49142	0.51215	0.51535	0.51716	AVG		0.46607		14.7546	15.00000	O
1,1,2-Trichloroethane	0.26522	0.25564	0.26624	0.27058	0.26863	0.26663	AVG		0.26549		1.95539	15.00000	O
Dibromochloromethane	0.30045	0.33006	0.38445	0.40073	0.41646	0.42129	AVG		0.37557		13.1454	15.00000	O
1,3-Dichloropropane	0.57494	0.59960	0.63036	0.61601	0.62439	0.62201	AVG		0.61122		3.37716	15.00000	O
1,2-Dibromoethane	0.29121	0.29925	0.32787	0.33305	0.33514	0.33418	AVG		0.32012		6.12463	15.00000	O

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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sales@katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3841
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-D
Lab File IDs : D1262.d D1261.d D1260.d D1259.d D1264.d D1263.d
Column ID:
Calibration Date(s): 10-MAY-18 08:36 10-MAY-18 11:34

2-Hexanone	0.17592	0.21419	0.24851	0.25061	0.24841	0.24695	AVG		0.23077		13.0938	15.00000	O
Chlorobenzene	0.94896	0.92088	0.94262	0.89588	0.93169	0.90524	AVG		0.92421		2.25981	15.00000	O
Ethylbenzene	1.53365	1.56731	1.65724	1.56248	1.61363	1.56803	AVG		1.58372		2.79162	15.00000	O
1,1,1,2-Tetrachloroethane	0.28742	0.30973	0.34276	0.33853	0.35068	0.34685	AVG		0.32933		7.64384	15.00000	O
m+p-Xylenes	1.11930	1.22345	1.27593	1.20484	1.22419	1.17647	AVG		1.20403		4.37803	15.00000	O
o-Xylene	1.03413	1.15571	1.29155	1.24563	1.29555	1.26663	AVG		1.21487		8.40901	15.00000	O
Styrene	0.72024	0.89322	0.98448	0.96404	0.99464	0.95801	AVG		0.91910		11.2786	15.00000	O
Bromoform	1584	9268	45859	120673	252742	364795	LNR	0.02359	0.25784		0.99968	0.99000	O
Isopropylbenzene	2.17850	2.61226	2.81289	2.72321	2.87585	2.72617	AVG		2.65481		9.41391	15.00000	O
Bromobenzene	0.75667	0.73016	0.76879	0.73878	0.76032	0.73115	AVG		0.74765		2.19406	15.00000	O
N-Propylbenzene	3.29934	3.43179	3.63045	3.44994	3.61382	3.40826	AVG		3.47227		3.66998	15.00000	O
1,1,2,2-Tetrachloroethane	0.85905	0.85152	0.88887	0.86825	0.88535	0.86536	AVG		0.86973		1.68771	15.00000	O
1,3,5-Trimethylbenzene	2.06442	2.25303	2.42670	2.33047	2.44030	2.30345	AVG		2.30306		5.96370	15.00000	O
2-Chlorotoluene	1.97476	2.02601	2.17288	2.08126	2.16779	2.05598	AVG		2.07978		3.78004	15.00000	O
1,2,3-Trichloropropane	0.75585	0.73651	0.76927	0.75552	0.74559	0.73112	AVG		0.74898		1.87631	15.00000	O
4-Chlorotoluene	2.13480	2.15903	2.31262	2.19625	2.27703	2.17938	AVG		2.20985		3.16148	15.00000	O
tert-Butylbenzene	1.84017	2.12417	2.30255	2.21466	2.31209	2.21065	AVG		2.16738		8.05122	15.00000	O
1,2,4-Trimethylbenzene	2.04309	2.33581	2.54040	2.41743	2.55079	2.42936	AVG		2.38615		7.81732	15.00000	O
P-Isopropyltoluene	1.82971	2.14413	2.36353	2.27462	2.40797	2.30971	AVG		2.22161		9.54932	15.00000	O
1,3-Dichlorobenzene	1.37362	1.31865	1.35917	1.29679	1.35357	1.29820	AVG		1.33333		2.48399	15.00000	O
1,4-Dichlorobenzene	1.50533	1.35595	1.40068	1.33379	1.38029	1.32567	AVG		1.38362		4.76389	15.00000	O
N-Butylbenzene	1.81494	1.96843	2.16719	2.10347	2.22662	2.14011	AVG		2.07013		7.33830	15.00000	O
sec-Butylbenzene	2.44542	2.68142	2.87797	2.75294	2.90061	2.74913	AVG		2.73458		6.01129	15.00000	O
1,2-Dichlorobenzene	1.21625	1.20840	1.30227	1.26609	1.31735	1.27885	AVG		1.26487		3.51843	15.00000	O
1,2-Dibromo-3-Chloropropane	0.11325	0.11876	0.13743	0.14316	0.15391	0.16240	AVG		0.13815		13.9524	15.00000	O
Hexachlorobutadiene	0.33751	0.28488	0.29239	0.27408	0.30171	0.29236	AVG		0.29715		7.33877	15.00000	O
1,2,4-Trichlorobenzene	0.68629	0.68828	0.75962	0.74157	0.80620	0.78164	AVG		0.74393		6.57699	15.00000	O
Naphthalene	5588	33699	172641	424409	938571	1336967	LNR	0.02224	1.84187		0.99939	0.99000	O
1,2,3-Trichlorobenzene	0.55970	0.58317	0.62336	0.60235	0.64596	0.63136	AVG		0.60765		5.30849	15.00000	O
Dibromofluoromethane	0.59327	0.58023	0.58757	0.58775	0.58840	0.58990	AVG		0.58785		0.72990	15.00000	
1,2-Dichloroethane-D4	0.76439	0.74846	0.73661	0.74720	0.71646	0.74655	AVG		0.74328		2.13794	15.00000	
Toluene-D8	1.21612	1.19459	1.22020	1.22926	1.22849	1.22746	AVG		1.21935		1.08305	15.00000	
P-Bromofluorobenzene	0.48224	0.47486	0.49316	0.48863	0.48436	0.49716	AVG		0.48673		1.64465	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Report Date: 18-May-2018 12:22

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa02236
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: WG228096-9
Level: LOW Operator: JSS
Data Type: MS DATA SampleType: LCS
SpikeList File: IND_CHECK.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-d.i\D051118.b\D8A05(21)D.m
Misc Info: WG228096,WG227999-4,SL3807-5

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	1	Dichlorodifluorome	50.0	70.3	140.69*	80-120
	2	Chloromethane	50.0	56.4	112.89	80-120
	3	Vinyl chloride	50.0	56.0	111.99	80-120
	4	Bromomethane	50.0	49.8	99.69	80-120
	5	Chloroethane	50.0	55.5	111.05	80-120
	6	Trichlorofluoromet	50.0	51.4	102.80	80-120
	7	Diethyl Ether	50.0	49.9	99.88	80-120
	8	Tertiary-butyl alc	250	242	96.63	80-120
	9	1,1-Dichloroethene	50.0	49.1	98.17	80-120
	10	Carbon Disulfide	50.0	49.8	99.50	80-120
	11	Freon-113	50.0	48.6	97.15	80-120
	12	Iodomethane	50.0	54.1	108.26	80-120
	13	Acrolein	250	239	95.77	80-120
	14	Methylene Chloride	50.0	47.8	95.62	80-120
	15	Acetone	50.0	47.9	95.75	80-120
	16	Isobutyl Alcohol	1000	879	87.89	80-120
	17	trans-1,2-Dichloro	50.0	48.6	97.15	80-120
	18	Allyl Chloride	50.0	51.5	102.93	80-120
	19	Methyl tert-butyl	50.0	49.1	98.18	80-120
	20	Acetonitrile	500	467	93.50	80-120
	21	Di-isopropyl ether	50.0	52.0	104.07	80-120
	22	Chloroprene	50.0	51.1	102.12	80-120
	23	Propionitrile	500	475	94.99	80-120
	24	Methacrylonitrile	500	485	96.94	80-120
	25	1,1-Dichloroethane	50.0	52.7	105.45	80-120
	26	Acrylonitrile	250	237	94.91	80-120
	27	Ethyl tertiary-but	50.0	53.5	106.97	80-120
	28	Vinyl Acetate	50.0	55.3	110.64	80-120
	29	cis-1,2-Dichloroet	50.0	49.7	99.49	80-120
M	30	1,2-Dichloroethyle	100	98.3	98.32	80-120
	31	Methyl Methacrylat	50.0	47.7	95.39	80-120
	32	2,2-Dichloropropan	50.0	57.8	115.72	80-120
	33	Bromochloromethane	50.0	51.2	102.35	80-120
	34	Chloroform	50.0	49.3	98.58	80-120
	35	Carbon Tetrachlori	50.0	51.9	103.73	80-120
	36	Tetrahydrofuran	50.0	45.9	91.83	80-120
	38	1,1,1-Trichloroeth	50.0	50.0	100.01	80-120
	39	1,1-Dichloropropen	50.0	50.9	101.85	80-120
	40	2-Butanone	50.0	47.9	95.83	80-120
	41	Benzene	50.0	50.1	100.13	80-120

Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Report Date: 18-May-2018 12:22

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	43	Cyclohexane	50.0	49.8	99.63	80-120
	44	Ethyl Methacrylate	50.0	44.8	89.64	80-120
	46	Tertiary-amyl meth	50.0	51.9	103.83	80-120
	47	1,2-Dichloroethane	50.0	47.8	95.53	80-120
	48	Trichloroethene	50.0	49.2	98.46	80-120
	50	Dibromomethane	50.0	49.5	98.92	80-120
	51	1,2-Dichloropropan	50.0	50.8	101.57	80-120
	52	Bromodichlorometha	50.0	51.6	103.18	80-120
	53	cis-1,3-dichloropr	50.0	51.4	102.79	80-120
	54	1,4-Dioxane	1000	836	83.56	80-120
	56	2-Chloroethylvinyl	50.0	49.7	99.40	80-120
	57	Toluene	50.0	49.7	99.42	80-120
	58	4-methyl-2-pentano	50.0	48.4	96.92	80-120
	59	Tetrachloroethene	50.0	50.0	100.12	80-120
	60	trans-1,3-Dichloro	50.0	54.9	109.80	80-120
	61	1,1,2-Trichloroeth	50.0	48.3	96.62	80-120
	62	Dibromochlorometha	50.0	51.8	103.71	80-120
	63	1,3-Dichloropropan	50.0	46.3	92.56	80-120
	64	1,2-Dibromoethane	50.0	48.8	97.71	80-120
	65	2-Hexanone	50.0	48.9	97.85	80-120
	67	Chlorobenzene	50.0	48.3	96.62	80-120
	152	1-Chlorohexane	50.0	0.00	0.00*	80-120
	68	Ethylbenzene	50.0	49.0	98.07	80-120
	69	1,1,1,2-Tetrachlor	50.0	50.4	100.76	80-120
M	70	Xylenes (total)	150	149	99.28	80-120
	71	m+p-Xylenes	100	98.9	98.87	80-120
	72	o-Xylene	50.0	50.0	100.10	80-120
	73	Styrene	50.0	51.2	102.34	80-120
	74	Bromoform	50.0	46.1	92.24	80-120
	75	Isopropylbenzene	50.0	53.7	107.46	80-120
	77	cis-1,4-Dichloro-2	50.0	47.4	94.92	80-120
	78	trans-1,4-Dichloro	50.0	46.1	92.30	80-120
	79	Bromobenzene	50.0	48.3	96.54	80-120
	80	N-Propylbenzene	50.0	49.8	99.62	80-120
	81	1,1,2,2-Tetrachlor	50.0	47.2	94.32	80-120
	82	1,3,5-Trimethylben	50.0	50.5	101.02	80-120
	83	2-Chlorotoluene	50.0	49.7	99.47	80-120
	84	1,2,3-Trichloropro	50.0	45.1	90.28	80-120
	85	4-Chlorotoluene	50.0	50.0	100.01	80-120
	86	tert-Butylbenzene	50.0	50.4	100.73	80-120
	87	Pentachloroethane	50.0	50.8	101.66	80-120
	88	1,2,4-Trimethylben	50.0	50.6	101.25	80-120
	89	P-Isopropyltoluene	50.0	51.7	103.39	80-120
	90	1,3-Dichlorobenzen	50.0	48.5	96.95	80-120
	92	1,4-Dichlorobenzen	50.0	47.0	94.04	80-120
	93	N-Butylbenzene	50.0	52.1	104.25	80-120
	94	sec-Butylbenzene	50.0	50.4	100.89	80-120
	95	1,2-Dichlorobenzen	50.0	48.6	97.14	80-120
	96	1,2-Dibromo-3-Chlo	50.0	47.1	94.24	80-120
	97	1,3,5-Trichloroben	50.0	50.1	100.21	80-120
	98	Hexachlorobutadien	50.0	47.3	94.67	80-120
	99	1,2,4-Trichloroben	50.0	49.8	99.60	80-120
	100	1,2,3-Trimethylben	50.0	50.7	101.32	80-120
	101	Naphthalene	50.0	43.6	87.15	80-120

Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Report Date: 18-May-2018 12:22

SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
102 1,2,3-Trichloroben	50.0	47.5	95.05	80-120
103 Methyl Acetate	50.0	43.4	86.80	80-120
104 Methylcyclohexane	50.0	51.4	102.89	80-120
M 153 Total Alkylbenzene	350	356	101.59	80-120

SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$ 37 Dibromofluorometha	50.0	50.0	100.00	68-128
$ 45 1,2-Dichloroethane	50.0	49.1	98.15	67-135
$ 55 Toluene-D8	50.0	50.5	101.05	65-128
$ 76 P-Bromofluorobenze	50.0	50.6	101.19	56-133

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1259.d
Report Date: 15-May-2018 13:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051018.b\D1259.d
Lab Smp Id: WG227999-4
Inj Date : 10-MAY-2018 08:36
Operator : JSS   Inst ID: gcms-d.i
Smp Info : WG227999-4
Misc Info :
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-d.i\D051018.b\D8A05(21)D.m
Meth Date : 10-May-2018 14:53 jsampson   Quant Type: ISTD
Cal Date : 10-MAY-2018 08:36   Cal File: D1259.d
Als bottle: 2   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	205265	50.0000	50.0	
2	Chloromethane	50	1.663	1.663	(0.227)	200868	50.0000	50.0	
3	Vinyl chloride	62	1.728	1.728	(0.236)	164507	50.0000	50.0	
4	Bromomethane	94	2.025	2.025	(0.277)	80701	50.0000	50.0	
5	Chloroethane	64	2.137	2.137	(0.292)	76551	50.0000	50.0	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	269243	50.0000	50.0	
7	Diethyl Ether	59	2.583	2.583	(0.353)	88081	50.0000	50.0	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	57486	250.000	250	
9	1,1-Dichloroethene	96	2.788	2.788	(0.381)	111190	50.0000	50.0	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	347658	50.0000	50.0	
11	Freon-113	151	2.834	2.835	(0.387)	97287	50.0000	50.0	
12	Iodomethane	142	2.936	2.937	(0.401)	117174	50.0000	50.0	
13	Acrolein	56	3.159	3.160	(0.432)	148286	250.000	250	
14	Methylene Chloride	84	3.448	3.448	(0.471)	181105	50.0000	50.0	
15	Acetone	43	3.522	3.522	(0.482)	256461	250.000	250	
16	Isobutyl Alcohol	43	7.603	7.604	(1.039)	130741	1000.00	1000	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	166437	50.0000	50.0	
18	Allyl Chloride	41	3.317	3.318	(0.454)	261537	50.0000	50.0	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	462152	50.0000	50.0	
20	Acetonitrile	39	4.135	4.136	(0.565)	47913	500.000	500	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	556590	50.0000	50.0	
22	Chloroprene	53	4.479	4.480	(0.612)	273657	50.0000	50.0	
23	Propionitrile	54	7.148	7.148	(0.977)	249358	500.000	500	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1259.d
Report Date: 15-May-2018 13:58

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.185	7.185	(0.982)	1135416	500.000	500	
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	318734	50.0000	50.0	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	293845	250.000	250	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	480909	50.0000	50.0	
	28	Vinyl Acetate	43	4.981	4.982	(0.615)	414877	50.0000	50.0	
	29	cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	180483	50.0000	50.0	
M	30	1,2-Dichloroethylene (total)	96				346920	50.0000	100	
	31	Methyl Methacrylate	41	10.643	10.643	(1.315)	163385	50.0000	50.0	
	32	2,2-Dichloropropane	77	5.642	5.642	(0.771)	230506	50.0000	50.0	
	33	Bromochloromethane	128	5.809	5.809	(0.794)	93363	50.0000	50.0	
	34	Chloroform	83	6.013	6.014	(0.822)	332919	50.0000	50.0	
	35	Carbon Tetrachloride	117	6.236	6.237	(0.770)	238844	50.0000	50.0	
	36	Tetrahydrofuran	42	6.302	6.302	(0.861)	254617	250.000	250	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	197939	50.0000	50.0	
	38	1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	279256	50.0000	50.0	
	39	1,1-Dichloropropene	75	6.627	6.627	(0.819)	245020	50.0000	50.0	
	40	2-Butanone	43	6.655	6.655	(0.910)	421224	250.000	250	
	41	Benzene	78	7.055	7.055	(0.871)	658237	50.0000	50.0	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	336775	50.0000		
	43	Cyclohexane	56	5.790	5.791	(0.792)	280807	50.0000	50.0	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	123543	50.0000	50.0	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	251639	50.0000	50.0	
	46	Tertiary-amyl methyl ether	73	7.333	7.334	(1.003)	393838	50.0000	50.0	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	274965	50.0000	50.0	
	48	Trichloroethene	95	8.003	8.003	(0.989)	177822	50.0000	50.0	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	538592	50.0000		
	50	Dibromomethane	93	8.588	8.589	(1.061)	126276	50.0000	50.0	
	51	1,2-Dichloropropane	63	8.737	8.738	(1.079)	182136	50.0000	50.0	
	52	Bromodichloromethane	83	8.858	8.859	(1.094)	252656	50.0000	50.0	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	316695	50.0000	50.0	
	54	1,4-Dioxane	88	9.137	9.137	(1.129)	30855	1000.00	1000	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	662072	50.0000	50.0	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	115077	50.0000	50.0	
	57	Toluene	92	9.936	9.937	(1.227)	399355	50.0000	50.0	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	878900	250.000	250	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	128749	50.0000	50.0	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	275842	50.0000	50.0	
	61	1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	145731	50.0000	50.0	
	62	Dibromochloromethane	129	10.773	10.774	(0.934)	196474	50.0000	50.0	
	63	1,3-Dichloropropane	76	10.875	10.876	(0.943)	302025	50.0000	50.0	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	179377	50.0000	50.0	
	65	2-Hexanone	43	11.294	11.294	(0.979)	614370	250.000	250	
*	66	Chlorobenzene-D5	117	11.535	11.536	(1.000)	490295	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.002)	439244	50.0000	50.0	
	152	1-Chlorohexane	91	11.600	11.601	(1.006)	766077	50.0000	(a)	
	68	Ethylbenzene	91	11.600	11.601	(1.006)	766077	50.0000	50.0	
	69	1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	165978	50.0000	50.0	
M	70	Xylenes (total)	106				1792184	150.000	150	
	71	m+p-Xylenes	91	11.749	11.750	(1.019)	1181457	100.000	100	
	72	o-Xylene	91	12.168	12.168	(1.055)	610727	50.0000	50.0	
	73	Styrene	104	12.223	12.224	(1.060)	472662	50.0000	50.0	
	74	Bromoform	173	12.233	12.233	(1.060)	120673	50.0000	50.0	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	679544	50.0000	50.0	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	263172	50.0000	50.0	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1259.d
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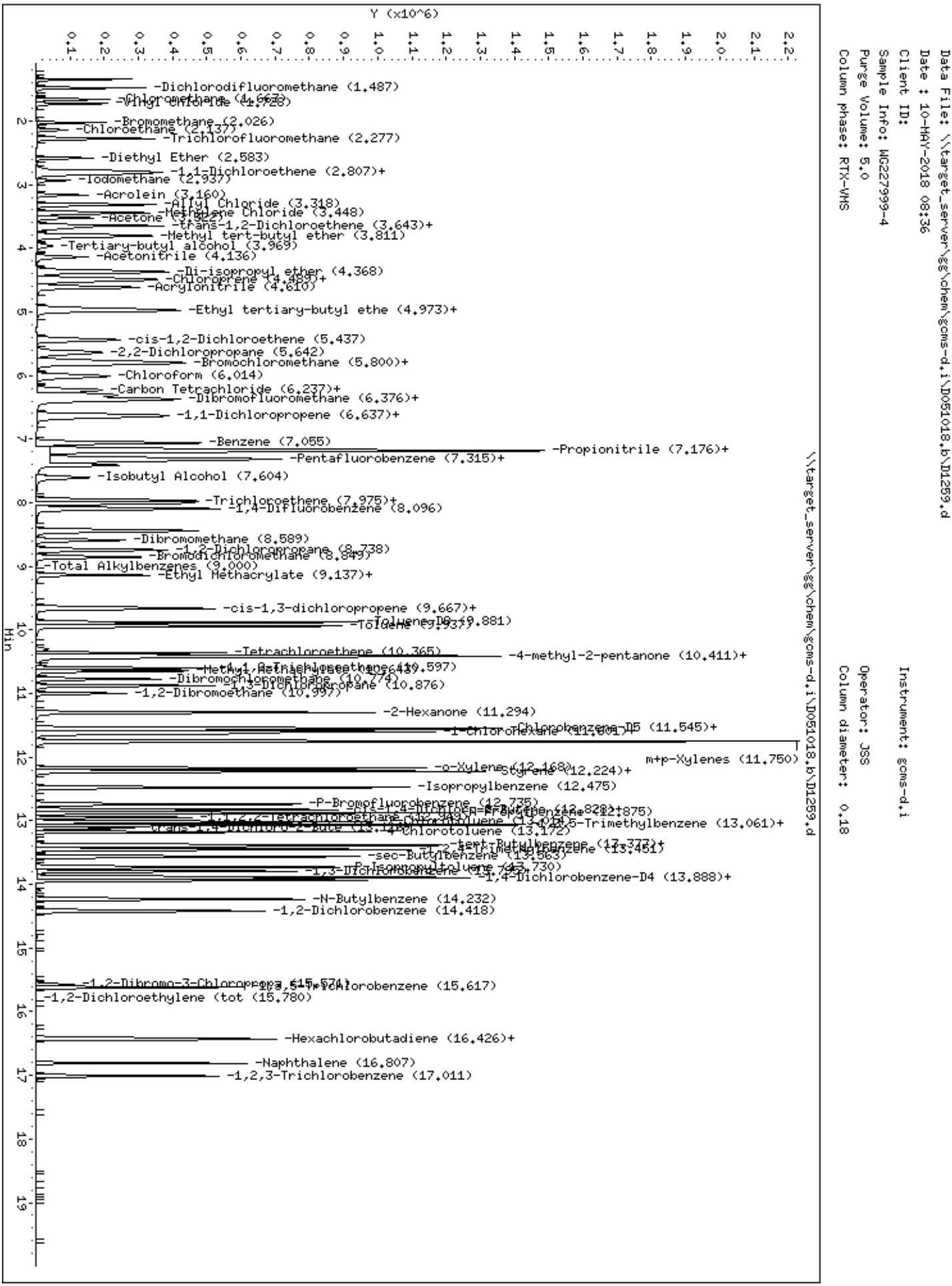
			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	77	cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	71457	50.0000	50.0	
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	57450	50.0000	50.0	
	79	Bromobenzene	156	12.828	12.828	(0.924)	184354	50.0000	50.0	
	80	N-Propylbenzene	91	12.874	12.875	(0.928)	860890	50.0000	50.0	
	81	1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	216662	50.0000	50.0	
	82	1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	581540	50.0000	50.0	
	83	2-Chlorotoluene	91	13.014	13.014	(0.938)	519353	50.0000	50.0	
	84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	188530	50.0000	50.0	
	85	4-Chlorotoluene	91	13.172	13.172	(0.949)	548049	50.0000	50.0	
	86	tert-Butylbenzene	119	13.376	13.377	(0.964)	552641	50.0000	50.0	
	87	Pentachloroethane	117	13.395	13.395	(0.965)	134768	50.0000	50.0	
	88	1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	603241	50.0000	50.0	
	89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	567605	50.0000	50.0	
	90	1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	323599	50.0000	50.0	
*	91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	249538	50.0000		
	92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	332832	50.0000	50.0	
	93	N-Butylbenzene	91	14.231	14.232	(1.025)	524896	50.0000	50.0	
	94	sec-Butylbenzene	105	13.562	13.563	(0.977)	686964	50.0000	50.0	
	95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	315938	50.0000	50.0	
	96	1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	35723	50.0000	50.0	
	97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	213333	50.0000	50.0	
	98	Hexachlorobutadiene	225	16.416	16.416	(1.183)	68393	50.0000	50.0	
	99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	185050	50.0000	50.0	
	100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	606167	50.0000	50.0	
	101	Naphthalene	128	16.806	16.806	(1.211)	424409	50.0000	50.0	
	102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	150309	50.0000	50.0	
	103	Methyl Acetate	43	3.689	3.690	(0.504)	151020	50.0000	50.0	
	104	Methylcyclohexane	83	7.966	7.966	(1.089)	267359	50.0000	50.0	
M	153	Total Alkylbenzenes	100				4377777	50.0000	350	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).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Client ID:
Sample Info: WG227999-4
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)
-Vinyl Chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.137)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.583)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.522)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.437)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)+
-Dibromofluoromethane (6.376)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.055)
-Propionitrile (7.176)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.604)
-Trichloroethene (7.975)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.849)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.881)
-Toluene (9.937)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-1,1,2-Trichloroethene (10.597)
-Methyl Methacrylate (10.643)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-1-Chlorohexane (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-cis-1,4-Dichloro-2-Butene (12.829)+
-Propylbenzene (12.875)
-1,1,2,2-Tetrachloroethane (12.949)
-2-Chlorotoluene (13.012)
-1,2,5-Trimethylbenzene (13.061)+
-trans-1,4-Dichloro-2-Bute (13.146)
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.377)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.563)
-P-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.742)
-1,4-Dichlorobenzene-D4 (13.888)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropa (15.571)
-1,3,5-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)
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Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1260.d
Report Date: 15-May-2018 13:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051018.b\D1260.d
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Inj Date : 10-MAY-2018 09:12 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG227999-3
Misc Info : WG227906,WG227571-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051018.b\D8A05(21)D.m
Meth Date : 10-May-2018 14:53 jsampson Quant Type: ISTD
Cal Date : 10-MAY-2018 09:12 Cal File: D1260.d
Als bottle: 3 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	84413	20.0000	20.2	
2	Chloromethane	50	1.663	1.663	(0.227)	91598	20.0000	21.3	
3	Vinyl chloride	62	1.737	1.728	(0.238)	69223	20.0000	20.5	
4	Bromomethane	94	2.025	2.025	(0.277)	35798	20.0000	21.0	
5	Chloroethane	64	2.146	2.137	(0.293)	34079	20.0000	21.0	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	108535	20.0000	20.0	
7	Diethyl Ether	59	2.583	2.583	(0.353)	36055	20.0000	20.2	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	24219	100.000	102	
9	1,1-Dichloroethene	96	2.788	2.788	(0.381)	45872	20.0000	20.3	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	143535	20.0000	20.3	
11	Freon-113	151	2.834	2.835	(0.387)	40531	20.0000	20.4	
12	Iodomethane	142	2.936	2.937	(0.401)	39174	20.0000	18.2	
13	Acrolein	56	3.169	3.160	(0.433)	59975	100.000	100	
14	Methylene Chloride	84	3.448	3.448	(0.471)	77743	20.0000	20.7	
15	Acetone	43	3.522	3.522	(0.482)	105910	100.000	101	
16	Isobutyl Alcohol	43	7.603	7.604	(1.039)	53334	400.000	403	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	71361	20.0000	20.7	
18	Allyl Chloride	41	3.317	3.318	(0.454)	106956	20.0000	20.2	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	182030	20.0000	19.8	
20	Acetonitrile	39	4.136	4.136	(0.565)	19176	200.000	200	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	225154	20.0000	20.1	
22	Chloroprene	53	4.479	4.480	(0.612)	112767	20.0000	20.3	
23	Propionitrile	54	7.148	7.148	(0.977)	102465	200.000	202	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1260.d
Report Date: 15-May-2018 13:58

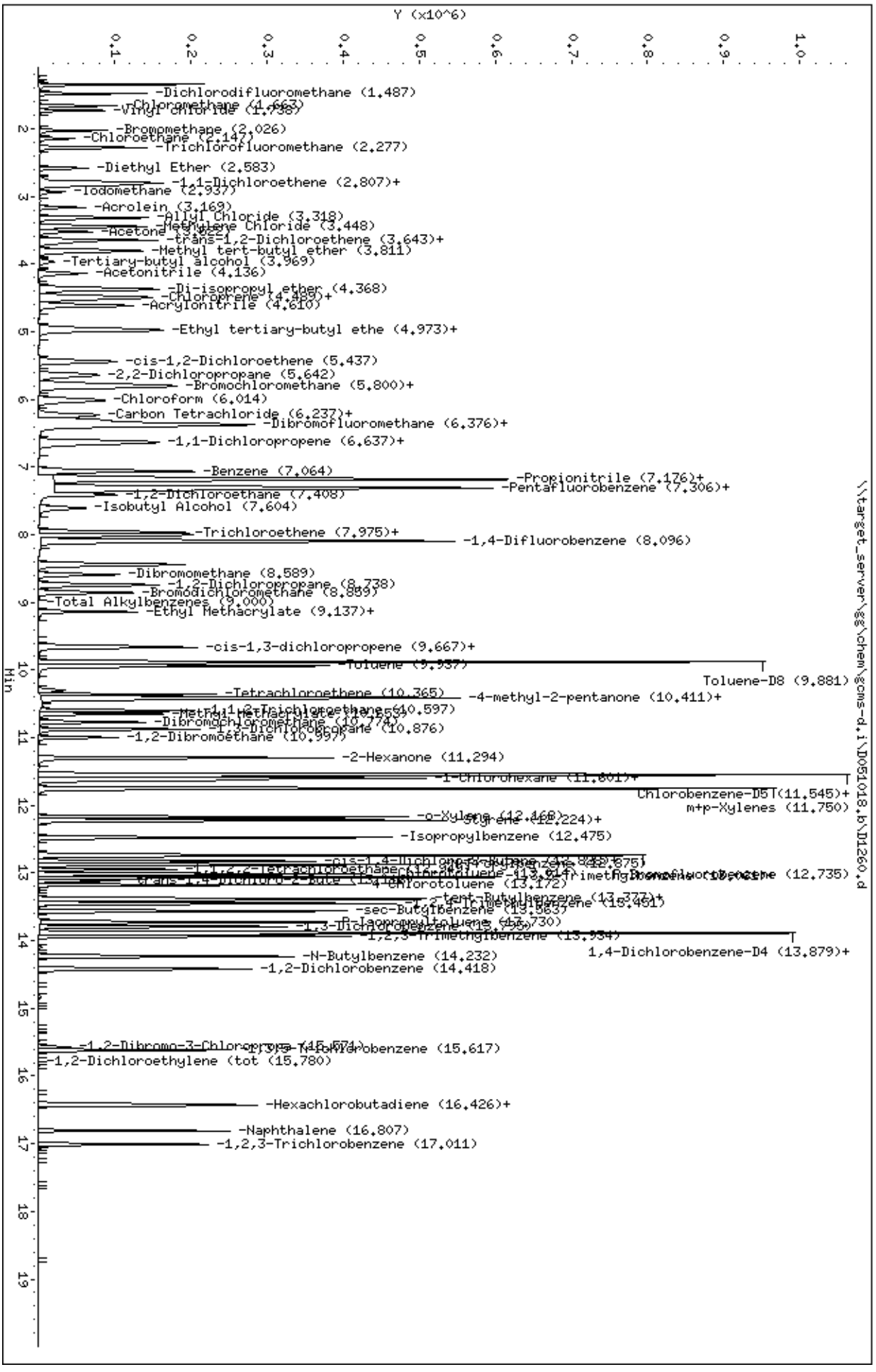
							AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	24 Methacrylonitrile	41	7.185	7.185	(0.982)	468996	200.000	203	
	25 1,1-Dichloroethane	63	4.517	4.517	(0.617)	132724	20.0000	20.4	
	26 Acrylonitrile	52	4.610	4.610	(0.630)	119222	100.000	100	
	27 Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	187993	20.0000	19.7	
	28 Vinyl Acetate	43	4.981	4.982	(0.615)	160831	20.0000	19.6	
	29 cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	76455	20.0000	20.5	
M	30 1,2-Dichloroethylene (total)	96				147816	20.0000	41.2	
	31 Methyl Methacrylate	41	10.643	10.643	(1.315)	62346	20.0000	19.4	
	32 2,2-Dichloropropane	77	5.642	5.642	(0.771)	90249	20.0000	19.8	
	33 Bromochloromethane	128	5.818	5.809	(0.795)	38571	20.0000	20.3	
	34 Chloroform	83	6.013	6.014	(0.822)	138245	20.0000	20.3	
	35 Carbon Tetrachloride	117	6.227	6.237	(0.769)	96214	20.0000	20.0	
	36 Tetrahydrofuran	42	6.311	6.302	(0.863)	101489	100.000	99.7	
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	198446	50.0000	50.0	
	38 1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	114142	20.0000	20.2	
	39 1,1-Dichloropropene	75	6.627	6.627	(0.819)	103638	20.0000	20.5	
	40 2-Butanone	43	6.655	6.655	(0.910)	167706	100.000	99.6	
	41 Benzene	78	7.064	7.055	(0.873)	277282	20.0000	20.4	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	337743	50.0000		
	43 Cyclohexane	56	5.790	5.791	(0.792)	117727	20.0000	20.4	
	44 Ethyl Methacrylate	69	9.137	9.137	(1.129)	47502	20.0000	19.5	
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	248784	50.0000	49.6	
	46 Tertiary-amyl methyl ether	73	7.343	7.334	(1.004)	152422	20.0000	19.6	
	47 1,2-Dichloroethane	62	7.408	7.408	(0.915)	110914	20.0000	20.0	
	48 Trichloroethene	95	8.003	8.003	(0.989)	75531	20.0000	20.5	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	542524	50.0000		
	50 Dibromomethane	93	8.588	8.589	(1.061)	51134	20.0000	20.0	
	51 1,2-Dichloropropane	63	8.737	8.738	(1.079)	75534	20.0000	20.3	
	52 Bromodichloromethane	83	8.858	8.859	(1.094)	103624	20.0000	20.2	
	53 cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	124476	20.0000	19.8	
	54 1,4-Dioxane	88	9.137	9.137	(1.129)	15064	400.000	438	
$	55 Toluene-D8	98	9.881	9.881	(1.220)	661986	50.0000	49.8	
	56 2-Chloroethylvinylether	63	9.639	9.639	(1.191)	45950	20.0000	19.9	
	57 Toluene	92	9.936	9.937	(1.227)	167383	20.0000	20.4	
	58 4-methyl-2-pentanone	43	10.411	10.411	(1.286)	355093	100.000	100	
	59 Tetrachloroethene	164	10.364	10.365	(0.898)	55209	20.0000	20.6	
	60 trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	106643	20.0000	19.6	
	61 1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	57777	20.0000	19.8	
	62 Dibromochloromethane	129	10.773	10.774	(0.934)	75905	20.0000	19.6	
	63 1,3-Dichloropropane	76	10.875	10.876	(0.943)	124456	20.0000	20.2	
	64 1,2-Dibromoethane	107	10.996	10.997	(1.358)	71151	20.0000	19.8	
	65 2-Hexanone	43	11.294	11.294	(0.979)	245331	100.000	99.6	
*	66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	493594	50.0000		
	67 Chlorobenzene	112	11.554	11.555	(1.002)	186108	20.0000	20.5	
	152 1-Chlorohexane	91	11.600	11.601	(1.006)	327201	20.0000	(a)	
	68 Ethylbenzene	91	11.600	11.601	(1.006)	327201	20.0000	20.6	
	69 1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	67674	20.0000	20.1	
M	70 Xylenes (total)	106				758834	60.0000	61.5	
	71 m+p-Xylenes	91	11.749	11.750	(1.019)	503834	40.0000	41.1	
	72 o-Xylene	91	12.168	12.168	(1.055)	255000	20.0000	20.4	
	73 Styrene	104	12.223	12.224	(1.060)	194373	20.0000	20.2	
	74 Bromoform	173	12.233	12.233	(1.060)	45859	20.0000	19.4	
	75 Isopropylbenzene	105	12.474	12.475	(0.899)	284164	20.0000	20.3	
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	267550	50.0000	50.2	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1260.d
Report Date: 15-May-2018 13:58

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	77 cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	26464	20.0000	19.1	
	78 trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	21890	20.0000	19.4	
	79 Bromobenzene	156	12.828	12.828	(0.924)	77665	20.0000	20.4	
	80 N-Propylbenzene	91	12.874	12.875	(0.928)	366755	20.0000	20.5	
	81 1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	89795	20.0000	20.2	
	82 1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	245150	20.0000	20.4	
	83 2-Chlorotoluene	91	13.014	13.014	(0.938)	219509	20.0000	20.4	
	84 1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	77713	20.0000	20.2	
	85 4-Chlorotoluene	91	13.172	13.172	(0.949)	233626	20.0000	20.5	
	86 tert-Butylbenzene	119	13.376	13.377	(0.964)	232608	20.0000	20.4	
	87 Pentachloroethane	117	13.395	13.395	(0.965)	54517	20.0000	20.0	
	88 1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	256636	20.0000	20.5	
	89 P-Isopropyltoluene	119	13.729	13.730	(0.989)	238769	20.0000	20.4	
	90 1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	137306	20.0000	20.5	
*	91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	252555	50.0000		
	92 1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	141500	20.0000	20.5	
	93 N-Butylbenzene	91	14.231	14.232	(1.025)	218934	20.0000	20.3	
	94 sec-Butylbenzene	105	13.562	13.563	(0.977)	290738	20.0000	20.4	
	95 1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	131558	20.0000	20.3	
	96 1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	13883	20.0000	19.6	
	97 1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	88974	20.0000	20.3	
	98 Hexachlorobutadiene	225	16.416	16.416	(1.183)	29538	20.0000	20.6	
	99 1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	76738	20.0000	20.2	
	100 1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	252128	20.0000	20.3	
	101 Naphthalene	128	16.806	16.806	(1.211)	172641	20.0000	20.0	
	102 1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	62973	20.0000	20.3	
	103 Methyl Acetate	43	3.689	3.690	(0.504)	59535	20.0000	19.8	
	104 Methylcyclohexane	83	7.966	7.966	(1.089)	108970	20.0000	20.2	
M	153 Total Alkylbenzenes	100				1849590	20.0000	143	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).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Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
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Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)
-Vinyl chloride (1.738)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.583)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.169)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.562)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.437)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)+
-Dibromofluoromethane (6.376)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.064)
-Propionitrile (7.176)+
-Pentafluorobenzene (7.306)+
-1,2-Dichloroethane (7.408)
-Isobutyl Alcohol (7.604)
-Trichloroethene (7.975)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.899)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
-Toluene (9.937)
Toluene-D8 (9.881)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-1,1,2-Trichloroethane (10.597)
-Methyl Methacrylate (10.674)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-1-Chlorohexane (11.601)+
Chlorobenzene-D5 (11.545)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-Bromoform (12.735)
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.277)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.563)
-p-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.796)
-1,2,3-Trimethylbenzene (13.934)
1,4-Dichlorobenzene-D4 (13.879)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.574)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1261.d
Report Date: 15-May-2018 13:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051018.b\D1261.d
Lab Smp Id: WG227999-2
Inj Date : 10-MAY-2018 09:47 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG227999-2
Misc Info : WG227906,WG227571-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051018.b\D8A05(21)D.m
Meth Date : 10-May-2018 14:53 jsampson Quant Type: ISTD
Cal Date : 10-MAY-2018 09:47 Cal File: D1261.d
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	20386	5.00000	4.9	
2	Chloromethane	50	1.663	1.663	(0.227)	23228	5.00000	5.2	
3	Vinyl chloride	62	1.728	1.728	(0.236)	16907	5.00000	5.0	
4	Bromomethane	94	2.025	2.025	(0.277)	9115	5.00000	5.2	
5	Chloroethane	64	2.146	2.137	(0.293)	8917	5.00000	5.3	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	26546	5.00000	4.9	
7	Diethyl Ether	59	2.583	2.583	(0.353)	8541	5.00000	4.8	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.543)	5201	25.0000	22.8	
9	1,1-Dichloroethene	96	2.788	2.788	(0.381)	11174	5.00000	4.9	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	33041	5.00000	4.8	
11	Freon-113	151	2.834	2.835	(0.387)	9957	5.00000	5.0	
12	Iodomethane	142	2.936	2.937	(0.401)	7675	5.00000	3.9	
13	Acrolein	56	3.169	3.160	(0.433)	13775	25.0000	23.6	
14	Methylene Chloride	84	3.448	3.448	(0.471)	18901	5.00000	5.0	
15	Acetone	43	3.522	3.522	(0.482)	25439	25.0000	24.4	
16	Isobutyl Alcohol	43	7.612	7.604	(1.041)	10042	100.000	82.1	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	17326	5.00000	5.0	
18	Allyl Chloride	41	3.318	3.318	(0.454)	24958	5.00000	4.8	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	41471	5.00000	4.6	
20	Acetonitrile	39	4.136	4.136	(0.565)	5235	50.0000	52.7	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	51510	5.00000	4.7	
22	Chloroprene	53	4.480	4.480	(0.612)	27045	5.00000	4.9	
23	Propionitrile	54	7.148	7.148	(0.977)	25000	50.0000	49.3	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1261.d
Report Date: 15-May-2018 13:58

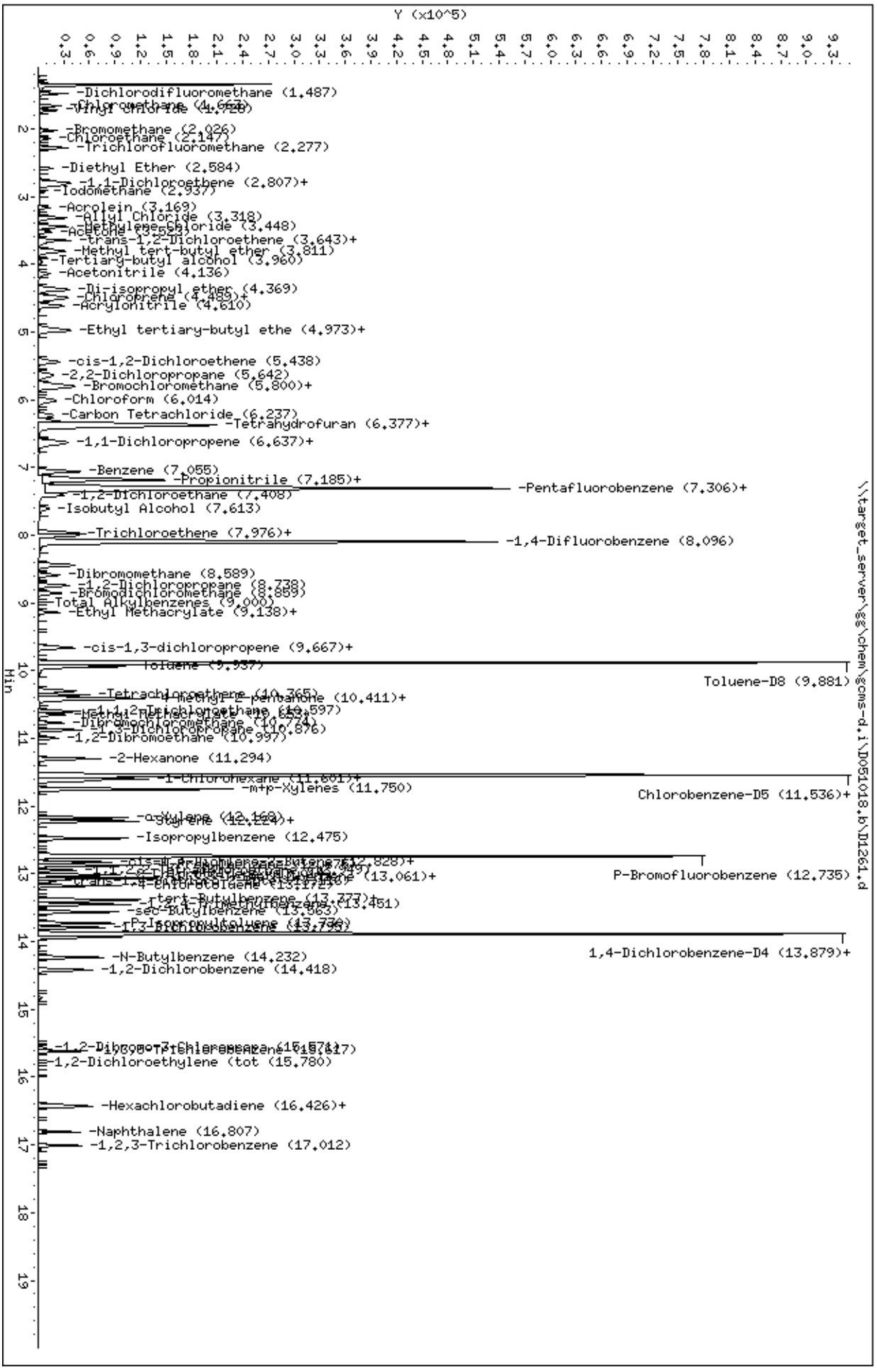
								AMOUNTS		
			QUANT SIG					CAL-AMT	ON-COL	
	Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.185	7.185	(0.982)	113134	50.0000	49.0	
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	32205	5.00000	4.9	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	28279	25.0000	24.1	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	41609	5.00000	4.5	
	28	Vinyl Acetate	43	4.991	4.982	(0.616)	35205	5.00000	4.4(T)	
	29	cis-1,2-Dichloroethene	96	5.446	5.437	(0.745)	17753	5.00000	4.8	
M	30	1,2-Dichloroethylene (total)	96				35079	5.00000	9.8	
	31	Methyl Methacrylate	41	10.652	10.643	(1.316)	13467	5.00000	4.4	
	32	2,2-Dichloropropane	77	5.642	5.642	(0.771)	19395	5.00000	4.4	
	33	Bromochloromethane	128	5.818	5.809	(0.795)	9443	5.00000	5.0	
	34	Chloroform	83	6.014	6.014	(0.822)	33353	5.00000	4.9	
	35	Carbon Tetrachloride	117	6.237	6.237	(0.770)	21838	5.00000	4.6	
	36	Tetrahydrofuran	42	6.320	6.302	(0.864)	21606	25.0000	22.2	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	197433	50.0000	49.6	
	38	1,1,1-Trichloroethane	97	6.385	6.376	(0.873)	26855	5.00000	4.8	
	39	1,1-Dichloropropene	75	6.627	6.627	(0.819)	23804	5.00000	4.7	
	40	2-Butanone	43	6.655	6.655	(0.910)	39791	25.0000	24.0	
	41	Benzene	78	7.064	7.055	(0.873)	66183	5.00000	4.9	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	340267	50.0000		
	43	Cyclohexane	56	5.800	5.791	(0.793)	25832	5.00000	4.6	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	9701	5.00000	4.2	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	254675	50.0000	50.3	
	46	Tertiary-amyl methyl ether	73	7.343	7.334	(1.004)	34327	5.00000	4.6	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	26847	5.00000	4.8	
	48	Trichloroethene	95	8.003	8.003	(0.989)	18273	5.00000	4.9	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	552341	50.0000		
	50	Dibromomethane	93	8.589	8.589	(1.061)	11700	5.00000	4.6	
	51	1,2-Dichloropropane	63	8.747	8.738	(1.080)	17559	5.00000	4.7	
	52	Bromodichloromethane	83	8.858	8.859	(1.094)	22851	5.00000	4.6	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	25526	5.00000	4.3	
	54	1,4-Dioxane	88	9.146	9.137	(1.130)	3134	100.000	92.8	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	659819	50.0000	49.2	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	9432	5.00000	4.3	
	57	Toluene	92	9.937	9.937	(1.227)	41003	5.00000	4.9	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	80728	25.0000	23.2	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	13430	5.00000	5.0	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	22282	5.00000	4.3	
	61	1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	14120	5.00000	4.8	
	62	Dibromochloromethane	129	10.773	10.774	(0.934)	16168	5.00000	4.4	
	63	1,3-Dichloropropane	76	10.876	10.876	(0.943)	29371	5.00000	4.9	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	16529	5.00000	4.7	
	65	2-Hexanone	43	11.294	11.294	(0.979)	52460	25.0000	22.5	
*	66	Chlorobenzene-D5	117	11.536	11.536	(1.000)	489845	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.002)	45109	5.00000	5.0	
	152	1-Chlorohexane	91	11.601	11.601	(1.006)	76774	5.00000	(a)	
	68	Ethylbenzene	91	11.601	11.601	(1.006)	76774	5.00000	4.9	
	69	1,1,1,2-Tetrachloroethane	131	11.629	11.629	(1.008)	15172	5.00000	4.7	
M	70	Xylenes (total)	106				176472	15.0000	14.6	
	71	m+p-Xylenes	91	11.749	11.750	(1.019)	119860	10.0000	9.9	
	72	o-Xylene	91	12.168	12.168	(1.055)	56612	5.00000	4.7	
	73	Styrene	104	12.223	12.224	(1.060)	43754	5.00000	4.7	
	74	Bromoform	173	12.233	12.233	(1.060)	9268	5.00000	4.2	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	65417	5.00000	4.8	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	262284	50.0000	48.9	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1261.d
Report Date: 15-May-2018 13:58

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
77	cis-1,4-Dichloro-2-Butene	53	12.818	12.810	(0.924)	5618	5.00000	4.4	
78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	4670	5.00000	4.4	
79	Bromobenzene	156	12.828	12.828	(0.924)	18285	5.00000	4.9	
80	N-Propylbenzene	91	12.874	12.875	(0.928)	85940	5.00000	4.9	
81	1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.933)	21324	5.00000	4.9	
82	1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	56421	5.00000	4.8	
83	2-Chlorotoluene	91	13.014	13.014	(0.938)	50736	5.00000	4.8	
84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	18444	5.00000	4.9	
85	4-Chlorotoluene	91	13.172	13.172	(0.949)	54067	5.00000	4.8	
86	tert-Butylbenzene	119	13.376	13.377	(0.964)	53194	5.00000	4.8	
87	Pentachloroethane	117	13.395	13.395	(0.965)	12263	5.00000	4.7	
88	1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	58494	5.00000	4.8	
89	P-Isopropyltoluene	119	13.730	13.730	(0.989)	53694	5.00000	4.7	
90	1,3-Dichlorobenzene	146	13.795	13.795	(0.994)	33022	5.00000	5.0	
* 91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	250423	50.0000		
92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	33956	5.00000	5.0	
93	N-Butylbenzene	91	14.232	14.232	(1.025)	49294	5.00000	4.7	
94	sec-Butylbenzene	105	13.562	13.563	(0.977)	67149	5.00000	4.8	
95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	30261	5.00000	4.8	
96	1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	2974	5.00000	4.5	
97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	20445	5.00000	4.8	
98	Hexachlorobutadiene	225	16.416	16.416	(1.183)	7134	5.00000	5.0	
99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	17236	5.00000	4.7	
100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	60106	5.00000	4.9	
101	Naphthalene	128	16.807	16.806	(1.211)	33699	5.00000	4.2	
102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	14604	5.00000	4.8	
103	Methyl Acetate	43	3.689	3.690	(0.504)	14486	5.00000	4.8	
104	Methylcyclohexane	83	7.966	7.966	(1.089)	25302	5.00000	4.8	
M 153	Total Alkylbenzenes	100				424186	5.00000	33.6	

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).


Y (x10^5)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.662)
-Vinyl Chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.169)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.522)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.960)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.369)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.438)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)
-Tetrahydrofuran (6.377)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.055)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.306)+
-1,2-Dichloroethane (7.408)
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.976)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.859)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.667)+
-Toluene (9.937)
Toluene-D8 (9.881)
-Tetrachloroethene (10.365)
-4-Methyl-2-pentanone (10.411)+
-1,1,2-Trichloroethane (10.597)
-Tetrahydrofuran (10.652)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-1-Chlorohexane (11.601)+
-m+p-Xylenes (11.750)
Chlorobenzene-D5 (11.536)+
-o-Xylene (12.169)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
P-Bromofluorobenzene (12.735)
-Bromoform (13.061)+
-trans-1,4-Dichlorobutene (13.172)
-tert-Butylbenzene (13.277)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.563)
-p-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.795)
1,4-Dichlorobenzene-D4 (13.879)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.571)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)
Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1261.d
Date : 10-MAY-2018 09:47
Client ID:
Sample Info: WG227999-2
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051018.b\D1261.d

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1262.d
Report Date: 15-May-2018 13:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051018.b\D1262.d
Lab Smp Id: WG227999-1
Inj Date : 10-MAY-2018 10:22 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG227999-1
Misc Info : WG227906,WG227571-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051018.b\D8A05(21)D.m
Meth Date : 10-May-2018 14:53 jsampson Quant Type: ISTD
Cal Date : 10-MAY-2018 10:22 Cal File: D1262.d
Als bottle: 5 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	3661	1.00000	0.94(a)	
2	Chloromethane	50	1.663	1.663	(0.227)	4647	1.00000	1.1	
3	Vinyl chloride	62	1.737	1.728	(0.238)	3068	1.00000	0.95(a)	
4	Bromomethane	94	2.025	2.025	(0.277)	1977	1.00000	1.1	
5	Chloroethane	64	2.155	2.137	(0.295)	1558	1.00000	0.97(a)	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	4968	1.00000	0.97(a)	
7	Diethyl Ether	59	2.583	2.583	(0.353)	1616	1.00000	0.96(a)	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	904	5.00000	4.3(a)	
9	1,1-Dichloroethene	96	2.788	2.788	(0.381)	2252	1.00000	1.0	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	6522	1.00000	0.98(a)	
11	Freon-113	151	2.834	2.835	(0.387)	1968	1.00000	1.0	
12	Iodomethane	142	2.936	2.937	(0.401)	1352	1.00000	0.77(Ta)	
13	Acrolein	56	3.169	3.160	(0.433)	2399	5.00000	4.4(a)	
14	Methylene Chloride	84	3.448	3.448	(0.471)	4009	1.00000	1.1(a)	
15	Acetone	43	3.522	3.522	(0.482)	5678	5.00000	5.5	
16	Isobutyl Alcohol	43	7.622	7.604	(1.042)	1874	20.0000	16.8(a)	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	3478	1.00000	1.0	
18	Allyl Chloride	41	3.317	3.318	(0.454)	4226	1.00000	0.88(a)	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	7700	1.00000	0.92(a)	
20	Acetonitrile	39	4.145	4.136	(0.567)	834	10.0000	9.0(a)	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	8582	1.00000	0.85(a)	
22	Chloroprene	53	4.489	4.480	(0.614)	4419	1.00000	0.87(a)	
23	Propionitrile	54	7.147	7.148	(0.977)	4357	10.0000	9.2(a)	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1262.d
Report Date: 15-May-2018 13:58

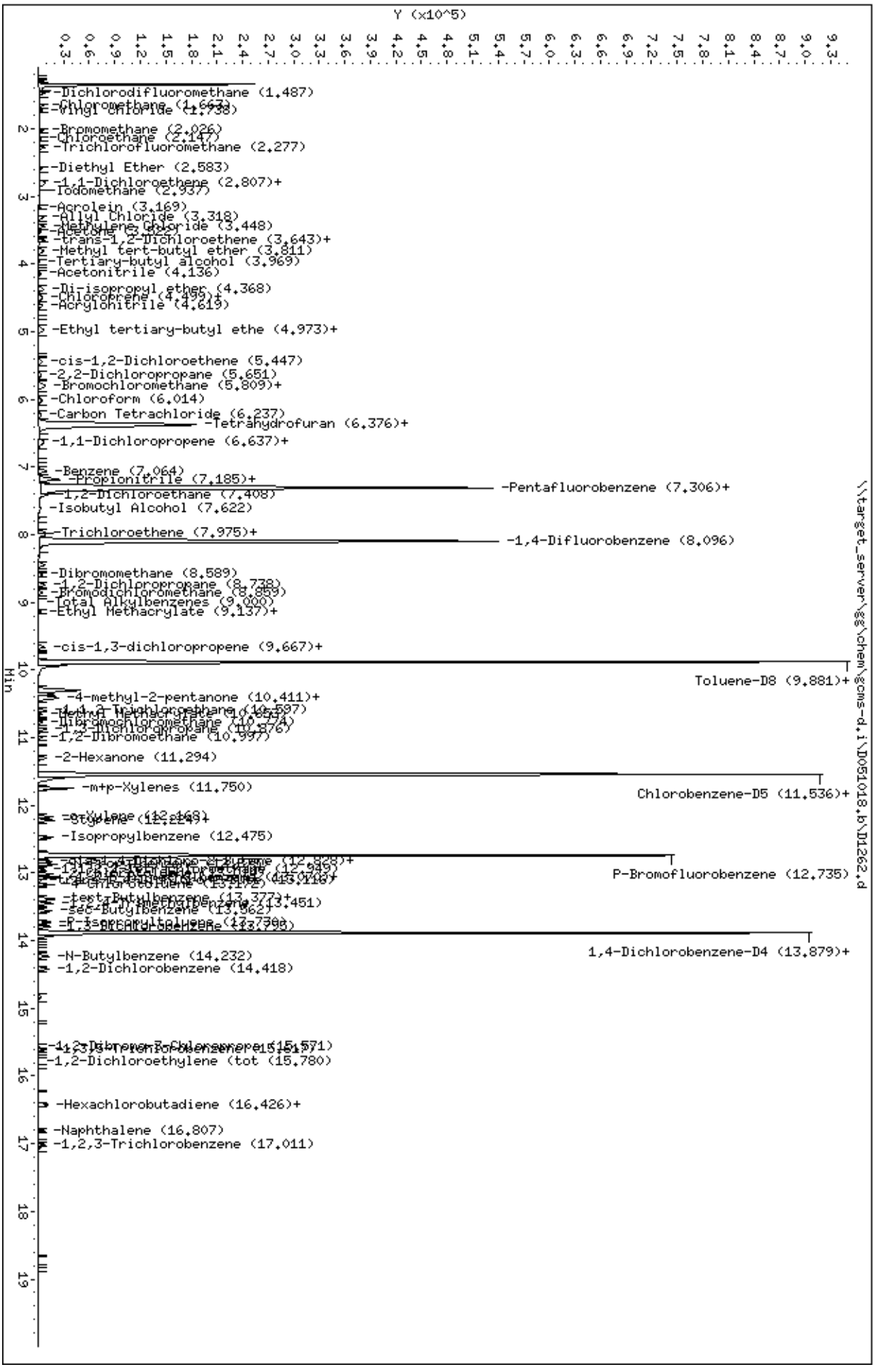
								AMOUNTS		
			QUANT SIG					CAL-AMT	ON-COL	
	Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.185	7.185	(0.982)	19831	10.0000	9.2(a)	
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	6306	1.00000	1.0	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	4888	5.00000	4.5(a)	
	27	Ethyl tertiary-butyl ether	59	4.972	4.963	(0.680)	6769	1.00000	0.82(a)	
	28	Vinyl Acetate	43	4.991	4.982	(0.616)	6222	1.00000	0.86(a)	
	29	cis-1,2-Dichloroethene	96	5.446	5.437	(0.745)	3564	1.00000	1.0	
M	30	1,2-Dichloroethylene (total)	96				7042	1.00000	2.0	
	31	Methyl Methacrylate	41	10.652	10.643	(1.316)	1876	1.00000	0.70(a)	
	32	2,2-Dichloropropane	77	5.641	5.642	(0.771)	3352	1.00000	0.84(a)	
	33	Bromochloromethane	128	5.809	5.809	(0.794)	1634	1.00000	0.92(a)	
	34	Chloroform	83	6.013	6.014	(0.822)	6818	1.00000	1.0	
	35	Carbon Tetrachloride	117	6.227	6.237	(0.769)	4025	1.00000	0.91(a)	
	36	Tetrahydrofuran	42	6.320	6.302	(0.864)	4032	5.00000	4.5(a)	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	193802	50.0000	50.5	
	38	1,1,1-Trichloroethane	97	6.385	6.376	(0.873)	5144	1.00000	0.97(a)	
	39	1,1-Dichloropropene	75	6.627	6.627	(0.819)	4593	1.00000	0.96(a)	
	40	2-Butanone	43	6.664	6.655	(0.911)	7075	5.00000	4.6(a)	
	41	Benzene	78	7.064	7.055	(0.873)	12738	1.00000	0.98(a)	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	326667	50.0000		
	43	Cyclohexane	56	5.790	5.791	(0.792)	4742	1.00000	0.91(a)	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	1453	1.00000	0.72(a)	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	249701	50.0000	51.0	
	46	Tertiary-amyl methyl ether	73	7.343	7.334	(1.004)	6032	1.00000	0.87(a)	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	6342	1.00000	1.1	
	48	Trichloroethene	95	8.003	8.003	(0.989)	3610	1.00000	1.0	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	531069	50.0000		
	50	Dibromomethane	93	8.588	8.589	(1.061)	2244	1.00000	0.95(a)	
	51	1,2-Dichloropropane	63	8.737	8.738	(1.079)	3257	1.00000	0.94(Ta)	
	52	Bromodichloromethane	83	8.858	8.859	(1.094)	4655	1.00000	0.97(a)	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	4347	1.00000	0.80(a)	
	54	1,4-Dioxane	88	9.156	9.137	(1.131)	335	20.0000	11.7(a)	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	645843	50.0000	50.0	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	1470	1.00000	0.75(a)	
	57	Toluene	92	9.936	9.937	(1.227)	8126	1.00000	1.0	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	14219	5.00000	4.4(a)	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	2569	1.00000	0.98(a)	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	3791	1.00000	0.81(a)	
	61	1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	2817	1.00000	1.0	
	62	Dibromochloromethane	129	10.773	10.774	(0.934)	2928	1.00000	0.85(a)	
	63	1,3-Dichloropropane	76	10.875	10.876	(0.943)	5603	1.00000	0.95(a)	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	3093	1.00000	0.93(Ta)	
	65	2-Hexanone	43	11.294	11.294	(0.979)	8572	5.00000	4.0(a)	
*	66	Chlorobenzene-D5	117	11.535	11.536	(1.000)	487270	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.002)	9248	1.00000	1.0	
	152	1-Chlorohexane	91	11.600	11.601	(1.006)	14946	1.00000	(a)	
	68	Ethylbenzene	91	11.600	11.601	(1.006)	14946	1.00000	0.97(a)	
	69	1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	2801	1.00000	0.90(a)	
M	70	Xylenes (total)	106				31894	5.00000	2.7(a)	
	71	m+p-Xylenes	91	11.749	11.750	(1.019)	21816	2.00000	1.8(a)	
	72	o-Xylene	91	12.168	12.168	(1.055)	10078	1.00000	0.88(a)	
	73	Styrene	104	12.223	12.224	(1.060)	7019	1.00000	0.81(a)	
	74	Bromoform	173	12.233	12.233	(1.060)	1584	1.00000	0.78(Ta)	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	10618	1.00000	0.84(a)	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	256101	50.0000	49.7	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1262.d
Report Date: 15-May-2018 13:58

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	77 cis-1,4-Dichloro-2-Butene	53	12.818	12.810	(0.924)	853	1.00000	0.74(a)	
	78 trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	659	1.00000	0.70(a)	
	79 Bromobenzene	156	12.828	12.828	(0.924)	3688	1.00000	1.0	
	80 N-Propylbenzene	91	12.874	12.875	(0.928)	16081	1.00000	0.96(a)	
	81 1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	4187	1.00000	0.99(a)	
	82 1,3,5-Trimethylbenzene	105	13.069	13.061	(0.942)	10062	1.00000	0.91(a)	
	83 2-Chlorotoluene	91	13.014	13.014	(0.938)	9625	1.00000	0.96(a)	
	84 1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	3684	1.00000	1.0	
	85 4-Chlorotoluene	91	13.172	13.172	(0.949)	10405	1.00000	0.97(a)	
	86 tert-Butylbenzene	119	13.376	13.377	(0.964)	8969	1.00000	0.87(a)	
	87 Pentachloroethane	117	13.385	13.395	(0.964)	2228	1.00000	0.90(a)	
	88 1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	9958	1.00000	0.88(a)	
	89 P-Isopropyltoluene	119	13.729	13.730	(0.989)	8918	1.00000	0.85(a)	
	90 1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	6695	1.00000	1.0	
*	91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	243700	50.0000		
	92 1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	7337	1.00000	1.1	
	93 N-Butylbenzene	91	14.231	14.232	(1.025)	8846	1.00000	0.90(a)	
	94 sec-Butylbenzene	105	13.562	13.563	(0.977)	11919	1.00000	0.91(a)	
	95 1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	5928	1.00000	0.97(a)	
	96 1,2-Dibromo-3-Chloropropane	75	15.579	15.571	(1.123)	552	1.00000	0.88(a)	
	97 1,3,5-Trichlorobenzene	180	15.616	15.617	(1.125)	3851	1.00000	0.94(a)	
	98 Hexachlorobutadiene	225	16.416	16.416	(1.183)	1645	1.00000	1.1	
	99 1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	3345	1.00000	0.95(a)	
	100 1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	10485	1.00000	0.91(a)	
	101 Naphthalene	128	16.806	16.806	(1.211)	5588	1.00000	0.78(a)	
	102 1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	2728	1.00000	0.94(a)	
	103 Methyl Acetate	43	3.699	3.690	(0.506)	2933	1.00000	1.0	
	104 Methylcyclohexane	83	7.966	7.966	(1.089)	4349	1.00000	0.88(a)	
M	153 Total Alkylbenzenes	100				74753	1.00000	6.3(a)	

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).


Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1262.d
Date : 10-MAY-2018 10:22
Client ID:
Sample Info: WG227999-1
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
Y (x10^5)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)
-Vinyl Chloride (1.738)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.583)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.169)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.522)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.499)+
-Acrylonitrile (4.619)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.447)
-2,2-Dichloropropane (5.651)
-Bromochloromethane (5.809)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)
-Tetrahydrofuran (6.376)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.064)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.306)+
-1,2-Dichloroethane (7.408)
-Isobutyl Alcohol (7.622)
-Trichloroethene (7.975)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.859)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
Toluene-D8 (9.881)+
-4-methyl-2-pentanone (10.411)+
-1,1,2-Trichloroethane (10.597)
-Dibromochloromethane (10.777)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-m+p-Xylenes (11.750)
Chlorobenzene-D5 (11.536)+
-o-Xylene (12.168)
-Styrene (12.214)+
-Isopropylbenzene (12.475)
P-Bromofluorobenzene (12.735)
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.377)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.662)+
-P-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.796)
1,4-Dichlorobenzene-D4 (13.879)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.571)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)
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Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1263.d
Report Date: 15-May-2018 13:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051018.b\D1263.d
Lab Smp Id: WG227999-6
Inj Date : 10-MAY-2018 10:58 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG227999-6
Misc Info : WG227906,WG227571-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051018.b\D8A05(21)D.m
Meth Date : 10-May-2018 14:53 jsampson Quant Type: ISTD
Cal Date : 10-MAY-2018 10:58 Cal File: D1263.d
Als bottle: 6 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	596950	150.000	153(A)	
2	Chloromethane	50	1.653	1.663	(0.226)	582189	150.000	137	
3	Vinyl chloride	62	1.728	1.728	(0.236)	502451	150.000	156(A)	
4	Bromomethane	94	2.025	2.025	(0.277)	246357	150.000	143	
5	Chloroethane	64	2.118	2.137	(0.290)	96313	150.000	60.5	
6	Trichlorofluoromethane	101	2.267	2.277	(0.310)	774508	150.000	151(A)	
7	Diethyl Ether	59	2.583	2.583	(0.353)	261729	150.000	156(A)	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	179580	750.000	837(A)	
9	1,1-Dichloroethene	96	2.778	2.788	(0.380)	327785	150.000	150(A)	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	1055732	150.000	158(A)	
11	Freon-113	151	2.825	2.835	(0.386)	283360	150.000	148	
12	Iodomethane	142	2.936	2.937	(0.401)	353876	150.000	190(A)	
13	Acrolein	56	3.159	3.160	(0.432)	429690	750.000	789(A)	
14	Methylene Chloride	84	3.448	3.448	(0.471)	532048	150.000	145	
15	Acetone	43	3.522	3.522	(0.482)	757058	750.000	740	
16	Isobutyl Alcohol	43	7.612	7.604	(1.041)	422162	3000.00	3610(A)	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	488356	150.000	146	
18	Allyl Chloride	41	3.317	3.318	(0.454)	761617	150.000	157(A)	
19	Methyl tert-butyl ether	73	3.801	3.811	(0.520)	1395338	150.000	164(A)	
20	Acetonitrile	39	4.135	4.136	(0.565)	141782	1500.00	1530(A)	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	1654918	150.000	162(A)	
22	Chloroprene	53	4.479	4.480	(0.612)	801519	150.000	156(A)	
23	Propionitrile	54	7.157	7.148	(0.978)	711090	1500.00	1510(A)	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1263.d
Report Date: 15-May-2018 13:58

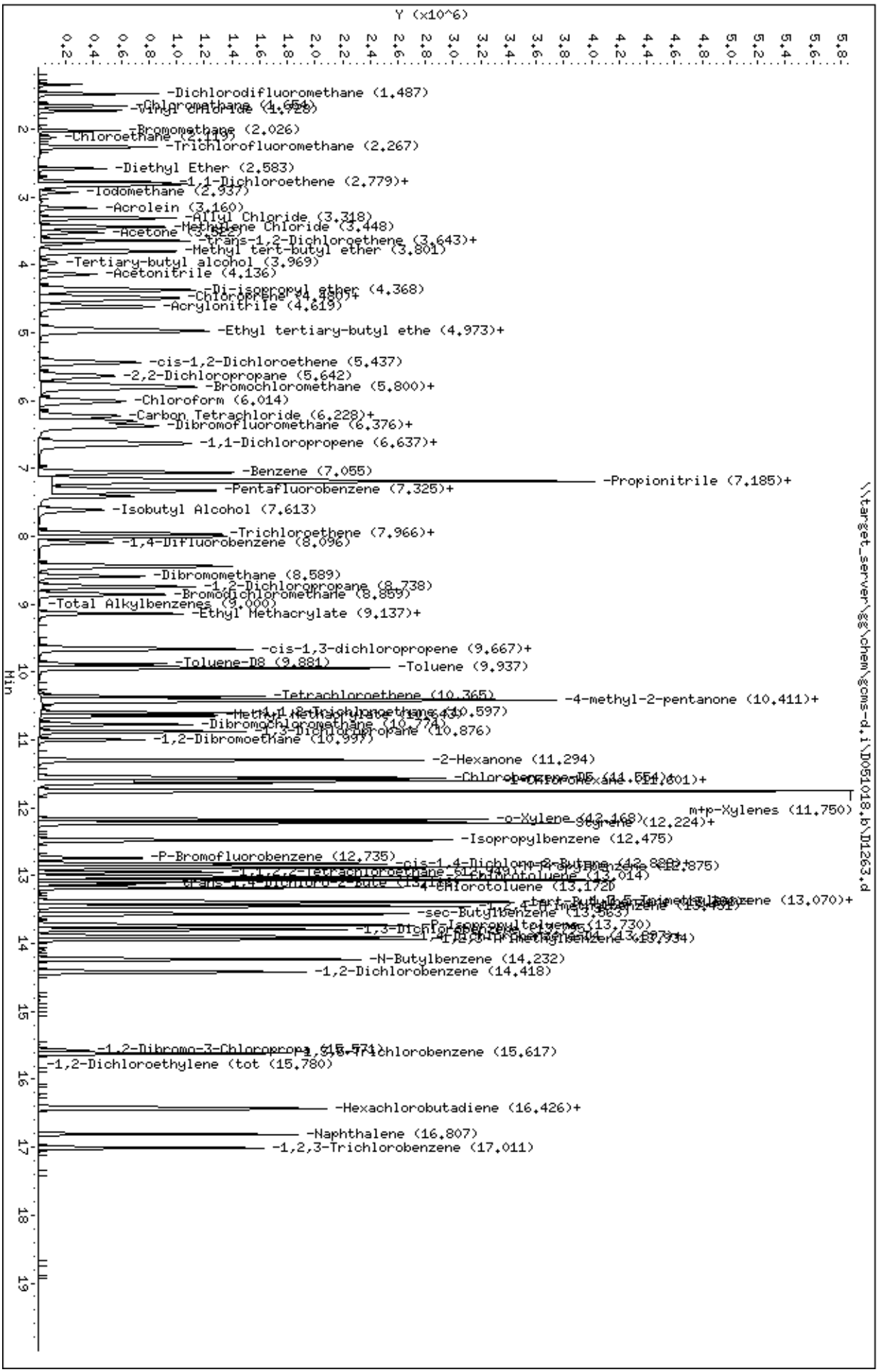
			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.185	7.185	(0.982)	3043255	1500.00	1430	
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	929949	150.000	149	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	850904	750.000	778(A)	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	1441762	150.000	169(A)	
	28	Vinyl Acetate	43	4.981	4.982	(0.615)	1224109	150.000	165(A)	
	29	cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	539834	150.000	153(A)	
M	30	1,2-Dichloroethylene (total)	96				1028190	150.000	299	
	31	Methyl Methacrylate	41	10.643	10.643	(1.315)	485465	150.000	174(A)	
	32	2,2-Dichloropropane	77	5.641	5.642	(0.771)	669718	150.000	165(A)	
	33	Bromochloromethane	128	5.818	5.809	(0.795)	240684	150.000	138	
	34	Chloroform	83	6.013	6.014	(0.822)	975563	150.000	149	
	35	Carbon Tetrachloride	117	6.227	6.237	(0.769)	723663	150.000	162(A)	
	36	Tetrahydrofuran	42	6.302	6.302	(0.861)	777215	750.000	841(A)	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	191556	50.0000	50.2	
	38	1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	837274	150.000	157(A)	
	39	1,1-Dichloropropene	75	6.618	6.627	(0.817)	733072	150.000	154(A)	
	40	2-Butanone	43	6.655	6.655	(0.910)	1242200	750.000	794(A)	
	41	Benzene	78	7.055	7.055	(0.871)	1958717	150.000	151(A)	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	324727	50.0000		
	43	Cyclohexane	56	5.790	5.791	(0.792)	837903	150.000	159(A)	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	383044	150.000	181(A)	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	242426	50.0000	49.9	
	46	Tertiary-amyl methyl ether	73	7.333	7.334	(1.003)	1198082	150.000	169(A)	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	787889	150.000	143	
	48	Trichloroethene	95	8.003	8.003	(0.989)	521163	150.000	147	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	527967	50.0000		
	50	Dibromomethane	93	8.588	8.589	(1.061)	374803	150.000	157(A)	
	51	1,2-Dichloropropane	63	8.737	8.738	(1.079)	546690	150.000	156(A)	
	52	Bromodichloromethane	83	8.858	8.859	(1.094)	774878	150.000	160(A)	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	939678	150.000	169(A)	
	54	1,4-Dioxane	88	9.137	9.137	(1.129)	95377	3000.00	3280(A)	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	648059	50.0000	50.4	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	329670	150.000	166(A)	
	57	Toluene	92	9.936	9.937	(1.227)	1163242	150.000	147	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	2409037	750.000	752(A)	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	382704	150.000	150(A)	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	819126	150.000	170(A)	
	61	1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	422318	150.000	151(A)	
	62	Dibromochloromethane	129	10.773	10.774	(0.933)	596085	150.000	172(A)	
	63	1,3-Dichloropropane	76	10.875	10.876	(0.942)	880095	150.000	153(A)	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	529310	150.000	158(A)	
	65	2-Hexanone	43	11.294	11.294	(0.978)	1747072	750.000	815(A)	
*	66	Chlorobenzene-D5	117	11.545	11.536	(1.000)	471640	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.001)	1280841	150.000	147	
	152	1-Chlorohexane	91	11.600	11.601	(1.005)	2218644	150.000	(a)	
	68	Ethylbenzene	91	11.600	11.601	(1.005)	2218644	150.000	149	
	69	1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.007)	490768	150.000	160(A)	
M	70	Xylenes (total)	106				5121409	150.000	453	
	71	m+p-Xylenes	91	11.749	11.750	(1.018)	3329230	300.000	294	
	72	o-Xylene	91	12.168	12.168	(1.054)	1792179	150.000	158(A)	
	73	Styrene	104	12.223	12.224	(1.059)	1355504	150.000	159(A)	
	74	Bromoform	173	12.233	12.233	(1.060)	364795	150.000	178(A)	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	1997184	150.000	157(A)	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	262483	50.0000	51.0	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1263.d
Report Date: 15-May-2018 13:58

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
77	cis-1,4-Dichloro-2-Butene	53	12.818	12.810	(0.924)	209478	150.000	174(A)	
78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	171762	150.000	175(A)	
79	Bromobenzene	156	12.828	12.828	(0.924)	535640	150.000	147	
80	N-Propylbenzene	91	12.874	12.875	(0.928)	2496882	150.000	148	
81	1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	633959	150.000	150	
82	1,3,5-Trimethylbenzene	105	13.069	13.061	(0.942)	1687500	150.000	152(A)	
83	2-Chlorotoluene	91	13.014	13.014	(0.938)	1506202	150.000	150	
84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	535615	150.000	146	
85	4-Chlorotoluene	91	13.172	13.172	(0.949)	1596605	150.000	149	
86	tert-Butylbenzene	119	13.376	13.377	(0.964)	1619517	150.000	155(A)	
87	Pentachloroethane	117	13.395	13.395	(0.965)	393081	150.000	157(A)	
88	1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	1779741	150.000	155(A)	
89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	1692088	150.000	159(A)	
90	1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	951059	150.000	146	
* 91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	244199	50.0000		
92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	971183	150.000	144	
93	N-Butylbenzene	91	14.231	14.232	(1.025)	1567839	150.000	157(A)	
94	sec-Butylbenzene	105	13.562	13.563	(0.977)	2014003	150.000	153(A)	
95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	936882	150.000	153(A)	
96	1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	118972	150.000	180(A)	
97	1,3,5-Trichlorobenzene	180	15.616	15.617	(1.125)	641806	150.000	156(A)	
98	Hexachlorobutadiene	225	16.416	16.416	(1.183)	214181	150.000	148	
99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	572626	150.000	160(A)	
100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	1769441	150.000	152(A)	
101	Naphthalene	128	16.806	16.806	(1.211)	1336967	150.000	177(A)	
102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	462534	150.000	158(A)	
103	Methyl Acetate	43	3.689	3.690	(0.504)	448089	150.000	155(A)	
104	Methylcyclohexane	83	7.966	7.966	(1.089)	779075	150.000	157(A)	
M 153	Total Alkylbenzenes	100				12857570	150.000	1080	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.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Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
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Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.654)
-Vinyl Chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.119)
-Trichlorofluoromethane (2.267)
-Diethyl Ether (2.583)
-1,1-Dichloroethene (2.779)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.522)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.801)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.490)+
-Acrylonitrile (4.619)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.437)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.228)+
-Dibromofluoromethane (6.376)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.055)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.325)+
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.966)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.859)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.881)
-Toluene (9.937)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.554)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-1,1,2,2-Tetrachloroethane (12.875)
-4-Chlorotoluene (13.014)
-1,4-Dichloro-2-Butene (13.172)
-sec-Butylbenzene (13.363)
-1,3-Dichlorobenzene (13.730)
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropa (15.571)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)

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Report Date: 15-May-2018 13:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051018.b\D1264.d
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Inj Date : 10-MAY-2018 11:34 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG227999-5
Misc Info : WG227906,WG227571-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051018.b\D8A05(21)D.m
Meth Date : 10-May-2018 14:53 jsampson Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 7 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	428172	100.000	103	
2	Chloromethane	50	1.654	1.663	(0.226)	436527	100.000	97.9	
3	Vinyl chloride	62	1.728	1.728	(0.236)	388483	100.000	111	
4	Bromomethane	94	2.025	2.025	(0.277)	169161	100.000	94.0	
5	Chloroethane	64	2.128	2.137	(0.291)	125474	100.000	78.7	
6	Trichlorofluoromethane	101	2.267	2.277	(0.310)	543831	100.000	100	
7	Diethyl Ether	59	2.583	2.583	(0.353)	184378	100.000	103	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.543)	131872	500.000	567	
9	1,1-Dichloroethene	96	2.778	2.788	(0.380)	239123	100.000	103	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	770578	100.000	108	
11	Freon-113	151	2.825	2.835	(0.386)	205859	100.000	102	
12	Iodomethane	142	2.936	2.937	(0.401)	240672	100.000	118	
13	Acrolein	56	3.160	3.160	(0.432)	305343	500.000	525	
14	Methylene Chloride	84	3.448	3.448	(0.471)	381783	100.000	98.7	
15	Acetone	43	3.522	3.522	(0.482)	522103	500.000	486	
16	Isobutyl Alcohol	43	7.612	7.604	(1.041)	305026	2000.00	2380	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	364680	100.000	103	
18	Allyl Chloride	41	3.318	3.318	(0.454)	547847	100.000	106	
19	Methyl tert-butyl ether	73	3.801	3.811	(0.520)	1001586	100.000	109	
20	Acetonitrile	39	4.136	4.136	(0.565)	98620	1000.00	1010	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	1184032	100.000	108	
22	Chloroprene	53	4.480	4.480	(0.612)	582365	100.000	106	
23	Propionitrile	54	7.148	7.148	(0.977)	508139	1000.00	1020	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1264.d
Report Date: 15-May-2018 13:58

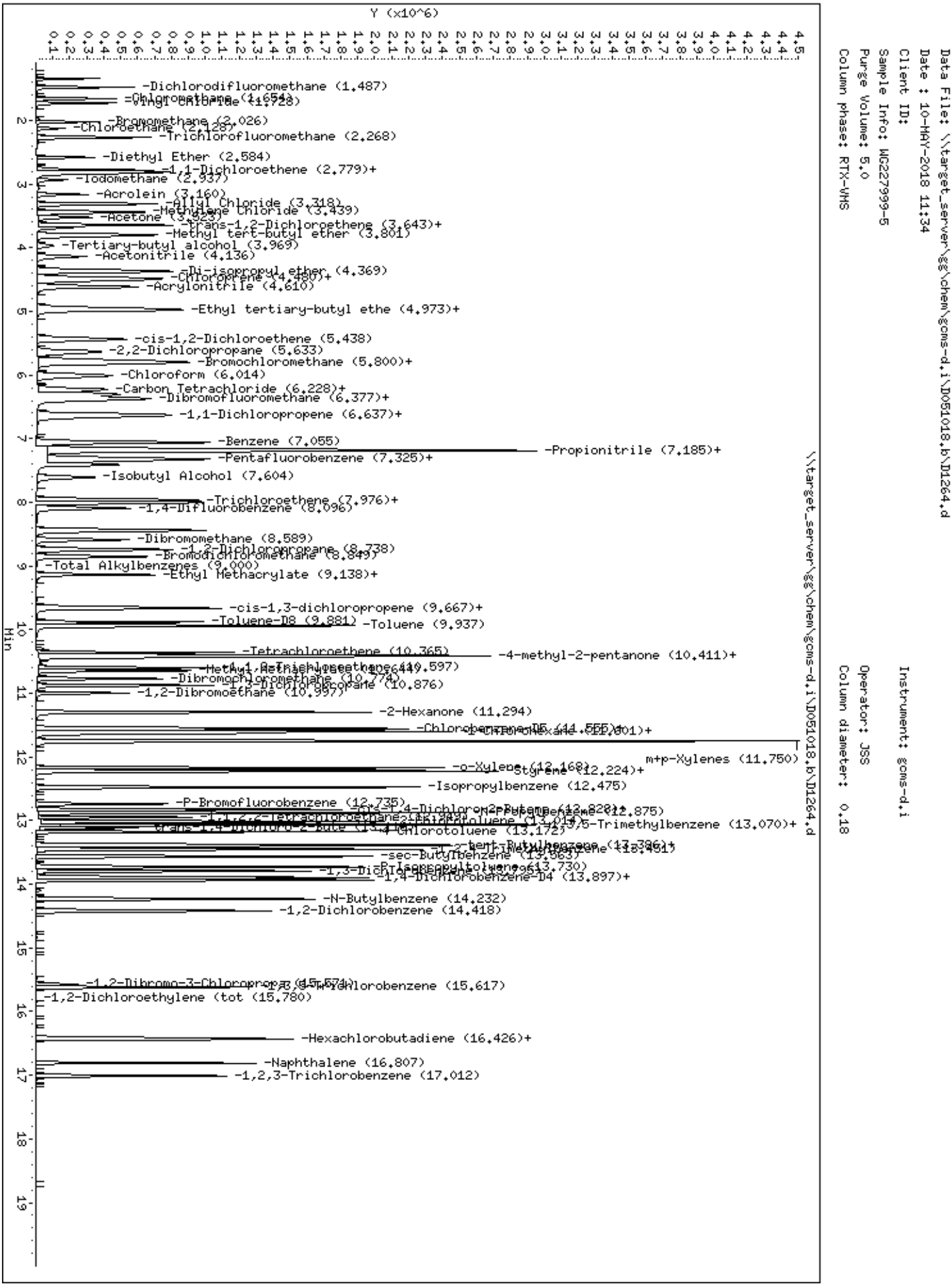
			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.185	7.185	(0.982)	2174411	1000.00	976	
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	682598	100.000	103	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	605528	500.000	520	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	1039801	100.000	113	
	28	Vinyl Acetate	43	4.982	4.982	(0.615)	854749	100.000	108	
	29	cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	393301	100.000	104	
M	30	1,2-Dichloroethylene (total)	96				757981	100.000	207	
	31	Methyl Methacrylate	41	10.643	10.643	(1.315)	338402	100.000	112	
	32	2,2-Dichloropropane	77	5.642	5.642	(0.771)	474471	100.000	109	
	33	Bromochloromethane	128	5.809	5.809	(0.794)	197484	100.000	106	
	34	Chloroform	83	6.014	6.014	(0.822)	708383	100.000	102	
	35	Carbon Tetrachloride	117	6.227	6.237	(0.769)	521803	100.000	108	
	36	Tetrahydrofuran	42	6.302	6.302	(0.861)	538083	500.000	542	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	201701	50.0000	50.0	
	38	1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	606347	100.000	106	
	39	1,1-Dichloropropene	75	6.618	6.627	(0.817)	542023	100.000	106	
	40	2-Butanone	43	6.655	6.655	(0.910)	869399	500.000	522	
	41	Benzene	78	7.055	7.055	(0.871)	1415775	100.000	103	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	342793	50.0000		
	43	Cyclohexane	56	5.790	5.791	(0.792)	605366	100.000	107	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	266889	100.000	116	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	245596	50.0000	48.2	
	46	Tertiary-amyl methyl ether	73	7.334	7.334	(1.003)	850475	100.000	111	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	549340	100.000	95.4	
	48	Trichloroethene	95	8.003	8.003	(0.989)	379705	100.000	101	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	558227	50.0000		
	50	Dibromomethane	93	8.589	8.589	(1.061)	261642	100.000	103	
	51	1,2-Dichloropropane	63	8.737	8.738	(1.079)	385453	100.000	104	
	52	Bromodichloromethane	83	8.849	8.859	(1.093)	542154	100.000	105	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	670290	100.000	112	
	54	1,4-Dioxane	88	9.137	9.137	(1.129)	78968	2000.00	2450	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	685776	50.0000	50.4	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	229486	100.000	107	
	57	Toluene	92	9.937	9.937	(1.227)	857503	100.000	102	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	1723383	500.000	507	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	286199	100.000	105	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	575363	100.000	110	
	61	1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	299918	100.000	101	
	62	Dibromochloromethane	129	10.773	10.774	(0.934)	417763	100.000	111	
	63	1,3-Dichloropropane	76	10.876	10.876	(0.943)	626348	100.000	102	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	374167	100.000	105	
	65	2-Hexanone	43	11.294	11.294	(0.979)	1245942	500.000	538	
*	66	Chlorobenzene-D5	117	11.536	11.536	(1.000)	501569	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.002)	934609	100.000	101	
	152	1-Chlorohexane	91	11.601	11.601	(1.006)	1618698	100.000	(a)	
	68	Ethylbenzene	91	11.601	11.601	(1.006)	1618698	100.000	102	
	69	1,1,1,2-Tetrachloroethane	131	11.629	11.629	(1.008)	351777	100.000	106	
M	70	Xylenes (total)	106				3755689	100.000	310	
	71	m+p-Xylenes	91	11.749	11.750	(1.019)	2456069	200.000	203	
	72	o-Xylene	91	12.168	12.168	(1.055)	1299620	100.000	107	
	73	Styrene	104	12.223	12.224	(1.060)	997760	100.000	108	
	74	Bromoform	173	12.233	12.233	(1.060)	252742	100.000	113	
	75	Isopropylbenzene	105	12.475	12.475	(0.899)	1456833	100.000	108	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	270382	50.0000	49.8	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1264.d
Report Date: 15-May-2018 13:58

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	77	cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	139960	100.000	110	
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	112857	100.000	109	
	79	Bromobenzene	156	12.828	12.828	(0.924)	385158	100.000	102	
	80	N-Propylbenzene	91	12.874	12.875	(0.928)	1830667	100.000	104	
	81	1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.933)	448497	100.000	102	
	82	1,3,5-Trimethylbenzene	105	13.069	13.061	(0.942)	1236190	100.000	106	
	83	2-Chlorotoluene	91	13.014	13.014	(0.938)	1098148	100.000	104	
	84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	377695	100.000	99.5	
	85	4-Chlorotoluene	91	13.172	13.172	(0.949)	1153483	100.000	103	
	86	tert-Butylbenzene	119	13.376	13.377	(0.964)	1171247	100.000	107	
	87	Pentachloroethane	117	13.395	13.395	(0.965)	281051	100.000	107	
	88	1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	1292165	100.000	107	
	89	P-Isopropyltoluene	119	13.730	13.730	(0.989)	1219817	100.000	108	
	90	1,3-Dichlorobenzene	146	13.795	13.795	(0.994)	685682	100.000	102	
*	91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	253287	50.0000		
	92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	699219	100.000	99.8	
	93	N-Butylbenzene	91	14.232	14.232	(1.025)	1127949	100.000	108	
	94	sec-Butylbenzene	105	13.562	13.563	(0.977)	1469372	100.000	106	
	95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	667333	100.000	104	
	96	1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	77966	100.000	111	
	97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	457320	100.000	106	
	98	Hexachlorobutadiene	225	16.416	16.416	(1.183)	152838	100.000	102	
	99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	408398	100.000	108	
	100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	1268533	100.000	104	
	101	Naphthalene	128	16.807	16.806	(1.211)	938571	100.000	116	
	102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	327226	100.000	106	
	103	Methyl Acetate	43	3.689	3.690	(0.504)	312471	100.000	102	
	104	Methylcyclohexane	83	7.966	7.966	(1.089)	566730	100.000	107	
M	153	Total Alkylbenzenes	100				9347407	100.000	746	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).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Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
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Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.654)
-Vinyl Chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.128)
-Trichlorofluoromethane (2.268)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.779)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.439)
-Acetone (3.523)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.801)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.369)
-Chloroprene (4.480)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.438)
-2,2-Dichloropropane (5.633)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.228)+
-Dibromofluoromethane (6.377)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.055)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.325)+
-Isobutyl Alcohol (7.604)
-Trichloroethene (7.976)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.849)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.881)
-Toluene (9.937)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.555)+
-1-Chlorohexane (11.801)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-cis-1,4-Dichloro-2-Butene (12.828)+
-N-Propylbenzene (12.875)
-1,1,2,2-Tetrachloroethane (13.049)
-2-Chlorotoluene (13.014)
-1,3,5-Trimethylbenzene (13.070)+
-trans-1,4-Dichloro-2-Bute (13.165)
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.386)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.563)
-P-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.795)
-1,4-Dichlorobenzene-D4 (13.897)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.571)
-1,3,5-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)

Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Report Date: 18-May-2018 12:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Lab Smp Id: WG228096-9
Inj Date : 11-MAY-2018 09:03 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228096-9,SL3807
Misc Info : WG228096,WG227999-4,SL3807-5
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051118.b\D8A05(21)D.m
Meth Date : 18-May-2018 12:21 hgould Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 2 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	290279	70.3435	70.3(R)	
2	Chloromethane	50	1.663	1.663	(0.227)	250348	56.4450	56.4	
3	Vinyl chloride	62	1.728	1.728	(0.236)	194068	55.9936	56.0	
4	Bromomethane	94	2.025	2.025	(0.277)	89198	49.8427	49.8	
5	Chloroethane	64	2.146	2.137	(0.293)	88073	55.5252	55.5	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	276404	51.4016	51.4	
7	Diethyl Ether	59	2.583	2.583	(0.353)	88785	49.9397	49.9	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	55890	241.579	242	
9	1,1-Dichloroethene	96	2.778	2.788	(0.380)	113132	49.0857	49.1	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	354605	49.7513	49.8	
11	Freon-113	151	2.834	2.835	(0.387)	97922	48.5742	48.6	
12	Iodomethane	142	2.936	2.937	(0.401)	129926	54.1316	54.1	
13	Acrolein	56	3.159	3.160	(0.432)	138380	239.437	239	
14	Methylene Chloride	84	3.447	3.448	(0.471)	183931	47.8081	47.8	
15	Acetone	43	3.522	3.522	(0.482)	51154	47.8765	47.9	
16	Isobutyl Alcohol	43	7.603	7.604	(1.039)	127110	878.937	879	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	170975	48.5751	48.6	
18	Allyl Chloride	41	3.317	3.318	(0.454)	264916	51.4643	51.5	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	446871	49.0889	49.1	
20	Acetonitrile	39	4.135	4.136	(0.565)	45430	467.491	467	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	566089	52.0364	52.0	
22	Chloroprene	53	4.479	4.480	(0.612)	278000	51.0617	51.1	
23	Propionitrile	54	7.147	7.148	(0.977)	235956	474.940	475	
24	Methacrylonitrile	41	7.185	7.185	(0.982)	1074019	484.679	485	

Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Report Date: 18-May-2018 12:22

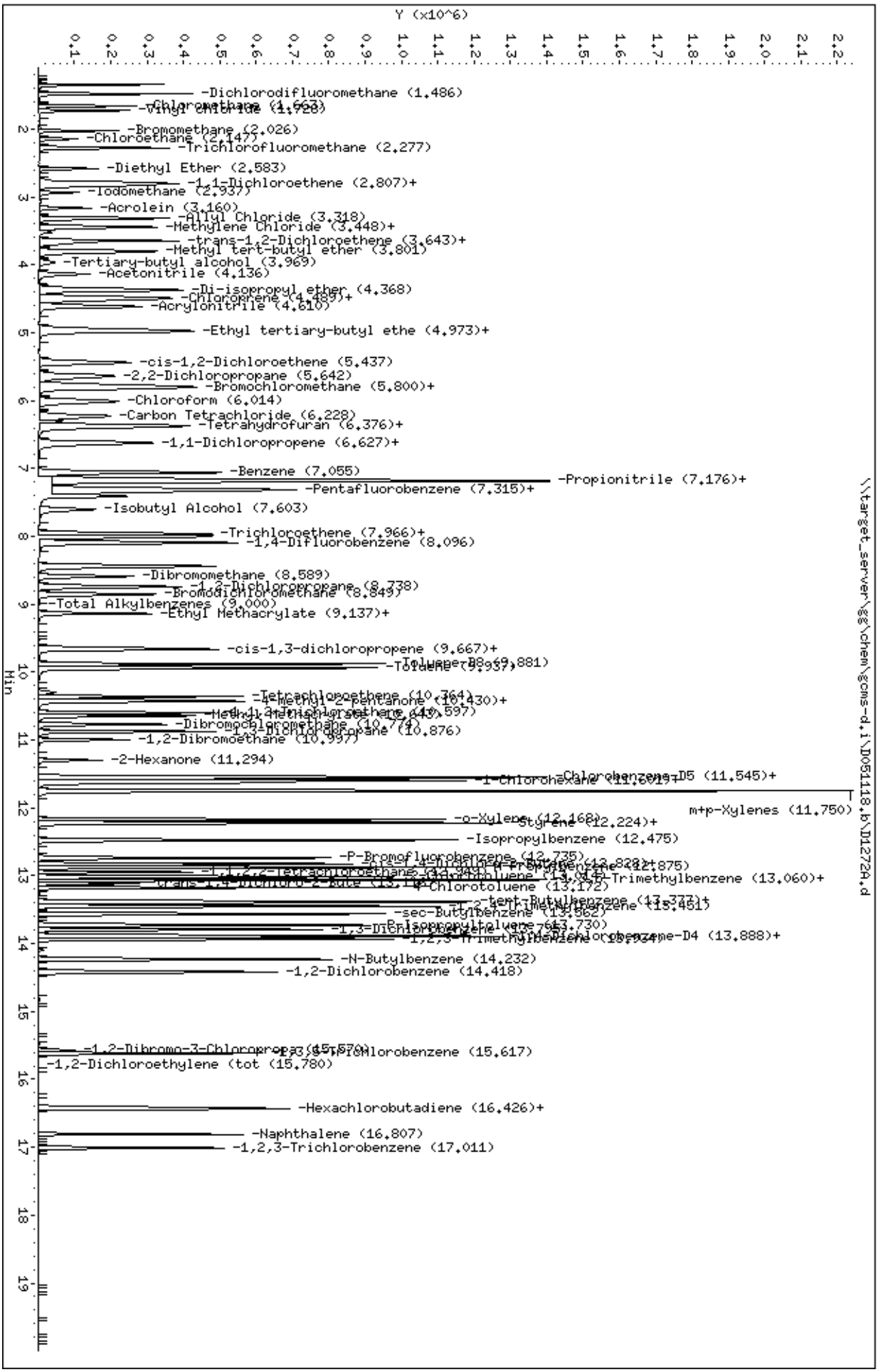
							CONCENTRATIONS		
		QUANT SIG					ON-COLUMN	FINAL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	25 1,1-Dichloroethane	63	4.517	4.517	(0.617)	346983	52.7255	52.7	
	26 Acrylonitrile	52	4.610	4.610	(0.630)	274543	237.263	237	
	27 Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	490820	53.4841	53.5	
	28 Vinyl Acetate	43	4.981	4.982	(0.615)	434924	55.3223	55.3	
	29 cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	186385	49.7455	49.7	
M	30 1,2-Dichloroethylene (total)	96				357360	98.3206	98.3	
	31 Methyl Methacrylate	41	10.643	10.643	(1.315)	159288	47.6940	47.7	
	32 2,2-Dichloropropane	77	5.641	5.642	(0.771)	250856	57.8589	57.8	
	33 Bromochloromethane	128	5.809	5.809	(0.794)	94530	51.1729	51.2	
	34 Chloroform	83	6.013	6.014	(0.822)	340025	49.2890	49.3	
	35 Carbon Tetrachloride	117	6.227	6.237	(0.769)	246702	51.8642	51.9	
	36 Tetrahydrofuran	42	6.311	6.302	(0.863)	45316	45.9171	45.9	
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	200430	50.0024	50.0	
	38 1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	283832	50.0049	50.0	
	39 1,1-Dichloropropene	75	6.618	6.627	(0.817)	257110	50.9244	50.9	
	40 2-Butanone	43	6.655	6.655	(0.910)	79368	47.9154	47.9	
	41 Benzene	78	7.054	7.055	(0.871)	681802	50.0640	50.1	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	340936	50.0000		
	43 Cyclohexane	56	5.790	5.791	(0.792)	279289	49.8153	49.8	
	44 Ethyl Methacrylate	69	9.137	9.137	(1.129)	116806	44.8203	44.8	
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	248710	49.0726	49.1	
	46 Tertiary-amyl methyl ether	73	7.333	7.334	(1.003)	395310	51.9163	51.9	
	47 1,2-Dichloroethane	62	7.408	7.408	(0.915)	271927	47.7661	47.8	
	48 Trichloroethene	95	8.003	8.003	(0.989)	182778	49.2282	49.2	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	551947	50.0000		
	50 Dibromomethane	93	8.588	8.589	(1.061)	124139	49.4612	49.5	
	51 1,2-Dichloropropane	63	8.737	8.738	(1.079)	186977	50.7837	50.8	
	52 Bromodichloromethane	83	8.849	8.859	(1.093)	263238	51.5890	51.6	
	53 cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	305103	51.3946	51.4	
	54 1,4-Dioxane	88	9.137	9.137	(1.129)	31501	835.561	836	
$	55 Toluene-D8	98	9.881	9.881	(1.220)	680110	50.5269	50.5	
	56 2-Chloroethylvinylether	63	9.639	9.639	(1.191)	113920	49.6986	49.7	
	57 Toluene	92	9.936	9.937	(1.227)	413639	49.7106	49.7	
	58 4-methyl-2-pentanone	43	10.410	10.411	(1.286)	162853	48.4592	48.4	
	59 Tetrachloroethene	164	10.364	10.365	(0.898)	137048	50.0596	50.0	
	60 trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	282459	54.9007	54.9	
	61 1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	141584	48.3100	48.3	
	62 Dibromochloromethane	129	10.773	10.774	(0.934)	195572	51.8565	51.8	
	63 1,3-Dichloropropane	76	10.875	10.876	(0.943)	284044	46.2786	46.3	
	64 1,2-Dibromoethane	107	10.996	10.997	(1.358)	172635	48.8533	48.8	
	65 2-Hexanone	43	11.294	11.294	(0.979)	113379	48.9272	48.9	
*	66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	502089	50.0000		
	67 Chlorobenzene	112	11.554	11.555	(1.002)	448359	48.3108	48.3	
	152 1-Chlorohexane	91	11.600	11.601	(1.006)	779805			(aR)
	68 Ethylbenzene	91	11.600	11.601	(1.006)	779805	49.0338	49.0	
	69 1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	166601	50.3778	50.4	
M	70 Xylenes (total)	106				1805989	148.921	149	
	71 m+p-Xylenes	91	11.749	11.750	(1.019)	1195394	98.8696	98.9	
	72 o-Xylene	91	12.167	12.168	(1.055)	610595	50.0511	50.0	
	73 Styrene	104	12.223	12.224	(1.060)	472288	51.1719	51.2	
	74 Bromoform	173	12.233	12.233	(1.060)	116357	46.1186	46.1	
	75 Isopropylbenzene	105	12.474	12.475	(0.899)	720827	53.7298	53.7	
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	271852	50.5958	50.6	
	77 cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	67240	47.4576	47.4	

Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Report Date: 18-May-2018 12:22

			QUANT SIG					CONCENTRATIONS		
								ON-COLUMN	FINAL	
	Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	53183	46.1480	46.1	
	79	Bromobenzene	156	12.828	12.828	(0.924)	182376	48.2714	48.3	
	80	N-Propylbenzene	91	12.874	12.875	(0.928)	873990	49.8094	49.8	
	81	1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	207265	47.1583	47.2	
	82	1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	587855	50.5107	50.5	
	83	2-Chlorotoluene	91	13.013	13.014	(0.938)	522710	49.7349	49.7	
	84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	170845	45.1391	45.1	
	85	4-Chlorotoluene	91	13.172	13.172	(0.949)	558434	50.0065	50.0	
	86	tert-Butylbenzene	119	13.376	13.377	(0.964)	551640	50.3661	50.4	
	87	Pentachloroethane	117	13.395	13.395	(0.965)	133479	50.8300	50.8	
	88	1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	610413	50.6227	50.6	
	89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	580336	51.6927	51.7	
	90	1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	326603	48.4730	48.5	
*	91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	252669	50.0000		
	92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	328765	47.0205	47.0	
	93	N-Butylbenzene	91	14.231	14.232	(1.025)	545299	52.1262	52.1	
	94	sec-Butylbenzene	105	13.562	13.563	(0.977)	697075	50.4437	50.4	
	95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	310464	48.5718	48.6	
	96	1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	32894	47.1176	47.1	
	97	1,3,5-Trichlorobenzene	180	15.616	15.617	(1.125)	216110	50.1058	50.1	
	98	Hexachlorobutadiene	225	16.416	16.416	(1.183)	71083	47.3372	47.3	
	99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	187210	49.7982	49.8	
	100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	614250	50.6617	50.7	
	101	Naphthalene	128	16.806	16.806	(1.211)	395237	43.5753	43.6	
	102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	145941	47.5271	47.5	
	103	Methyl Acetate	43	3.689	3.690	(0.504)	132158	43.3998	43.4	
	104	Methylcyclohexane	83	7.966	7.966	(1.089)	271041	51.4435	51.4	
M	153	Total Alkylbenzenes	100				4446608	355.571	356	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.


Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Date : 11-MAY-2018 09:03
Client ID:
Sample Info: WG228096-9,SL3807
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.486)
-Chloromethane (1.663)
-Vinyl chloride (1.726)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.583)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)+
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.801)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.437)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.228)
-Tetrahydrofuran (6.376)+
-1,1-Dichloropropene (6.627)+
-Benzene (7.055)
-Propionitrile (7.176)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.603)
-Trichloroethene (7.966)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.849)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
-Toluene (9.937)
Toluene-D8 (9.881)
-Tetrachloroethene (10.764)
-4-Methyl-2-pentanone (10.430)+
-Methyl methacrylate (10.597)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
Chlorobenzene-D5 (11.545)+
-1-Chlorohexane (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-1,1,2,2-Tetrachloroethane (13.044)
4-Chlorotoluene (13.172)
-1,2,4-Trimethylbenzene (13.460)
-sec-Butylbenzene (13.562)
-1,3-Dichlorobenzene (13.730)
-1,2,3-Trimethylbenzene (13.934)
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropa (15.570)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3841
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-P
Lab File IDs : P5511a.D P5510a.D P5509a.D P5508a.D P5513a.D P5512a.D
Column ID:
Calibration Date(s): 03-MAY-18 12:56, 03-MAY-18 15:47

	1.0000 Level 1	5.0000 Level 2	20.0000 Level 3	50.0000 Level 4	100.0000 Level 5	150.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Dichlorodifluoromethane	0.48415	0.45282	0.39107	0.43996	0.41195	0.40756	AVG		0.43125		7.95758	15.00000	O
Chloromethane	0.46988	0.42974	0.37716	0.40724	0.37963	0.41423	AVG		0.41298		8.35157	15.00000	O
Vinyl chloride	0.49456	0.49536	0.40340	0.45136	0.41679	0.44827	AVG		0.45162		8.46432	15.00000	O
Bromomethane	3898	16615	79029	211364	566905	842644	QUA	0.02063	5.10911	-1.54031	0.99945	0.99000	O
Chloroethane	0.30946	0.27357	0.23622	0.24417	0.21907	0.23431	AVG		0.25280		13.0845	15.00000	O
Trichlorofluoromethane	0.93088	0.84439	0.71426	0.80644	0.74433	0.76347	AVG		0.80063		9.82262	15.00000	O
1,1-Dichloroethene	0.32240	0.39978	0.31812	0.33055	0.30350	0.32441	AVG		0.33313		10.1741	15.00000	O
Freon-113	0.32302	0.30775	0.31238	0.33618	0.32405	0.32080	AVG		0.32070		3.09707	15.00000	O
Carbon Disulfide	1.02531	1.24786	1.05788	1.17585	1.08533	1.16717	AVG		1.12657		7.47525	15.00000	O
Methylene Chloride	0.46811	0.46967	0.40581	0.42344	0.39818	0.41004	AVG		0.42921		7.41304	15.00000	O
Acetone	0.09783	0.11349	0.10274	0.10905	0.09612	0.09910	AVG		0.10305		6.66596	15.00000	O
trans-1,2-Dichloroethene	0.34327	0.48236	0.38656	0.40457	0.38841	0.39941	AVG		0.40076		11.3439	15.00000	O
Methyl tert-butyl ether	1.01118	1.22205	1.19149	1.24489	1.19014	1.17513	AVG		1.17248		7.07431	15.00000	O
1,1-Dichloroethane	0.69374	0.86030	0.76181	0.78712	0.73922	0.76436	AVG		0.76776		7.20017	15.00000	O
cis-1,2-Dichloroethene	0.37549	0.46083	0.42582	0.43739	0.43334	0.44208	AVG		0.42916		6.71034	15.00000	O
2,2-Dichloropropane	0.45890	0.59293	0.56724	0.59901	0.51563	0.51090	AVG		0.54077		10.1425	15.00000	O
Bromochloromethane	0.18939	0.21069	0.19185	0.19921	0.17751	0.17577	AVG		0.19074		6.92362	15.00000	O
Chloroform	0.67412	0.83030	0.73054	0.77353	0.74782	0.76352	AVG		0.75331		6.83652	15.00000	O
Carbon Tetrachloride	0.27668	0.37507	0.35325	0.36074	0.36644	0.36628	AVG		0.34975		10.4395	15.00000	O
1,1,1-Trichloroethane	0.57152	0.75593	0.66477	0.69426	0.66901	0.68455	AVG		0.67334		8.87212	15.00000	O
2-Butanone	0.13804	0.17748	0.17332	0.18002	0.16381	0.16944	AVG		0.16702		9.17409	15.00000	O
1,1-Dichloropropene	0.34138	0.42390	0.36893	0.37558	0.37918	0.38933	AVG		0.37972		7.11343	15.00000	O
Benzene	0.89113	1.18125	1.04885	1.05323	1.06047	1.08477	AVG		1.05328		8.87923	15.00000	O
1,2-Dichloroethane	0.43322	0.43964	0.40234	0.40003	0.39405	0.40096	AVG		0.41171		4.72817	15.00000	O
Trichloroethene	0.23496	0.28491	0.25344	0.25631	0.25729	0.27065	AVG		0.25959		6.50084	15.00000	O
Dibromomethane	0.13465	0.16481	0.15942	0.15931	0.16224	0.16153	AVG		0.15699		7.09038	15.00000	O
1,2-Dichloropropane	0.23187	0.27314	0.26261	0.26707	0.27209	0.28466	AVG		0.26524		6.76588	15.00000	O
Bromodichloromethane	0.30356	0.37567	0.36134	0.37422	0.37479	0.38973	AVG		0.36322		8.41857	15.00000	O
cis-1,3-dichloropropene	0.33747	0.44867	0.47483	0.48153	0.47911	0.50618	AVG		0.45463		13.2522	15.00000	O
Toluene	0.58715	0.72063	0.66125	0.65692	0.66076	0.68683	AVG		0.66226		6.64541	15.00000	O
Tetrachloroethene	0.19198	0.22640	0.19547	0.19938	0.19782	0.20180	AVG		0.20214		6.10876	15.00000	O
4-methyl-2-pentanone	0.16676	0.23088	0.24317	0.24161	0.23658	0.24157	AVG		0.22676		13.1153	15.00000	O
trans-1,3-Dichloropropene	9096	69335	288952	778870	1702360	2431609	LNR	0.02365	0.45292		0.99927	0.99000	O
1,1,2-Trichloroethane	4369	35212	140800	346680	780934	1104065	LNR	0.01782	0.20554		0.99942	0.99000	O
Dibromochloromethane	0.21896	0.25566	0.24562	0.26249	0.26592	0.27393	AVG		0.25376		7.70536	15.00000	O
1,3-Dichloropropane	0.42370	0.48710	0.46560	0.47138	0.46456	0.47641	AVG		0.46479		4.67999	15.00000	O
1,2-Dibromoethane	0.20405	0.25019	0.24259	0.25028	0.24915	0.25297	AVG		0.24154		7.73740	15.00000	O

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3841
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-P
Lab File IDs : P5511a.D P5510a.D P5509a.D P5508a.D P5513a.D P5512a.D
Column ID:
Calibration Date(s): 03-MAY-18 12:56 03-MAY-18 15:47

2-Hexanone	0.10673	0.15002	0.15829	0.16489	0.16035	0.16158	AVG		0.15031		14.5869(	15.00000	O
Chlorobenzene	0.66630	0.80756	0.73688	0.76033	0.75762	0.76227	AVG		0.74849		6.20723	15.00000	O
Ethylbenzene	0.35921	0.44476	0.41083	0.41509	0.41168	0.42514	AVG		0.41112		6.91355	15.00000	O
1,1,1,2-Tetrachloroethane	5661	46537	180453	458484	1021606	1495615	LNR	0.01852	0.26450		0.99914	0.99000	O
m+p-Xylenes	0.41915	0.54476	0.49159	0.51112	0.51119	0.52024	AVG		0.49968		8.61714	15.00000	O
o-Xylene	0.36541	0.51989	0.48138	0.49070	0.49966	0.51270	AVG		0.47829		11.9293(	15.00000	O
Styrene	0.58132	0.86367	0.82079	0.85577	0.86085	0.88201	AVG		0.81074		14.0799-	15.00000	O
Bromoform	0.13656	0.17364	0.17141	0.18554	0.19897	0.20559	AVG		0.17862		13.7939(	15.00000	O
Isopropylbenzene	1.75498	2.45866	2.19300	2.13560	2.10859	2.04916	AVG		2.11666		10.7439:	15.00000	O
Bromobenzene	0.51351	0.59805	0.55527	0.54169	0.56339	0.55985	AVG		0.55530		4.99461	15.00000	O
N-Propylbenzene	2.27628	2.96486	2.66605	2.59267	2.48369	2.33070	AVG		2.55237		9.83042	15.00000	O
1,1,2,2-Tetrachloroethane	0.50673	0.60137	0.55660	0.54313	0.53938	0.54729	AVG		0.54908		5.59363	15.00000	O
2-Chlorotoluene	1.39419	1.71319	1.59475	1.54149	1.53444	1.51623	AVG		1.54905		6.73115	15.00000	O
1,2,3-Trichloropropane	0.47172	0.52817	0.50976	0.49702	0.50169	0.51366	AVG		0.50367		3.77330	15.00000	O
1,3,5-Trimethylbenzene	1.44491	1.99231	1.89669	1.86215	1.83349	1.80854	AVG		1.80635		10.42307	15.00000	O
4-Chlorotoluene	1.49906	1.83507	1.71234	1.64142	1.62500	1.59456	AVG		1.65124		6.88809	15.00000	O
tert-Butylbenzene	1.42646	1.92423	1.77374	1.76359	1.79673	1.77918	AVG		1.74399		9.54672	15.00000	O
1,2,4-Trimethylbenzene	1.49761	2.10980	1.94838	1.91693	1.90177	1.83704	AVG		1.86859		10.8786(	15.00000	O
sec-Butylbenzene	1.89856	2.55893	2.25977	2.23925	2.18238	2.08922	AVG		2.20469		9.88054	15.00000	O
P-Isopropyltoluene	1.44098	2.02828	1.85464	1.86710	1.86115	1.82068	AVG		1.81214		10.8074(	15.00000	O
1,3-Dichlorobenzene	0.89897	1.04003	0.99085	0.98183	0.99242	1.00308	AVG		0.98453		4.73244	15.00000	O
1,4-Dichlorobenzene	0.98362	1.12126	1.06209	1.02155	1.03897	1.05132	AVG		1.04647		4.37673	15.00000	O
N-Butylbenzene	1.33547	1.84559	1.66597	1.67046	1.63287	1.61097	AVG		1.62689		10.1548:	15.00000	O
1,2-Dichlorobenzene	0.95904	0.98903	0.93035	0.94005	0.95821	0.95615	AVG		0.95547		2.10129	15.00000	O
1,2-Dibromo-3-Chloropropane	1033	9790	43098	110420	260996	375489	LNR	0.02403	0.11519		0.99938	0.99000	O
Hexachlorobutadiene	0.23699	0.26379	0.24452	0.24434	0.26145	0.26211	AVG		0.25220		4.59092	15.00000	O
1,2,4-Trichlorobenzene	7299	56264	242871	606814	1462057	2118253	LNR	0.02705	0.64853		0.99895	0.99000	O
Naphthalene	13965	98475	496939	1258877	3078609	4197177	LNR	0.01897	1.30717		0.99867	0.99000	O
1,2,3-Trichlorobenzene	0.36761	0.42169	0.45905	0.44194	0.49967	0.49326	AVG		0.44720		10.9673:	15.00000	O
Dibromofluoromethane	0.49361	0.49416	0.49036	0.51055	0.48733	0.49096	AVG		0.49449		1.66656	15.00000	
1,2-Dichloroethane-D4	0.66680	0.66321	0.64872	0.66920	0.61538	0.64908	AVG		0.65206		3.06784	15.00000	
Toluene-D8	1.19049	1.18445	1.18696	1.18577	1.16923	1.18999	AVG		1.18448		0.66128	15.00000	
P-Bromofluorobenzene	0.50963	0.51551	0.52872	0.53277	0.52553	0.53899	AVG		0.52519		2.07942	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5523A.D
Report Date: 09-May-2018 12:35

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa02236
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: WG227659-7
Level: LOW Operator: hg
Data Type: MS DATA SampleType: LCS
SpikeList File: IND_CHECK.spk Quant Type: ISTD
Sublist File: all50.sub
Method File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P8A05(68)D.m
Misc Info: WG227659,WG227568-4

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	1	Dichlorodifluorome	50.0	44.6	89.30	80-120
	2	Chloromethane	50.0	43.5	87.07	80-120
	3	Vinyl chloride	50.0	43.1	86.27	80-120
	4	Bromomethane	50.0	44.4	88.79	80-120
	5	Chloroethane	50.0	44.3	88.70	80-120
	6	Trichlorofluoromet	50.0	41.7	83.48	80-120
	7	Diethyl Ether	50.0	42.4	84.83	80-120
	19	Tertiary-butyl alc	250	230	91.85	80-120
	8	1,1-Dichloroethene	50.0	41.4	82.86	80-120
	10	Carbon Disulfide	50.0	40.6	81.22	80-120
	9	Freon-113	50.0	47.2	94.38	80-120
	11	Iodomethane	50.0	60.3	120.63*	80-120
	12	Acrolein	250	233	93.36	80-120
	14	Methylene Chloride	50.0	44.8	89.66	80-120
	15	Acetone	50.0	47.3	94.63	80-120
	45	Isobutyl Alcohol	1000	827	82.74	80-120
	16	trans-1,2-Dichloro	50.0	46.3	92.70	80-120
	13	Allyl Chloride	50.0	43.9	87.80	80-120
	18	Methyl tert-butyl	50.0	47.5	95.08	80-120
	20	Acetonitrile	500	427	85.50	80-120
	21	Di-isopropyl ether	50.0	43.8	87.56	80-120
	22	Chloroprene	50.0	44.8	89.68	80-120
	39	Propionitrile	500	469	93.75	80-120
	40	Methacrylonitrile	500	460	92.07	80-120
	23	1,1-Dichloroethane	50.0	47.7	95.32	80-120
	24	Acrylonitrile	250	240	96.04	80-120
	25	Ethyl tertiary-but	50.0	45.1	90.25	80-120
	26	Vinyl Acetate	50.0	54.3	108.58	80-120
	27	cis-1,2-Dichloroet	50.0	47.3	94.56	80-120
M	98	1,2-Dichloroethyle	100	93.6	93.63	80-120
	52	Methyl Methacrylat	50.0	51.7	103.36	80-120
	28	2,2-Dichloropropan	50.0	50.9	101.88	80-120
	29	Bromochloromethane	50.0	48.4	96.87	80-120
	31	Chloroform	50.0	47.3	94.65	80-120
	32	Carbon Tetrachlori	50.0	51.4	102.77	80-120
	33	Tetrahydrofuran	50.0	44.1	88.15	80-120
	35	1,1,1-Trichloroeth	50.0	46.3	92.56	80-120
	37	1,1-Dichloropropen	50.0	49.4	98.82	80-120
	36	2-Butanone	50.0	49.9	99.75	80-120
	38	Benzene	50.0	49.4	98.86	80-120

Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5523A.D
Report Date: 09-May-2018 12:35

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	30	Cyclohexane	50.0	43.8	87.57	80-120
	53	Ethyl Methacrylate	50.0	47.6	95.20	80-120
	43	Tertiary-amyl meth	50.0	46.4	92.80	80-120
	44	1,2-Dichloroethane	50.0	47.2	94.45	80-120
	47	Trichloroethene	50.0	49.0	97.97	80-120
	49	Dibromomethane	50.0	53.1	106.21	80-120
	50	1,2-Dichloropropan	50.0	48.9	97.87	80-120
	51	Bromodichlorometha	50.0	51.6	103.17	80-120
	57	cis-1,3-dichloropr	50.0	51.2	102.41	80-120
	54	1,4-Dioxane	1000	638	63.83*	80-120
	56	2-Chloroethylviny	50.0	0.00	*	80-120
	59	Toluene	50.0	49.9	99.74	80-120
	61	4-methyl-2-pentano	50.0	50.6	101.25	80-120
	60	Tetrachloroethene	50.0	51.8	103.70	80-120
	62	trans-1,3-Dichloro	50.0	49.0	97.97	80-120
	63	1,1,2-Trichloroeth	50.0	49.3	98.61	80-120
	64	Dibromochlorometha	50.0	53.1	106.27	80-120
	65	1,3-Dichloropropan	50.0	47.9	95.82	80-120
	66	1,2-Dibromoethane	50.0	52.0	104.08	80-120
	67	2-Hexanone	50.0	53.2	106.44	80-120
	69	Chlorobenzene	50.0	49.9	99.88	80-120
	70	1-Chlorohexane	50.0	0.00	*	80-120
	71	Ethylbenzene	50.0	50.3	100.56	80-120
	72	1,1,1,2-Tetrachlor	50.0	49.4	98.73	80-120
M	106	Xylenes (total)	150	152	101.69	80-120
	73	m+p-Xylenes	100	102	102.29	80-120
	74	o-Xylene	50.0	50.2	100.49	80-120
	75	Styrene	50.0	52.6	105.18	80-120
	76	Bromoform	50.0	56.8	113.50	80-120
	77	Isopropylbenzene	50.0	51.4	102.81	80-120
	79	cis-1,4-Dichloro-2	50.0	48.6	97.22	80-120
	86	trans-1,4-Dichloro	50.0	53.0	106.00	80-120
	80	Bromobenzene	50.0	50.1	100.16	80-120
	81	N-Propylbenzene	50.0	49.3	98.62	80-120
	82	1,1,2,2-Tetrachlor	50.0	50.5	100.96	80-120
	85	1,3,5-Trimethylben	50.0	50.2	100.43	80-120
	83	2-Chlorotoluene	50.0	48.4	96.80	80-120
	84	1,2,3-Trichloropro	50.0	48.5	96.94	80-120
	87	4-Chlorotoluene	50.0	47.9	95.89	80-120
	88	tert-Butylbenzene	50.0	49.4	98.77	80-120
	89	Pentachloroethane	50.0	50.5	101.08	80-120
	90	1,2,4-Trimethylben	50.0	50.1	100.24	80-120
	92	P-Isopropyltoluene	50.0	50.8	101.51	80-120
	93	1,3-Dichlorobenzen	50.0	49.9	99.76	80-120
	95	1,4-Dichlorobenzen	50.0	48.4	96.83	80-120
	97	N-Butylbenzene	50.0	49.4	98.78	80-120
	91	sec-Butylbenzene	50.0	49.9	99.87	80-120
	99	1,2-Dichlorobenzen	50.0	48.9	97.74	80-120
	100	1,2-Dibromo-3-Chlo	50.0	51.0	101.96	80-120
	101	1,3,5-Trichloroben	50.0	49.0	98.10	80-120
	102	Hexachlorobutadien	50.0	51.4	102.90	80-120
	103	1,2,4-Trichloroben	50.0	48.6	97.24	80-120
	96	1,2,3-Trimethylben	50.0	48.8	97.71	80-120
	104	Naphthalene	50.0	50.7	101.43	80-120

Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5523A.D
Report Date: 09-May-2018 12:35

	SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	105 1,2,3-Trichloroben	50.0	53.6	107.11	80-120
	17 Methyl Acetate	50.0	40.8	81.69	80-120
	46 Methylcyclohexane	50.0	46.2	92.40	80-120
M	55 Total Alkylbenzene	350	349	99.75	80-120

	SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$	34 Dibromofluorometha	50.0	47.0	93.91	80-119
$	42 1,2-Dichloroethane	50.0	45.8	91.66	81-118
$	58 Toluene-D8	50.0	49.2	98.44	89-112
$	78 P-Bromofluorobenze	50.0	50.3	100.61	85-114

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5509.D
Report Date: 09-May-2018 12:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050318B.b\P5509.D
Lab Smp Id: WG227568-3
Inj Date : 03-MAY-2018 13:30 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227568-3
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050318B.b\P8A05(68)D.m
Meth Date : 07-May-2018 16:14 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 13:30 Cal File: P5509.D
Als bottle: 2 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.517	1.515	(0.235)	177303	20.0000	18.8	
2	Chloromethane	50	1.667	1.673	(0.259)	171000	20.0000	19.2	
3	Vinyl chloride	62	1.731	1.730	(0.269)	182895	20.0000	18.9	
4	Bromomethane	94	1.974	1.973	(0.306)	79029	20.0000	18.8	
5	Chloroethane	64	2.074	2.066	(0.322)	107097	20.0000	19.7	
6	Trichlorofluoromethane	101	2.182	2.173	(0.339)	323834	20.0000	18.8	
7	Diethyl Ether	59	2.418	2.416	(0.375)	121012	20.0000	18.6	
19	Tertiary-butyl alcohol	59	3.512	3.503	(0.545)	62030	100.000	95.9	
8	1,1-Dichloroethene	96	2.596	2.595	(0.403)	144231	20.0000	19.6	
10	Carbon Disulfide	76	2.625	2.624	(0.407)	479625	20.0000	18.9	
9	Freon-113	151	2.618	2.616	(0.406)	141626	20.0000	19.3	
11	Iodomethane	142	2.732	2.731	(0.424)	78303	20.0000	16.0	
12	Acrolein	56	2.904	2.903	(0.451)	125676	100.000	95.3	
14	Methylene Chloride	84	3.133	3.131	(0.486)	183988	20.0000	19.6	
15	Acetone	43	3.183	3.181	(0.494)	232907	100.000	97.0	
45	Isobutyl Alcohol	43	6.779	6.785	(1.052)	96383	400.000	352	
16	trans-1,2-Dichloroethene	96	3.290	3.281	(0.511)	175260	20.0000	19.5	
13	Allyl Chloride	41	3.025	3.024	(0.470)	246697	20.0000	19.2	
18	Methyl tert-butyl ether	73	3.397	3.396	(0.527)	540202	20.0000	19.6	
20	Acetonitrile	41	3.690	3.689	(0.573)	241524	200.000	189	
21	Di-isopropyl ether	45	3.826	3.825	(0.594)	580127	20.0000	19.1	
22	Chloroprene	53	3.948	3.946	(0.613)	299780	20.0000	19.4	
39	Propionitrile	54	6.300	6.306	(0.978)	276979	200.000	191	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5509.D
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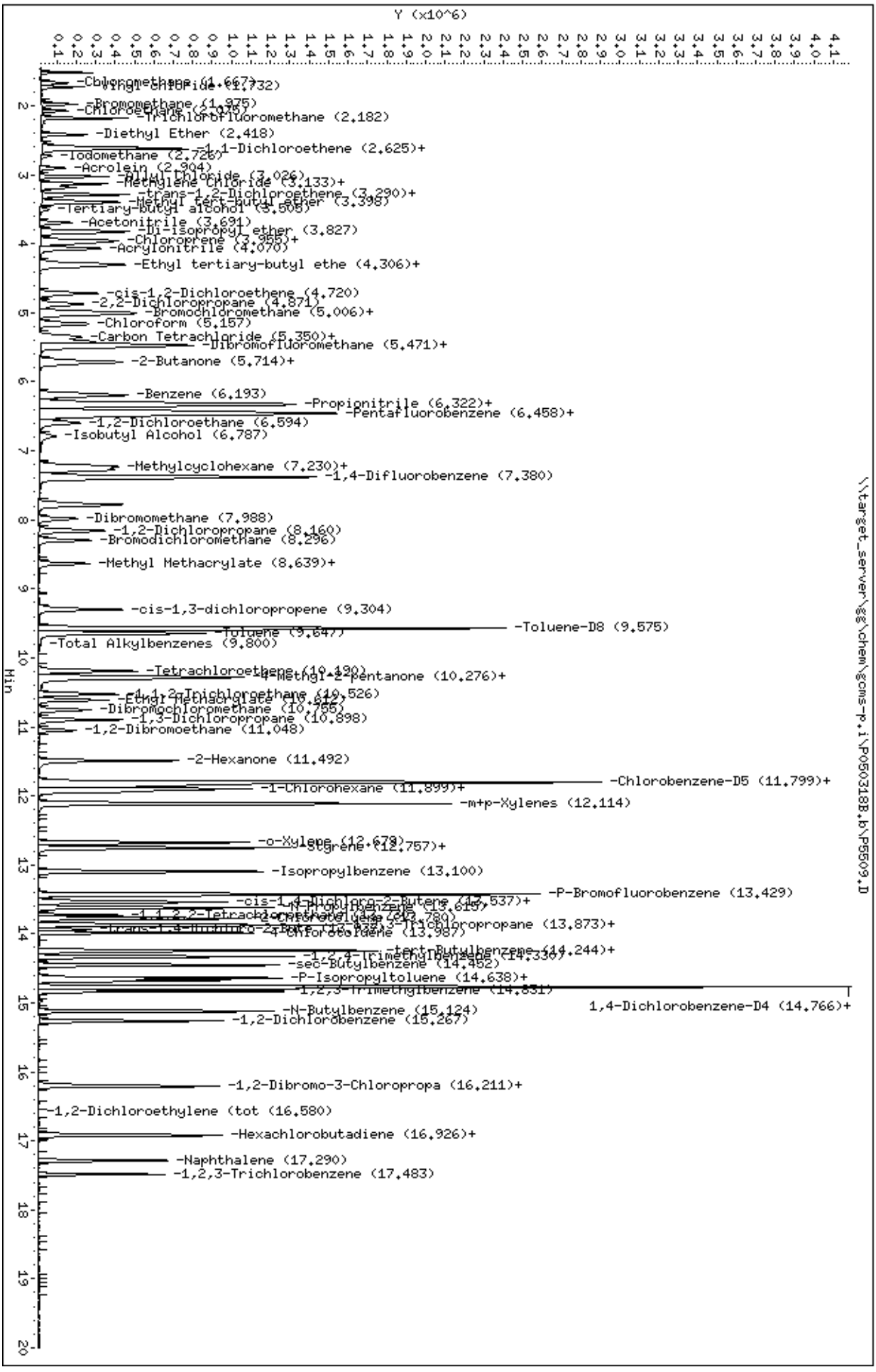
			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	40	Methacrylonitrile	41	6.322	6.335	(0.981)	1132886	200.000	190	
	23	1,1-Dichloroethane	63	3.984	3.982	(0.618)	345392	20.0000	19.7	
	24	Acrylonitrile	52	4.062	4.068	(0.630)	299241	100.000	95.3	
	25	Ethyl tertiary-butyl ether	59	4.291	4.297	(0.666)	546464	20.0000	19.2	
	26	Vinyl Acetate	43	4.327	4.325	(0.586)	413448	20.0000	19.5	
	27	cis-1,2-Dichloroethene	96	4.713	4.719	(0.731)	193060	20.0000	19.7	
M	98	1,2-Dichloroethylene (total)	96				368320	20.0000	39.3	
	52	Methyl Methacrylate	41	8.631	8.630	(1.170)	155530	20.0000	19.2	
	28	2,2-Dichloropropane	77	4.870	4.876	(0.756)	257179	20.0000	19.4	
	29	Bromochloromethane	128	5.020	5.019	(0.779)	86982	20.0000	19.6	
	31	Chloroform	83	5.163	5.162	(0.801)	331214	20.0000	19.4	
	32	Carbon Tetrachloride	117	5.349	5.348	(0.725)	255230	20.0000	19.8	
	33	Tetrahydrofuran	42	5.406	5.412	(0.839)	260563	100.000	97.0	
$	34	Dibromofluoromethane	113	5.471	5.469	(0.849)	555801	50.0000	49.0	
	35	1,1,1-Trichloroethane	97	5.478	5.484	(0.850)	301394	20.0000	19.6	
	37	1,1-Dichloropropene	75	5.714	5.705	(0.774)	266556	20.0000	19.8	
	36	2-Butanone	43	5.721	5.720	(0.888)	392903	100.000	98.1	
	38	Benzene	78	6.193	6.192	(0.839)	757809	20.0000	20.0	
*	41	Pentafluorobenzene	168	6.443	6.442	(1.000)	1133458	50.0000		
	30	Cyclohexane	56	4.999	4.997	(0.776)	324271	20.0000	19.1	
	53	Ethyl Methacrylate	69	10.612	10.610	(1.438)	245531	20.0000	19.0	
$	42	1,2-Dichloroethane-D4	65	6.465	6.470	(1.003)	735298	50.0000	49.2	
	43	Tertiary-amyl methyl ether	73	6.472	6.478	(1.004)	479709	20.0000	18.8	
	44	1,2-Dichloroethane	62	6.586	6.599	(0.892)	290698	20.0000	20.0	
	47	Trichloroethene	95	7.273	7.278	(0.985)	183115	20.0000	19.9	
*	48	1,4-Difluorobenzene	114	7.380	7.378	(1.000)	1806289	50.0000		
	49	Dibromomethane	93	7.988	7.986	(1.082)	115186	20.0000	20.0	
	50	1,2-Dichloropropane	63	8.159	8.158	(1.106)	189737	20.0000	19.8	
	51	Bromodichloromethane	83	8.302	8.301	(1.125)	261073	20.0000	19.6	
	57	cis-1,3-dichloropropene	75	9.303	9.302	(1.261)	343075	20.0000	19.9	
	54	1,4-Dioxane	88	8.631	8.637	(1.170)	36812	400.000	387	
$	58	Toluene-D8	98	9.575	9.574	(1.297)	2143993	50.0000	50.0	
	59	Toluene	92	9.646	9.645	(1.307)	477766	20.0000	20.1	
	61	4-methyl-2-pentanone	43	10.276	10.274	(1.392)	878469	100.000	100	
	60	Tetrachloroethene	164	10.190	10.196	(0.864)	144394	20.0000	19.8	
	62	trans-1,3-Dichloropropene	75	10.304	10.310	(1.396)	288952	20.0000	19.1	
	63	1,1,2-Trichloroethane	83	10.526	10.525	(1.426)	140800	20.0000	20.0	
	64	Dibromochloromethane	129	10.762	10.753	(0.912)	181442	20.0000	19.3	
	65	1,3-Dichloropropane	76	10.898	10.904	(0.924)	343939	20.0000	19.9	
	66	1,2-Dibromoethane	107	11.048	11.054	(1.497)	175272	20.0000	19.7	
	67	2-Hexanone	43	11.491	11.490	(0.974)	584651	100.000	98.0	
*	68	Chlorobenzene-D5	117	11.799	11.804	(1.000)	1846760	50.0000		
	69	Chlorobenzene	112	11.820	11.826	(1.002)	544334	20.0000	19.7	
	70	1-Chlorohexane	91	11.856	11.854	(1.005)	276746	20.0000	20.0	
	71	Ethylbenzene	106	11.899	11.905	(1.008)	303481	20.0000	19.9	
	72	1,1,1,2-Tetrachloroethane	131	11.934	11.933	(1.012)	180453	20.0000	19.6	
M	106	Xylenes (total)	106				1081875	60.0000	59.0	
	73	m+p-Xylenes	106	12.113	12.112	(1.027)	726276	40.0000	39.2	
	74	o-Xylene	106	12.678	12.677	(1.075)	355599	20.0000	19.8	
	75	Styrene	104	12.757	12.755	(1.081)	606320	20.0000	19.6	
	76	Bromoform	173	12.757	12.755	(1.081)	126624	20.0000	19.2	
	77	Isopropylbenzene	105	13.100	13.099	(0.887)	888081	20.0000	20.3	
$	78	P-Bromofluorobenzene	95	13.429	13.428	(1.820)	955030	50.0000	49.8	
	79	cis-1,4-Dichloro-2-Butene	53	13.543	13.549	(0.917)	84164	20.0000	19.6	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5509.D
Report Date: 09-May-2018 12:05

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	86	trans-1,4-Dichloro-2-Butene	53	13.936	13.935	(0.944)	59404	20.0000	18.6	
	80	Bromobenzene	156	13.536	13.535	(0.917)	224864	20.0000	20.2	
	81	N-Propylbenzene	91	13.615	13.621	(0.922)	1079650	20.0000	20.3	
	82	1,1,2,2-Tetrachloroethane	83	13.729	13.728	(0.930)	225401	20.0000	20.2	
	85	1,3,5-Trimethylbenzene	105	13.872	13.878	(0.939)	768088	20.0000	20.2	
	83	2-Chlorotoluene	91	13.779	13.778	(0.933)	645815	20.0000	20.3	
	84	1,2,3-Trichloropropane	75	13.865	13.864	(0.939)	206433	20.0000	20.2	
	87	4-Chlorotoluene	91	13.987	13.985	(0.947)	693433	20.0000	20.4	
	88	tert-Butylbenzene	119	14.244	14.243	(0.965)	718298	20.0000	20.0	
	89	Pentachloroethane	165	14.251	14.250	(0.965)	102908	20.0000	19.7	
	90	1,2,4-Trimethylbenzene	105	14.330	14.328	(0.970)	789020	20.0000	20.2	
	92	P-Isopropyltoluene	119	14.637	14.636	(0.991)	751060	20.0000	19.9	
	93	1,3-Dichlorobenzene	146	14.673	14.679	(0.994)	401256	20.0000	20.1	
*	94	1,4-Dichlorobenzene-D4	152	14.766	14.772	(1.000)	1012406	50.0000		
	95	1,4-Dichlorobenzene	146	14.787	14.786	(1.001)	430106	20.0000	20.4	
	97	N-Butylbenzene	91	15.123	15.122	(1.024)	674655	20.0000	20.0	
	91	sec-Butylbenzene	105	14.451	14.457	(0.979)	915123	20.0000	20.1	
	99	1,2-Dichlorobenzene	146	15.266	15.265	(1.034)	376758	20.0000	19.9	
	100	1,2-Dibromo-3-Chloropropane	157	16.182	16.180	(1.096)	43098	20.0000	20.1	
	101	1,3,5-Trichlorobenzene	180	16.210	16.209	(1.098)	273010	20.0000	19.8	
	102	Hexachlorobutadiene	225	16.911	16.910	(1.145)	99020	20.0000	20.0	
	103	1,2,4-Trichlorobenzene	180	16.925	16.931	(1.146)	242871	20.0000	20.3	
	96	1,2,3-Trimethylbenzene	105	14.830	14.836	(1.004)	787658	20.0000	19.6	
	104	Naphthalene	128	17.290	17.289	(1.171)	496939	20.0000	20.2	
	105	1,2,3-Trichlorobenzene	180	17.483	17.489	(1.184)	185899	20.0000	20.4	
	17	Methyl Acetate	43	3.304	3.303	(0.513)	139595	20.0000	19.2	
	46	Methylcyclohexane	83	7.223	7.228	(1.121)	300277	20.0000	18.9	
M	55	Total Alkylbenzenes	100				5695894	20.0000	141	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Date : 03-MAY-2018 13:30
Client ID:
Sample Info: WG227568-3
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
\\target_server\gg\chem\gcms-p.i\P050318B.b\P5509.D
Y (x10^6)
Min
-Chloromethane (1.667)
-Vinyl Chloride (1.732)
-Bromomethane (1.975)
-Chloroethane (1.975)
-Trichlorofluoromethane (2.182)
-Diethyl Ether (2.418)
-1,1-Dichloroethene (2.625)+
-Iodomethane (2.726)
-Acrolein (2.904)
-Allyl Chloride (3.026)
-Methylene Chloride (3.133)+
-trans-1,2-Dichloroethene (3.290)+
-Methyl tert-butyl ether (3.398)
-Tertiary-butyl alcohol (3.508)
-Acetonitrile (3.691)
-Di-isopropyl ether (3.827)
-Chloroprene (3.955)+
-Acrylonitrile (4.070)
-Ethyl tertiary-butyl ethe (4.306)+
-cis-1,2-Dichloroethene (4.720)
-2,2-Dichloropropane (4.871)
-Bromochloromethane (5.006)+
-Chloroform (5.157)
-Carbon Tetrachloride (5.350)+
-Dibromofluoromethane (5.471)+
-2-Butanone (5.714)+
-Benzene (6.193)
-Propionitrile (6.322)+
-Pentafluorobenzene (6.458)+
-1,2-Dichloroethane (6.594)
-Isobutyl Alcohol (6.787)
-Methylcyclohexane (7.230)+
-1,4-Difluorobenzene (7.380)
-Dibromomethane (7.988)
-1,2-Dichloropropane (8.160)
-Bromodichloromethane (8.296)
-Methyl Methacrylate (8.639)+
-cis-1,3-dichloropropene (9.304)
-Toluene-D8 (9.575)
-Toluene (9.647)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.120)
-4-Methyl-2-pentanone (10.276)+
-Ethyl Methacrylate (10.612)
-Dibromochloromethane (10.766)
-1,3-Dichloropropane (10.898)
-1,2-Dibromoethane (11.048)
-2-Hexanone (11.492)
-Chlorobenzene-D5 (11.799)+
-1-Chlorohexane (11.899)+
-m+p-Xylenes (12.114)
-o-Xylene (12.678)
-Styrene (12.757)+
-Isopropylbenzene (13.100)
-P-Bromofluorobenzene (13.429)
-N-Propylbenzene (13.619)
-2-Chlorotoluene (13.780)
-1,1,2,2-Tetrachloroethane (13.873)+
-4-Chlorotoluene (13.987)
-tert-Butylbenzene (14.244)+
-1,2,4-Trimethylbenzene (14.336)
-sec-Butylbenzene (14.492)
-P-Isopropyltoluene (14.638)+
-1,2,3-Trimethylbenzene (14.831)
1,4-Dichlorobenzene-D4 (14.766)+
-N-Butylbenzene (15.124)
-1,2-Dichlorobenzene (15.267)
-1,2-Dibromo-3-Chloropropa (16.211)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.926)+
-Naphthalene (17.290)
-1,2,3-Trichlorobenzene (17.483)

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5510.D
Report Date: 09-May-2018 12:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050318B.b\P5510.D
Lab Smp Id: WG227568-2
Inj Date : 03-MAY-2018 14:04 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227568-2
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050318B.b\P8A05(68)D.m
Meth Date : 07-May-2018 16:14 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:04 Cal File: P5510.D
Als bottle: 3 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

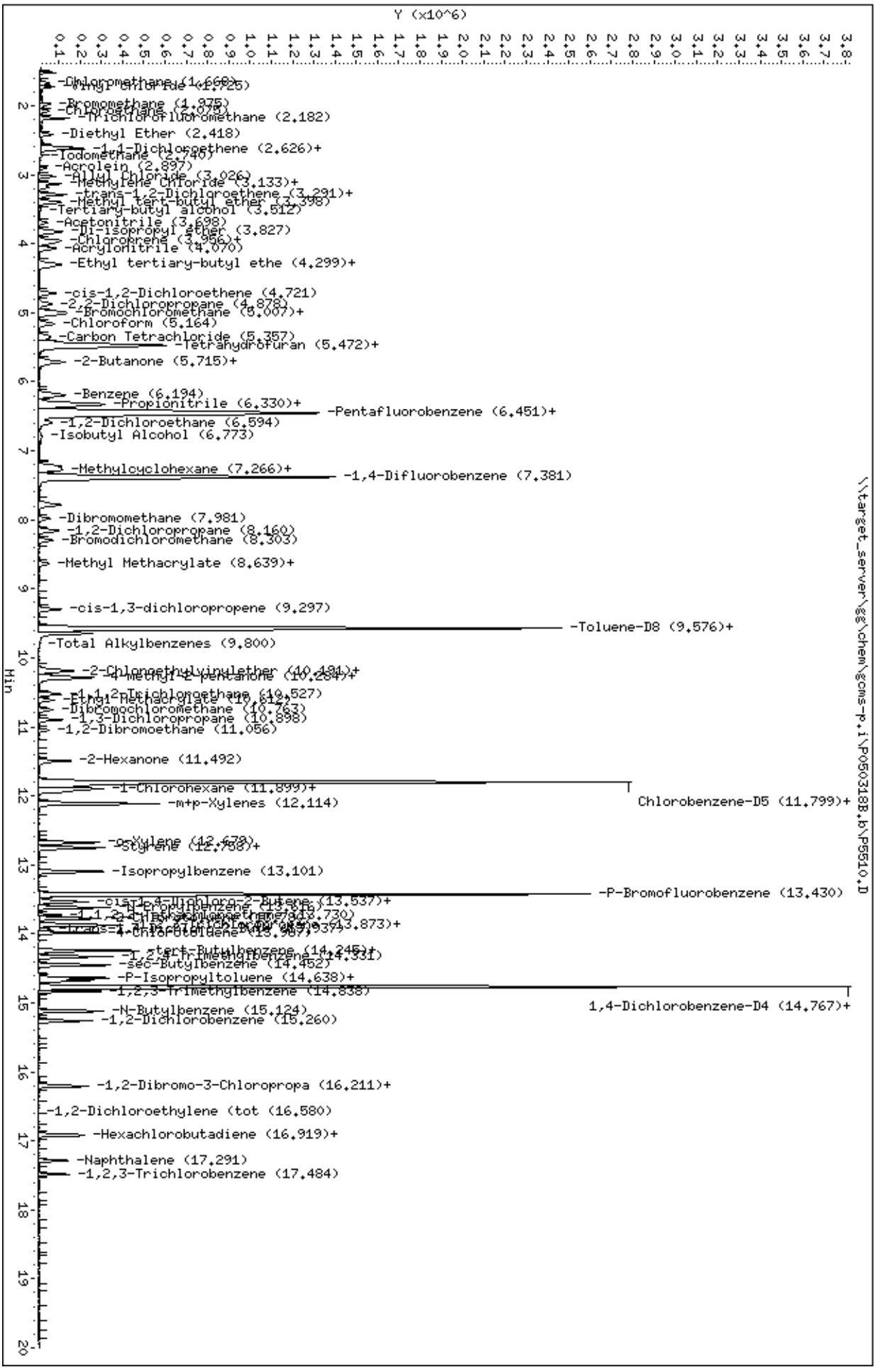
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.517	1.515	(0.236)	49689	5.00000	5.3	
2	Chloromethane	50	1.667	1.673	(0.259)	47156	5.00000	5.3	
3	Vinyl chloride	62	1.732	1.730	(0.269)	54357	5.00000	5.5	
4	Bromomethane	94	1.975	1.973	(0.307)	16615	5.00000	4.3	
5	Chloroethane	64	2.075	2.066	(0.322)	30019	5.00000	5.4	
6	Trichlorofluoromethane	101	2.182	2.173	(0.339)	92657	5.00000	5.4	
7	Diethyl Ether	59	2.418	2.416	(0.376)	32301	5.00000	5.1	
19	Tertiary-butyl alcohol	59	3.512	3.503	(0.546)	12297	25.0000	21.2	
8	1,1-Dichloroethene	96	2.597	2.595	(0.403)	43869	5.00000	5.7	
10	Carbon Disulfide	76	2.625	2.624	(0.408)	136930	5.00000	5.4	
9	Freon-113	151	2.618	2.616	(0.407)	33770	5.00000	4.8	
11	Iodomethane	142	2.740	2.731	(0.426)	12608	5.00000	3.2	
12	Acrolein	56	2.904	2.903	(0.451)	30251	25.0000	24.1	
14	Methylene Chloride	84	3.133	3.131	(0.487)	51538	5.00000	5.4	
15	Acetone	43	3.183	3.181	(0.495)	62267	25.0000	26.2	
45	Isobutyl Alcohol	43	6.772	6.785	(1.052)	4104	100.000	21.6	
16	trans-1,2-Dichloroethene	96	3.283	3.281	(0.510)	52930	5.00000	5.7	
13	Allyl Chloride	41	3.026	3.024	(0.470)	56151	5.00000	4.6	
18	Methyl tert-butyl ether	73	3.397	3.396	(0.528)	134098	5.00000	5.0	
20	Acetonitrile	41	3.698	3.689	(0.575)	59407	50.0000	48.7	
21	Di-isopropyl ether	45	3.826	3.825	(0.595)	139505	5.00000	4.8	
22	Chloroprene	53	3.955	3.946	(0.615)	76617	5.00000	5.1	
39	Propionitrile	54	6.300	6.306	(0.979)	64482	50.0000	47.2	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5510.D
Report Date: 09-May-2018 12:05

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	40	Methacrylonitrile	41	6.329	6.335	(0.983)	273802	50.0000	48.4	
	23	1,1-Dichloroethane	63	3.984	3.982	(0.619)	94403	5.00000	5.4	
	24	Acrylonitrile	52	4.070	4.068	(0.632)	70204	25.0000	23.7	
	25	Ethyl tertiary-butyl ether	59	4.298	4.297	(0.668)	125615	5.00000	4.7	
	26	Vinyl Acetate	43	4.327	4.325	(0.586)	101661	5.00000	4.9	
	27	cis-1,2-Dichloroethene	96	4.720	4.719	(0.733)	50568	5.00000	5.2	
M	98	1,2-Dichloroethylene (total)	96				103498	5.00000	10.9	
	52	Methyl Methacrylate	41	8.639	8.630	(1.171)	32371	5.00000	4.3	
	28	2,2-Dichloropropane	77	4.878	4.876	(0.758)	65064	5.00000	5.0	
	29	Bromochloromethane	128	5.021	5.019	(0.780)	23119	5.00000	5.2	
	31	Chloroform	83	5.156	5.162	(0.801)	91111	5.00000	5.3	
	32	Carbon Tetrachloride	117	5.349	5.348	(0.725)	66845	5.00000	5.2	
	33	Tetrahydrofuran	42	5.428	5.412	(0.843)	64866	25.0000	25.0	
$	34	Dibromofluoromethane	113	5.471	5.469	(0.850)	542248	50.0000	49.6	
	35	1,1,1-Trichloroethane	97	5.471	5.484	(0.850)	82950	5.00000	5.4	
	37	1,1-Dichloropropene	75	5.714	5.705	(0.774)	75546	5.00000	5.4	
	36	2-Butanone	43	5.714	5.720	(0.888)	97374	25.0000	25.1	
	38	Benzene	78	6.193	6.192	(0.839)	210520	5.00000	5.4	
*	41	Pentafluorobenzene	168	6.436	6.442	(1.000)	1097322	50.0000		
	30	Cyclohexane	56	4.992	4.997	(0.776)	87413	5.00000	5.2	
	53	Ethyl Methacrylate	69	10.612	10.610	(1.438)	45277	5.00000	3.9	
$	42	1,2-Dichloroethane-D4	65	6.472	6.470	(1.006)	727750	50.0000	50.2	
	43	Tertiary-amyl methyl ether	73	6.472	6.478	(1.006)	106321	5.00000	4.5	
	44	1,2-Dichloroethane	62	6.594	6.599	(0.893)	78352	5.00000	5.3	
	47	Trichloroethene	95	7.273	7.278	(0.985)	50776	5.00000	5.4	
*	48	1,4-Difluorobenzene	114	7.380	7.378	(1.000)	1782181	50.0000		
	49	Dibromomethane	93	7.981	7.986	(1.081)	29372	5.00000	5.1	
	50	1,2-Dichloropropane	63	8.159	8.158	(1.106)	48679	5.00000	5.1	
	51	Bromodichloromethane	83	8.295	8.301	(1.124)	66951	5.00000	5.1	
	57	cis-1,3-dichloropropene	75	9.303	9.302	(1.261)	79962	5.00000	4.8	
	54	1,4-Dioxane	88	8.639	8.637	(1.171)	6898	100.000	80.6	
$	58	Toluene-D8	98	9.575	9.574	(1.297)	2110902	50.0000	49.9	
	56	2-Chloroethylvinylether	63	10.119	10.203	(1.371)	108	5.00000	5.0	
	59	Toluene	92	9.647	9.645	(1.307)	128430	5.00000	5.3	
	61	4-methyl-2-pentanone	43	10.283	10.274	(1.393)	205733	25.0000	24.2	
	60	Tetrachloroethene	164	10.197	10.196	(0.864)	40686	5.00000	5.5	
	62	trans-1,3-Dichloropropene	75	10.305	10.310	(1.396)	69335	5.00000	4.8	
	63	1,1,2-Trichloroethane	83	10.526	10.525	(1.426)	35212	5.00000	5.0	
	64	Dibromochloromethane	129	10.762	10.753	(0.912)	45946	5.00000	5.0	
	65	1,3-Dichloropropane	76	10.905	10.904	(0.924)	87538	5.00000	5.1	
	66	1,2-Dibromoethane	107	11.055	11.054	(1.498)	44589	5.00000	5.0	
	67	2-Hexanone	43	11.491	11.490	(0.974)	134805	25.0000	23.8	
*	68	Chlorobenzene-D5	117	11.799	11.804	(1.000)	1797123	50.0000		
	69	Chlorobenzene	112	11.820	11.826	(1.002)	145128	5.00000	5.2	
	70	1-Chlorohexane	91	11.849	11.854	(1.004)	76533	5.00000	5.4	
	71	Ethylbenzene	106	11.899	11.905	(1.008)	79928	5.00000	5.2	
	72	1,1,1,2-Tetrachloroethane	131	11.935	11.933	(1.012)	46537	5.00000	5.1	
M	106	Xylenes (total)	106				289232	15.0000	15.8	
	73	m+p-Xylenes	106	12.113	12.112	(1.027)	195801	10.0000	10.6	
	74	o-Xylene	106	12.678	12.677	(1.075)	93431	5.00000	5.2	
	75	Styrene	104	12.757	12.755	(1.081)	155212	5.00000	5.1	
	76	Bromoform	173	12.757	12.755	(1.081)	31205	5.00000	4.9	
	77	Isopropylbenzene	105	13.100	13.099	(0.887)	241884	5.00000	5.4	
$	78	P-Bromofluorobenzene	95	13.429	13.428	(1.820)	918732	50.0000	49.0	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5510.D
Report Date: 09-May-2018 12:05

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	79	cis-1,4-Dichloro-2-Butene	53	13.551	13.549	(0.918)	17479	5.00000	4.4	
	86	trans-1,4-Dichloro-2-Butene	53	13.937	13.935	(0.944)	14853	5.00000	4.8	
	80	Bromobenzene	156	13.536	13.535	(0.917)	58837	5.00000	5.3	
	81	N-Propylbenzene	91	13.615	13.621	(0.922)	291685	5.00000	5.4	
	82	1,1,2,2-Tetrachloroethane	83	13.722	13.728	(0.929)	59163	5.00000	5.3	
	85	1,3,5-Trimethylbenzene	105	13.872	13.878	(0.939)	196005	5.00000	5.2	
	83	2-Chlorotoluene	91	13.779	13.778	(0.933)	168545	5.00000	5.3	
	84	1,2,3-Trichloropropane	75	13.865	13.864	(0.939)	51962	5.00000	5.2	
	87	4-Chlorotoluene	91	13.987	13.985	(0.947)	180535	5.00000	5.3	
	88	tert-Butylbenzene	119	14.244	14.243	(0.965)	189307	5.00000	5.3	
	89	Pentachloroethane	165	14.244	14.250	(0.965)	23275	5.00000	4.7	
	90	1,2,4-Trimethylbenzene	105	14.330	14.328	(0.970)	207563	5.00000	5.3	
	92	P-Isopropyltoluene	119	14.637	14.636	(0.991)	199543	5.00000	5.3	
	93	1,3-Dichlorobenzene	146	14.673	14.679	(0.994)	102319	5.00000	5.2	
*	94	1,4-Dichlorobenzene-D4	152	14.766	14.772	(1.000)	983806	50.0000		
	95	1,4-Dichlorobenzene	146	14.788	14.786	(1.001)	110310	5.00000	5.2	
	97	N-Butylbenzene	91	15.124	15.122	(1.024)	181570	5.00000	5.3	
	91	sec-Butylbenzene	105	14.452	14.457	(0.979)	251749	5.00000	5.4	
	99	1,2-Dichlorobenzene	146	15.267	15.265	(1.034)	97301	5.00000	5.2	
	100	1,2-Dibromo-3-Chloropropane	157	16.175	16.180	(1.095)	9790	5.00000	4.8	
	101	1,3,5-Trichlorobenzene	180	16.211	16.209	(1.098)	66337	5.00000	5.0	
	102	Hexachlorobutadiene	225	16.904	16.910	(1.145)	25952	5.00000	5.2	
	103	1,2,4-Trichlorobenzene	180	16.933	16.931	(1.147)	56264	5.00000	4.9	
	96	1,2,3-Trimethylbenzene	105	14.838	14.836	(1.005)	190148	5.00000	4.9	
	104	Naphthalene	128	17.290	17.289	(1.171)	98475	5.00000	4.4	
	105	1,2,3-Trichlorobenzene	180	17.483	17.489	(1.184)	41486	5.00000	4.8	
	17	Methyl Acetate	43	3.305	3.303	(0.513)	35241	5.00000	5.0	
	46	Methylcyclohexane	83	7.230	7.228	(1.123)	74727	5.00000	4.9	
M	55	Total Alkylbenzenes	100				1517422	5.00000	37.2	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Date : 03-MAY-2018 14:04
Client ID:
Sample Info: WG227568-2
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
\\target_server\gg\chem\gcms-p.i\P050318B.b\P5510.D
Y (x10^6)
Min
-Chloromethane (1.668)
-Vinyl Chloride (1.725)
-Bromomethane (1.975)
-Chloroethane (2.070)
-Trichlorofluoromethane (2.182)
-Diethyl Ether (2.418)
-1,1-Dichloroethene (2.626)+
-Iodomethane (2.740)
-Acrolein (2.897)
-Allyl Chloride (3.026)
-Methylene Chloride (3.133)+
-trans-1,2-Dichloroethene (3.291)+
-Methyl tert-butyl ether (3.398)
-Tertiary-butyl alcohol (3.512)
-Acetonitrile (3.698)
-Di-isopropyl ether (3.827)
-Chloroprene (3.956)+
-Acrylonitrile (4.070)
-Ethyl tertiary-butyl ethe (4.299)+
-cis-1,2-Dichloroethene (4.721)
-2,2-Dichloropropane (4.878)
-Bromochloromethane (5.007)+
-Chloroform (5.164)
-Carbon Tetrachloride (5.357)
-Tetrahydrofuran (5.472)+
-2-Butanone (5.715)+
-Benzene (6.194)
-Propionitrile (6.330)+
-Pentafluorobenzene (6.451)+
-1,2-Dichloroethane (6.594)
-Isobutyl Alcohol (6.773)
-Methylcyclohexane (7.266)+
-1,4-Difluorobenzene (7.381)
-Dibromomethane (7.981)
-1,2-Dichloropropane (8.160)
-Bromodichloromethane (8.303)
-Methyl Methacrylate (8.639)+
-cis-1,3-dichloropropene (9.297)
-Toluene-D8 (9.576)+
-Total Alkylbenzenes (9.800)
-2-Chloroethylvinylether (10.481)+
-4-Methyl-2-pentanone (10.284)+
-1,1,2-Trichloroethane (10.527)
-Ethyl Methacrylate (10.612)
-Dibromochloromethane (10.763)
-1,3-Dichloropropane (10.898)
-1,2-Dibromoethane (11.056)
-2-Hexanone (11.492)
-1-Chlorohexane (11.899)+
Chlorobenzene-D5 (11.799)+
-m+p-Xylenes (12.114)
-o-Xylene (12.678)
-Styrene (12.768)+
-Isopropylbenzene (13.101)
-P-Bromofluorobenzene (13.430)
-cis-1,4-Dichloro-2-Butene (13.537)+
-n-Propylbenzene (13.576)
-1,1,2,2-Tetrachloroethane (13.730)
-trans-1,4-Dichloro-2-Butene (13.873)+
-4-Chlorotoluene (13.907)
-1,3,5-Trimethylbenzene (14.331)
-tert-Butylbenzene (14.245)+
-sec-Butylbenzene (14.452)
-P-Isopropyltoluene (14.638)+
-1,2,3-Trimethylbenzene (14.838)
1,4-Dichlorobenzene-D4 (14.767)+
-N-Butylbenzene (15.124)
-1,2-Dichlorobenzene (15.260)
-1,2-Dibromo-3-Chloropropa (16.211)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.919)+
-Naphthalene (17.291)
-1,2,3-Trichlorobenzene (17.484)

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5511.D
Report Date: 09-May-2018 12:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050318B.b\P5511.D
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Inj Date : 03-MAY-2018 14:39 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227568-1
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050318B.b\P8A05(68)D.m
Meth Date : 07-May-2018 16:14 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 4 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.514	1.515	(0.235)	10141	1.00000	1.1	
2	Chloromethane	50	1.664	1.673	(0.258)	9842	1.00000	1.1	
3	Vinyl chloride	62	1.729	1.730	(0.268)	10359	1.00000	1.1	
4	Bromomethane	94	1.986	1.973	(0.308)	3898	1.00000	2.0	
5	Chloroethane	64	2.079	2.066	(0.323)	6482	1.00000	1.2	
6	Trichlorofluoromethane	101	2.179	2.173	(0.338)	19498	1.00000	1.2	
7	Diethyl Ether	59	2.415	2.416	(0.375)	6370	1.00000	1.0	
19	Tertiary-butyl alcohol	59	3.509	3.503	(0.545)	2707	5.00000	5.2	
8	1,1-Dichloroethene	96	2.587	2.595	(0.402)	6753	1.00000	0.97(a)	
10	Carbon Disulfide	76	2.623	2.624	(0.407)	21476	1.00000	0.91(a)	
9	Freon-113	151	2.637	2.616	(0.409)	6766	1.00000	1.0	
11	Iodomethane	142	2.730	2.731	(0.424)	1379	1.00000	2.0	
12	Acrolein	56	2.901	2.903	(0.451)	5481	5.00000	4.6(a)	
14	Methylene Chloride	84	3.130	3.131	(0.486)	9805	1.00000	1.1(a)	
15	Acetone	43	3.187	3.181	(0.495)	10246	5.00000	4.7(a)	
45	Isobutyl Alcohol	43	6.791	6.785	(1.054)	2922	20.0000	14.6(Ta)	
16	trans-1,2-Dichloroethene	96	3.280	3.281	(0.509)	7190	1.00000	0.86(a)	
13	Allyl Chloride	41	3.016	3.024	(0.468)	12730	1.00000	1.1	
18	Methyl tert-butyl ether	73	3.395	3.396	(0.527)	21180	1.00000	0.86(a)	
20	Acetonitrile	41	3.695	3.689	(0.574)	12712	10.0000	11.1(a)	
21	Di-isopropyl ether	45	3.824	3.825	(0.594)	29080	1.00000	1.0	
22	Chloroprene	53	3.960	3.946	(0.615)	13305	1.00000	0.95(a)	
39	Propionitrile	54	6.298	6.306	(0.978)	13122	10.0000	9.9(a)	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5511.D
Report Date: 09-May-2018 12:05

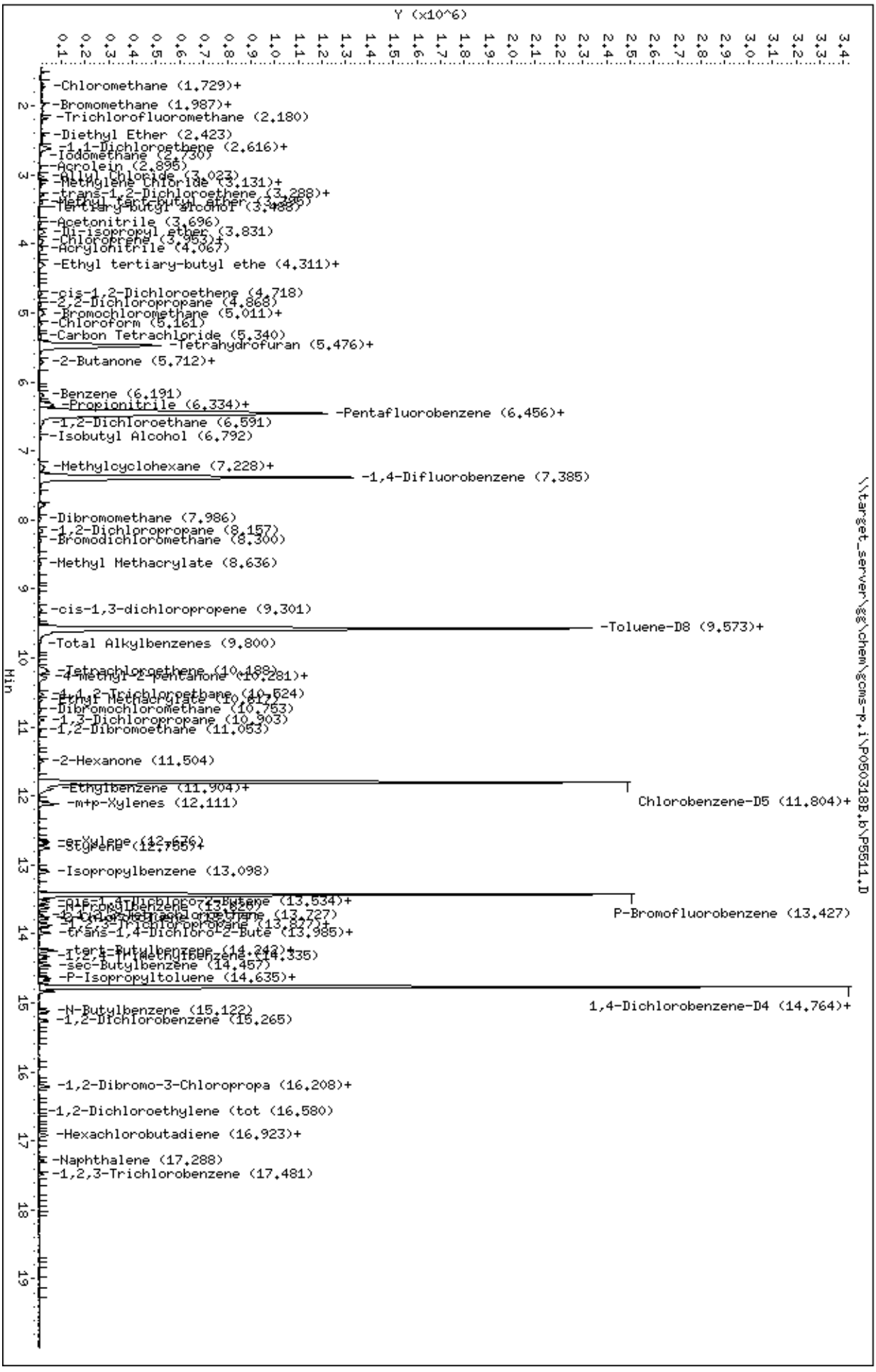
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	40 Methacrylonitrile	41	6.326	6.335	(0.982)	52013	10.0000	9.8(a)	
	23 1,1-Dichloroethane	63	3.988	3.982	(0.619)	14531	1.00000	0.90(a)	
	24 Acrylonitrile	52	4.067	4.068	(0.631)	14533	5.00000	5.1	
	25 Ethyl tertiary-butyl ether	59	4.303	4.297	(0.668)	26510	1.00000	1.0	
	26 Vinyl Acetate	43	4.324	4.325	(0.586)	15322	1.00000	0.79(a)	
	27 cis-1,2-Dichloroethene	96	4.732	4.719	(0.735)	7865	1.00000	0.87(a)	
M	98 1,2-Dichloroethylene (total)	96				15055	1.00000	1.7(a)	
	52 Methyl Methacrylate	41	8.643	8.630	(1.170)	7084	1.00000	0.95(a)	
	28 2,2-Dichloropropane	77	4.889	4.876	(0.759)	9612	1.00000	(a)	
	29 Bromochloromethane	128	5.025	5.019	(0.780)	3967	1.00000	0.99(a)	
	31 Chloroform	83	5.154	5.162	(0.800)	14120	1.00000	0.89(a)	
	32 Carbon Tetrachloride	117	5.347	5.348	(0.724)	9417	1.00000	0.79(a)	
	33 Tetrahydrofuran	42	5.418	5.412	(0.841)	9694	5.00000	4.0(a)	
$	34 Dibromofluoromethane	113	5.468	5.469	(0.849)	516959	50.0000	49.9	
	35 1,1,1-Trichloroethane	97	5.483	5.484	(0.851)	11971	1.00000	0.85(a)	
	37 1,1-Dichloropropene	75	5.697	5.705	(0.772)	11619	1.00000	0.90(a)	
	36 2-Butanone	43	5.740	5.720	(0.891)	14457	5.00000	2.0(a)	
	38 Benzene	78	6.183	6.192	(0.837)	30330	1.00000	0.85(a)	
*	41 Pentafluorobenzene	168	6.441	6.442	(1.000)	1047294	50.0000		
	30 Cyclohexane	56	4.989	4.997	(0.775)	12579	1.00000	0.83(a)	
	53 Ethyl Methacrylate	69	10.616	10.610	(1.438)	8031	1.00000	2.2	
$	42 1,2-Dichloroethane-D4	65	6.469	6.470	(1.004)	698331	50.0000	51.1	
	43 Tertiary-amyl methyl ether	73	6.462	6.478	(1.003)	22724	1.00000	0.99(a)	
	44 1,2-Dichloroethane	62	6.591	6.599	(0.893)	14745	1.00000	1.0	
	47 Trichloroethene	95	7.263	7.278	(0.984)	7997	1.00000	0.90(a)	
*	48 1,4-Difluorobenzene	114	7.385	7.378	(1.000)	1701781	50.0000		
	49 Dibromomethane	93	7.978	7.986	(1.080)	4583	1.00000	0.86(a)	
	50 1,2-Dichloropropane	63	8.164	8.158	(1.106)	7892	1.00000	0.87(Ta)	
	51 Bromodichloromethane	83	8.307	8.301	(1.125)	10332	1.00000	0.84(a)	
	57 cis-1,3-dichloropropene	75	9.301	9.302	(1.259)	11486	1.00000	0.74(a)	
$	58 Toluene-D8	98	9.573	9.574	(1.296)	2025953	50.0000	50.2	
	59 Toluene	92	9.651	9.645	(1.307)	19984	1.00000	0.89(a)	
	61 4-methyl-2-pentanone	43	10.280	10.274	(1.392)	28379	5.00000	3.7(a)	
	60 Tetrachloroethene	164	10.187	10.196	(0.863)	6561	1.00000	0.95(a)	
	62 trans-1,3-Dichloropropene	75	10.302	10.310	(1.395)	9096	1.00000	1.8	
	63 1,1,2-Trichloroethane	83	10.531	10.525	(1.426)	4369	1.00000	1.5	
	64 Dibromochloromethane	129	10.767	10.753	(0.912)	7483	1.00000	1.7	
	65 1,3-Dichloropropane	76	10.895	10.904	(0.923)	14480	1.00000	0.91(a)	
	66 1,2-Dibromoethane	107	11.053	11.054	(1.497)	6945	1.00000	0.84(Ta)	
	67 2-Hexanone	43	11.496	11.490	(0.974)	18237	5.00000	3.6(a)	
*	68 Chlorobenzene-D5	117	11.803	11.804	(1.000)	1708773	50.0000		
	69 Chlorobenzene	112	11.825	11.826	(1.002)	22771	1.00000	0.89(a)	
	70 1-Chlorohexane	91	11.861	11.854	(1.005)	10123	1.00000	0.81(a)	
	71 Ethylbenzene	106	11.903	11.905	(1.008)	12276	1.00000	0.87(a)	
	72 1,1,1,2-Tetrachloroethane	131	11.939	11.933	(1.012)	5661	1.00000	1.6	
M	106 Xylenes (total)	106				41137	5.00000	2.4(a)	
	73 m+p-Xylenes	106	12.111	12.112	(1.026)	28649	2.00000	1.7(a)	
	74 o-Xylene	106	12.683	12.677	(1.075)	12488	1.00000	0.76(a)	
	75 Styrene	104	12.754	12.755	(1.081)	19867	1.00000	0.72(a)	
	76 Bromoform	173	12.754	12.755	(1.081)	4667	1.00000	0.76(a)	
	77 Isopropylbenzene	105	13.098	13.099	(0.887)	32635	1.00000	0.83(a)	
$	78 P-Bromofluorobenzene	95	13.426	13.428	(1.818)	867274	50.0000	48.5	
	79 cis-1,4-Dichloro-2-Butene	53	13.548	13.549	(0.917)	3693	1.00000	0.98(a)	
	86 trans-1,4-Dichloro-2-Butene	53	13.941	13.935	(0.944)	2408	1.00000	0.84(a)	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5511.D
Report Date: 09-May-2018 12:05

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	80	Bromobenzene	156	13.527	13.535	(0.916)	9549	1.00000	0.92(a)	
	81	N-Propylbenzene	91	13.612	13.621	(0.922)	42329	1.00000	0.89(a)	
	82	1,1,2,2-Tetrachloroethane	83	13.727	13.728	(0.929)	9423	1.00000	0.92(a)	
	85	1,3,5-Trimethylbenzene	105	13.877	13.878	(0.939)	26869	1.00000	0.80(a)	
	83	2-Chlorotoluene	91	13.777	13.778	(0.933)	25926	1.00000	0.90(a)	
	84	1,2,3-Trichloropropane	75	13.855	13.864	(0.938)	8772	1.00000	0.94(a)	
	87	4-Chlorotoluene	91	13.984	13.985	(0.947)	27876	1.00000	0.91(a)	
	88	tert-Butylbenzene	119	14.242	14.243	(0.964)	26526	1.00000	0.82(a)	
	89	Pentachloroethane	165	14.249	14.250	(0.965)	3858	1.00000	0.82(a)	
	90	1,2,4-Trimethylbenzene	105	14.334	14.328	(0.970)	27849	1.00000	0.80(a)	
	92	P-Isopropyltoluene	119	14.635	14.636	(0.991)	26796	1.00000	0.80(a)	
	93	1,3-Dichlorobenzene	146	14.678	14.679	(0.994)	16717	1.00000	0.91(a)	
*	94	1,4-Dichlorobenzene-D4	152	14.771	14.772	(1.000)	929784	50.0000		
	95	1,4-Dichlorobenzene	146	14.785	14.786	(1.001)	18291	1.00000	0.94(a)	
	97	N-Butylbenzene	91	15.121	15.122	(1.024)	24834	1.00000	0.82(a)	
	91	sec-Butylbenzene	105	14.456	14.457	(0.979)	35305	1.00000	0.86(a)	
	99	1,2-Dichlorobenzene	146	15.264	15.265	(1.033)	17834	1.00000	1.0	
	100	1,2-Dibromo-3-Chloropropane	157	16.172	16.180	(1.095)	1033	1.00000	1.7	
	101	1,3,5-Trichlorobenzene	180	16.208	16.209	(1.097)	14114	1.00000	1.1	
	102	Hexachlorobutadiene	225	16.909	16.910	(1.145)	4407	1.00000	0.94(a)	
	103	1,2,4-Trichlorobenzene	180	16.923	16.931	(1.146)	7299	1.00000	2.0	
	96	1,2,3-Trimethylbenzene	105	14.835	14.836	(1.004)	37305	1.00000	1.0	
	104	Naphthalene	128	17.287	17.289	(1.170)	13965	1.00000	1.5	
	105	1,2,3-Trichlorobenzene	180	17.488	17.489	(1.184)	6836	1.00000	0.82(a)	
	17	Methyl Acetate	43	3.302	3.303	(0.513)	7386	1.00000	1.1	
	46	Methylcyclohexane	83	7.227	7.228	(1.122)	13250	1.00000	0.92(a)	
M	55	Total Alkylbenzenes	100				210508	1.00000	5.8(a)	

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).


Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5511.D
Date : 03-MAY-2018 14:39
Client ID:
Sample Info: WG227568-1
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
\\target_server\gg\chem\gcms-p.i\P050318B.b\P5511.D
Y (x10^6)
Min
-Chloromethane (1.729)+
-Bromomethane (1.987)+
-Trichlorofluoromethane (2.180)
-Diethyl Ether (2.423)
-1,1-Dichloroethene (2.616)+
-Iodomethane (2.730)
-Acrolein (2.895)
-Allyl Chloride (3.023)
-Methylene Chloride (3.131)+
-trans-1,2-Dichloroethene (3.288)+
-Methyl tertiary-butyl ether (3.335)
-Tertiary-butyl alcohol (3.488)
-Acetonitrile (3.696)
-Di-isopropyl ether (3.831)
-Chloroprene (3.952)+
-Acrylonitrile (4.067)
-Ethyl tertiary-butyl ethe (4.311)+
-cis-1,2-Dichloroethene (4.718)
-2,2-Dichloropropane (4.868)
-Bromochloromethane (5.011)+
-Chloroform (5.161)
-Carbon Tetrachloride (5.340)
-Tetrahydrofuran (5.476)+
-2-Butanone (5.712)+
-Benzene (6.191)
-Propionitrile (6.334)+
-Pentafluorobenzene (6.456)+
-1,2-Dichloroethane (6.591)
-Isobutyl Alcohol (6.792)
-Methylcyclohexane (7.228)+
-1,4-Difluorobenzene (7.385)
-Dibromomethane (7.986)
-1,2-Dichloropropane (8.157)
-Bromodichloromethane (8.300)
-Methyl Methacrylate (8.636)
-cis-1,3-dichloropropene (9.301)
-Toluene-D8 (9.573)+
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.189)
-4-Methyl-2-pentanone (10.281)+
-1,1,2-Trichloroethane (10.524)
-Ethyl Methacrylate (10.617)
-Dibromochloromethane (10.753)
-1,3-Dichloropropane (10.903)
-1,2-Dibromoethane (11.053)
-2-Hexanone (11.504)
-Ethylbenzene (11.904)+
-m+p-Xylenes (12.111)
Chlorobenzene-D5 (11.804)+
-o-Xylene (12.676)
-Styrene (12.755)+
-Isopropylbenzene (13.098)
-cis-1,4-Dichloro-2-Butene (13.534)+
-n-Propylbenzene (13.926)
-2-Chlorotoluene (13.727)
-1,2,3-Trichloropropane (13.827)+
-trans-1,4-Dichloro-2-Bute (13.985)+
P-Bromofluorobenzene (13.427)
-tert-Butylbenzene (14.243)+
-1,2,4-Trimethylbenzene (14.335)
-sec-Butylbenzene (14.457)
-P-Isopropyltoluene (14.635)+
1,4-Dichlorobenzene-D4 (14.764)+
-N-Butylbenzene (15.122)
-1,2-Dichlorobenzene (15.265)
-1,2-Dibromo-3-Chloropropa (16.208)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.923)+
-Naphthalene (17.288)
-1,2,3-Trichlorobenzene (17.481)

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5512.D
Report Date: 09-May-2018 12:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050318B.b\P5512.D
Lab Smp Id: WG227568-6
Inj Date : 03-MAY-2018 15:13 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227568-6
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050318B.b\P8A05(68)D.m
Meth Date : 07-May-2018 16:14 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 15:13 Cal File: P5512.D
Als bottle: 5 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.515	1.515	(0.235)	1372154	150.000	140	
2	Chloromethane	50	1.665	1.673	(0.259)	1394606	150.000	148	
3	Vinyl chloride	62	1.730	1.730	(0.269)	1509203	150.000	147	
4	Bromomethane	94	1.973	1.973	(0.306)	842644	150.000	196(A)	
5	Chloroethane	64	2.059	2.066	(0.320)	788882	150.000	132	
6	Trichlorofluoromethane	101	2.173	2.173	(0.337)	2570409	150.000	141	
7	Diethyl Ether	59	2.416	2.416	(0.375)	995889	150.000	151(A)	
19	Tertiary-butyl alcohol	59	3.503	3.503	(0.544)	364573	750.000	640	
8	1,1-Dichloroethene	96	2.595	2.595	(0.403)	1092205	150.000	144	
10	Carbon Disulfide	76	2.624	2.624	(0.407)	3929582	150.000	154(A)	
9	Freon-113	151	2.624	2.616	(0.407)	1080068	150.000	150(A)	
11	Iodomethane	142	2.731	2.731	(0.424)	828894	150.000	215(A)	
12	Acrolein	56	2.902	2.903	(0.451)	965553	750.000	765(A)	
14	Methylene Chloride	84	3.131	3.131	(0.486)	1380500	150.000	141	
15	Acetone	43	3.181	3.181	(0.494)	1668172	750.000	722	
45	Isobutyl Alcohol	43	6.785	6.785	(1.053)	822172	3000.00	4660(A)	
16	trans-1,2-Dichloroethene	96	3.289	3.281	(0.511)	1344702	150.000	148	
13	Allyl Chloride	41	3.024	3.024	(0.469)	1858409	150.000	147	
18	Methyl tert-butyl ether	73	3.396	3.396	(0.527)	3956363	150.000	151(A)	
20	Acetonitrile	41	3.689	3.689	(0.573)	1678494	1500.00	1350	
21	Di-isopropyl ether	45	3.825	3.825	(0.594)	4513743	150.000	150(A)	
22	Chloroprene	53	3.954	3.946	(0.614)	2225005	150.000	148	
39	Propionitrile	54	6.306	6.306	(0.979)	2200513	1500.00	1560(A)	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5512.D
Report Date: 09-May-2018 12:05

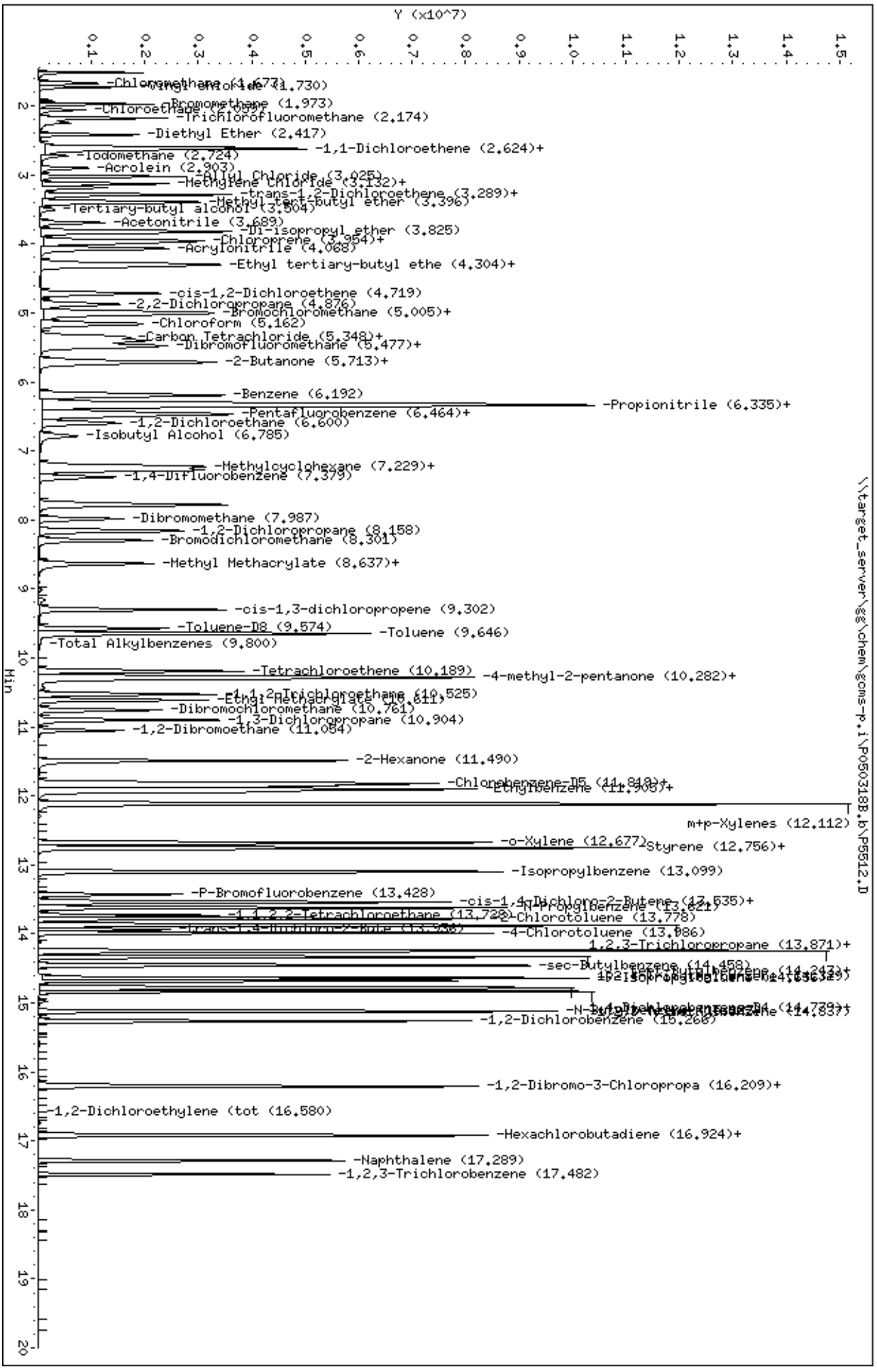
			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	40	Methacrylonitrile	41	6.335	6.335	(0.983)	8569935	1500.00	1500	
	23	1,1-Dichloroethane	63	3.982	3.982	(0.618)	2573429	150.000	148	
	24	Acrylonitrile	52	4.068	4.068	(0.632)	2321394	750.000	759(A)	
	25	Ethyl tertiary-butyl ether	59	4.297	4.297	(0.667)	4235933	150.000	153(A)	
	26	Vinyl Acetate	43	4.325	4.325	(0.586)	3284195	150.000	164(A)	
	27	cis-1,2-Dichloroethene	96	4.719	4.719	(0.733)	1488370	150.000	155(A)	
M	98	1,2-Dichloroethylene (total)	96				2833072	150.000	303	
	52	Methyl Methacrylate	41	8.630	8.630	(1.170)	1290102	150.000	168(A)	
	28	2,2-Dichloropropane	77	4.876	4.876	(0.757)	1720086	150.000	157(A)	
	29	Bromochloromethane	128	5.026	5.019	(0.780)	591765	150.000	136	
	31	Chloroform	83	5.162	5.162	(0.801)	2570590	150.000	152(A)	
	32	Carbon Tetrachloride	117	5.348	5.348	(0.725)	1955874	150.000	159(A)	
	33	Tetrahydrofuran	42	5.405	5.412	(0.839)	2029757	750.000	790(A)	
$	34	Dibromofluoromethane	113	5.476	5.469	(0.850)	550980	50.0000	49.5	
	35	1,1,1-Trichloroethane	97	5.484	5.484	(0.851)	2304714	150.000	152(A)	
	37	1,1-Dichloropropene	75	5.705	5.705	(0.773)	2078928	150.000	154(A)	
	36	2-Butanone	43	5.720	5.720	(0.888)	2852256	750.000	844(A)	
	38	Benzene	78	6.192	6.192	(0.839)	5792391	150.000	155(A)	
*	41	Pentafluorobenzene	168	6.442	6.442	(1.000)	1122253	50.0000		
	30	Cyclohexane	56	4.997	4.997	(0.776)	2459434	150.000	151(A)	
	53	Ethyl Methacrylate	69	10.610	10.610	(1.438)	2144203	150.000	187(A)	
$	42	1,2-Dichloroethane-D4	65	6.470	6.470	(1.004)	728433	50.0000	49.2	
	43	Tertiary-amyl methyl ether	73	6.478	6.478	(1.006)	3873684	150.000	158(A)	
	44	1,2-Dichloroethane	62	6.599	6.599	(0.894)	2141021	150.000	145	
	47	Trichloroethene	95	7.278	7.278	(0.986)	1445217	150.000	157(A)	
*	48	1,4-Difluorobenzene	114	7.378	7.378	(1.000)	1779921	50.0000		
	49	Dibromomethane	93	7.986	7.986	(1.082)	862532	150.000	155(A)	
	50	1,2-Dichloropropane	63	8.158	8.158	(1.106)	1520043	150.000	162(A)	
	51	Bromodichloromethane	83	8.301	8.301	(1.125)	2081067	150.000	162(A)	
	57	cis-1,3-dichloropropene	75	9.302	9.302	(1.261)	2702868	150.000	169(A)	
	54	1,4-Dioxane	88	8.637	8.637	(1.171)	172791	3000.00	2200	
$	58	Toluene-D8	98	9.574	9.574	(1.297)	2118091	50.0000	50.1	
	59	Toluene	92	9.645	9.645	(1.307)	3667490	150.000	155(A)	
	61	4-methyl-2-pentanone	43	10.274	10.274	(1.392)	6449582	750.000	806(A)	
	60	Tetrachloroethene	164	10.188	10.196	(0.863)	1131010	150.000	149	
	62	trans-1,3-Dichloropropene	75	10.310	10.310	(1.397)	2431609	150.000	175(A)	
	63	1,1,2-Trichloroethane	83	10.524	10.525	(1.426)	1104065	150.000	168(A)	
	64	Dibromochloromethane	129	10.760	10.753	(0.912)	1535265	150.000	174(A)	
	65	1,3-Dichloropropane	76	10.903	10.904	(0.924)	2670144	150.000	154(A)	
	66	1,2-Dibromoethane	107	11.054	11.054	(1.498)	1350793	150.000	158(A)	
	67	2-Hexanone	43	11.490	11.490	(0.973)	4527919	750.000	817(A)	
*	68	Chlorobenzene-D5	117	11.804	11.804	(1.000)	1868221	50.0000		
	69	Chlorobenzene	112	11.826	11.826	(1.002)	4272284	150.000	153(A)	
	70	1-Chlorohexane	91	11.854	11.854	(1.004)	2056756	150.000	150	
	71	Ethylbenzene	106	11.904	11.905	(1.008)	2382775	150.000	155(A)	
	72	1,1,1,2-Tetrachloroethane	131	11.940	11.933	(1.012)	1495615	150.000	168(A)	
M	106	Xylenes (total)	106				8705074	150.000	476	
	73	m+p-Xylenes	106	12.112	12.112	(1.026)	5831539	300.000	314(A)	
	74	o-Xylene	106	12.677	12.677	(1.074)	2873535	150.000	162(A)	
	75	Styrene	104	12.755	12.755	(1.081)	4943346	150.000	165(A)	
	76	Bromoform	173	12.755	12.755	(1.081)	1152267	150.000	177(A)	
	77	Isopropylbenzene	105	13.099	13.099	(0.887)	6691866	150.000	145	
$	78	P-Bromofluorobenzene	95	13.427	13.428	(1.820)	959359	50.0000	51.3	
	79	cis-1,4-Dichloro-2-Butene	53	13.549	13.549	(0.917)	688447	150.000	156(A)	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5512.D
Report Date: 09-May-2018 12:05

		QUANT SIG					AMOUNTS CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	86 trans-1,4-Dichloro-2-Butene	53	13.935	13.935	(0.943)	560223	150.000	168(A)	
	80 Bromobenzene	156	13.535	13.535	(0.916)	1828296	150.000	152(A)	
	81 N-Propylbenzene	91	13.621	13.621	(0.922)	7611291	150.000	136	
	82 1,1,2,2-Tetrachloroethane	83	13.728	13.728	(0.929)	1787281	150.000	149	
	85 1,3,5-Trimethylbenzene	105	13.878	13.878	(0.939)	5906082	150.000	151(A)	
	83 2-Chlorotoluene	91	13.778	13.778	(0.933)	4951489	150.000	146	
	84 1,2,3-Trichloropropane	75	13.864	13.864	(0.939)	1677432	150.000	153(A)	
	87 4-Chlorotoluene	91	13.985	13.985	(0.947)	5207290	150.000	144	
	88 tert-Butylbenzene	119	14.243	14.243	(0.964)	5810200	150.000	154(A)	
	89 Pentachloroethane	165	14.250	14.250	(0.965)	930236	150.000	172(A)	
	90 1,2,4-Trimethylbenzene	105	14.328	14.328	(0.970)	5999154	150.000	148	
	92 P-Isopropyltoluene	119	14.636	14.636	(0.991)	5945741	150.000	152(A)	
	93 1,3-Dichlorobenzene	146	14.679	14.679	(0.994)	3275727	150.000	153(A)	
*	94 1,4-Dichlorobenzene-D4	152	14.772	14.772	(1.000)	1088556	50.0000		
	95 1,4-Dichlorobenzene	146	14.786	14.786	(1.001)	3433247	150.000	150(A)	
	97 N-Butylbenzene	91	15.122	15.122	(1.024)	5260885	150.000	149	
	91 sec-Butylbenzene	105	14.457	14.457	(0.979)	6822710	150.000	142	
	99 1,2-Dichlorobenzene	146	15.265	15.265	(1.033)	3122472	150.000	150(A)	
	100 1,2-Dibromo-3-Chloropropane	157	16.180	16.180	(1.095)	375489	150.000	179(A)	
	101 1,3,5-Trichlorobenzene	180	16.209	16.209	(1.097)	2414709	150.000	157(A)	
	102 Hexachlorobutadiene	225	16.910	16.910	(1.145)	855964	150.000	157(A)	
	103 1,2,4-Trichlorobenzene	180	16.931	16.931	(1.146)	2118253	150.000	174(A)	
	96 1,2,3-Trimethylbenzene	105	14.836	14.836	(1.004)	6098182	150.000	143	
	104 Naphthalene	128	17.289	17.289	(1.170)	4197177	150.000	176(A)	
	105 1,2,3-Trichlorobenzene	180	17.489	17.489	(1.184)	1610836	150.000	169(A)	
	17 Methyl Acetate	43	3.303	3.303	(0.513)	1050897	150.000	144	
	46 Methylcyclohexane	83	7.228	7.228	(1.122)	2309658	150.000	151(A)	
M	55 Total Alkylbenzenes	100				43356063	150.000	1030	

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.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Date : 03-MAY-2018 15:13
Client ID:
Sample Info: WG227568-6
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
\\target_server\gg\chem\gcms-p.i\P050318B.b\P5512.D
Y (x10^7)
Min
-Chloromethane (1.677)
-Vinyl chloride (1.730)
-Bromomethane (1.973)
-Chloroethane (2.009)
-Trichlorofluoromethane (2.174)
-Diethyl Ether (2.417)
-1,1-Dichloroethene (2.624)+
-Iodomethane (2.724)
-Acrolein (2.903)
-Allyl Chloride (3.025)
-Methylene Chloride (3.132)+
-trans-1,2-Dichloroethene (3.289)+
-Methyl tert-butyl ether (3.396)
-Tertiary-butyl alcohol (3.504)
-Acetonitrile (3.689)
-Di-isopropyl ether (3.825)
-Chloroprene (3.964)+
-Acrylonitrile (4.068)
-Ethyl tertiary-butyl ethe (4.304)+
-cis-1,2-Dichloroethene (4.719)
-2,2-Dichloropropane (4.876)
-Bromochloromethane (5.005)+
-Chloroform (5.162)
-Carbon Tetrachloride (5.348)+
-Dibromofluoromethane (5.477)+
-2-Butanone (5.713)+
-Benzene (6.192)
-Propionitrile (6.335)+
-Pentafluorobenzene (6.464)+
-1,2-Dichloroethane (6.600)
-Isobutyl Alcohol (6.785)
-Methylcyclohexane (7.229)+
-1,4-Difluorobenzene (7.379)
-Dibromomethane (7.987)
-1,2-Dichloropropane (8.158)
-Bromodichloromethane (8.301)
-Methyl Methacrylate (8.637)+
-cis-1,3-dichloropropene (9.302)
-Toluene-D8 (9.574)
-Toluene (9.646)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.189)
-4-methyl-2-pentanone (10.282)+
-1,1,2-Trichloroethane (10.525)
-Ethyl Methacrylate (10.611)
-Dibromochloromethane (10.761)
-1,3-Dichloropropane (10.904)
-1,2-Dibromoethane (11.084)
-2-Hexanone (11.490)
-Chlorobenzene-D5 (11.848)+
-Ethylbenzene (11.905)+
m+p-Xylenes (12.112)
-o-Xylene (12.677)
-Styrene (12.756)+
-Isopropylbenzene (13.099)
-P-Bromofluorobenzene (13.428)
-cis-1,4-Dichloro-2-Butene (13.535)+
-N-Propylbenzene (13.621)
-1,1,2,2-Tetrachloroethane (13.728)
-2-Chlorotoluene (13.778)
-4-Chlorotoluene (13.986)
1,2,3-Trichloropropane (13.871)+
-sec-Butylbenzene (14.458)
-1,2-Dichlorobenzene (15.266)
-1,2-Dibromo-3-Chloropropa (16.209)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.924)+
-Naphthalene (17.289)
-1,2,3-Trichlorobenzene (17.482)

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5513.D
Report Date: 09-May-2018 12:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050318B.b\P5513.D
Lab Smp Id: WG227568-5
Inj Date : 03-MAY-2018 15:47 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227568-5
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050318B.b\P8A05(68)D.m
Meth Date : 07-May-2018 16:14 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 15:47 Cal File: P5513.D
Als bottle: 6 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

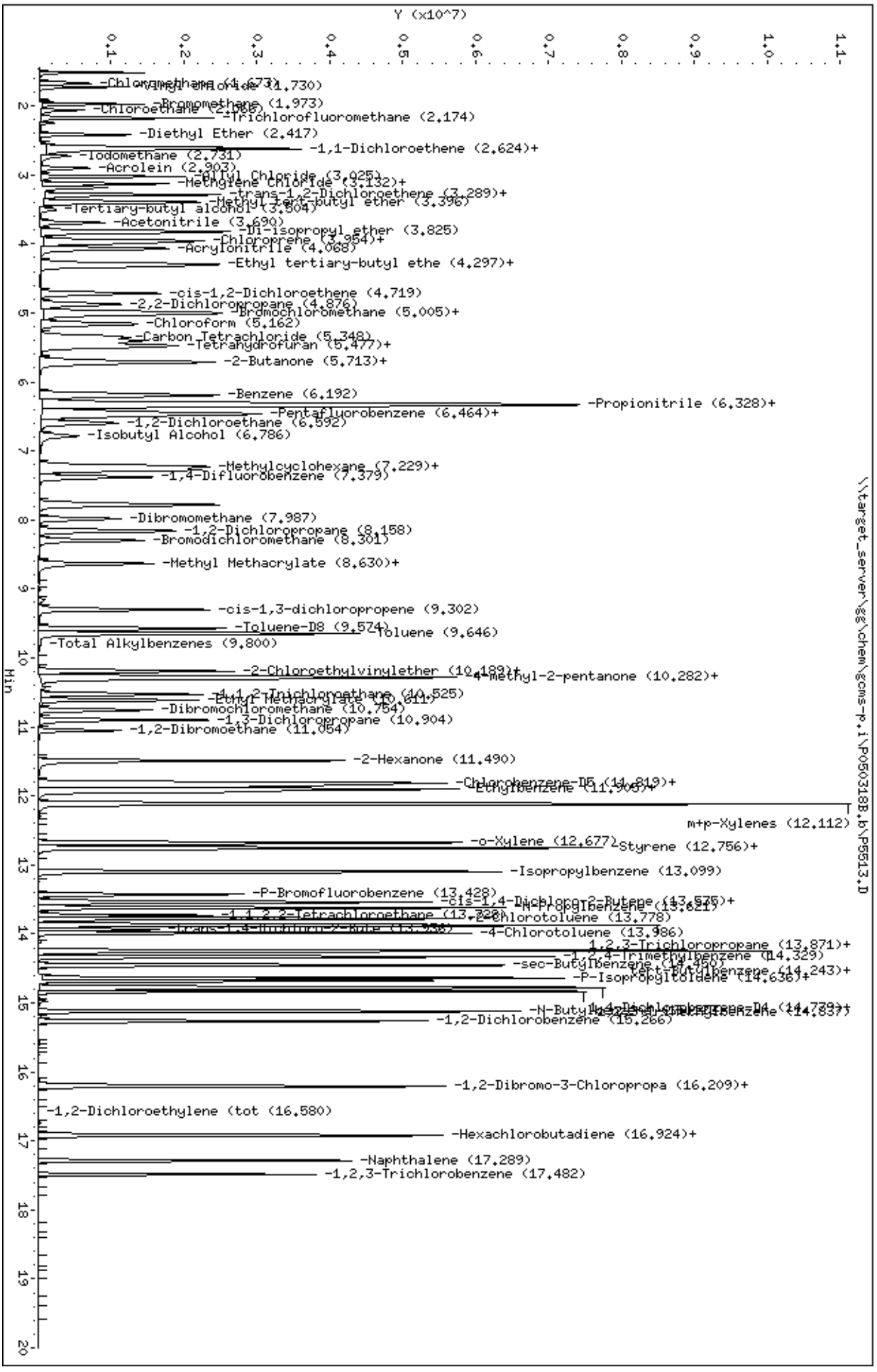
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.515	1.515	(0.235)	1019480	100.000	95.5	
2	Chloromethane	50	1.673	1.673	(0.260)	939491	100.000	91.9	
3	Vinyl chloride	62	1.730	1.730	(0.269)	1031473	100.000	92.3	
4	Bromomethane	94	1.973	1.973	(0.306)	566905	100.000	116	
5	Chloroethane	64	2.066	2.066	(0.321)	542158	100.000	85.4	
6	Trichlorofluoromethane	101	2.173	2.173	(0.337)	1842051	100.000	93.0	
7	Diethyl Ether	59	2.416	2.416	(0.375)	661228	100.000	92.4	
19	Tertiary-butyl alcohol	59	3.503	3.503	(0.544)	291617	500.000	470	
8	1,1-Dichloroethene	96	2.595	2.595	(0.403)	751093	100.000	91.1	
10	Carbon Disulfide	76	2.624	2.624	(0.407)	2685968	100.000	96.3	
9	Freon-113	151	2.616	2.616	(0.406)	801948	100.000	101	
11	Iodomethane	142	2.731	2.731	(0.424)	613526	100.000	134	
12	Acrolein	56	2.903	2.903	(0.451)	719619	500.000	514	
14	Methylene Chloride	84	3.131	3.131	(0.486)	985404	100.000	92.8	
15	Acetone	43	3.181	3.181	(0.494)	1189325	500.000	472	
45	Isobutyl Alcohol	43	6.785	6.785	(1.053)	602295	2000.00	2840	
16	trans-1,2-Dichloroethene	96	3.281	3.281	(0.509)	961229	100.000	96.9	
13	Allyl Chloride	41	3.024	3.024	(0.469)	1331833	100.000	96.5	
18	Methyl tert-butyl ether	73	3.396	3.396	(0.527)	2945339	100.000	102	
20	Acetonitrile	41	3.689	3.689	(0.573)	1246723	1000.00	922	
21	Di-isopropyl ether	45	3.825	3.825	(0.594)	3245653	100.000	98.4	
22	Chloroprene	53	3.946	3.946	(0.613)	1615937	100.000	97.7	
39	Propionitrile	54	6.306	6.306	(0.979)	1562742	1000.00	1000	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5513.D
Report Date: 09-May-2018 12:05

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	40	Methacrylonitrile	41	6.335	6.335	(0.983)	6188893	1000.00	983	
	23	1,1-Dichloroethane	63	3.982	3.982	(0.618)	1829414	100.000	96.3	
	24	Acrylonitrile	52	4.068	4.068	(0.632)	1690667	500.000	501	
	25	Ethyl tertiary-butyl ether	59	4.297	4.297	(0.667)	3119582	100.000	102	
	26	Vinyl Acetate	43	4.325	4.325	(0.586)	2321232	100.000	105	
	27	cis-1,2-Dichloroethene	96	4.719	4.719	(0.733)	1072422	100.000	101	
M	98	1,2-Dichloroethylene (total)	96				2033651	100.000	198	
	52	Methyl Methacrylate	41	8.630	8.630	(1.170)	907550	100.000	106	
	28	2,2-Dichloropropane	77	4.876	4.876	(0.757)	1276078	100.000	104	
	29	Bromochloromethane	128	5.019	5.019	(0.779)	439292	100.000	93.1	
	31	Chloroform	83	5.162	5.162	(0.801)	1850690	100.000	99.3	
	32	Carbon Tetrachloride	117	5.348	5.348	(0.725)	1431643	100.000	105	
	33	Tetrahydrofuran	42	5.412	5.412	(0.840)	1436479	500.000	506	
$	34	Dibromofluoromethane	113	5.469	5.469	(0.849)	603017	50.0000	49.3	
	35	1,1,1-Trichloroethane	97	5.484	5.484	(0.851)	1655644	100.000	99.4	
	37	1,1-Dichloropropene	75	5.705	5.705	(0.773)	1481424	100.000	99.9	
	36	2-Butanone	43	5.720	5.720	(0.888)	2026979	500.000	536	
	38	Benzene	78	6.192	6.192	(0.839)	4143131	100.000	101	
*	41	Pentafluorobenzene	168	6.442	6.442	(1.000)	1237392	50.0000		
	30	Cyclohexane	56	4.997	4.997	(0.776)	1810432	100.000	101	
	53	Ethyl Methacrylate	69	10.610	10.610	(1.438)	1541073	100.000	118	
$	42	1,2-Dichloroethane-D4	65	6.470	6.470	(1.004)	761464	50.0000	47.2	
	43	Tertiary-amyl methyl ether	73	6.478	6.478	(1.006)	2826506	100.000	104	
	44	1,2-Dichloroethane	62	6.599	6.599	(0.894)	1539482	100.000	95.7	
	47	Trichloroethene	95	7.278	7.278	(0.986)	1005196	100.000	99.8	
*	48	1,4-Difluorobenzene	114	7.378	7.378	(1.000)	1953432	50.0000		
	49	Dibromomethane	93	7.986	7.986	(1.082)	633843	100.000	103	
	50	1,2-Dichloropropane	63	8.158	8.158	(1.106)	1063032	100.000	102	
	51	Bromodichloromethane	83	8.301	8.301	(1.125)	1464273	100.000	103	
	57	cis-1,3-dichloropropene	75	9.302	9.302	(1.261)	1871804	100.000	105	
	54	1,4-Dioxane	88	8.637	8.637	(1.171)	154491	2000.00	1830	
$	58	Toluene-D8	98	9.574	9.574	(1.297)	2284018	50.0000	49.4	
	56	2-Chloroethylvinylether	63	10.203	10.203	(1.383)	300	100.000	22.5	
	59	Toluene	92	9.645	9.645	(1.307)	2581513	100.000	99.8	
	61	4-methyl-2-pentanone	43	10.274	10.274	(1.392)	4621453	500.000	522	
	60	Tetrachloroethene	164	10.196	10.196	(0.864)	795491	100.000	97.9	
	62	trans-1,3-Dichloropropene	75	10.310	10.310	(1.397)	1702360	100.000	110	
	63	1,1,2-Trichloroethane	83	10.525	10.525	(1.426)	780934	100.000	107	
	64	Dibromochloromethane	129	10.753	10.753	(0.911)	1069318	100.000	110	
	65	1,3-Dichloropropane	76	10.904	10.904	(0.924)	1868116	100.000	100	
	66	1,2-Dibromoethane	107	11.054	11.054	(1.498)	973396	100.000	103	
	67	2-Hexanone	43	11.490	11.490	(0.973)	3223978	500.000	533	
*	68	Chlorobenzene-D5	117	11.804	11.804	(1.000)	2010625	50.0000		
	69	Chlorobenzene	112	11.826	11.826	(1.002)	3046565	100.000	101	
	70	1-Chlorohexane	91	11.854	11.854	(1.004)	1469130	100.000	99.5	
	71	Ethylbenzene	106	11.905	11.905	(1.008)	1655451	100.000	100	
	72	1,1,1,2-Tetrachloroethane	131	11.933	11.933	(1.011)	1021606	100.000	106	
M	106	Xylenes (total)	106				6120522	100.000	309	
	73	m+p-Xylenes	106	12.112	12.112	(1.026)	4111269	200.000	205	
	74	o-Xylene	106	12.677	12.677	(1.074)	2009253	100.000	104	
	75	Styrene	104	12.755	12.755	(1.081)	3461712	100.000	106	
	76	Bromoform	173	12.755	12.755	(1.081)	800121	100.000	111	
	77	Isopropylbenzene	105	13.099	13.099	(0.887)	4833512	100.000	99.6	
$	78	P-Bromofluorobenzene	95	13.428	13.428	(1.820)	1026589	50.0000	50.0	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5513.D
Report Date: 09-May-2018 12:05

							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	79 cis-1,4-Dichloro-2-Butene	53	13.549	13.549	(0.917)	470124	100.000	101	
	86 trans-1,4-Dichloro-2-Butene	53	13.935	13.935	(0.943)	347480	100.000	98.9	
	80 Bromobenzene	156	13.535	13.535	(0.916)	1291465	100.000	101	
	81 N-Propylbenzene	91	13.621	13.621	(0.922)	5693345	100.000	97.3	
	82 1,1,2,2-Tetrachloroethane	83	13.728	13.728	(0.929)	1236428	100.000	98.2	
	85 1,3,5-Trimethylbenzene	105	13.878	13.878	(0.939)	4202906	100.000	102	
	83 2-Chlorotoluene	91	13.778	13.778	(0.933)	3517393	100.000	99.0	
	84 1,2,3-Trichloropropane	75	13.864	13.864	(0.939)	1150018	100.000	99.6	
	87 4-Chlorotoluene	91	13.985	13.985	(0.947)	3724982	100.000	98.4	
	88 tert-Butylbenzene	119	14.243	14.243	(0.964)	4118632	100.000	103	
	89 Pentachloroethane	165	14.250	14.250	(0.965)	640659	100.000	110	
	90 1,2,4-Trimethylbenzene	105	14.328	14.328	(0.970)	4359413	100.000	102	
	92 P-Isopropyltoluene	119	14.636	14.636	(0.991)	4266314	100.000	103	
	93 1,3-Dichlorobenzene	146	14.679	14.679	(0.994)	2274923	100.000	101	
*	94 1,4-Dichlorobenzene-D4	152	14.772	14.772	(1.000)	1146147	50.0000		
	95 1,4-Dichlorobenzene	146	14.786	14.786	(1.001)	2381623	100.000	99.3	
	97 N-Butylbenzene	91	15.122	15.122	(1.024)	3743013	100.000	100	
	91 sec-Butylbenzene	105	14.457	14.457	(0.979)	5002657	100.000	99.0	
	99 1,2-Dichlorobenzene	146	15.265	15.265	(1.033)	2196496	100.000	100	
	100 1,2-Dibromo-3-Chloropropane	157	16.180	16.180	(1.095)	260996	100.000	115	
	101 1,3,5-Trichlorobenzene	180	16.209	16.209	(1.097)	1674396	100.000	103	
	102 Hexachlorobutadiene	225	16.910	16.910	(1.145)	599326	100.000	104	
	103 1,2,4-Trichlorobenzene	180	16.931	16.931	(1.146)	1462057	100.000	112	
	96 1,2,3-Trimethylbenzene	105	14.836	14.836	(1.004)	4495918	100.000	100	
	104 Naphthalene	128	17.289	17.289	(1.170)	3078609	100.000	118	
	105 1,2,3-Trichlorobenzene	180	17.489	17.489	(1.184)	1145385	100.000	112	
	17 Methyl Acetate	43	3.303	3.303	(0.513)	783333	100.000	97.7	
	46 Methylcyclohexane	83	7.228	7.228	(1.122)	1756187	100.000	104	
M	55 Total Alkylbenzenes	100				31386280	100.000	706	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Client ID:
Sample Info: WG227568-5
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
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Min
\\target_server\gg\chem\gcms-p.i\P050318B.b\P5513.D
-Chloromethane (1.730)
-Bromomethane (1.973)
-Chloroethane (2.068)
-Trichlorofluoromethane (2.174)
-Diethyl Ether (2.417)
-1,1-Dichloroethene (2.624)+
-Iodomethane (2.731)
-Acrolein (2.903)
-Allyl Chloride (3.025)
-Methylene Chloride (3.132)+
-trans-1,2-Dichloroethene (3.289)+
-Methyl tert-butyl ether (3.396)
-Tertiary-butyl alcohol (3.504)
-Acetonitrile (3.690)
-Di-isopropyl ether (3.825)
-Chloroprene (3.954)+
-Acrylonitrile (4.068)
-Ethyl tertiary-butyl ethe (4.297)+
-cis-1,2-Dichloroethene (4.719)
-2,2-Dichloropropane (4.876)
-Bromochloromethane (5.005)+
-Chloroform (5.162)
-Carbon Tetrachloride (5.348)
-Tetrahydrofuran (5.477)+
-2-Butanone (5.713)+
-Benzene (6.192)
-Propionitrile (6.328)+
-Pentafluorobenzene (6.464)+
-1,2-Dichloroethane (6.592)
-Isobutyl Alcohol (6.786)
-Methylcyclohexane (7.229)+
-1,4-Difluorobenzene (7.379)
-Dibromomethane (7.987)
-1,2-Dichloropropane (8.158)
-Bromodichloromethane (8.301)
-Methyl Methacrylate (8.630)+
-cis-1,3-dichloropropene (9.302)
-Toluene-D8 (9.574)
-Toluene (9.646)
-Total Alkylbenzenes (9.800)
-2-Chloroethylvinylether (10.182)+
-4-Methyl-2-pentanone (10.282)+
-1,1,2-Trichloroethane (10.525)
-Ethyl Methacrylate (10.611)
-Dibromochloromethane (10.754)
-1,3-Dichloropropane (10.904)
-1,2-Dibromoethane (11.054)
-2-Hexanone (11.490)
-Chlorobenzene-D5 (11.819)+
-Ethylbenzene (11.906)+
m+p-Xylenes (12.112)
-o-Xylene (12.677)
-Styrene (12.756)+
-Isopropylbenzene (13.099)
-P-Bromofluorobenzene (13.428)
-cis-1,4-Dichloro-2-Butene (13.525)+
-N-Propylbenzene (13.621)
-1,1,2,2-Tetrachloroethane (13.728)
-2-Chlorotoluene (13.778)
-trans-1,4-Dichloro-2-Bute (13.938)
-4-Chlorotoluene (13.986)
-1,2,3-Trichloropropane (13.871)+
-1,3,5-Trimethylbenzene (14.329)
-sec-Butylbenzene (14.460)
-tert-Butylbenzene (14.243)+
-P-Isopropyltoluene (14.636)+
-N-Butylbenzene (14.779)+
-1,2-Dichlorobenzene (15.266)
-1,2-Dibromo-3-Chloropropa (16.209)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.924)+
-Naphthalene (17.289)
-1,2,3-Trichlorobenzene (17.482)

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5508.D
Report Date: 09-May-2018 12:34

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050318B.b\P5508.D
Lab Smp Id: WG227568-4
Inj Date : 03-MAY-2018 12:56 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info :
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050318B.b\P8A05(68)D.m
Meth Date : 09-May-2018 12:33 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 12:56 Cal File: P5508.D
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.515	1.515	(0.235)	472590	50.0000	51.0	
2	Chloromethane	50	1.666	1.666	(0.259)	437451	50.0000	49.3	
3	Vinyl chloride	62	1.730	1.730	(0.269)	484838	50.0000	50.0	
4	Bromomethane	94	1.973	1.973	(0.306)	211364	50.0000	48.3	
5	Chloroethane	64	2.066	2.066	(0.321)	262281	50.0000	48.3	
6	Trichlorofluoromethane	101	2.173	2.173	(0.337)	866255	50.0000	50.4	
7	Diethyl Ether	59	2.416	2.416	(0.375)	329832	50.0000	53.1	
19	Tertiary-butyl alcohol	59	3.496	3.496	(0.543)	159376	250.000	296	
8	1,1-Dichloroethene	96	2.595	2.595	(0.403)	355074	50.0000	49.6	
10	Carbon Disulfide	76	2.624	2.624	(0.407)	1263070	50.0000	52.2	
9	Freon-113	151	2.624	2.624	(0.407)	361116	50.0000	52.4	
11	Iodomethane	142	2.724	2.724	(0.423)	277754	50.0000	53.3	
12	Acrolein	56	2.903	2.903	(0.451)	327091	250.000	269	
14	Methylene Chloride	84	3.131	3.131	(0.486)	454848	50.0000	49.3	
15	Acetone	43	3.181	3.181	(0.494)	585672	250.000	264	
45	Isobutyl Alcohol	43	6.785	6.785	(1.053)	290035	1000.00	1110	
16	trans-1,2-Dichloroethene	96	3.281	3.281	(0.509)	434581	50.0000	50.5	
13	Allyl Chloride	41	3.024	3.024	(0.469)	635843	50.0000	53.1	
18	Methyl tert-butyl ether	73	3.396	3.396	(0.527)	1337232	50.0000	53.1	
20	Acetonitrile	41	3.689	3.689	(0.573)	638461	500.000	544	
21	Di-isopropyl ether	45	3.825	3.825	(0.594)	1509548	50.0000	52.7	
22	Chloroprene	53	3.946	3.946	(0.613)	753713	50.0000	52.5	
39	Propionitrile	54	6.299	6.299	(0.978)	719381	500.000	532	
40	Methacrylonitrile	41	6.327	6.327	(0.982)	2948885	500.000	539	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5508.D
Report Date: 09-May-2018 12:34

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	23	1,1-Dichloroethane	63	3.982	3.982	(0.618)	845506	50.0000	51.3	
	24	Acrylonitrile	52	4.068	4.068	(0.632)	778173	250.000	266	
	25	Ethyl tertiary-butyl ether	59	4.297	4.297	(0.667)	1402363	50.0000	52.6	
	26	Vinyl Acetate	43	4.325	4.325	(0.586)	1069085	50.0000	52.8	
	27	cis-1,2-Dichloroethene	96	4.712	4.712	(0.731)	469837	50.0000	51.0	
	52	Methyl Methacrylate	41	8.630	8.630	(1.170)	418044	50.0000	53.5	
	28	2,2-Dichloropropane	77	4.876	4.876	(0.757)	643447	50.0000	55.4	
	29	Bromochloromethane	128	5.019	5.019	(0.779)	213990	50.0000	52.2	
	31	Chloroform	83	5.162	5.162	(0.801)	830910	50.0000	51.3	
	32	Carbon Tetrachloride	117	5.348	5.348	(0.725)	644081	50.0000	51.6	
	33	Tetrahydrofuran	42	5.412	5.412	(0.840)	655194	250.000	267	
$	34	Dibromofluoromethane	113	5.469	5.469	(0.849)	548419	50.0000	51.6	
	35	1,1,1-Trichloroethane	97	5.484	5.484	(0.851)	745754	50.0000	51.6	
	37	1,1-Dichloropropene	75	5.705	5.705	(0.773)	670572	50.0000	49.4	
	36	2-Butanone	43	5.720	5.720	(0.888)	966856	250.000	269	
	38	Benzene	78	6.192	6.192	(0.839)	1880461	50.0000	50.0	
*	41	Pentafluorobenzene	168	6.442	6.442	(1.000)	1074176	50.0000		
	30	Cyclohexane	56	4.990	4.990	(0.775)	842101	50.0000	54.0	
	53	Ethyl Methacrylate	69	10.610	10.610	(1.438)	672279	50.0000	48.3	
$	42	1,2-Dichloroethane-D4	65	6.470	6.470	(1.004)	718843	50.0000	51.3	
	43	Tertiary-amyl methyl ether	73	6.478	6.478	(1.006)	1285401	50.0000	54.4	
	44	1,2-Dichloroethane	62	6.592	6.592	(0.893)	714232	50.0000	48.6	
	47	Trichloroethene	95	7.278	7.278	(0.986)	457620	50.0000	49.4	
*	48	1,4-Difluorobenzene	114	7.379	7.379	(1.000)	1785427	50.0000		
	49	Dibromomethane	93	7.986	7.986	(1.082)	284440	50.0000	50.7	
	50	1,2-Dichloropropane	63	8.158	8.158	(1.106)	476841	50.0000	50.3	
	51	Bromodichloromethane	83	8.294	8.294	(1.124)	668138	50.0000	51.5	
	57	cis-1,3-dichloropropene	75	9.302	9.302	(1.261)	859728	50.0000	53.0	
	54	1,4-Dioxane	88	8.637	8.637	(1.171)	97094	1000.00	1070	
$	58	Toluene-D8	98	9.574	9.574	(1.297)	2117101	50.0000	50.0	
	59	Toluene	92	9.645	9.645	(1.307)	1172890	50.0000	49.6	
	61	4-methyl-2-pentanone	43	10.274	10.274	(1.392)	2156912	250.000	266	
	60	Tetrachloroethene	164	10.196	10.196	(0.864)	358966	50.0000	49.3	
	62	trans-1,3-Dichloropropene	75	10.303	10.303	(1.396)	778870	50.0000	49.3	
	63	1,1,2-Trichloroethane	83	10.525	10.525	(1.426)	346680	50.0000	48.1	
	64	Dibromochloromethane	129	10.753	10.753	(0.912)	472580	50.0000	51.7	
	65	1,3-Dichloropropane	76	10.896	10.896	(0.924)	848670	50.0000	50.7	
	66	1,2-Dibromoethane	107	11.047	11.047	(1.497)	446860	50.0000	51.8	
	67	2-Hexanone	43	11.490	11.490	(0.974)	1484332	250.000	274	
*	68	Chlorobenzene-D5	117	11.797	11.797	(1.000)	1800386	50.0000		
	69	Chlorobenzene	112	11.826	11.826	(1.002)	1368883	50.0000	50.8	
	70	1-Chlorohexane	91	11.854	11.854	(1.005)	674193	50.0000	51.0	
	71	Ethylbenzene	106	11.897	11.897	(1.008)	747324	50.0000	50.5	
	72	1,1,1,2-Tetrachloroethane	131	11.933	11.933	(1.012)	458484	50.0000	49.1	
	73	m+p-Xylenes	106	12.112	12.112	(1.027)	1840433	100.000	102	
	74	o-Xylene	106	12.677	12.677	(1.075)	883451	50.0000	51.3	
	75	Styrene	104	12.755	12.755	(1.081)	1540713	50.0000	52.8	
	76	Bromoform	173	12.755	12.755	(1.081)	334038	50.0000	51.9	
	77	Isopropylbenzene	105	13.099	13.099	(0.887)	2237729	50.0000	50.4	
$	78	P-Bromofluorobenzene	95	13.428	13.428	(1.820)	951214	50.0000	50.7	
	79	cis-1,4-Dichloro-2-Butene	53	13.549	13.549	(0.918)	225904	50.0000	53.2	
	86	trans-1,4-Dichloro-2-Butene	53	13.935	13.935	(0.944)	177038	50.0000	55.1	
	80	Bromobenzene	156	13.535	13.535	(0.917)	567596	50.0000	48.8	
	81	N-Propylbenzene	91	13.621	13.621	(0.923)	2716648	50.0000	50.8	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5508.D
Report Date: 09-May-2018 12:34

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
82	1,1,2,2-Tetrachloroethane	83	13.728	13.728	(0.930)	569103	50.0000	49.4	
85	1,3,5-Trimethylbenzene	105	13.871	13.871	(0.939)	1951200	50.0000	51.5	
83	2-Chlorotoluene	91	13.778	13.778	(0.933)	1615201	50.0000	49.8	
84	1,2,3-Trichloropropane	75	13.864	13.864	(0.939)	520792	50.0000	49.3	
87	4-Chlorotoluene	91	13.985	13.985	(0.947)	1719916	50.0000	49.7	
88	tert-Butylbenzene	119	14.243	14.243	(0.965)	1847927	50.0000	50.6	
89	Pentachloroethane	165	14.250	14.250	(0.965)	273041	50.0000	51.3	
90	1,2,4-Trimethylbenzene	105	14.328	14.328	(0.970)	2008597	50.0000	51.3	
92	P-Isopropyltoluene	119	14.636	14.636	(0.991)	1956380	50.0000	51.5	
93	1,3-Dichlorobenzene	146	14.679	14.679	(0.994)	1028784	50.0000	49.9	
* 94	1,4-Dichlorobenzene-D4	152	14.765	14.765	(1.000)	1047820	50.0000		
95	1,4-Dichlorobenzene	146	14.786	14.786	(1.001)	1070399	50.0000	48.8	
97	N-Butylbenzene	91	15.122	15.122	(1.024)	1750345	50.0000	51.3	
91	sec-Butylbenzene	105	14.450	14.450	(0.979)	2346330	50.0000	50.8	
99	1,2-Dichlorobenzene	146	15.265	15.265	(1.034)	985000	50.0000	49.2	
100	1,2-Dibromo-3-Chloropropane	157	16.180	16.180	(1.096)	110420	50.0000	46.9	
101	1,3,5-Trichlorobenzene	180	16.209	16.209	(1.098)	718342	50.0000	48.2	
102	Hexachlorobutadiene	225	16.910	16.910	(1.145)	256027	50.0000	48.4	
103	1,2,4-Trichlorobenzene	180	16.924	16.924	(1.146)	606814	50.0000	46.0	
96	1,2,3-Trimethylbenzene	105	14.836	14.836	(1.005)	2109640	50.0000	51.5	
104	Naphthalene	128	17.289	17.289	(1.171)	1258877	50.0000	46.9	
105	1,2,3-Trichlorobenzene	180	17.489	17.489	(1.185)	463076	50.0000	49.4	
17	Methyl Acetate	43	3.303	3.303	(0.513)	358507	50.0000	51.5	
46	Methylcyclohexane	83	7.228	7.228	(1.122)	794367	50.0000	54.0	

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\P5508.D
Date : 03-MAY-2018 12:56
Client ID:
Sample Info:
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
\\target_server\gg\chem\gcms-p.i\P050318B.b\P5508.D
Y (x10^6)
Min
-Chloromethane (1.666)
-Vinyl Chloride (1.730)
-Bromomethane (1.974)
-Chloroethane (2.068)
-Trichlorofluoromethane (2.174)
-Diethyl Ether (2.417)
-1,1-Dichloroethene (2.624)+
-Iodomethane (2.724)
-Acrolein (2.903)
-Allyl Chloride (3.025)
-Methylene Chloride (3.132)+
-trans-1,2-Dichloroethene (3.289)+
-Methyl tert-butyl ether (3.389)
-Tertiary-butyl alcohol (3.504)
-Acetonitrile (3.690)
-Di-isopropyl ether (3.825)
-Chloroprene (3.954)+
-Acrylonitrile (4.068)
-Ethyl tertiary-butyl ethe (4.304)+
-cis-1,2-Dichloroethene (4.719)
-2,2-Dichloropropane (4.876)
-Bromochloromethane (5.005)+
-Chloroform (5.155)
-Carbon Tetrachloride (5.348)
-Tetrahydrofuran (5.477)+
-1,1-Dichloropropene (5.713)+
-Benzene (6.192)
-Propionitrile (6.328)+
-Pentafluorobenzene (6.457)+
-1,2-Dichloroethane (6.592)
-Isobutyl Alcohol (6.786)
-Trichloroethene (7.229)+
-1,4-Difluorobenzene (7.379)
-Dibromomethane (7.987)
-1,2-Dichloropropane (8.158)
-Bromodichloromethane (8.294)
-Methyl Methacrylate (8.630)+
-cis-1,3-dichloropropene (9.302)
-Toluene-D8 (9.574)
-Toluene (9.648)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.189)
4-methyl-2-pentanone (10.282)+
-1,1,2-Trichloroethane (10.525)
-Ethyl Methacrylate (10.611)
-Dibromochloromethane (10.754)
-1,3-Dichloropropane (10.897)
-1,2-Dibromoethane (11.047)
-2-Hexanone (11.490)
-Chlorobenzene-D5 (11.805)+
-1-Chlorohexane (11.898)+
m+p-Xylenes (12.112)
-o-Xylene (12.477)
-Styrene (12.756)+
-Isopropylbenzene (13.099)
-P-Bromofluorobenzene (13.428)
-cis-1,4-Dichloro-2-Butene (13.572)+
-N-Propylbenzene (13.614)
-1,1,2,2-Tetrachloroethane (13.739)
-3-Chlorotoluene (13.778)
-trans-1,4-Dichloro-2-Bute (13.936)
-4-Chlorotoluene (13.986)
-1,3,5-Trimethylbenzene (13.871)+
-1,2,4-Trimethylbenzene (14.329)
-sec-Butylbenzene (14.460)
-Para-Butylbenzene (14.243)+
-P-Isopropyltoluene (14.636)+
-1,2,3-Trimethylbenzene (14.887)
-N-Butylbenzene (15.123)
1,4-Dichlorobenzene-D4 (14.772)+
-1,2-Dichlorobenzene (15.266)
-1,2-Dibromo-3-Chloropropa (16.209)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.924)+
-Naphthalene (17.289)
-1,2,3-Trichlorobenzene (17.482)

Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5523A.D
Report Date: 09-May-2018 12:35

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050418B.b\P5523A.D
Lab Smp Id: WG227659-7
Inj Date : 04-MAY-2018 13:05 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227659-7
Misc Info : WG227659,WG227568-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050418B.b\P8A05(68)D.m
Meth Date : 09-May-2018 12:08 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 3 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.514	1.515	(0.235)	509398	44.6510	44.6	
2	Chloromethane	50	1.671	1.665	(0.260)	475638	43.5363	43.5	
3	Vinyl chloride	62	1.729	1.729	(0.268)	515355	43.1354	43.1	
4	Bromomethane	94	1.979	1.987	(0.307)	237360	44.3925	44.4	
5	Chloroethane	64	2.072	2.080	(0.322)	296587	44.3483	44.3	
6	Trichlorofluoromethane	101	2.179	2.180	(0.338)	884059	41.7402	41.7	
7	Diethyl Ether	59	2.422	2.416	(0.376)	324559	42.4171	42.4	WAS
19	Tertiary-butyl alcohol	59	3.502	3.510	(0.544)	152399	229.635	230	8:22 am, May 21, 2018
8	1,1-Dichloroethene	96	2.594	2.587	(0.403)	365100	41.4290	41.4	
10	Carbon Disulfide	76	2.630	2.623	(0.408)	1210275	40.6098	40.6	
9	Freon-113	151	2.622	2.637	(0.407)	400366	47.1918	47.2	
11	Iodomethane	142	2.730	2.730	(0.424)	388817	60.3159	60.3(R)	
12	Acrolein	56	2.901	2.902	(0.451)	349203	233.409	233	
14	Methylene Chloride	84	3.130	3.131	(0.486)	509038	44.8318	44.8	
15	Acetone	43	3.180	3.188	(0.494)	128993	47.3158	47.3	
45	Isobutyl Alcohol	43	6.784	6.792	(1.053)	264605	827.385	827(M)	M6
16	trans-1,2-Dichloroethene	96	3.287	3.281	(0.510)	491396	46.3499	46.3	
13	Allyl Chloride	41	3.023	3.016	(0.469)	647608	43.9019	43.9	
18	Methyl tert-butyl ether	73	3.395	3.395	(0.527)	1474488	47.5379	47.5	
20	Acetonitrile	41	3.688	3.696	(0.573)	617796	427.496	427	
21	Di-isopropyl ether	45	3.824	3.824	(0.594)	1543523	43.7782	43.8	
22	Chloroprene	53	3.952	3.960	(0.614)	792784	44.8384	44.8	
39	Propionitrile	54	6.298	6.298	(0.978)	781206	468.762	469	
40	Methacrylonitrile	41	6.326	6.327	(0.982)	3099096	460.352	460	

Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5523A.D
Report Date: 09-May-2018 12:35

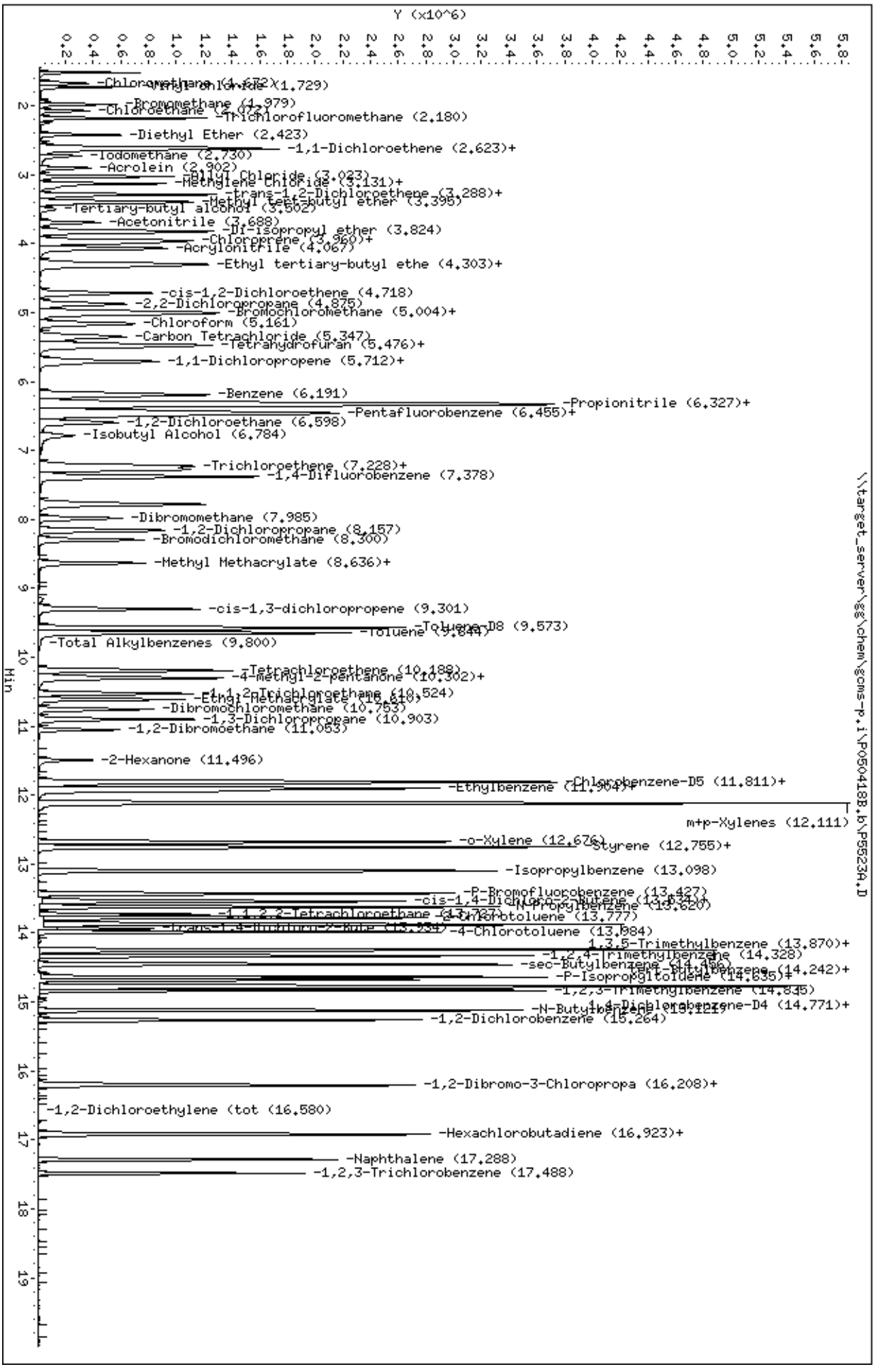
			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	23	1,1-Dichloroethane	63	3.988	3.989	(0.619)	968023	47.6610	47.7	
	24	Acrylonitrile	52	4.067	4.067	(0.631)	866096	240.099	240	
	25	Ethyl tertiary-butyl ether	59	4.295	4.303	(0.667)	1480161	45.1227	45.1	
	26	Vinyl Acetate	43	4.324	4.325	(0.586)	1232039	54.2880	54.3	
	27	cis-1,2-Dichloroethene	96	4.717	4.732	(0.732)	536773	47.2798	47.3	
M	98	1,2-Dichloroethylene (total)	96				1028169	93.6298	93.6	
	52	Methyl Methacrylate	41	8.636	8.643	(1.171)	452863	51.6820	51.7	
	28	2,2-Dichloropropane	77	4.875	4.890	(0.757)	728715	50.9387	50.9	
	29	Bromochloromethane	128	5.018	5.026	(0.779)	244391	48.4346	48.4	
	31	Chloroform	83	5.154	5.154	(0.800)	943087	47.3243	47.3	
	32	Carbon Tetrachloride	117	5.347	5.347	(0.725)	719563	51.3838	51.4	
	33	Tetrahydrofuran	42	5.411	5.419	(0.840)	132995	44.0747	44.1	
$	34	Dibromofluoromethane	113	5.475	5.469	(0.850)	614273	46.9574	47.0	
	35	1,1,1-Trichloroethane	97	5.482	5.483	(0.851)	824337	46.2780	46.3	
	37	1,1-Dichloropropene	75	5.704	5.698	(0.773)	751248	49.4123	49.4	
	36	2-Butanone	43	5.733	5.741	(0.890)	220359	49.8739	49.9	
	38	Benzene	78	6.190	6.184	(0.839)	2084523	49.4280	49.4	
*	41	Pentafluorobenzene	168	6.441	6.441	(1.000)	1322716	50.0000		
	30	Cyclohexane	56	4.996	4.990	(0.776)	841361	43.7836	43.8	
	53	Ethyl Methacrylate	69	10.609	10.617	(1.438)	741931	47.5995	47.6	
$	42	1,2-Dichloroethane-D4	65	6.469	6.470	(1.004)	790574	45.8306	45.8	
	43	Tertiary-amyl methyl ether	73	6.469	6.463	(1.004)	1350512	46.4013	46.4	
	44	1,2-Dichloroethane	62	6.591	6.591	(0.893)	778500	47.2259	47.2	
	47	Trichloroethene	95	7.270	7.264	(0.985)	509161	48.9860	49.0	
*	48	1,4-Difluorobenzene	114	7.377	7.385	(1.000)	2001979	50.0000		
	49	Dibromomethane	93	7.978	7.979	(1.081)	333828	53.1067	53.1	
	50	1,2-Dichloropropane	63	8.157	8.164	(1.106)	519701	48.9351	48.9	
	51	Bromodichloromethane	83	8.300	8.307	(1.125)	750215	51.5855	51.6	
	57	cis-1,3-dichloropropene	75	9.301	9.301	(1.261)	932131	51.2068	51.2	
	54	1,4-Dioxane	88	8.636	8.664	(1.171)	79014	638.264	638(R)	
$	58	Toluene-D8	98	9.572	9.573	(1.298)	2334302	49.2197	49.2	
	59	Toluene	92	9.644	9.652	(1.307)	1322364	49.8694	49.9	
	61	4-methyl-2-pentanone	43	10.280	10.281	(1.393)	459640	50.6242	50.6	
	60	Tetrachloroethene	164	10.194	10.188	(0.864)	427238	51.8519	51.8	
	62	trans-1,3-Dichloropropene	75	10.302	10.302	(1.396)	866878	48.9845	49.0	
	63	1,1,2-Trichloroethane	83	10.530	10.531	(1.427)	398449	49.3057	49.3	
	64	Dibromochloromethane	129	10.752	10.767	(0.911)	549620	53.1354	53.1	
	65	1,3-Dichloropropane	76	10.902	10.896	(0.924)	907733	47.9125	47.9	
	66	1,2-Dibromoethane	107	11.052	11.053	(1.498)	503292	52.0408	52.0	
	67	2-Hexanone	43	11.489	11.496	(0.973)	326058	53.2181	53.2	
*	68	Chlorobenzene-D5	117	11.803	11.804	(1.000)	2038077	50.0000		
	69	Chlorobenzene	112	11.825	11.825	(1.002)	1523605	49.9384	49.9	
	71	Ethylbenzene	106	11.896	11.904	(1.008)	842547	50.2781	50.3	
	72	1,1,1,2-Tetrachloroethane	131	11.932	11.940	(1.011)	522222	49.3635	49.4	
M	106	Xylenes (total)	106				3063071	152.540	152	
	73	m+p-Xylenes	106	12.111	12.111	(1.026)	2083491	102.295	102	
	74	o-Xylene	106	12.675	12.683	(1.074)	979580	50.2455	50.2	
	75	Styrene	104	12.754	12.755	(1.081)	1737860	52.5878	52.6	
	76	Bromoform	173	12.754	12.755	(1.081)	413197	56.7517	56.8	
	77	Isopropylbenzene	105	13.097	13.098	(0.887)	2593758	51.4036	51.4	
$	78	P-Bromofluorobenzene	95	13.426	13.427	(1.820)	1057888	50.3075	50.3	
	79	cis-1,4-Dichloro-2-Butene	53	13.548	13.548	(0.917)	234764	48.6084	48.6	
	86	trans-1,4-Dichloro-2-Butene	53	13.934	13.942	(0.943)	193573	53.0002	53.0	
	80	Bromobenzene	156	13.533	13.527	(0.916)	662940	50.0802	50.1	

Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5523A.D
Report Date: 09-May-2018 12:35

			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	81	N-Propylbenzene	91	13.619	13.613	(0.922)	3000254	49.3094	49.3	
	82	1,1,2,2-Tetrachloroethane	83	13.727	13.727	(0.929)	660783	50.4819	50.5	
	85	1,3,5-Trimethylbenzene	105	13.877	13.877	(0.939)	2162409	50.2172	50.2	
	83	2-Chlorotoluene	91	13.777	13.777	(0.933)	1787346	48.4016	48.4	
	84	1,2,3-Trichloropropane	75	13.862	13.856	(0.939)	581983	48.4707	48.5	
	87	4-Chlorotoluene	91	13.984	13.985	(0.947)	1887299	47.9453	47.9	
	88	tert-Butylbenzene	119	14.241	14.242	(0.964)	2053094	49.3834	49.4	
	89	Pentachloroethane	165	14.248	14.249	(0.965)	305830	50.5387	50.5	
	90	1,2,4-Trimethylbenzene	105	14.334	14.335	(0.970)	2232484	50.1177	50.1	
	92	P-Isopropyltoluene	119	14.635	14.635	(0.991)	2192543	50.7543	50.8	
	93	1,3-Dichlorobenzene	146	14.677	14.678	(0.994)	1170667	49.8792	49.9	
*	94	1,4-Dichlorobenzene-D4	152	14.770	14.771	(1.000)	1191939	50.0000		
	95	1,4-Dichlorobenzene	146	14.785	14.785	(1.001)	1207733	48.4130	48.4	
	97	N-Butylbenzene	91	15.121	15.122	(1.024)	1915584	49.3923	49.4	
	91	sec-Butylbenzene	105	14.456	14.457	(0.979)	2624413	49.9346	49.9	
	99	1,2-Dichlorobenzene	146	15.264	15.265	(1.033)	1113092	48.8686	48.9	
	100	1,2-Dibromo-3-Chloropropane	157	16.179	16.172	(1.095)	136694	50.9804	51.0	
	101	1,3,5-Trichlorobenzene	180	16.208	16.207	(1.097)	830787	49.0518	49.0	
	102	Hexachlorobutadiene	225	16.908	16.908	(1.145)	309336	51.4518	51.4	
	103	1,2,4-Trichlorobenzene	180	16.930	16.922	(1.146)	730774	48.6207	48.6	
	96	1,2,3-Trimethylbenzene	105	14.835	14.835	(1.004)	2276091	48.8550	48.8	
	104	Naphthalene	128	17.287	17.288	(1.170)	1550842	50.7166	50.7	
	105	1,2,3-Trichlorobenzene	180	17.487	17.488	(1.184)	570923	53.5534	53.6	
	17	Methyl Acetate	43	3.302	3.302	(0.513)	350127	40.8474	40.8	
	46	Methylcyclohexane	83	7.227	7.228	(1.122)	837391	46.1988	46.2	
M	55	Total Alkylbenzenes	100				16180781	349.109	349	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.


Y (x10^6)
Min
Data File: \\target_server\gg\chem\gcms-p.i\P050418B.b\P5523A.D
Date : 04-MAY-2018 13:05
Client ID:
Sample Info: WG227659-7
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
\\target_server\gg\chem\gcms-p.i\P050418B.b\P5523A.D
-Chloromethane (1.672)
-Vinyl chloride (1.729)
-Bromomethane (1.979)
-Chloroethane (2.072)
-Trichlorofluoromethane (2.180)
-Diethyl Ether (2.423)
-1,1-Dichloroethene (2.623)+
-Iodomethane (2.730)
-Acrolein (2.902)
-Allyl Chloride (3.083)
-Methylene Chloride (3.131)+
-trans-1,2-Dichloroethene (3.288)+
-Methyl tert-butyl ether (3.396)
-Tertiary-butyl alcohol (3.502)
-Acetonitrile (3.688)
-Di-isopropyl ether (3.824)
-Chloroprene (3.960)+
-Acrylonitrile (4.067)
-Ethyl tertiary-butyl ethe (4.303)+
-cis-1,2-Dichloroethene (4.718)
-2,2-Dichloropropane (4.875)
-BromoChloromethane (5.004)+
-Chloroform (5.161)
-Carbon Tetrachloride (5.347)
-Tetrahydrofuran (5.476)+
-1,1-Dichloropropene (5.712)+
-Benzene (6.191)
-Propionitrile (6.327)+
-Pentafluorobenzene (6.455)+
-1,2-Dichloroethane (6.598)
-Isobutyl Alcohol (6.784)
-Trichloroethene (7.228)+
-1,4-Difluorobenzene (7.378)
-Dibromomethane (7.985)
-1,2-Dichloropropane (8.157)
-Bromodichloromethane (8.300)
-Methyl Methacrylate (8.636)+
-cis-1,3-dichloropropene (9.301)
-Toluene-D8 (9.573)
-Toluene (9.644)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.189)
-4-methyl-2-pentanone (10.302)+
-1,1,2-Trichloroethane (10.524)
-Ethyl Methacrylate (10.610)
-Dibromochloromethane (10.753)
-1,3-Dichloropropane (10.903)
-1,2-Dibromoethane (11.053)
-2-Hexanone (11.496)
-Chlorobenzene-D5 (11.811)+
-Ethylbenzene (11.904)+
m+p-Xylenes (12.111)
-o-Xylene (12.676)
-Styrene (12.755)+
-Isopropylbenzene (13.098)
-P-Bromofluorobenzene (13.427)
-cis-1,4-Dichloro-2-Butene (13.634)+
-N-Propylbenzene (13.620)
-1,1,2,2-Tetrachloroethane (13.737)
-2-Chlorotoluene (13.777)
-trans-1,4-Dichloro-2-Bute (13.934)
-4-Chlorotoluene (13.984)
-1,3,5-Trimethylbenzene (13.870)+
-1,2,4-Trimethylbenzene (14.328)
-sec-Butylbenzene (14.466)
-tert-Butylbenzene (14.242)+
-P-Isopropyltoluene (14.635)+
-1,2,3-Trimethylbenzene (14.845)
-1,4-Dichlorobenzene-D4 (14.771)+
-N-Butylbenzene (15.121)
-1,2-Dichlorobenzene (15.264)
-1,2-Dibromo-3-Chloropropa (16.208)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.923)+
-Naphthalene (17.288)
-1,2,3-Trichlorobenzene (17.488)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG228421-4
Analytical Date: 05/16/18 12:40
Lab File ID : D1328.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.60519	0.53303	0.53303	0.010	-11.92245	20.00000	Averaged
2	Chloromethane	0.65045	0.54891	0.54891	0.100	-15.61161	20.00000	Averaged
3	Vinyl chloride	0.50829	0.43637	0.43637	0.010	-14.14954	20.00000	Averaged
4	Bromomethane	0.26245	0.23425	0.23425	0.010	-10.74617	20.00000	Averaged
5	Chloroethane	0.23262	0.22738	0.22738	0.010	-2.25246	20.00000	Averaged
6	Trichlorofluoromethane	0.78861	0.78561	0.78561	0.010	-0.38159	20.00000	Averaged
9	1,1-Dichloroethene	0.33801	0.31379	0.31379	0.100	-7.16449	20.00000	Averaged
10	Carbon Disulfide	1.04529	1.02317	1.02317	0.010	-2.11594	20.00000	Averaged
11	Freon-113	0.29565	0.26661	0.26661	0.010	-9.82240	20.00000	Averaged
14	Methylene Chloride	0.56422	0.52059	0.52059	0.010	-7.73264	20.00000	Averaged
15	Acetone	0.15669	0.15702	0.15702	0.010	0.20446	20.00000	Averaged
17	trans-1,2-Dichloroethene	0.51620	0.44846	0.44846	0.010	-13.12190	20.00000	Averaged
19	Methyl tert-butyl ether	1.33505	1.26299	1.26299	0.010	-5.39692	20.00000	Averaged
25	1,1-Dichloroethane	0.96513	0.93797	0.93797	0.100	-2.81362	20.00000	Averaged
29	cis-1,2-Dichloroethene	0.54948	0.50149	0.50149	0.010	-8.73424	20.00000	Averaged
32	2,2-Dichloropropane	0.63584	0.64708	0.64708	0.010	1.76649	20.00000	Averaged
33	Bromochloromethane	0.27091	0.27305	0.27305	0.010	0.79009	20.00000	Averaged
34	Chloroform	1.01172	0.98547	0.98547	0.010	-2.59430	20.00000	Averaged
35	Carbon Tetrachloride	0.43090	0.42931	0.42931	0.010	-0.36991	20.00000	Averaged
38	1,1,1-Trichloroethane	0.83243	0.80782	0.80782	0.010	-2.95648	20.00000	Averaged
39	1,1-Dichloropropene	0.45737	0.42830	0.42830	0.010	-6.35534	20.00000	Averaged
40	2-Butanone	0.24292	0.24519	0.24519	0.010	0.93303	20.00000	Averaged
41	Benzene	1.23369	1.16635	1.16635	0.010	-5.45818	20.00000	Averaged
47	1,2-Dichloroethane	0.51571	0.53512	0.53512	0.010	3.76352	20.00000	Averaged
48	Trichloroethene	0.33634	0.32526	0.32526	0.010	-3.29443	20.00000	Averaged
50	Dibromomethane	0.22736	0.23347	0.23347	0.010	2.68479	20.00000	Averaged
51	1,2-Dichloropropane	0.33353	0.33342	0.33342	0.010	-0.03393	20.00000	Averaged
52	Bromodichloromethane	0.46224	0.48351	0.48351	0.010	4.60208	20.00000	Averaged
53	cis-1,3-dichloropropene	0.53778	0.57369	0.57369	0.010	6.67874	20.00000	Averaged
57	Toluene	0.75378	0.71044	0.71044	0.010	-5.75013	20.00000	Averaged
58	4-methyl-2-pentanone	0.30443	0.33067	0.33067	0.010	8.61868	20.00000	Averaged
59	Tetrachloroethene	0.27263	0.24162	0.24162	0.010	-11.37635	20.00000	Averaged
60	trans-1,3-Dichloropropene	0.46607	0.51111	0.51111	0.010	9.66344	20.00000	Averaged
61	1,1,2-Trichloroethane	0.26549	0.26781	0.26781	0.010	0.87185	20.00000	Averaged
62	Dibromochloromethane	0.37557	0.39008	0.39008	0.010	3.86230	20.00000	Averaged
63	1,3-Dichloropropane	0.61122	0.60305	0.60305	0.010	-1.33676	20.00000	Averaged
64	1,2-Dibromoethane	0.32012	0.32822	0.32822	0.010	2.53157	20.00000	Averaged
65	2-Hexanone	0.23077	0.24687	0.24687	0.010	6.97963	20.00000	Averaged
67	Chlorobenzene	0.92421	0.87029	0.87029	0.300	-5.83455	20.00000	Averaged
68	Ethylbenzene	1.58372	1.52744	1.52744	0.010	-3.55369	20.00000	Averaged
69	1,1,1,2-Tetrachloroethane	0.32933	0.32987	0.32987	0.010	0.16426	20.00000	Averaged

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant **SDG:** SL3841
Lab ID : WG228421-4 **Analytical Date:** 05/16/18 12:40
Lab File ID : D1328.d **Instrument ID:** GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34 **Column ID:**

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71 m+p-Xylenes	1.20403	1.19491	1.19491	0.010	-0.75766	20.00000	Averaged
72 o-Xylene	1.21487	1.22054	1.22054	0.010	0.46687	20.00000	Averaged
73 Styrene	0.91910	0.92417	0.92417	0.010	0.55170	20.00000	Averaged
74 Bromoform	50.00000	47.40218	0.23836	0.100	-5.19565	20.00000	Linear
75 Isopropylbenzene	2.65481	2.62134	2.62134	0.010	-1.26092	20.00000	Averaged
79 Bromobenzene	0.74765	0.71006	0.71006	0.010	-5.02755	20.00000	Averaged
80 N-Propylbenzene	3.47227	3.40901	3.40901	0.010	-1.82172	20.00000	Averaged
81 1,1,2,2-Tetrachloroethane	0.86973	0.84133	0.84133	0.300	-3.26616	20.00000	Averaged
82 1,3,5-Trimethylbenzene	2.30306	2.29349	2.29349	0.010	-0.41538	20.00000	Averaged
83 2-Chlorotoluene	2.07978	2.04979	2.04979	0.010	-1.44191	20.00000	Averaged
84 1,2,3-Trichloropropane	0.74898	0.76212	0.76212	0.010	1.75472	20.00000	Averaged
85 4-Chlorotoluene	2.20985	2.20690	2.20690	0.010	-0.13351	20.00000	Averaged
86 tert-Butylbenzene	2.16738	2.18181	2.18181	0.010	0.66563	20.00000	Averaged
88 1,2,4-Trimethylbenzene	2.38615	2.40040	2.40040	0.010	0.59731	20.00000	Averaged
89 P-Isopropyltoluene	2.22161	2.28489	2.28489	0.010	2.84839	20.00000	Averaged
90 1,3-Dichlorobenzene	1.33333	1.27266	1.27266	0.010	-4.55018	20.00000	Averaged
92 1,4-Dichlorobenzene	1.38362	1.31708	1.31708	0.010	-4.80934	20.00000	Averaged
93 N-Butylbenzene	2.07013	2.20955	2.20955	0.010	6.73505	20.00000	Averaged
94 sec-Butylbenzene	2.73458	2.75778	2.75778	0.010	0.84833	20.00000	Averaged
95 1,2-Dichlorobenzene	1.26487	1.23143	1.23143	0.010	-2.64331	20.00000	Averaged
96 1,2-Dibromo-3-Chloropropane	0.13815	0.14609	0.14609	0.010	5.74574	20.00000	Averaged
98 Hexachlorobutadiene	0.29715	0.31414	0.31414	0.010	5.71704	20.00000	Averaged
99 1,2,4-Trichlorobenzene	0.74393	0.74647	0.74647	0.010	0.34120	20.00000	Averaged
101 Naphthalene	50.00000	44.41119	1.59504	0.010	-11.17762	20.00000	Linear
102 1,2,3-Trichlorobenzene	0.60765	0.59154	0.59154	0.010	-2.65219	20.00000	Averaged
37 Dibromofluoromethane	0.58785	0.60162	0.60162	0.010	2.34136	20.00000	Averaged
45 1,2-Dichloroethane-D4	0.74328	0.83134	0.83134	0.010	11.84838	20.00000	Averaged
55 Toluene-D8	1.21935	1.22307	1.22307	0.010	0.30519	20.00000	Averaged
76 P-Bromofluorobenzene	0.48673	0.51370	0.51370	0.010	5.54087	20.00000	Averaged

600 Technology Way
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Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG228421-4
Lab File ID : D1328.d
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34

SDG: SL3841
Analytical Date: 05/16/18 12:40
Instrument ID: GCMS-D
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
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Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1328.d
Report Date: 21-May-2018 08:12

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051618B.b\D1328.d
Lab Smp Id: WG228421-4
Inj Date : 16-MAY-2018 12:40 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228421-4,SL3841
Misc Info : WG228421,WG227999-4,SL3841-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051618B.b\D8A05(21)D.m
Meth Date : 21-May-2018 08:09 gcms-d.i Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

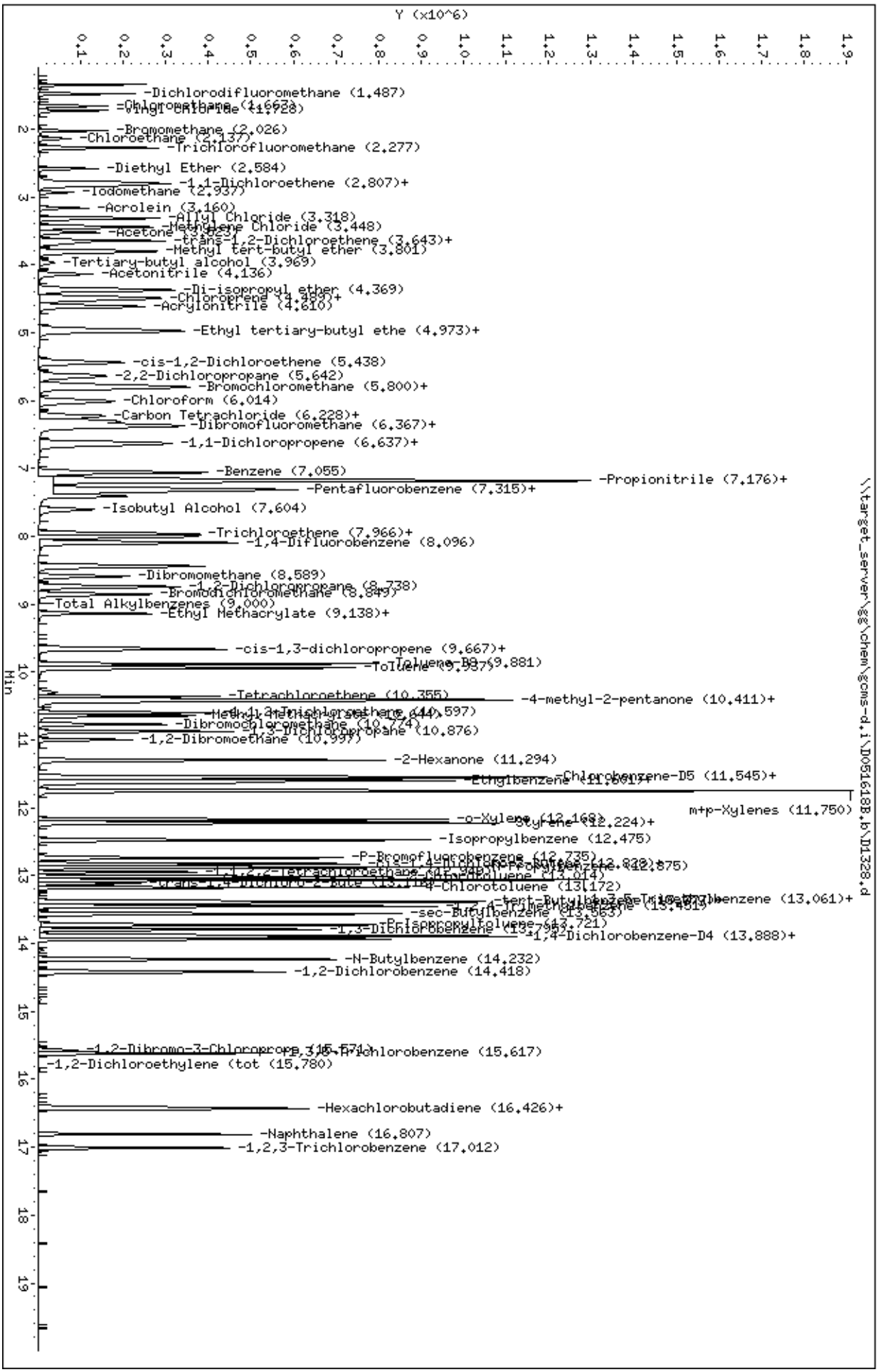
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	147714	50.0000	44.0	
2	Chloromethane	50	1.663	1.663	(0.227)	152113	50.0000	42.2	
3	Vinyl chloride	62	1.728	1.728	(0.236)	120927	50.0000	42.9	
4	Bromomethane	94	2.025	2.025	(0.277)	64915	50.0000	44.6	
5	Chloroethane	64	2.137	2.137	(0.292)	63012	50.0000	48.9	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	217707	50.0000	49.8	
7	Diethyl Ether	59	2.583	2.583	(0.353)	73340	50.0000	50.8	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.543)	41451	250.000	220	
9	1,1-Dichloroethene	96	2.778	2.788	(0.380)	86958	50.0000	46.4	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	283542	50.0000	48.9	
11	Freon-113	151	2.834	2.835	(0.387)	73882	50.0000	45.1	
12	Iodomethane	142	2.936	2.937	(0.401)	92497	50.0000	47.6	
13	Acrolein	56	3.159	3.160	(0.432)	109887	250.000	234	
14	Methylene Chloride	84	3.448	3.448	(0.471)	144267	50.0000	46.1	
15	Acetone	43	3.522	3.522	(0.482)	217560	250.000	250	
16	Isobutyl Alcohol	43	7.603	7.604	(1.039)	103576	1000.00	881	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	124278	50.0000	43.4	
18	Allyl Chloride	41	3.318	3.318	(0.454)	211093	50.0000	50.4	
19	Methyl tert-butyl ether	73	3.801	3.811	(0.520)	350001	50.0000	47.3	
20	Acetonitrile	39	4.136	4.136	(0.565)	39250	500.000	497	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	441691	50.0000	50.0	
22	Chloroprene	53	4.480	4.480	(0.612)	218802	50.0000	49.4	
23	Propionitrile	54	7.138	7.148	(0.976)	201114	500.000	498	
24	Methacrylonitrile	41	7.176	7.185	(0.981)	970329	500.000	539	

Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1328.d
Report Date: 21-May-2018 08:12

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	259931	50.0000	48.6	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	235459	250.000	250	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	371671	50.0000	49.8	
	28	Vinyl Acetate	43	4.982	4.982	(0.615)	342556	50.0000	54.0	
	29	cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	138973	50.0000	45.6	
M	30	1,2-Dichloroethylene (total)	96				263251	50.0000	89.1	
	31	Methyl Methacrylate	41	10.643	10.643	(1.315)	137719	50.0000	51.1	
	32	2,2-Dichloropropane	77	5.642	5.642	(0.771)	179318	50.0000	50.9	
	33	Bromochloromethane	128	5.809	5.809	(0.794)	75668	50.0000	50.4	
	34	Chloroform	83	6.013	6.014	(0.822)	273093	50.0000	48.7	
	35	Carbon Tetrachloride	117	6.227	6.237	(0.769)	191038	50.0000	49.8	
	36	Tetrahydrofuran	42	6.302	6.302	(0.861)	200943	250.000	250	
$	37	Dibromofluoromethane	113	6.367	6.376	(0.870)	166720	50.0000	51.2	
	38	1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	223862	50.0000	48.5	
	39	1,1-Dichloropropene	75	6.618	6.627	(0.817)	190590	50.0000	46.8	
	40	2-Butanone	43	6.655	6.655	(0.910)	339734	250.000	252	
	41	Benzene	78	7.055	7.055	(0.871)	519016	50.0000	47.3	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	277120	50.0000		
	43	Cyclohexane	56	5.790	5.791	(0.792)	209396	50.0000	45.9	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	96088	50.0000	45.7	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	230382	50.0000	55.9	
	46	Tertiary-amyl methyl ether	73	7.334	7.334	(1.003)	296523	50.0000	47.9	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	238123	50.0000	51.9	
	48	Trichloroethene	95	8.003	8.003	(0.989)	144739	50.0000	48.4	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	444991	50.0000		
	50	Dibromomethane	93	8.589	8.589	(1.061)	103890	50.0000	51.3	
	51	1,2-Dichloropropane	63	8.737	8.738	(1.079)	148368	50.0000	50.0	
	52	Bromodichloromethane	83	8.849	8.859	(1.093)	215157	50.0000	52.3	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	255288	50.0000	53.3	
	54	1,4-Dioxane	88	9.137	9.137	(1.129)	23487	1000.00	772	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	544257	50.0000	50.2	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	84004	50.0000	45.5	
	57	Toluene	92	9.937	9.937	(1.227)	316138	50.0000	47.1	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	735729	250.000	272	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	100207	50.0000	44.3	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	227438	50.0000	54.8	
	61	1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	119171	50.0000	50.4	
	62	Dibromochloromethane	129	10.773	10.774	(0.934)	161780	50.0000	51.9	
	63	1,3-Dichloropropane	76	10.875	10.876	(0.943)	250106	50.0000	49.3	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	146055	50.0000	51.3	
	65	2-Hexanone	43	11.294	11.294	(0.979)	511937	250.000	267	
*	66	Chlorobenzene-D5	117	11.536	11.536	(1.000)	414738	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.002)	360941	50.0000	47.1	
	68	Ethylbenzene	91	11.601	11.601	(1.006)	633489	50.0000	48.2	
	69	1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	136809	50.0000	50.1	
M	70	Xylenes (total)	106				1497352	150.000	149	
	71	m+p-Xylenes	91	11.749	11.750	(1.019)	991148	100.000	99.2	
	72	o-Xylene	91	12.168	12.168	(1.055)	506204	50.0000	50.2	
	73	Styrene	104	12.223	12.224	(1.060)	383290	50.0000	50.3	
	74	Bromoform	173	12.233	12.233	(1.060)	98859	50.0000	47.4	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	560880	50.0000	49.4	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	228593	50.0000	52.8	
	77	cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	61503	50.0000	51.2	
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	49165	50.0000	50.3	

Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1328.d
Report Date: 21-May-2018 08:12

		QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	79 Bromobenzene	156	12.828	12.828	(0.924)	151929	50.0000	47.5	
	80 N-Propylbenzene	91	12.874	12.875	(0.928)	729416	50.0000	49.1	
	81 1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.933)	180016	50.0000	48.4	
	82 1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	490732	50.0000	49.8	
	83 2-Chlorotoluene	91	13.014	13.014	(0.938)	438588	50.0000	49.3	
	84 1,2,3-Trichloropropane	75	13.060	13.070	(0.941)	163068	50.0000	50.9	
	85 4-Chlorotoluene	91	13.172	13.172	(0.949)	472204	50.0000	49.9	
	86 tert-Butylbenzene	119	13.376	13.377	(0.964)	466835	50.0000	50.3	
	87 Pentachloroethane	117	13.395	13.395	(0.965)	113440	50.0000	51.0	
	88 1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	513606	50.0000	50.3	
	89 P-Isopropyltoluene	119	13.729	13.730	(0.989)	488892	50.0000	51.4	
	90 1,3-Dichlorobenzene	146	13.795	13.795	(0.994)	272308	50.0000	47.7	
*	91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	213967	50.0000		
	92 1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	281811	50.0000	47.6	
	93 N-Butylbenzene	91	14.231	14.232	(1.025)	472771	50.0000	53.4	
	94 sec-Butylbenzene	105	13.562	13.563	(0.977)	590074	50.0000	50.4	
	95 1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	263486	50.0000	48.7	
	96 1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	31258	50.0000	52.9	
	97 1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	185038	50.0000	50.7	
	98 Hexachlorobutadiene	225	16.407	16.416	(1.182)	67216	50.0000	52.8	
	99 1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	159720	50.0000	50.2	
	100 1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	517284	50.0000	50.4	
	101 Naphthalene	128	16.807	16.806	(1.211)	341286	50.0000	44.4	
	102 1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	126569	50.0000	48.7	
	103 Methyl Acetate	43	3.689	3.690	(0.504)	119532	50.0000	48.3	
	104 Methylcyclohexane	83	7.966	7.966	(1.089)	199578	50.0000	46.6	
M	153 Total Alkylbenzenes	100				3752326	50.0000	355	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Date : 16-MAY-2018 12:40
Client ID:
Sample Info: WG228421-4,SL3841
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051618B.b\D1328.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.662)
-Vinyl Chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.137)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.563)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.801)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.369)
-Chloroprene (4.469)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.438)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.228)+
-Dibromofluoromethane (6.367)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.055)
-Propionitrile (7.176)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.604)
-Trichloroethene (7.966)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.849)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.881)
-Toluene (9.937)
-Tetrachloroethene (10.355)
-4-methyl-2-pentanone (10.411)+
-Methyl Methacrylate (10.597)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-Ethylbenzene (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-cis-1,4-Dichloro-2-butene (12.828)+
-1,1,2,2-Tetrachloroethane (12.875)
-Bromobenzene (13.014)
-trans-1,4-Dichloro-2-butene (13.114)+
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.061)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.563)
-PrIsopropyltoluene (13.721)
-1,3-Dichlorobenzene (13.792)
-1,4-Dichlorobenzene-D4 (13.888)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.571)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG228421-5
Analytical Date: 05/16/18 23:06
Lab File ID : D1345.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.60519	0.59577	0.59577	0.010	-1.55610	20.00000	Averaged
2	Chloromethane	0.65045	0.56160	0.56160	0.100	-13.65956	20.00000	Averaged
3	Vinyl chloride	0.50829	0.48318	0.48318	0.010	-4.94131	20.00000	Averaged
4	Bromomethane	0.26245	0.21930	0.21930	0.010	-16.44063	20.00000	Averaged
5	Chloroethane	0.23262	0.24872	0.24872	0.010	6.92243	20.00000	Averaged
6	Trichlorofluoromethane	0.78861	0.91590	0.91590	0.010	16.14029	20.00000	Averaged
9	1,1-Dichloroethene	0.33801	0.35829	0.35829	0.100	6.00040	20.00000	Averaged
10	Carbon Disulfide	1.04529	1.15862	1.15862	0.010	10.84181	20.00000	Averaged
11	Freon-113	0.29565	0.29457	0.29457	0.010	-0.36322	20.00000	Averaged
14	Methylene Chloride	0.56422	0.53622	0.53622	0.010	-4.96242	20.00000	Averaged
15	Acetone	0.15669	0.16654	0.16654	0.010	6.28067	20.00000	Averaged
17	trans-1,2-Dichloroethene	0.51620	0.48525	0.48525	0.010	-5.99598	20.00000	Averaged
19	Methyl tert-butyl ether	1.33505	1.31029	1.31029	0.010	-1.85436	20.00000	Averaged
25	1,1-Dichloroethane	0.96513	1.01851	1.01851	0.100	5.53110	20.00000	Averaged
29	cis-1,2-Dichloroethene	0.54948	0.53058	0.53058	0.010	-3.44103	20.00000	Averaged
32	2,2-Dichloropropane	0.63584	0.55140	0.55140	0.010	-13.28030	20.00000	Averaged
33	Bromochloromethane	0.27091	0.28487	0.28487	0.010	5.15141	20.00000	Averaged
34	Chloroform	1.01172	1.06508	1.06508	0.010	5.27501	20.00000	Averaged
35	Carbon Tetrachloride	0.43090	0.47040	0.47040	0.010	9.16657	20.00000	Averaged
38	1,1,1-Trichloroethane	0.83243	0.90851	0.90851	0.010	9.14008	20.00000	Averaged
39	1,1-Dichloropropene	0.45737	0.46691	0.46691	0.010	2.08521	20.00000	Averaged
40	2-Butanone	0.24292	0.26046	0.26046	0.010	7.21776	20.00000	Averaged
41	Benzene	1.23369	1.22592	1.22592	0.010	-0.62938	20.00000	Averaged
47	1,2-Dichloroethane	0.51571	0.57183	0.57183	0.010	10.88148	20.00000	Averaged
48	Trichloroethene	0.33634	0.34633	0.34633	0.010	2.96928	20.00000	Averaged
50	Dibromomethane	0.22736	0.23990	0.23990	0.010	5.51493	20.00000	Averaged
51	1,2-Dichloropropane	0.33353	0.35175	0.35175	0.010	5.46243	20.00000	Averaged
52	Bromodichloromethane	0.46224	0.50853	0.50853	0.010	10.01494	20.00000	Averaged
53	cis-1,3-dichloropropene	0.53778	0.57683	0.57683	0.010	7.26184	20.00000	Averaged
57	Toluene	0.75378	0.74858	0.74858	0.010	-0.68944	20.00000	Averaged
58	4-methyl-2-pentanone	0.30443	0.34200	0.34200	0.010	12.33871	20.00000	Averaged
59	Tetrachloroethene	0.27263	0.26081	0.26081	0.010	-4.33492	20.00000	Averaged
60	trans-1,3-Dichloropropene	0.46607	0.52359	0.52359	0.010	12.34193	20.00000	Averaged
61	1,1,2-Trichloroethane	0.26549	0.26828	0.26828	0.010	1.05133	20.00000	Averaged
62	Dibromochloromethane	0.37557	0.40579	0.40579	0.010	8.04663	20.00000	Averaged
63	1,3-Dichloropropane	0.61122	0.63023	0.63023	0.010	3.11146	20.00000	Averaged
64	1,2-Dibromoethane	0.32012	0.33557	0.33557	0.010	4.82806	20.00000	Averaged
65	2-Hexanone	0.23077	0.26312	0.26312	0.010	14.02154	20.00000	Averaged
67	Chlorobenzene	0.92421	0.91981	0.91981	0.300	-0.47587	20.00000	Averaged
68	Ethylbenzene	1.58372	1.64374	1.64374	0.010	3.78959	20.00000	Averaged
69	1,1,1,2-Tetrachloroethane	0.32933	0.35771	0.35771	0.010	8.61906	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG228421-5
Analytical Date: 05/16/18 23:06
Lab File ID : D1345.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71 m+p-Xylenes	1.20403	1.27359	1.27359	0.010	5.77717	20.00000	Averaged
72 o-Xylene	1.21487	1.31072	1.31072	0.010	7.89028	20.00000	Averaged
73 Styrene	0.91910	0.97457	0.97457	0.010	6.03437	20.00000	Averaged
74 Bromoform	50.00000	48.18603	0.24241	0.100	-3.62794	20.00000	Linear
75 Isopropylbenzene	2.65481	2.79038	2.79038	0.010	5.10645	20.00000	Averaged
79 Bromobenzene	0.74765	0.73090	0.73090	0.010	-2.23999	20.00000	Averaged
80 N-Propylbenzene	3.47227	3.63675	3.63675	0.010	4.73692	20.00000	Averaged
81 1,1,2,2-Tetrachloroethane	0.86973	0.85604	0.85604	0.300	-1.57414	20.00000	Averaged
82 1,3,5-Trimethylbenzene	2.30306	2.44729	2.44729	0.010	6.26252	20.00000	Averaged
83 2-Chlorotoluene	2.07978	2.15852	2.15852	0.010	3.78594	20.00000	Averaged
84 1,2,3-Trichloropropane	0.74898	0.77812	0.77812	0.010	3.89109	20.00000	Averaged
85 4-Chlorotoluene	2.20985	2.32031	2.32031	0.010	4.99836	20.00000	Averaged
86 tert-Butylbenzene	2.16738	2.31640	2.31640	0.010	6.87543	20.00000	Averaged
88 1,2,4-Trimethylbenzene	2.38615	2.52388	2.52388	0.010	5.77244	20.00000	Averaged
89 P-Isopropyltoluene	2.22161	2.38625	2.38625	0.010	7.41080	20.00000	Averaged
90 1,3-Dichlorobenzene	1.33333	1.32598	1.32598	0.010	-0.55162	20.00000	Averaged
92 1,4-Dichlorobenzene	1.38362	1.36379	1.36379	0.010	-1.43324	20.00000	Averaged
93 N-Butylbenzene	2.07013	2.33338	2.33338	0.010	12.71695	20.00000	Averaged
94 sec-Butylbenzene	2.73458	2.94270	2.94270	0.010	7.61064	20.00000	Averaged
95 1,2-Dichlorobenzene	1.26487	1.27796	1.27796	0.010	1.03542	20.00000	Averaged
96 1,2-Dibromo-3-Chloropropane	0.13815	0.14648	0.14648	0.010	6.03239	20.00000	Averaged
98 Hexachlorobutadiene	0.29715	0.32489	0.32489	0.010	9.33365	20.00000	Averaged
99 1,2,4-Trichlorobenzene	0.74393	0.75299	0.75299	0.010	1.21769	20.00000	Averaged
101 Naphthalene	50.00000	45.03403	1.61798	0.010	-9.93194	20.00000	Linear
102 1,2,3-Trichlorobenzene	0.60765	0.61231	0.61231	0.010	0.76657	20.00000	Averaged
37 Dibromofluoromethane	0.58785	0.62104	0.62104	0.010	5.64590	20.00000	Averaged
45 1,2-Dichloroethane-D4	0.74328	0.85996	0.85996	0.010	15.69889	20.00000	Averaged
55 Toluene-D8	1.21935	1.21661	1.21661	0.010	-0.22455	20.00000	Averaged
76 P-Bromofluorobenzene	0.48673	0.50961	0.50961	0.010	4.69906	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG228421-5
Lab File ID : D1345.d
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34

SDG: SL3841
Analytical Date: 05/16/18 23:06
Instrument ID: GCMS-D
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1345.d
Report Date: 21-May-2018 08:12

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051618B.b\D1345.d
Lab Smp Id: WG228421-5
Inj Date : 16-MAY-2018 23:06 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228421-5,SL3841
Misc Info : WG228421,WG227999-4,SL3841-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051618B.b\D8A05(21)D.m
Meth Date : 21-May-2018 08:09 gcms-d.i Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 18 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	152724	50.0000	49.2	
2	Chloromethane	50	1.663	1.663	(0.227)	143966	50.0000	43.2	
3	Vinyl chloride	62	1.737	1.728	(0.238)	123861	50.0000	47.5	
4	Bromomethane	94	2.025	2.025	(0.277)	56218	50.0000	41.8	
5	Chloroethane	64	2.137	2.137	(0.292)	63760	50.0000	53.5	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	234789	50.0000	58.1	
7	Diethyl Ether	59	2.583	2.583	(0.353)	71181	50.0000	53.2	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.543)	42200	250.000	242	
9	1,1-Dichloroethene	96	2.788	2.788	(0.381)	91847	50.0000	53.0	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	297010	50.0000	55.4	
11	Freon-113	151	2.834	2.835	(0.387)	75513	50.0000	49.8	
12	Iodomethane	142	2.936	2.937	(0.401)	82649	50.0000	46.1	
13	Acrolein	56	3.169	3.160	(0.433)	74319	250.000	171	
14	Methylene Chloride	84	3.448	3.448	(0.471)	137460	50.0000	47.5	
15	Acetone	43	3.522	3.522	(0.482)	213456	250.000	266	
16	Isobutyl Alcohol	43	7.613	7.604	(1.041)	104904	1000.00	962	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	124392	50.0000	47.0	
18	Allyl Chloride	41	3.318	3.318	(0.454)	194650	50.0000	50.3	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	335890	50.0000	49.1	
20	Acetonitrile	39	4.136	4.136	(0.565)	39993	500.000	547	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	418453	50.0000	51.2	
22	Chloroprene	53	4.480	4.480	(0.612)	220952	50.0000	54.0	
23	Propionitrile	54	7.148	7.148	(0.977)	196503	500.000	526	
24	Methacrylonitrile	41	7.185	7.185	(0.982)	941286	500.000	565	

Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1345.d
Report Date: 21-May-2018 08:12

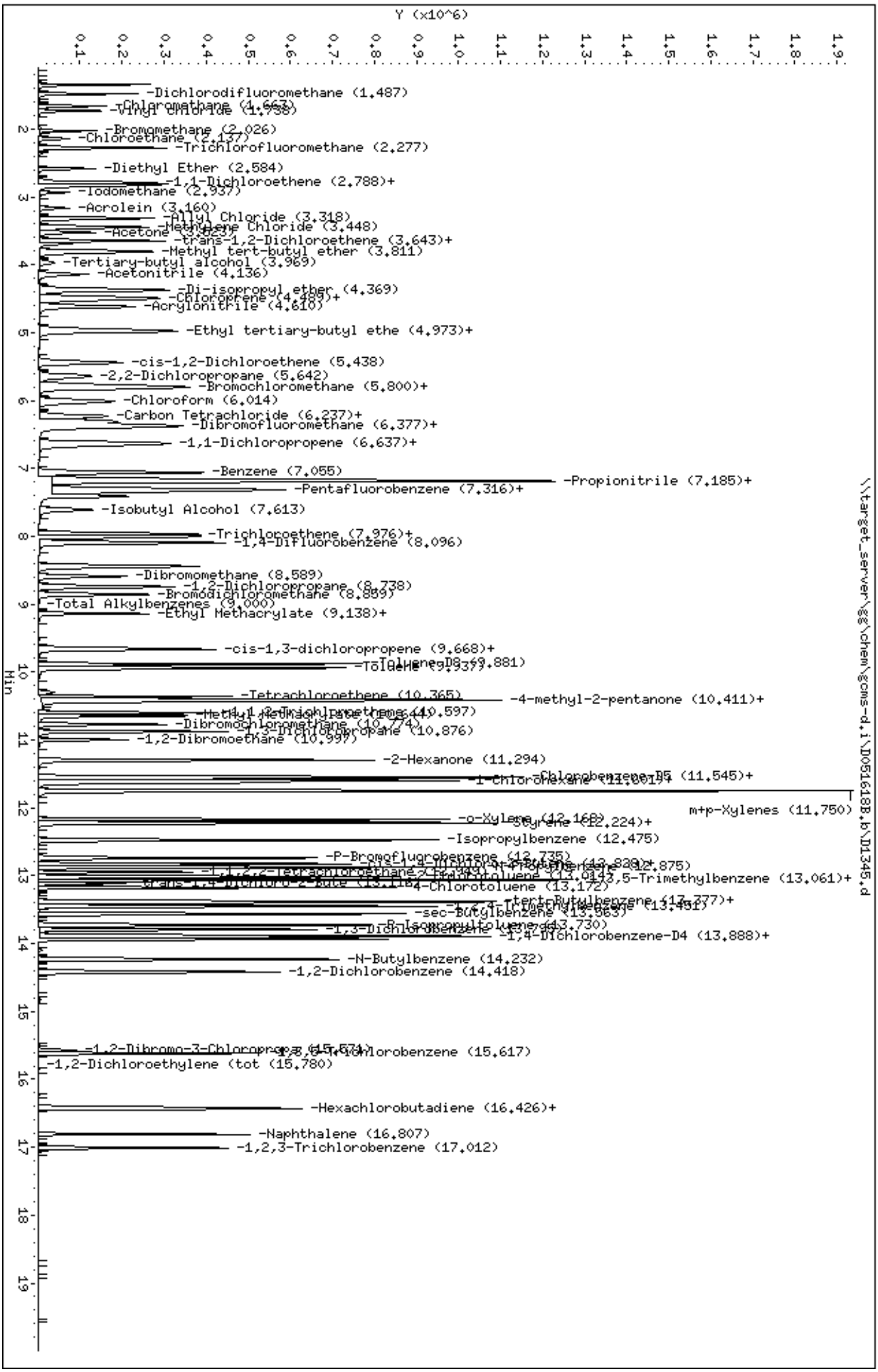
							AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	25 1,1-Dichloroethane	63	4.517	4.517	(0.617)	261093	50.0000	52.8	
	26 Acrylonitrile	52	4.610	4.610	(0.630)	223922	250.000	257	
	27 Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	353407	50.0000	51.2	
	28 Vinyl Acetate	43	4.982	4.982	(0.615)	323519	50.0000	54.0	
	29 cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	136012	50.0000	48.3	
M	30 1,2-Dichloroethylene (total)	96				260404	50.0000	(a)	
	31 Methyl Methacrylate	41	10.643	10.643	(1.315)	134083	50.0000	52.6	
	32 2,2-Dichloropropane	77	5.642	5.642	(0.771)	141351	50.0000	43.4	
	33 Bromochloromethane	128	5.809	5.809	(0.794)	73025	50.0000	52.6	
	34 Chloroform	83	6.014	6.014	(0.822)	273032	50.0000	52.6	
	35 Carbon Tetrachloride	117	6.237	6.237	(0.770)	197976	50.0000	54.6	
	36 Tetrahydrofuran	42	6.302	6.302	(0.861)	200832	250.000	271	
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	159203	50.0000	52.8	
	38 1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	232895	50.0000	54.6	
	39 1,1-Dichloropropene	75	6.627	6.627	(0.819)	196505	50.0000	51.0	
	40 2-Butanone	43	6.655	6.655	(0.910)	333837	250.000	268	
	41 Benzene	78	7.055	7.055	(0.871)	515951	50.0000	49.7	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	256348	50.0000		
	43 Cyclohexane	56	5.790	5.791	(0.792)	218042	50.0000	51.7	
	44 Ethyl Methacrylate	69	9.137	9.137	(1.129)	90359	50.0000	45.4	
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	220450	50.0000	57.8	
	46 Tertiary-amyl methyl ether	73	7.334	7.334	(1.003)	288374	50.0000	50.4	
	47 1,2-Dichloroethane	62	7.408	7.408	(0.915)	240663	50.0000	55.4	
	48 Trichloroethene	95	8.003	8.003	(0.989)	145759	50.0000	51.5	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	420867	50.0000		
	50 Dibromomethane	93	8.589	8.589	(1.061)	100966	50.0000	52.8	
	51 1,2-Dichloropropane	63	8.737	8.738	(1.079)	148040	50.0000	52.7	
	52 Bromodichloromethane	83	8.858	8.859	(1.094)	214023	50.0000	55.0	
	53 cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	242768	50.0000	53.6	
	54 1,4-Dioxane	88	9.137	9.137	(1.129)	25515	1000.00	889	
$	55 Toluene-D8	98	9.881	9.881	(1.220)	512033	50.0000	49.9	
	56 2-Chloroethylvinylether	63	9.639	9.639	(1.191)	73745	50.0000	42.2	
	57 Toluene	92	9.937	9.937	(1.227)	315054	50.0000	49.6	
	58 4-methyl-2-pentanone	43	10.411	10.411	(1.286)	719675	250.000	281	
	59 Tetrachloroethene	164	10.364	10.365	(0.898)	101547	50.0000	47.8	
	60 trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	220362	50.0000	56.2	
	61 1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	112911	50.0000	50.5	
	62 Dibromochloromethane	129	10.773	10.774	(0.934)	157995	50.0000	54.0	
	63 1,3-Dichloropropane	76	10.876	10.876	(0.943)	245381	50.0000	51.6	
	64 1,2-Dibromoethane	107	10.996	10.997	(1.358)	141231	50.0000	52.4	
	65 2-Hexanone	43	11.294	11.294	(0.979)	512233	250.000	285	
*	66 Chlorobenzene-D5	117	11.536	11.536	(1.000)	389349	50.0000		
	67 Chlorobenzene	112	11.554	11.555	(1.002)	358128	50.0000	49.8	
	152 1-Chlorohexane	91	11.601	11.601	(1.006)	639989	50.0000	(a)	
	68 Ethylbenzene	91	11.601	11.601	(1.006)	639989	50.0000	51.9	
	69 1,1,1,2-Tetrachloroethane	131	11.629	11.629	(1.008)	139275	50.0000	54.3	
M	70 Xylenes (total)	106				1502071	150.000	(a)	
	71 m+p-Xylenes	91	11.749	11.750	(1.019)	991742	100.000	106	
	72 o-Xylene	91	12.168	12.168	(1.055)	510329	50.0000	53.9	
	73 Styrene	104	12.224	12.224	(1.060)	379446	50.0000	53.0	
	74 Bromoform	173	12.233	12.233	(1.060)	94381	50.0000	48.2	
	75 Isopropylbenzene	105	12.475	12.475	(0.899)	568900	50.0000	52.6	
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	214476	50.0000	52.3	
	77 cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	52463	50.0000	45.9	

Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1345.d
Report Date: 21-May-2018 08:12

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	78 trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	43297	50.0000	46.6	
	79 Bromobenzene	156	12.828	12.828	(0.924)	149015	50.0000	48.9	
	80 N-Propylbenzene	91	12.874	12.875	(0.928)	741456	50.0000	52.4	
	81 1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.933)	174529	50.0000	49.2	
	82 1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	498951	50.0000	53.1	
	83 2-Chlorotoluene	91	13.014	13.014	(0.938)	440077	50.0000	51.9	
	84 1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	158642	50.0000	51.9	
	85 4-Chlorotoluene	91	13.172	13.172	(0.949)	473062	50.0000	52.5	
	86 tert-Butylbenzene	119	13.376	13.377	(0.964)	472265	50.0000	53.4	
	87 Pentachloroethane	117	13.395	13.395	(0.965)	112194	50.0000	52.9	
	88 1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	514567	50.0000	52.9	
	89 P-Isopropyltoluene	119	13.730	13.730	(0.989)	486507	50.0000	53.7	
	90 1,3-Dichlorobenzene	146	13.795	13.795	(0.994)	270339	50.0000	49.7	
*	91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	203879	50.0000		
	92 1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	278048	50.0000	49.3	
	93 N-Butylbenzene	91	14.232	14.232	(1.025)	475728	50.0000	56.4	
	94 sec-Butylbenzene	105	13.562	13.563	(0.977)	599955	50.0000	53.8	
	95 1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	260550	50.0000	50.5	
	96 1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	29865	50.0000	53.0	
	97 1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	175473	50.0000	50.4	
	98 Hexachlorobutadiene	225	16.416	16.416	(1.183)	66238	50.0000	54.7	
	99 1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	153519	50.0000	50.6	
	100 1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	513201	50.0000	52.4	
	101 Naphthalene	128	16.807	16.806	(1.211)	329873	50.0000	45.0	
	102 1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	124837	50.0000	50.4	
	103 Methyl Acetate	43	3.689	3.690	(0.504)	112655	50.0000	49.2	
	104 Methylcyclohexane	83	7.966	7.966	(1.089)	200288	50.0000	50.6	
M	153 Total Alkylbenzenes	100				3789429	50.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1345.d
Date : 16-MAY-2018 23:06
Client ID:
Sample Info: WG228421-5,SL3841
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051618B.b\D1345.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)
-Vinyl Chloride (1.738)
-Bromomethane (2.026)
-Chloroethane (2.137)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.788)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.623)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.369)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.438)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)+
-Dibromofluoromethane (6.377)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.055)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.316)+
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.976)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.889)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.668)+
=Toluene (9.939)
Toluene-D8 (9.881)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-Methyl Methacrylate (10.597)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-1-Chlorohexane (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-1,1,2,2-Tetrachloroethane (12.949)
-4-Chlorotoluene (13.172)
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.563)
-1,3-Dichlorobenzene (13.730)
-1,4-Dichlorobenzene-D4 (13.888)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.574)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG227763-4
Analytical Date: 05/07/18 08:50
Lab File ID : P5545.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.43125	0.35442	0.35442	0.010	-17.81504	20.00000	Averaged	
2	Chloromethane	0.41298	0.40232	0.40232	0.100	-2.58034	20.00000	Averaged	
3	Vinyl chloride	0.45162	0.44138	0.44138	0.010	-2.26727	20.00000	Averaged	
4	Bromomethane	50.00000	58.56231	0.24301	0.010	17.12461	20.00000	Quadratic	
5	Chloroethane	0.25280	0.24041	0.24041	0.010	-4.90201	20.00000	Averaged	
6	Trichlorofluoromethane	0.80063	0.76700	0.76700	0.010	-4.20023	20.00000	Averaged	
8	1,1-Dichloroethene	0.33313	0.29954	0.29954	0.100	-10.08293	20.00000	Averaged	
9	Freon-113	0.32070	0.29020	0.29020	0.010	-9.51029	20.00000	Averaged	
10	Carbon Disulfide	1.12657	1.09108	1.09108	0.010	-3.14996	20.00000	Averaged	
14	Methylene Chloride	0.42921	0.38839	0.38839	0.010	-9.51048	20.00000	Averaged	
15	Acetone	0.10305	0.11632	0.11632	0.010	12.87089	20.00000	Averaged	
16	trans-1,2-Dichloroethene	0.40076	0.36220	0.36220	0.010	-9.62296	20.00000	Averaged	
18	Methyl tert-butyl ether	1.17248	1.18610	1.18610	0.010	1.16155	20.00000	Averaged	
23	1,1-Dichloroethane	0.76776	0.70410	0.70410	0.100	-8.29201	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.42916	0.41507	0.41507	0.010	-3.28212	20.00000	Averaged	
28	2,2-Dichloropropane	0.54077	0.55215	0.55215	0.010	2.10445	20.00000	Averaged	
29	Bromochloromethane	0.19074	0.18709	0.18709	0.010	-1.91073	20.00000	Averaged	
31	Chloroform	0.75331	0.70742	0.70742	0.010	-6.09139	20.00000	Averaged	
32	Carbon Tetrachloride	0.34975	0.32571	0.32571	0.010	-6.87293	20.00000	Averaged	
35	1,1,1-Trichloroethane	0.67334	0.62079	0.62079	0.010	-7.80361	20.00000	Averaged	
36	2-Butanone	0.16702	0.20142	0.20142	0.010	20.59773	20.00000	Averaged	*
37	1,1-Dichloropropene	0.37972	0.35396	0.35396	0.010	-6.78279	20.00000	Averaged	
38	Benzene	1.05328	0.99835	0.99835	0.010	-5.21487	20.00000	Averaged	
44	1,2-Dichloroethane	0.41171	0.38357	0.38357	0.010	-6.83424	20.00000	Averaged	
47	Trichloroethene	0.25959	0.24719	0.24719	0.010	-4.77841	20.00000	Averaged	
49	Dibromomethane	0.15699	0.16372	0.16372	0.010	4.28386	20.00000	Averaged	
50	1,2-Dichloropropane	0.26524	0.26396	0.26396	0.010	-0.48287	20.00000	Averaged	
51	Bromodichloromethane	0.36322	0.35533	0.35533	0.010	-2.17311	20.00000	Averaged	
57	cis-1,3-dichloropropene	0.45463	0.46942	0.46942	0.010	3.25242	20.00000	Averaged	
59	Toluene	0.66226	0.64142	0.64142	0.010	-3.14592	20.00000	Averaged	
60	Tetrachloroethene	0.20214	0.17465	0.17465	0.010	-13.59882	20.00000	Averaged	
61	4-methyl-2-pentanone	0.22676	0.27874	0.27874	0.010	22.92228	20.00000	Averaged	*
62	trans-1,3-Dichloropropene	50.00000	48.79748	0.43132	0.010	-2.40504	20.00000	Linear	
63	1,1,2-Trichloroethane	50.00000	50.09516	0.20227	0.010	0.19032	20.00000	Linear	
64	Dibromochloromethane	0.25376	0.24864	0.24864	0.010	-2.01961	20.00000	Averaged	
65	1,3-Dichloropropane	0.46479	0.45824	0.45824	0.010	-1.40939	20.00000	Averaged	
66	1,2-Dibromoethane	0.24154	0.26864	0.26864	0.010	11.22198	20.00000	Averaged	
67	2-Hexanone	0.15031	0.18355	0.18355	0.010	22.11369	20.00000	Averaged	*
69	Chlorobenzene	0.74849	0.71542	0.71542	0.300	-4.41875	20.00000	Averaged	
71	Ethylbenzene	0.41112	0.39094	0.39094	0.010	-4.90715	20.00000	Averaged	
72	1,1,1,2-Tetrachloroethane	50.00000	45.92400	0.23804	0.010	-8.15200	20.00000	Linear	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG227763-4
Analytical Date: 05/07/18 08:50
Lab File ID : P5545.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.49968	0.47842	0.47842	0.010	-4.25406	20.00000	Averaged
74 o-Xylene	0.47829	0.45856	0.45856	0.010	-4.12501	20.00000	Averaged
75 Styrene	0.81074	0.80520	0.80520	0.010	-0.68295	20.00000	Averaged
76 Bromoform	0.17862	0.18903	0.18903	0.100	5.82809	20.00000	Averaged
77 Isopropylbenzene	2.11666	1.97337	1.97337	0.010	-6.76981	20.00000	Averaged
80 Bromobenzene	0.55530	0.51066	0.51066	0.010	-8.03871	20.00000	Averaged
81 N-Propylbenzene	2.55237	2.42182	2.42182	0.010	-5.11514	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.54908	0.57669	0.57669	0.300	5.02686	20.00000	Averaged
83 2-Chlorotoluene	1.54905	1.41332	1.41332	0.010	-8.76199	20.00000	Averaged
84 1,2,3-Trichloropropane	0.50367	0.52157	0.52157	0.010	3.55444	20.00000	Averaged
85 1,3,5-Trimethylbenzene	1.80635	1.70983	1.70983	0.010	-5.34320	20.00000	Averaged
87 4-Chlorotoluene	1.65124	1.54045	1.54045	0.010	-6.70936	20.00000	Averaged
88 tert-Butylbenzene	1.74399	1.64034	1.64034	0.010	-5.94307	20.00000	Averaged
90 1,2,4-Trimethylbenzene	1.86859	1.80059	1.80059	0.010	-3.63903	20.00000	Averaged
91 sec-Butylbenzene	2.20469	2.09561	2.09561	0.010	-4.94722	20.00000	Averaged
92 P-Isopropyltoluene	1.81214	1.74905	1.74905	0.010	-3.48165	20.00000	Averaged
93 1,3-Dichlorobenzene	0.98453	0.94197	0.94197	0.010	-4.32257	20.00000	Averaged
95 1,4-Dichlorobenzene	1.04647	0.98257	0.98257	0.010	-6.10563	20.00000	Averaged
97 N-Butylbenzene	1.62689	1.56923	1.56923	0.010	-3.54385	20.00000	Averaged
99 1,2-Dichlorobenzene	0.95547	0.90521	0.90521	0.010	-5.26045	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	54.51037	0.12281	0.010	9.02075	20.00000	Linear
102 Hexachlorobutadiene	0.25220	0.23289	0.23289	0.010	-7.65828	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	46.70621	0.58826	0.010	-6.58757	20.00000	Linear
104 Naphthalene	50.00000	55.00245	1.41315	0.010	10.00490	20.00000	Linear
105 1,2,3-Trichlorobenzene	0.44720	0.49369	0.49369	0.010	10.39547	20.00000	Averaged
34 Dibromofluoromethane	0.49449	0.48168	0.48168	0.010	-2.59051	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.65206	0.64805	0.64805	0.010	-0.61582	20.00000	Averaged
58 Toluene-D8	1.18448	1.21111	1.21111	0.010	2.24781	20.00000	Averaged
78 P-Bromofluorobenzene	0.52519	0.54815	0.54815	0.010	4.37187	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227763-4
Lab File ID : P5545.D
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47

SDG: SL3841
Analytical Date: 05/07/18 08:50
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5545.D
Report Date: 21-May-2018 08:14

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050718.b\P5545.D
Lab Smp Id: WG227763-4
Inj Date : 07-MAY-2018 08:50 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227763-4,SL3841
Misc Info : WG227763,WG227568-4,SL3841-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050718.b\P8A05(68)D.m
Meth Date : 21-May-2018 08:13 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.517	1.515	(0.236)	324085	50.0000	41.1	
2	Chloromethane	50	1.668	1.665	(0.259)	367885	50.0000	48.7	
3	Vinyl chloride	62	1.725	1.729	(0.268)	403602	50.0000	48.9	
4	Bromomethane	94	1.975	1.987	(0.307)	222212	50.0000	58.6	
5	Chloroethane	64	2.068	2.080	(0.321)	219830	50.0000	47.5	
6	Trichlorofluoromethane	101	2.175	2.180	(0.338)	701345	50.0000	47.9	
7	Diethyl Ether	59	2.418	2.416	(0.376)	284314	50.0000	53.7	
19	Tertiary-butyl alcohol	59	3.505	3.510	(0.545)	146364	250.000	319	
8	1,1-Dichloroethene	96	2.590	2.587	(0.402)	273899	50.0000	45.0	
10	Carbon Disulfide	76	2.626	2.623	(0.408)	997686	50.0000	48.4	
9	Freon-113	151	2.619	2.637	(0.407)	265357	50.0000	45.2	
11	Iodomethane	142	2.726	2.730	(0.424)	240911	50.0000	54.2	
12	Acrolein	56	2.897	2.902	(0.450)	296467	250.000	287	
14	Methylene Chloride	84	3.126	3.131	(0.486)	355143	50.0000	45.2	
15	Acetone	43	3.183	3.188	(0.495)	531805	250.000	282	
45	Isobutyl Alcohol	43	6.787	6.792	(1.054)	272993	1000.00	1220(M)	M6
16	trans-1,2-Dichloroethene	96	3.283	3.281	(0.510)	331193	50.0000	45.2	
13	Allyl Chloride	41	3.026	3.016	(0.470)	482770	50.0000	47.3	
18	Methyl tert-butyl ether	73	3.398	3.395	(0.528)	1084570	50.0000	50.6	
20	Acetonitrile	41	3.691	3.696	(0.573)	537527	500.000	538	
21	Di-isopropyl ether	45	3.827	3.824	(0.595)	1141175	50.0000	46.8	
22	Chloroprene	53	3.948	3.960	(0.613)	562909	50.0000	46.0	
39	Propionitrile	54	6.301	6.298	(0.979)	678649	500.000	589	
40	Methacrylonitrile	41	6.329	6.327	(0.983)	2670394	500.000	574	

WKS
8:23 am, May 21, 2018

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5545.D
Report Date: 21-May-2018 08:14

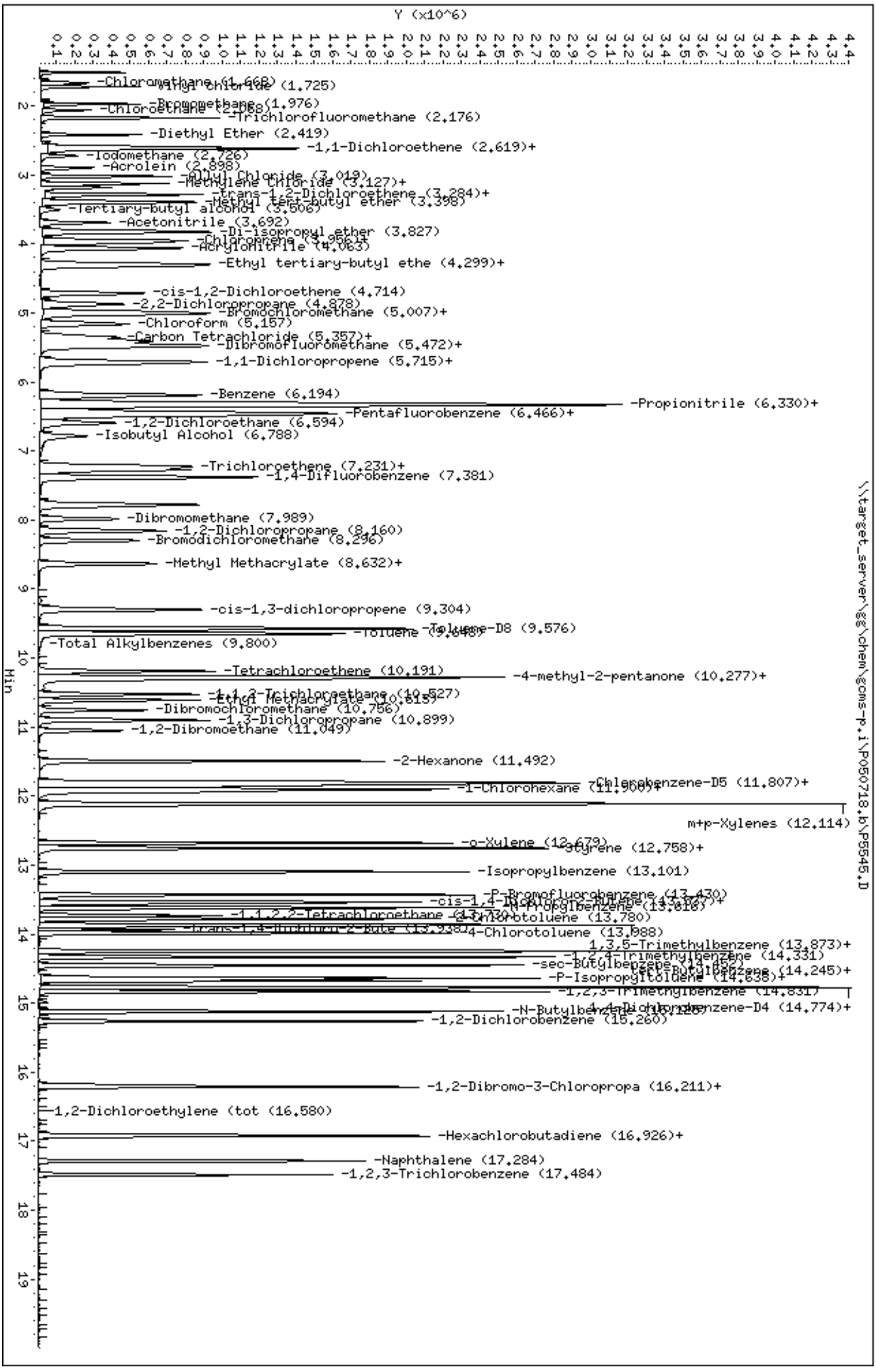
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	3.984	3.989	(0.619)	643828	50.0000	45.8	
	24 Acrylonitrile	52	4.063	4.067	(0.631)	715190	250.000	287	
	25 Ethyl tertiary-butyl ether	59	4.299	4.303	(0.668)	1082330	50.0000	47.7	
	26 Vinyl Acetate	43	4.320	4.325	(0.585)	902804	50.0000	54.1	
	27 cis-1,2-Dichloroethene	96	4.721	4.732	(0.733)	379544	50.0000	48.4	
	52 Methyl Methacrylate	41	8.632	8.643	(1.170)	361508	50.0000	56.1	
	28 2,2-Dichloropropane	77	4.878	4.890	(0.758)	504888	50.0000	51.0	
	29 Bromochloromethane	128	5.021	5.026	(0.780)	171077	50.0000	49.0	
	31 Chloroform	83	5.157	5.154	(0.801)	646865	50.0000	47.0	
	32 Carbon Tetrachloride	117	5.357	5.347	(0.726)	479796	50.0000	46.6	
	33 Tetrahydrofuran	42	5.407	5.419	(0.840)	609524	250.000	292	
$	34 Dibromofluoromethane	113	5.471	5.469	(0.850)	440453	50.0000	48.7	
	35 1,1,1-Trichloroethane	97	5.479	5.483	(0.851)	567655	50.0000	46.1	
	37 1,1-Dichloropropene	75	5.707	5.698	(0.773)	521414	50.0000	46.6	
	36 2-Butanone	43	5.722	5.741	(0.889)	920889	250.000	301	
	38 Benzene	78	6.194	6.184	(0.839)	1470660	50.0000	47.4	
*	41 Pentafluorobenzene	168	6.437	6.441	(1.000)	914402	50.0000		
	30 Cyclohexane	56	4.992	4.990	(0.776)	606286	50.0000	45.6	
	53 Ethyl Methacrylate	69	10.612	10.617	(1.438)	593426	50.0000	51.6	
$	42 1,2-Dichloroethane-D4	65	6.472	6.470	(1.006)	592577	50.0000	49.7	
	43 Tertiary-amyl methyl ether	73	6.472	6.463	(1.006)	1010203	50.0000	50.2	
	44 1,2-Dichloroethane	62	6.594	6.591	(0.893)	565031	50.0000	46.6	
	47 Trichloroethene	95	7.273	7.264	(0.985)	364130	50.0000	47.6	
*	48 1,4-Difluorobenzene	114	7.381	7.385	(1.000)	1473084	50.0000		
	49 Dibromomethane	93	7.988	7.979	(1.082)	241173	50.0000	52.1	
	50 1,2-Dichloropropane	63	8.160	8.164	(1.106)	388838	50.0000	49.8	
	51 Bromodichloromethane	83	8.296	8.307	(1.124)	523425	50.0000	48.9	
	57 cis-1,3-dichloropropene	75	9.304	9.301	(1.261)	691492	50.0000	51.6	
	54 1,4-Dioxane	88	8.646	8.664	(1.171)	81124	1000.00	1090	
$	58 Toluene-D8	98	9.576	9.573	(1.297)	1784062	50.0000	51.1	
	59 Toluene	92	9.647	9.652	(1.307)	944872	50.0000	48.4	
	61 4-methyl-2-pentanone	43	10.276	10.281	(1.392)	2053042	250.000	307	
	60 Tetrachloroethene	164	10.191	10.188	(0.864)	275975	50.0000	43.2	
	62 trans-1,3-Dichloropropene	75	10.305	10.302	(1.396)	635365	50.0000	48.8	
	63 1,1,2-Trichloroethane	83	10.527	10.531	(1.426)	297965	50.0000	50.1	
	64 Dibromochloromethane	129	10.755	10.767	(0.912)	392882	50.0000	49.0	
	65 1,3-Dichloropropane	76	10.898	10.896	(0.924)	724085	50.0000	49.3	
	66 1,2-Dibromoethane	107	11.049	11.053	(1.497)	395735	50.0000	55.6	
	67 2-Hexanone	43	11.492	11.496	(0.974)	1450156	250.000	305	
*	68 Chlorobenzene-D5	117	11.799	11.804	(1.000)	1580139	50.0000		
	69 Chlorobenzene	112	11.821	11.825	(1.002)	1130459	50.0000	47.8	
	70 1-Chlorohexane	91	11.856	11.861	(1.005)	554181	50.0000	47.7	
	71 Ethylbenzene	106	11.899	11.904	(1.008)	617743	50.0000	47.5	
	72 1,1,1,2-Tetrachloroethane	131	11.935	11.940	(1.012)	376133	50.0000	45.9	
	73 m+p-Xylenes	106	12.114	12.111	(1.027)	1511936	100.000	95.7	
	74 o-Xylene	106	12.679	12.683	(1.075)	724591	50.0000	47.9	
	75 Styrene	104	12.757	12.755	(1.081)	1272325	50.0000	49.6	
	76 Bromoform	173	12.750	12.755	(1.081)	298692	50.0000	52.9	
	77 Isopropylbenzene	105	13.101	13.098	(0.887)	1827579	50.0000	46.6	
$	78 P-Bromofluorobenzene	95	13.430	13.427	(1.820)	807474	50.0000	52.2	
	79 cis-1,4-Dichloro-2-Butene	53	13.551	13.548	(0.918)	208285	50.0000	55.5	
	86 trans-1,4-Dichloro-2-Butene	53	13.937	13.942	(0.944)	169831	50.0000	59.8	
	80 Bromobenzene	156	13.537	13.527	(0.917)	472930	50.0000	46.0	
	81 N-Propylbenzene	91	13.615	13.613	(0.922)	2242896	50.0000	47.4	

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5545.D
Report Date: 21-May-2018 08:14

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
82	1,1,2,2-Tetrachloroethane	83	13.730	13.727	(0.930)	534081	50.0000	52.5	
85	1,3,5-Trimethylbenzene	105	13.873	13.877	(0.939)	1583511	50.0000	47.3	
83	2-Chlorotoluene	91	13.780	13.777	(0.933)	1308907	50.0000	45.6	
84	1,2,3-Trichloropropane	75	13.859	13.856	(0.939)	483040	50.0000	51.8	
87	4-Chlorotoluene	91	13.987	13.985	(0.947)	1426646	50.0000	46.6	
88	tert-Butylbenzene	119	14.245	14.242	(0.965)	1519155	50.0000	47.0	
89	Pentachloroethane	165	14.252	14.249	(0.965)	234038	50.0000	49.8	
90	1,2,4-Trimethylbenzene	105	14.330	14.335	(0.970)	1667562	50.0000	48.2	
92	P-Isopropyltoluene	119	14.638	14.635	(0.991)	1619828	50.0000	48.2	
93	1,3-Dichlorobenzene	146	14.681	14.678	(0.994)	872382	50.0000	47.8	
* 94	1,4-Dichlorobenzene-D4	152	14.767	14.771	(1.000)	926121	50.0000		
95	1,4-Dichlorobenzene	146	14.788	14.785	(1.001)	909981	50.0000	46.9	
97	N-Butylbenzene	91	15.124	15.122	(1.024)	1453300	50.0000	48.2	
91	sec-Butylbenzene	105	14.452	14.457	(0.979)	1940793	50.0000	47.5	
99	1,2-Dichlorobenzene	146	15.267	15.265	(1.034)	838333	50.0000	47.4	
100	1,2-Dibromo-3-Chloropropane	157	16.182	16.172	(1.096)	113741	50.0000	54.5	
101	1,3,5-Trichlorobenzene	180	16.211	16.207	(1.098)	623848	50.0000	47.4	
102	Hexachlorobutadiene	225	16.904	16.908	(1.145)	215681	50.0000	46.2	
103	1,2,4-Trichlorobenzene	180	16.926	16.922	(1.146)	544804	50.0000	46.7	
96	1,2,3-Trimethylbenzene	105	14.831	14.835	(1.004)	1736612	50.0000	48.0	
104	Naphthalene	128	17.291	17.288	(1.171)	1308752	50.0000	55.0	
105	1,2,3-Trichlorobenzene	180	17.484	17.488	(1.184)	457220	50.0000	55.2	
17	Methyl Acetate	43	3.305	3.302	(0.513)	333045	50.0000	56.2	
46	Methylcyclohexane	83	7.230	7.228	(1.123)	604668	50.0000	48.2	

QC Flag Legend

M - Compound response manually integrated.


Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5545.D
Date : 07-MAY-2018 08:50
Client ID:
Sample Info: WG227763-4,SL3841
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
\\target_server\gg\chem\gcms-p.i\P050718.b\P5545.D
Y (x10^6)
Min
-Chloromethane (1.668)
-Vinyl Chloride (1.725)
-Bromomethane (1.976)
-Chloroethane (2.068)
-Trichlorofluoromethane (2.176)
-Diethyl Ether (2.419)
-1,1-Dichloroethene (2.619)+
-Iodomethane (2.726)
-Acrolein (2.898)
-Allyl Chloride (3.019)
-Methylene Chloride (3.127)+
-trans-1,2-Dichloroethene (3.284)+
-Methyl tert-butyl ether (3.398)
-Tertiary-Butyl alcohol (3.506)
-Acetonitrile (3.692)
-Di-isopropyl ether (3.827)
-Chloroprene (3.960)+
-Acrylonitrile (4.063)
-Ethyl tertiary-butyl ethe (4.299)+
-cis-1,2-Dichloroethene (4.714)
-2,2-Dichloropropane (4.878)
-Bromochloromethane (5.007)+
-Chloroform (5.157)
-Carbon Tetrachloride (5.357)+
-Dibromofluoromethane (5.472)+
-1,1-Dichloropropene (5.715)+
-Benzene (6.194)
-Propionitrile (6.330)+
-Pentafluorobenzene (6.466)+
-1,2-Dichloroethane (6.594)
-Isobutyl Alcohol (6.788)
-Trichloroethene (7.231)+
-1,4-Difluorobenzene (7.381)
-Dibromomethane (7.989)
-1,2-Dichloropropane (8.160)
-Bromodichloromethane (8.296)
-Methyl Methacrylate (8.632)+
-cis-1,3-dichloropropene (9.304)
-Toluene-D8 (9.576)
-Toluene (9.648)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.191)
-4-methyl-2-pentanone (10.277)+
-1,1,2-Trichloroethane (10.527)
-Ethyl Methacrylate (10.615)
-Dibromochloromethane (10.756)
-1,3-Dichloropropane (10.899)
-1,2-Dibromoethane (11.049)
-2-Hexanone (11.492)
-Chlorobenzene-D5 (11.807)+
-1-Chlorohexane (11.900)+
m+p-Xylenes (12.114)
-o-Xylene (12.479)
-Styrene (12.758)+
-Isopropylbenzene (13.101)
-P-Bromofluorobenzene (13.430)
-cis-1,4-Dichloro-2-Butene (13.527)+
-N-Propylbenzene (13.616)
-1,1,2,2-Tetrachloroethane (13.730)
-2-Chlorotoluene (13.780)
-trans-1,4-Dichloro-2-Bute (13.938)
-4-Chlorotoluene (13.988)
-1,3,5-Trimethylbenzene (13.873)+
-1,2,4-Trimethylbenzene (14.331)
-sec-Butylbenzene (14.467)
-4-Isopropyltoluene (14.245)+
-P-Isopropyltoluene (14.638)+
-1,2,3-Trimethylbenzene (14.831)
-1,4-Dichlorobenzene-D4 (14.774)+
-N-Butylbenzene (15.126)
-1,2-Dichlorobenzene (15.260)
-1,2-Dibromo-3-Chloropropa (16.211)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.926)+
-Naphthalene (17.284)
-1,2,3-Trichlorobenzene (17.484)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG227763-5
Analytical Date: 05/07/18 18:51
Lab File ID : P5562.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.43125	0.37216	0.37216	0.010	-13.70283	20.00000	Averaged	
2	Chloromethane	0.41298	0.42619	0.42619	0.100	3.19917	20.00000	Averaged	
3	Vinyl chloride	0.45162	0.46592	0.46592	0.010	3.16566	20.00000	Averaged	
4	Bromomethane	50.00000	54.16164	0.22297	0.010	8.32328	20.00000	Quadratic	
5	Chloroethane	0.25280	0.26537	0.26537	0.010	4.97179	20.00000	Averaged	
6	Trichlorofluoromethane	0.80063	0.79928	0.79928	0.010	-0.16844	20.00000	Averaged	
8	1,1-Dichloroethene	0.33313	0.32331	0.32331	0.100	-2.94828	20.00000	Averaged	
9	Freon-113	0.32070	0.31875	0.31875	0.010	-0.60833	20.00000	Averaged	
10	Carbon Disulfide	1.12657	1.15757	1.15757	0.010	2.75222	20.00000	Averaged	
14	Methylene Chloride	0.42921	0.41335	0.41335	0.010	-3.69563	20.00000	Averaged	
15	Acetone	0.10305	0.12174	0.12174	0.010	18.13362	20.00000	Averaged	
16	trans-1,2-Dichloroethene	0.40076	0.38581	0.38581	0.010	-3.73087	20.00000	Averaged	
18	Methyl tert-butyl ether	1.17248	1.16075	1.16075	0.010	-0.99994	20.00000	Averaged	
23	1,1-Dichloroethane	0.76776	0.73307	0.73307	0.100	-4.51783	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.42916	0.42466	0.42466	0.010	-1.04825	20.00000	Averaged	
28	2,2-Dichloropropane	0.54077	0.39884	0.39884	0.010	-26.24601	20.00000	Averaged	*
29	Bromochloromethane	0.19074	0.18127	0.18127	0.010	-4.96107	20.00000	Averaged	
31	Chloroform	0.75331	0.74056	0.74056	0.010	-1.69245	20.00000	Averaged	
32	Carbon Tetrachloride	0.34975	0.31589	0.31589	0.010	-9.67948	20.00000	Averaged	
35	1,1,1-Trichloroethane	0.67334	0.64690	0.64690	0.010	-3.92623	20.00000	Averaged	
36	2-Butanone	0.16702	0.20775	0.20775	0.010	24.38891	20.00000	Averaged	*
37	1,1-Dichloropropene	0.37972	0.36307	0.36307	0.010	-4.38482	20.00000	Averaged	
38	Benzene	1.05328	1.04056	1.04056	0.010	-1.20744	20.00000	Averaged	
44	1,2-Dichloroethane	0.41171	0.38815	0.38815	0.010	-5.72182	20.00000	Averaged	
47	Trichloroethene	0.25959	0.25324	0.25324	0.010	-2.44607	20.00000	Averaged	
49	Dibromomethane	0.15699	0.16737	0.16737	0.010	6.60939	20.00000	Averaged	
50	1,2-Dichloropropane	0.26524	0.26436	0.26436	0.010	-0.33350	20.00000	Averaged	
51	Bromodichloromethane	0.36322	0.35691	0.35691	0.010	-1.73815	20.00000	Averaged	
57	cis-1,3-dichloropropene	0.45463	0.43924	0.43924	0.010	-3.38458	20.00000	Averaged	
59	Toluene	0.66226	0.65872	0.65872	0.010	-0.53468	20.00000	Averaged	
60	Tetrachloroethene	0.20214	0.18805	0.18805	0.010	-6.97044	20.00000	Averaged	
61	4-methyl-2-pentanone	0.22676	0.28429	0.28429	0.010	25.37150	20.00000	Averaged	*
62	trans-1,3-Dichloropropene	50.00000	45.63025	0.40263	0.010	-8.73951	20.00000	Linear	
63	1,1,2-Trichloroethane	50.00000	50.94836	0.20578	0.010	1.89671	20.00000	Linear	
64	Dibromochloromethane	0.25376	0.25175	0.25175	0.010	-0.79497	20.00000	Averaged	
65	1,3-Dichloropropane	0.46479	0.46580	0.46580	0.010	0.21787	20.00000	Averaged	
66	1,2-Dibromoethane	0.24154	0.26769	0.26769	0.010	10.82760	20.00000	Averaged	
67	2-Hexanone	0.15031	0.19150	0.19150	0.010	27.40204	20.00000	Averaged	*
69	Chlorobenzene	0.74849	0.73996	0.73996	0.300	-1.13921	20.00000	Averaged	
71	Ethylbenzene	0.41112	0.39822	0.39822	0.010	-3.13770	20.00000	Averaged	
72	1,1,1,2-Tetrachloroethane	50.00000	46.29868	0.24002	0.010	-7.40264	20.00000	Linear	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG227763-5
Analytical Date: 05/07/18 18:51
Lab File ID : P5562.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47
Column ID:

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.49968	0.50275	0.50275	0.010	0.61588	20.00000	Averaged
74 o-Xylene	0.47829	0.48346	0.48346	0.010	1.08088	20.00000	Averaged
75 Styrene	0.81074	0.84478	0.84478	0.010	4.19902	20.00000	Averaged
76 Bromoform	0.17862	0.18510	0.18510	0.100	3.63084	20.00000	Averaged
77 Isopropylbenzene	2.11666	2.04357	2.04357	0.010	-3.45312	20.00000	Averaged
80 Bromobenzene	0.55530	0.53545	0.53545	0.010	-3.57305	20.00000	Averaged
81 N-Propylbenzene	2.55237	2.49382	2.49382	0.010	-2.29417	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.54908	0.59487	0.59487	0.300	8.33846	20.00000	Averaged
83 2-Chlorotoluene	1.54905	1.46915	1.46915	0.010	-5.15783	20.00000	Averaged
84 1,2,3-Trichloropropane	0.50367	0.53722	0.53722	0.010	6.66085	20.00000	Averaged
85 1,3,5-Trimethylbenzene	1.80635	1.76277	1.76277	0.010	-2.41268	20.00000	Averaged
87 4-Chlorotoluene	1.65124	1.57919	1.57919	0.010	-4.36330	20.00000	Averaged
88 tert-Butylbenzene	1.74399	1.68518	1.68518	0.010	-3.37199	20.00000	Averaged
90 1,2,4-Trimethylbenzene	1.86859	1.86089	1.86089	0.010	-0.41161	20.00000	Averaged
91 sec-Butylbenzene	2.20469	2.11753	2.11753	0.010	-3.95323	20.00000	Averaged
92 P-Isopropyltoluene	1.81214	1.74673	1.74673	0.010	-3.60943	20.00000	Averaged
93 1,3-Dichlorobenzene	0.98453	0.98024	0.98024	0.010	-0.43599	20.00000	Averaged
95 1,4-Dichlorobenzene	1.04647	1.00845	1.00845	0.010	-3.63305	20.00000	Averaged
97 N-Butylbenzene	1.62689	1.52097	1.52097	0.010	-6.51065	20.00000	Averaged
99 1,2-Dichlorobenzene	0.95547	0.94084	0.94084	0.010	-1.53131	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	54.90158	0.12372	0.010	9.80316	20.00000	Linear
102 Hexachlorobutadiene	0.25220	0.21132	0.21132	0.010	-16.21075	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	47.53538	0.59902	0.010	-4.92925	20.00000	Linear
104 Naphthalene	50.00000	59.42205	1.52870	0.010	18.84411	20.00000	Linear
105 1,2,3-Trichlorobenzene	0.44720	0.50921	0.50921	0.010	13.86552	20.00000	Averaged
34 Dibromofluoromethane	0.49449	0.48104	0.48104	0.010	-2.72000	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.65206	0.65051	0.65051	0.010	-0.23786	20.00000	Averaged
58 Toluene-D8	1.18448	1.18950	1.18950	0.010	0.42386	20.00000	Averaged
78 P-Bromofluorobenzene	0.52519	0.53258	0.53258	0.010	1.40727	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227763-5
Lab File ID : P5562.D
Initial Calibration Date(s): 05/03/18 12:56 05/03/18 15:47

SDG: SL3841
Analytical Date: 05/07/18 18:51
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5562.D
Report Date: 21-May-2018 08:14

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050718.b\P5562.D
Lab Smp Id: WG227763-5
Inj Date : 07-MAY-2018 18:51 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227763-5,SL3841
Misc Info : WG227763,WG227568-4,SL3841-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P050718.b\P8A05(68)D.m
Meth Date : 21-May-2018 08:13 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 19 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

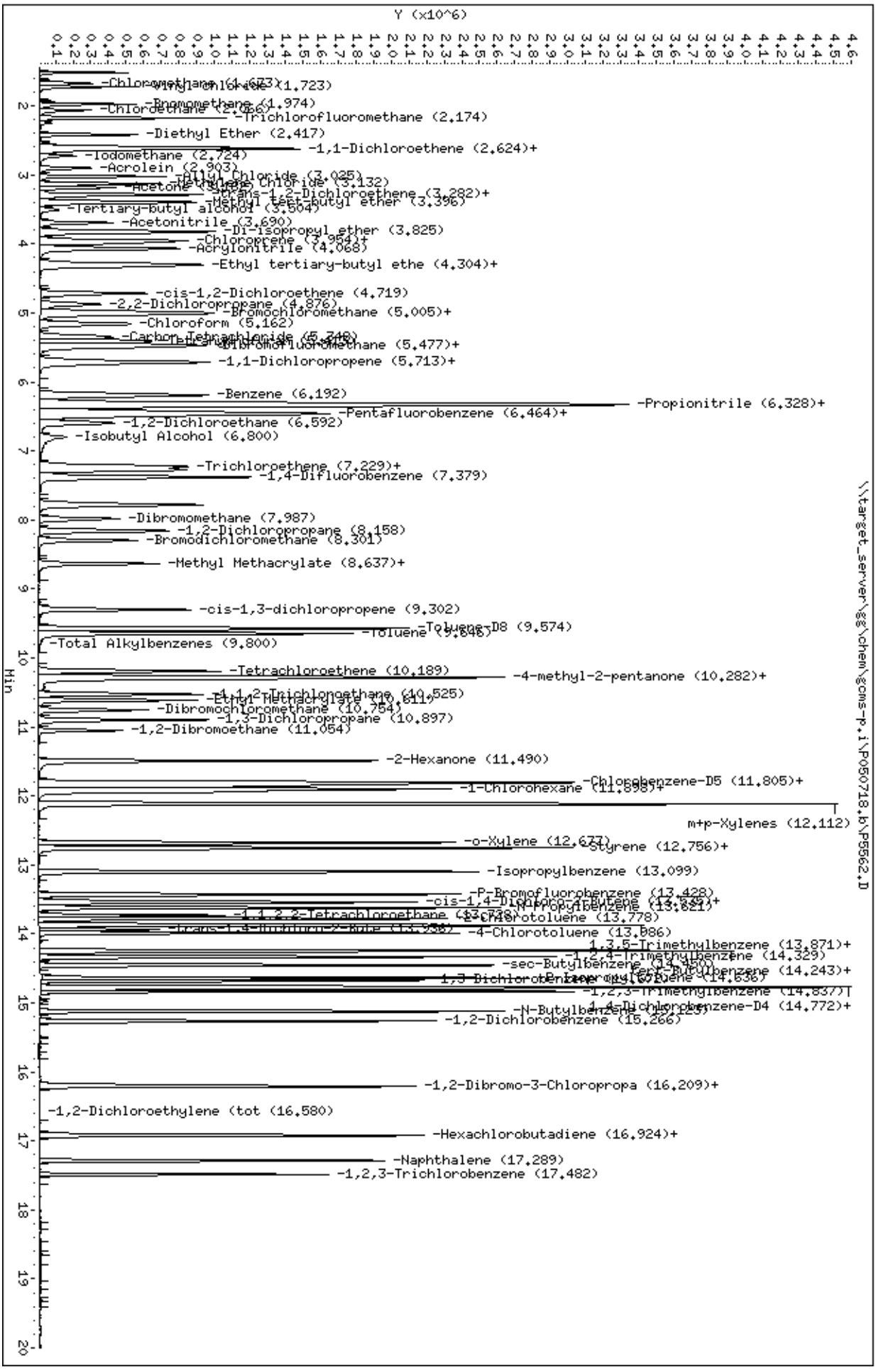
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.515	1.515	(0.235)	349322	50.0000	43.1	
2	Chloromethane	50	1.673	1.665	(0.260)	400041	50.0000	51.6	
3	Vinyl chloride	62	1.723	1.729	(0.267)	437332	50.0000	51.6	
4	Bromomethane	94	1.973	1.987	(0.306)	209290	50.0000	54.2	
5	Chloroethane	64	2.066	2.080	(0.321)	249087	50.0000	52.5	
6	Trichlorofluoromethane	101	2.173	2.180	(0.337)	750236	50.0000	49.9	
7	Diethyl Ether	59	2.416	2.416	(0.375)	295792	50.0000	54.5	
19	Tertiary-butyl alcohol	59	3.510	3.510	(0.545)	120912	250.000	257	
8	1,1-Dichloroethene	96	2.588	2.587	(0.402)	303469	50.0000	48.5	
10	Carbon Disulfide	76	2.624	2.623	(0.407)	1086546	50.0000	51.4	
9	Freon-113	151	2.617	2.637	(0.406)	299188	50.0000	49.7	
11	Iodomethane	142	2.724	2.730	(0.423)	256839	50.0000	56.3	
12	Acrolein	56	2.903	2.902	(0.451)	288726	250.000	272	
14	Methylene Chloride	84	3.131	3.131	(0.486)	387984	50.0000	48.2	
15	Acetone	43	3.181	3.188	(0.494)	571356	250.000	295	
45	Isobutyl Alcohol	43	6.799	6.792	(1.055)	191752	1000.00	844	
16	trans-1,2-Dichloroethene	96	3.289	3.281	(0.511)	362137	50.0000	48.1	
13	Allyl Chloride	41	3.024	3.016	(0.469)	466507	50.0000	44.6	
18	Methyl tert-butyl ether	73	3.396	3.395	(0.527)	1089533	50.0000	49.5	
20	Acetonitrile	41	3.689	3.696	(0.573)	566070	500.000	552	
21	Di-isopropyl ether	45	3.825	3.824	(0.594)	1195221	50.0000	47.8	
22	Chloroprene	53	3.946	3.960	(0.613)	584505	50.0000	46.6	
39	Propionitrile	54	6.299	6.298	(0.978)	711297	500.000	601	
40	Methacrylonitrile	41	6.327	6.327	(0.982)	2776259	500.000	581	

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5562.D
Report Date: 21-May-2018 08:14

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	3.982	3.989	(0.618)	688094	50.0000	47.7	
	24 Acrylonitrile	52	4.068	4.067	(0.632)	731320	250.000	286	
	25 Ethyl tertiary-butyl ether	59	4.297	4.303	(0.667)	1076699	50.0000	46.2	
	26 Vinyl Acetate	43	4.325	4.325	(0.586)	905232	50.0000	52.2	
	27 cis-1,2-Dichloroethene	96	4.719	4.732	(0.733)	398604	50.0000	49.5	
	52 Methyl Methacrylate	41	8.637	8.643	(1.171)	386821	50.0000	57.8	
	28 2,2-Dichloropropane	77	4.876	4.890	(0.757)	374368	50.0000	36.9	
	29 Bromochloromethane	128	5.019	5.026	(0.779)	170151	50.0000	47.5	
	31 Chloroform	83	5.155	5.154	(0.800)	695117	50.0000	49.2	
	32 Carbon Tetrachloride	117	5.355	5.347	(0.726)	483138	50.0000	45.2	
	33 Tetrahydrofuran	42	5.412	5.419	(0.840)	645969	250.000	302	
$	34 Dibromofluoromethane	113	5.477	5.469	(0.850)	451528	50.0000	48.6	
	35 1,1,1-Trichloroethane	97	5.484	5.483	(0.851)	607209	50.0000	48.0	
	37 1,1-Dichloropropene	75	5.705	5.698	(0.773)	555287	50.0000	47.8	
	36 2-Butanone	43	5.720	5.741	(0.888)	975018	250.000	311	
	38 Benzene	78	6.192	6.184	(0.839)	1591477	50.0000	49.4	
*	41 Pentafluorobenzene	168	6.442	6.441	(1.000)	938642	50.0000		
	30 Cyclohexane	56	4.990	4.990	(0.775)	656477	50.0000	48.1	
	53 Ethyl Methacrylate	69	10.610	10.617	(1.438)	607961	50.0000	50.9	
$	42 1,2-Dichloroethane-D4	65	6.470	6.470	(1.004)	610599	50.0000	49.9	
	43 Tertiary-amyl methyl ether	73	6.470	6.463	(1.004)	984551	50.0000	47.7	
	44 1,2-Dichloroethane	62	6.592	6.591	(0.893)	593651	50.0000	47.1	
	47 Trichloroethene	95	7.278	7.264	(0.986)	387320	50.0000	48.8	
*	48 1,4-Difluorobenzene	114	7.379	7.385	(1.000)	1529437	50.0000		
	49 Dibromomethane	93	7.979	7.979	(1.081)	255983	50.0000	53.3	
	50 1,2-Dichloropropane	63	8.158	8.164	(1.106)	404319	50.0000	49.8	
	51 Bromodichloromethane	83	8.294	8.307	(1.124)	545865	50.0000	49.1	
	57 cis-1,3-dichloropropene	75	9.302	9.301	(1.261)	671796	50.0000	48.3	
	54 1,4-Dioxane	88	8.637	8.664	(1.171)	82965	1000.00	1060	
$	58 Toluene-D8	98	9.574	9.573	(1.297)	1819269	50.0000	50.2	
	59 Toluene	92	9.645	9.652	(1.307)	1007467	50.0000	49.7	
	61 4-methyl-2-pentanone	43	10.274	10.281	(1.392)	2174053	250.000	313	
	60 Tetrachloroethene	164	10.189	10.188	(0.864)	303439	50.0000	46.5	
	62 trans-1,3-Dichloropropene	75	10.310	10.302	(1.397)	615791	50.0000	45.6	
	63 1,1,2-Trichloroethane	83	10.525	10.531	(1.426)	314728	50.0000	50.9	
	64 Dibromochloromethane	129	10.761	10.767	(0.912)	406216	50.0000	49.6	
	65 1,3-Dichloropropane	76	10.896	10.896	(0.924)	751622	50.0000	50.1	
	66 1,2-Dibromoethane	107	11.054	11.053	(1.498)	409417	50.0000	55.4	
	67 2-Hexanone	43	11.490	11.496	(0.974)	1544995	250.000	318	
*	68 Chlorobenzene-D5	117	11.797	11.804	(1.000)	1613599	50.0000		
	69 Chlorobenzene	112	11.826	11.825	(1.002)	1194006	50.0000	49.4	
	70 1-Chlorohexane	91	11.854	11.861	(1.005)	542053	50.0000	45.7	
	71 Ethylbenzene	106	11.897	11.904	(1.008)	642562	50.0000	48.4	
	72 1,1,1,2-Tetrachloroethane	131	11.933	11.940	(1.012)	387296	50.0000	46.3	
	73 m+p-Xylenes	106	12.112	12.111	(1.027)	1622482	100.000	101	
	74 o-Xylene	106	12.677	12.683	(1.075)	780112	50.0000	50.5	
	75 Styrene	104	12.755	12.755	(1.081)	1363133	50.0000	52.1	
	76 Bromoform	173	12.755	12.755	(1.081)	298684	50.0000	51.8	
	77 Isopropylbenzene	105	13.099	13.098	(0.887)	1932476	50.0000	48.3	
$	78 P-Bromofluorobenzene	95	13.428	13.427	(1.820)	814551	50.0000	50.7	
	79 cis-1,4-Dichloro-2-Butene	53	13.549	13.548	(0.917)	190436	50.0000	49.7	
	86 trans-1,4-Dichloro-2-Butene	53	13.935	13.942	(0.943)	159753	50.0000	55.1	
	80 Bromobenzene	156	13.535	13.527	(0.916)	506345	50.0000	48.2	
	81 N-Propylbenzene	91	13.621	13.613	(0.922)	2358245	50.0000	48.8	

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5562.D
Report Date: 21-May-2018 08:14

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
82	1,1,2,2-Tetrachloroethane	83	13.728	13.727	(0.929)	562530	50.0000	54.2	
85	1,3,5-Trimethylbenzene	105	13.878	13.877	(0.939)	1666936	50.0000	48.8	
83	2-Chlorotoluene	91	13.778	13.777	(0.933)	1389283	50.0000	47.4	
84	1,2,3-Trichloropropane	75	13.864	13.856	(0.939)	508014	50.0000	53.3	
87	4-Chlorotoluene	91	13.985	13.985	(0.947)	1493341	50.0000	47.8	
88	tert-Butylbenzene	119	14.243	14.242	(0.964)	1593568	50.0000	48.3	
89	Pentachloroethane	165	14.250	14.249	(0.965)	235618	50.0000	49.1	
90	1,2,4-Trimethylbenzene	105	14.328	14.335	(0.970)	1759729	50.0000	49.8	
92	P-Isopropyltoluene	119	14.636	14.635	(0.991)	1651771	50.0000	48.2	
93	1,3-Dichlorobenzene	146	14.679	14.678	(0.994)	926949	50.0000	49.8	
* 94	1,4-Dichlorobenzene-D4	152	14.772	14.771	(1.000)	945636	50.0000		
95	1,4-Dichlorobenzene	146	14.786	14.785	(1.001)	953624	50.0000	48.2	
97	N-Butylbenzene	91	15.122	15.122	(1.024)	1438281	50.0000	46.7	
91	sec-Butylbenzene	105	14.450	14.457	(0.978)	2002412	50.0000	48.0	
99	1,2-Dichlorobenzene	146	15.265	15.265	(1.033)	889692	50.0000	49.2	
100	1,2-Dibromo-3-Chloropropane	157	16.180	16.172	(1.095)	116990	50.0000	54.9	
101	1,3,5-Trichlorobenzene	180	16.209	16.207	(1.097)	619421	50.0000	46.1	
102	Hexachlorobutadiene	225	16.910	16.908	(1.145)	199829	50.0000	41.9	
103	1,2,4-Trichlorobenzene	180	16.924	16.922	(1.146)	566454	50.0000	47.5	
96	1,2,3-Trimethylbenzene	105	14.836	14.835	(1.004)	1835363	50.0000	49.6	
104	Naphthalene	128	17.289	17.288	(1.170)	1445592	50.0000	59.4	
105	1,2,3-Trichlorobenzene	180	17.489	17.488	(1.184)	481529	50.0000	56.9	
17	Methyl Acetate	43	3.303	3.302	(0.513)	339396	50.0000	55.8	
46	Methylcyclohexane	83	7.228	7.228	(1.122)	611878	50.0000	47.6	


Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5562.D
Date : 07-MAY-2018 18:51
Client ID:
Sample Info: WG227763-5,SL3841
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
Y (x10^6)
Min
\\target_server\gg\chem\gcms-p.i\P050718.b\P5562.D
-Chloromethane (1.677)
-Vinyl Chloride (1.723)
-Bromomethane (1.974)
-Chloroethane (2.056)
-Trichlorofluoromethane (2.174)
-Diethyl Ether (2.417)
-1,1-Dichloroethene (2.624)+
-Iodomethane (2.724)
-Acrolein (2.903)
-Allyl Chloride (3.025)
-Methylene Chloride (3.132)
-Acetone (3.208)
-trans-1,2-Dichloroethene (3.282)+
-Methyl tert-butyl ether (3.396)
-Tertiary-butyl alcohol (3.504)
-Acetonitrile (3.690)
-Di-isopropyl ether (3.825)
-Chloroprene (3.954)+
-Acrylonitrile (4.068)
-Ethyl tertiary-butyl ethe (4.304)+
-cis-1,2-Dichloroethene (4.719)
-2,2-Dichloropropane (4.876)
-Bromochloromethane (5.005)+
-Chloroform (5.162)
-Carbon Tetrachloride (5.248)
-Dibromofluoromethane (5.477)+
-1,1-Dichloropropene (5.713)+
-Benzene (6.192)
-Propionitrile (6.328)+
-Pentafluorobenzene (6.464)+
-1,2-Dichloroethane (6.592)
-Isobutyl Alcohol (6.800)
-Trichlorpethene (7.229)+
-1,4-Difluorobenzene (7.379)
-Dibromomethane (7.987)
-1,2-Dichloropropane (8.158)
-Bromodichloromethane (8.301)
-Methyl Methacrylate (8.637)+
-cis-1,3-dichloropropene (9.302)
-Toluene-D8 (9.574)
-Toluene (9.648)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.189)
-4-methyl-2-pentanone (10.282)+
-1,1,2-Trichloroethane (10.525)
-Ethyl Methacrylate (10.611)
-Dibromochloromethane (10.754)
-1,3-Dichloropropane (10.897)
-1,2-Dibromoethane (11.054)
-2-Hexanone (11.490)
-Chlorobenzene-D5 (11.805)+
-1-Chlorohexane (11.898)+
m+p-Xylenes (12.112)
-o-Xylene (12.627)
-Styrene (12.756)+
-Isopropylbenzene (13.099)
-P-Bromofluorobenzene (13.428)
-cis-1,4-Dichloro-2-Butene (13.542)+
-N-Propylbenzene (13.621)
-1,1,2,2-Tetrachloroethane (13.738)
-2-Chlorotoluene (13.778)
-trans-1,4-Dichloro-2-Bute (13.956)
-4-Chlorotoluene (13.986)
-1,3,5-Trimethylbenzene (13.871)+
-1,2,4-Trimethylbenzene (14.329)
-sec-Butylbenzene (14.450)
-tert-Butylbenzene (14.243)+
-1,3-Dichlorobenzene (14.636)
-1,2,3-Trimethylbenzene (14.837)
-4-Dichlorobenzene-D4 (14.772)+
-N-Butylbenzene (15.029)
-1,2-Dichlorobenzene (15.266)
-1,2-Dibromo-3-Chloropropa (16.209)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.924)+
-Naphthalene (17.289)
-1,2,3-Trichlorobenzene (17.482)

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\DB173a.d

Date : 10-MAY-2018 07:31

Client ID:

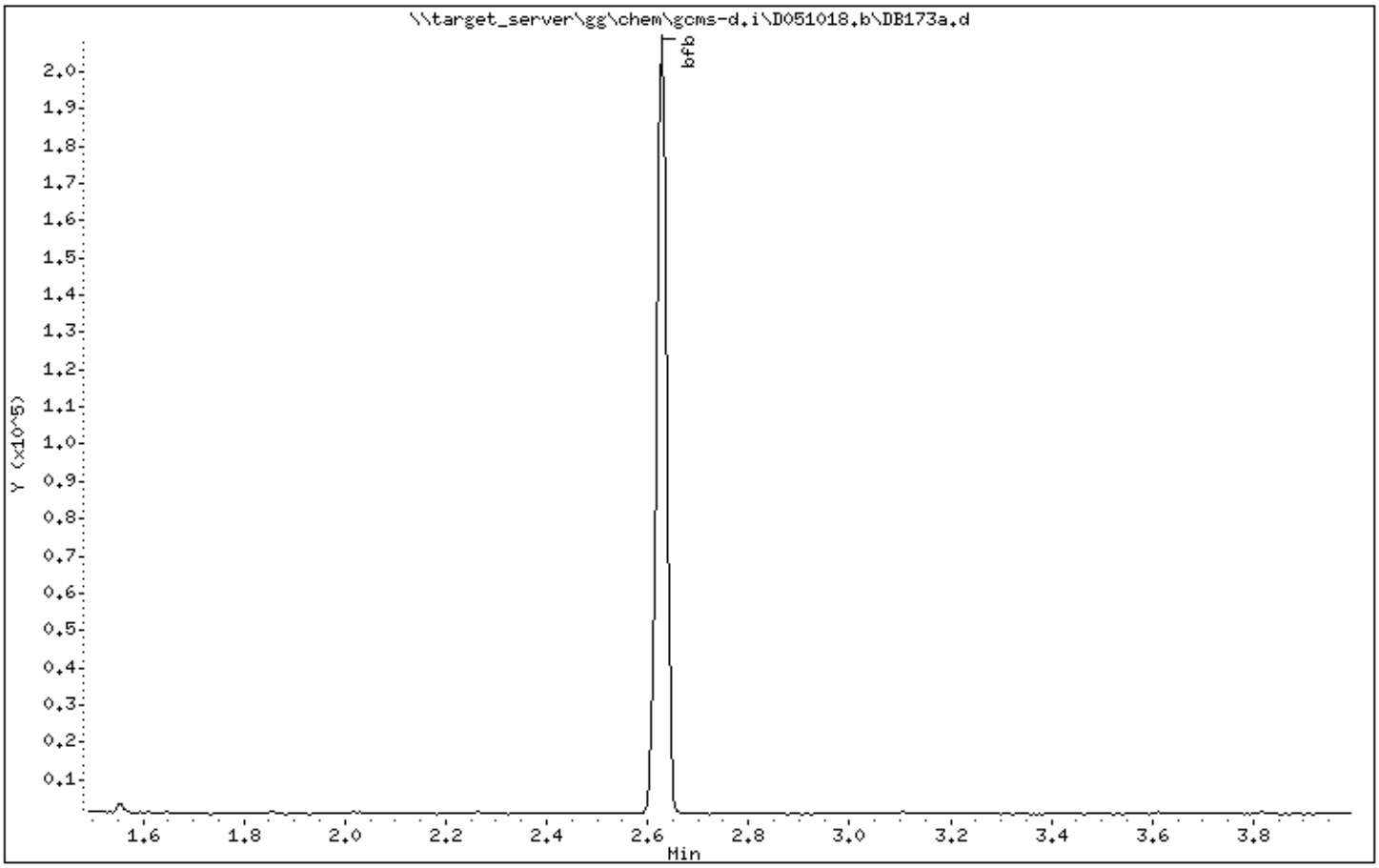
Instrument: gcms-d.i

Sample Info: WG227999-10,SL3841

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\DB173a.d

Date : 10-MAY-2018 07:31

Client ID:

Instrument: gcms-d.i

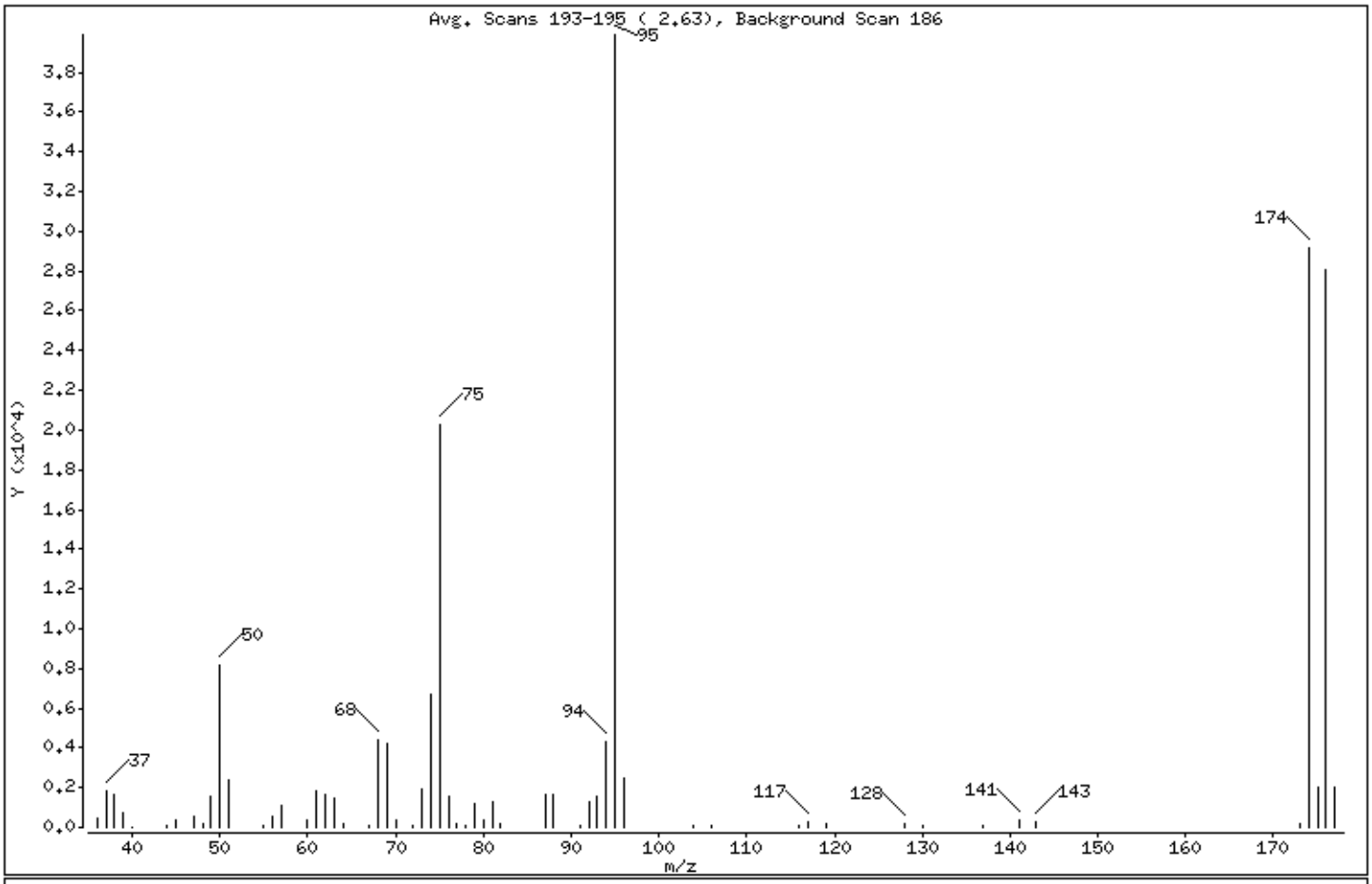
Sample Info: WG227999-10,SL3841

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	20.46
75	30.00 - 60.00% of mass 95	50.88
96	5.00 - 9.00% of mass 95	6.32
173	Less than 2.00% of mass 174	0.38 (0.51)
174	Greater than 50.00% of mass 95	73.06
175	5.00 - 9.00% of mass 174	4.94 (6.77)
176	95.00 - 101.00% of mass 174	70.32 (96.24)
177	5.00 - 9.00% of mass 176	5.09 (7.24)

Date : 10-MAY-2018 07:31

Client ID:

Instrument: gcms-d.i

Sample Info: WG227999-10,SL3841

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18

Data File: DB173a.d
Spectrum: Avg. Scans 193-195 (2.63), Background Scan 186
Location of Maximum: 95.00
Number of points: 58

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	435	60.00	338	78.00	66	116.00	107
37.00	1821	61.00	1822	79.00	1175	117.00	244
38.00	1677	62.00	1652	80.00	343	119.00	146
39.00	701	63.00	1453	81.00	1254	128.00	158
40.00	30	64.00	208	82.00	166	130.00	52
44.00	130	67.00	80	87.00	1639	137.00	53
45.00	339	68.00	4378	88.00	1692	141.00	409
47.00	521	69.00	4229	91.00	115	143.00	306
48.00	225	70.00	359	92.00	1286	173.00	150
49.00	1557	72.00	83	93.00	1592	174.00	29144
50.00	8160	73.00	1901	94.00	4342	175.00	1972
51.00	2418	74.00	6709	95.00	39888	176.00	28048
55.00	51	75.00	20296	96.00	2520	177.00	2032
56.00	590	76.00	1590	104.00	102		
57.00	1075	77.00	227	106.00	112		

Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\DB179a.d

Date : 16-MAY-2018 12:14

Client ID:

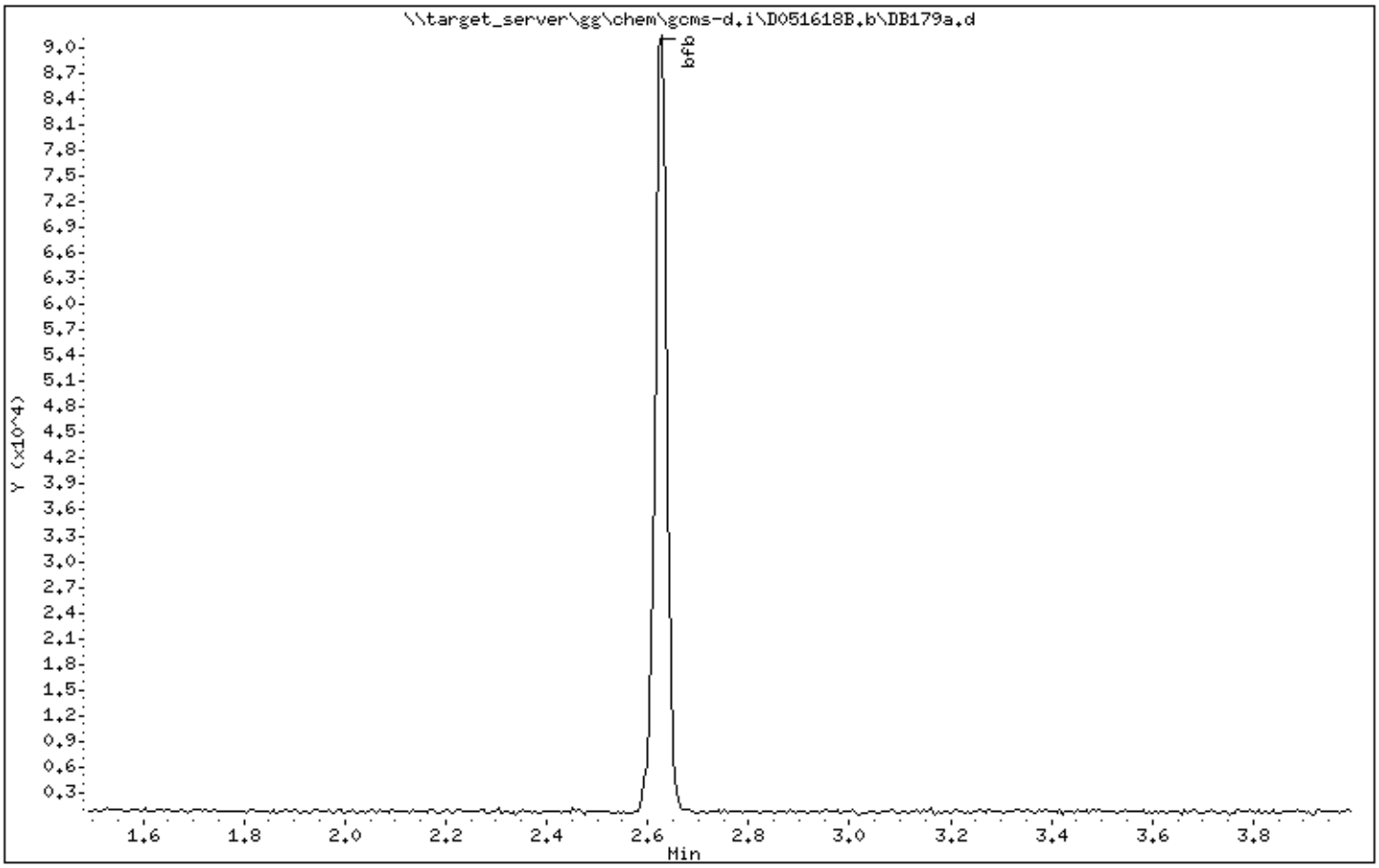
Instrument: gcms-d.i

Sample Info: WG228421-3,SL3841

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\DB179a.d

Date : 16-MAY-2018 12:14

Client ID:

Instrument: gcms-d.i

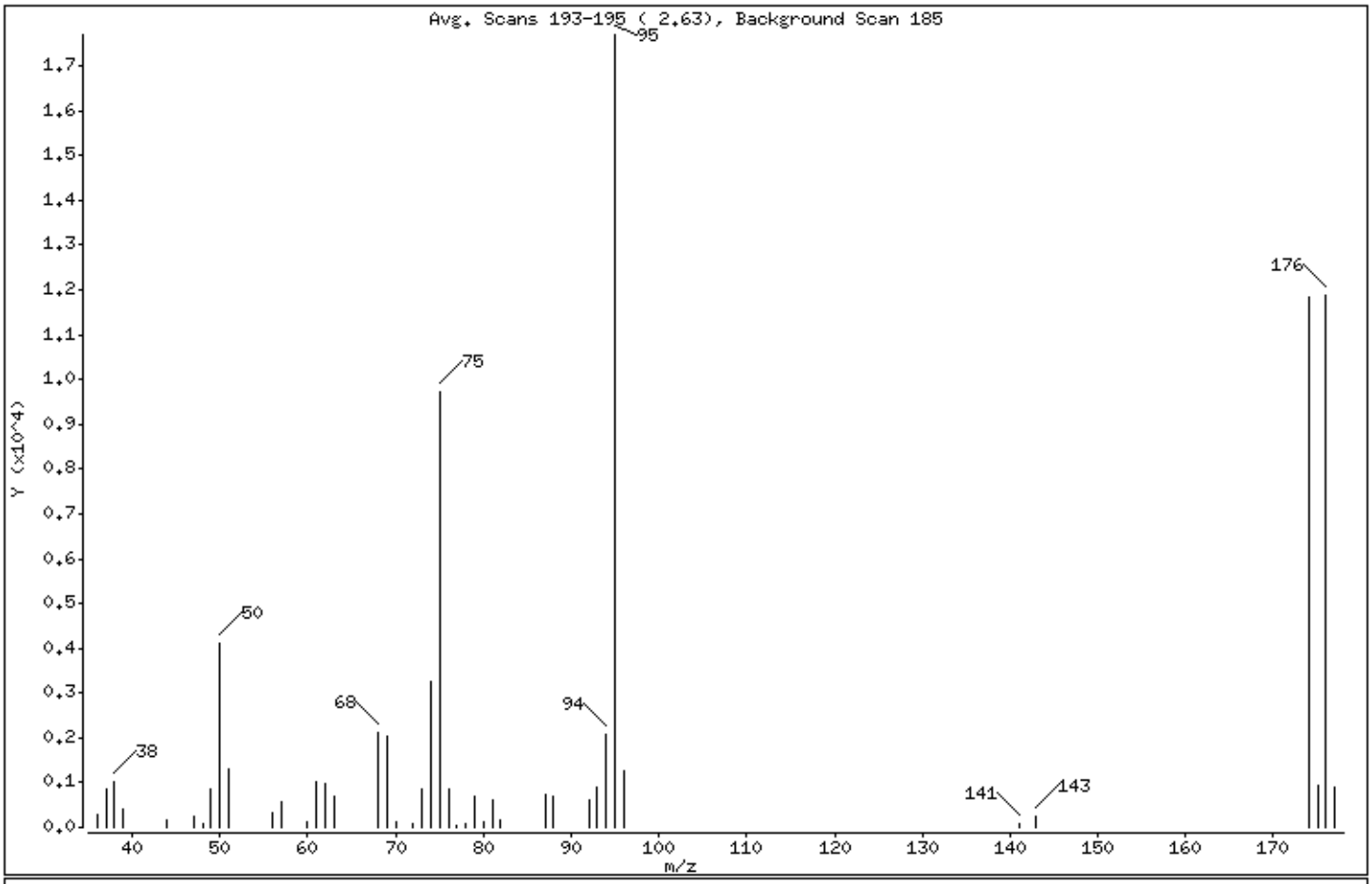
Sample Info: WG228421-3,SL3841

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	23.27
75	30.00 - 60.00% of mass 95	55.00
96	5.00 - 9.00% of mass 95	7.18
173	Less than 2.00% of mass 174	0.00 (0.00)
174	Greater than 50.00% of mass 95	66.96
175	5.00 - 9.00% of mass 174	5.32 (7.95)
176	95.00 - 101.00% of mass 174	67.02 (100.09)
177	5.00 - 9.00% of mass 176	5.08 (7.58)

Date : 16-MAY-2018 12:14

Client ID: Instrument: gcms-d.i

Sample Info: WG228421-3,SL3841

Operator: JSS

Column phase: RTX-VMS Column diameter: 0.18

Data File: DB179a.d
Spectrum: Avg. Scans 193-195 (2.63), Background Scan 185
Location of Maximum: 95.00
Number of points: 43

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	280	57.00	578	75.00	9732	93.00	877
37.00	840	60.00	126	76.00	863	94.00	2088
38.00	1015	61.00	1033	77.00	50	95.00	17696
39.00	411	62.00	956	78.00	79	96.00	1271
44.00	150	63.00	673	79.00	701	141.00	73
47.00	231	68.00	2103	80.00	117	143.00	262
48.00	65	69.00	2019	81.00	606	174.00	11849
49.00	861	70.00	118	82.00	159	175.00	942
50.00	4117	72.00	62	87.00	745	176.00	11860
51.00	1293	73.00	870	88.00	673	177.00	899
56.00	309	74.00	3264	92.00	623		

Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\PB018a.D

Date : 03-MAY-2018 12:30

Client ID:

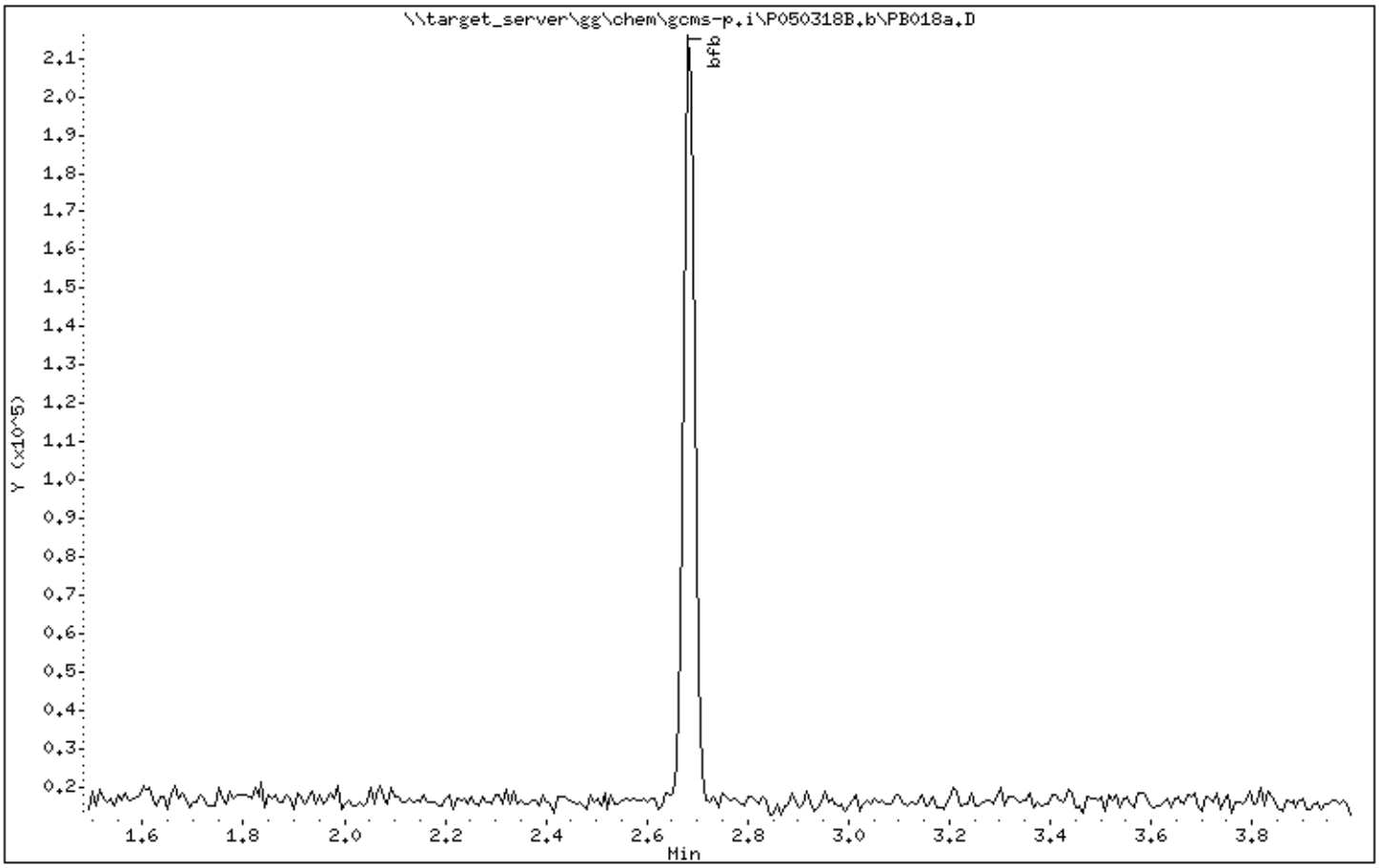
Instrument: gcms-p.i

Sample Info: WG227568-7,SL3841

Operator: hg

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-p.i\P050318B.b\PB018a.D

Date : 03-MAY-2018 12:30

Client ID:

Instrument: gcms-p.i

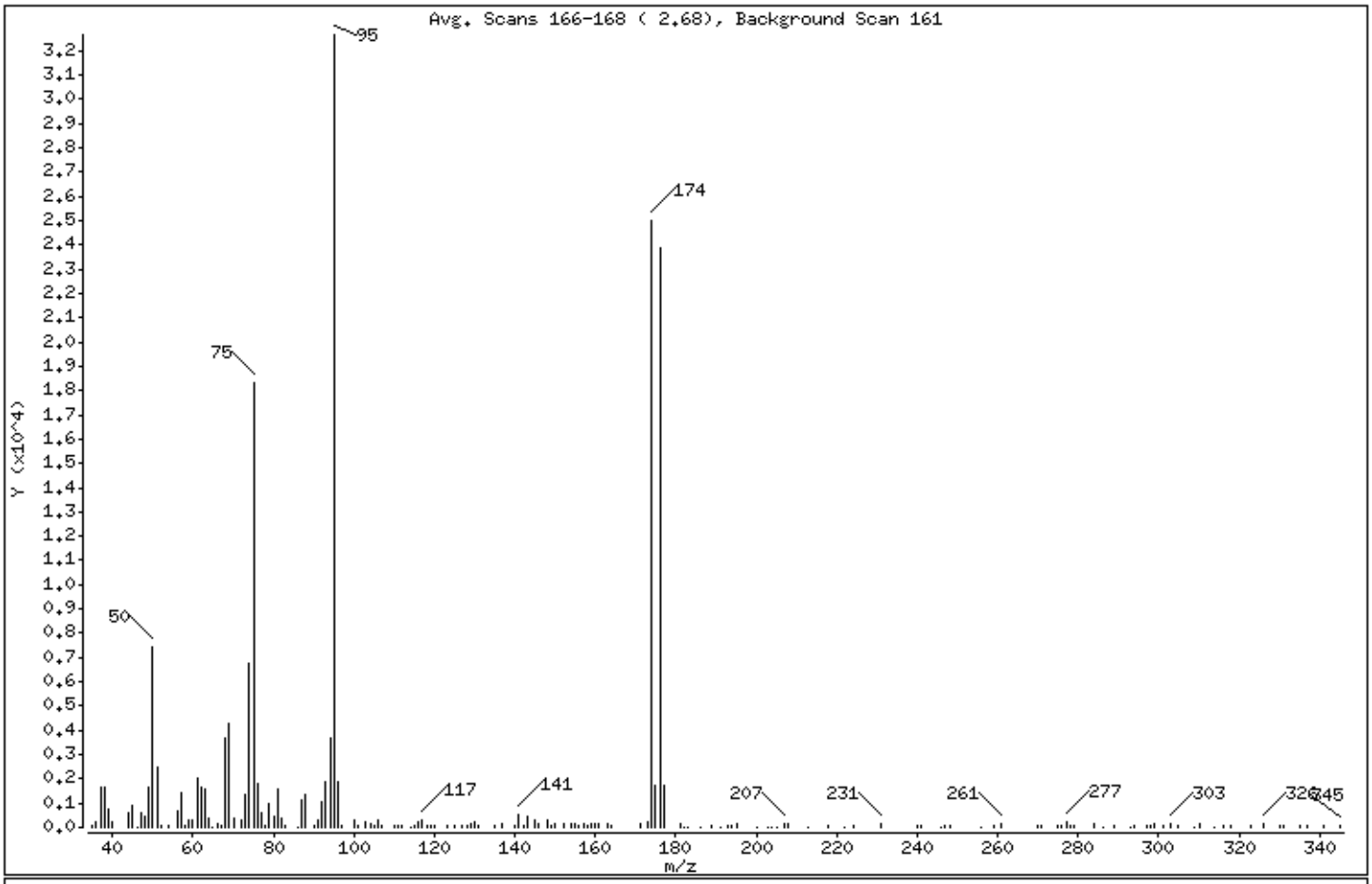
Sample Info: WG227568-7,SL3841

Operator: hg

Column phase: RTX-VMS

Column diameter: 0.18

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	22.65
75	30.00 - 60.00% of mass 95	56.00
96	5.00 - 9.00% of mass 95	5.64
173	Less than 2.00% of mass 174	0.78 (1.02)
174	Greater than 50.00% of mass 95	76.60
175	5.00 - 9.00% of mass 174	5.19 (6.78)
176	95.00 - 101.00% of mass 174	73.13 (95.46)
177	5.00 - 9.00% of mass 176	5.33 (7.29)

Date : 03-MAY-2018 12:30

Client ID: Instrument: gcms-p.i

Sample Info: WG227568-7,SL3841

Operator: hg

Column phase: RTX-VMS Column diameter: 0.18

Data File: PB018a.D
Spectrum: Avg. Scans 166-168 (2.68), Background Scan 161
Location of Maximum: 95.00
Number of points: 165

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	102	83.00	97	145.00	273	240.00	69
36.00	251	86.00	36	146.00	136	241.00	69
37.00	1619	87.00	1120	148.00	275	246.00	34
38.00	1622	88.00	1349	149.00	100	247.00	44
39.00	741	90.00	38	150.00	168	248.00	51
40.00	217	91.00	328	152.00	120	256.00	33
44.00	582	92.00	1082	154.00	147	259.00	45
45.00	872	93.00	1865	155.00	164	261.00	183
46.00	16	94.00	3658	156.00	83	270.00	67
47.00	601	95.00	32656	157.00	142	271.00	61
48.00	470	96.00	1843	158.00	38	275.00	59
49.00	1619	97.00	102	159.00	134	276.00	58
50.00	7396	100.00	272	160.00	132	277.00	241
51.00	2471	101.00	52	161.00	169	278.00	50
52.00	99	103.00	199	163.00	123	279.00	39
54.00	57	104.00	187	164.00	55	284.00	121
56.00	663	105.00	92	171.00	135	286.00	35
57.00	1449	106.00	318	173.00	255	289.00	39
58.00	48	107.00	107	174.00	25016	293.00	35
59.00	272	110.00	74	175.00	1695	294.00	63
60.00	292	111.00	70	176.00	23880	297.00	39
61.00	2041	112.00	56	177.00	1741	298.00	51
62.00	1630	114.00	36	181.00	129	299.00	140
63.00	1551	115.00	67	182.00	36	301.00	40
64.00	403	116.00	220	183.00	36	303.00	141
65.00	26	117.00	317	186.00	35	305.00	52
66.00	122	118.00	105	189.00	106	309.00	35
67.00	67	119.00	106	191.00	37	310.00	124
68.00	3652	120.00	72	193.00	63	314.00	37
69.00	4307	123.00	60	194.00	51	316.00	46
70.00	339	125.00	47	195.00	159	318.00	59
72.00	277	127.00	106	200.00	34	323.00	39
73.00	1335	128.00	83	203.00	36	326.00	143
74.00	6722	129.00	138	204.00	34	330.00	42
75.00	18288	130.00	242	205.00	36	331.00	100

Date : 03-MAY-2018 12:30

Client ID: Instrument: gcms-p.i

Sample Info: WG227568-7,SL3841

Operator: hg

Column phase: RTX-VMS Column diameter: 0.18

Data File: PB018a.D
Spectrum: Avg. Scans 166-168 (2.68), Background Scan 161
Location of Maximum: 95.00
Number of points: 165

m/z	Y	m/z	Y	m/z	Y	m/z	Y
76.00	1766	131.00	55	207.00	183	335.00	80
77.00	612	135.00	99	208.00	118	337.00	64
78.00	61	137.00	170	213.00	35	341.00	39
79.00	953	140.00	89	218.00	99	345.00	44
80.00	426	141.00	519	222.00	34		
81.00	1593	142.00	82	224.00	53		
82.00	383	143.00	484	231.00	125		

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\PB021a.D

Date : 07-MAY-2018 07:45

Client ID:

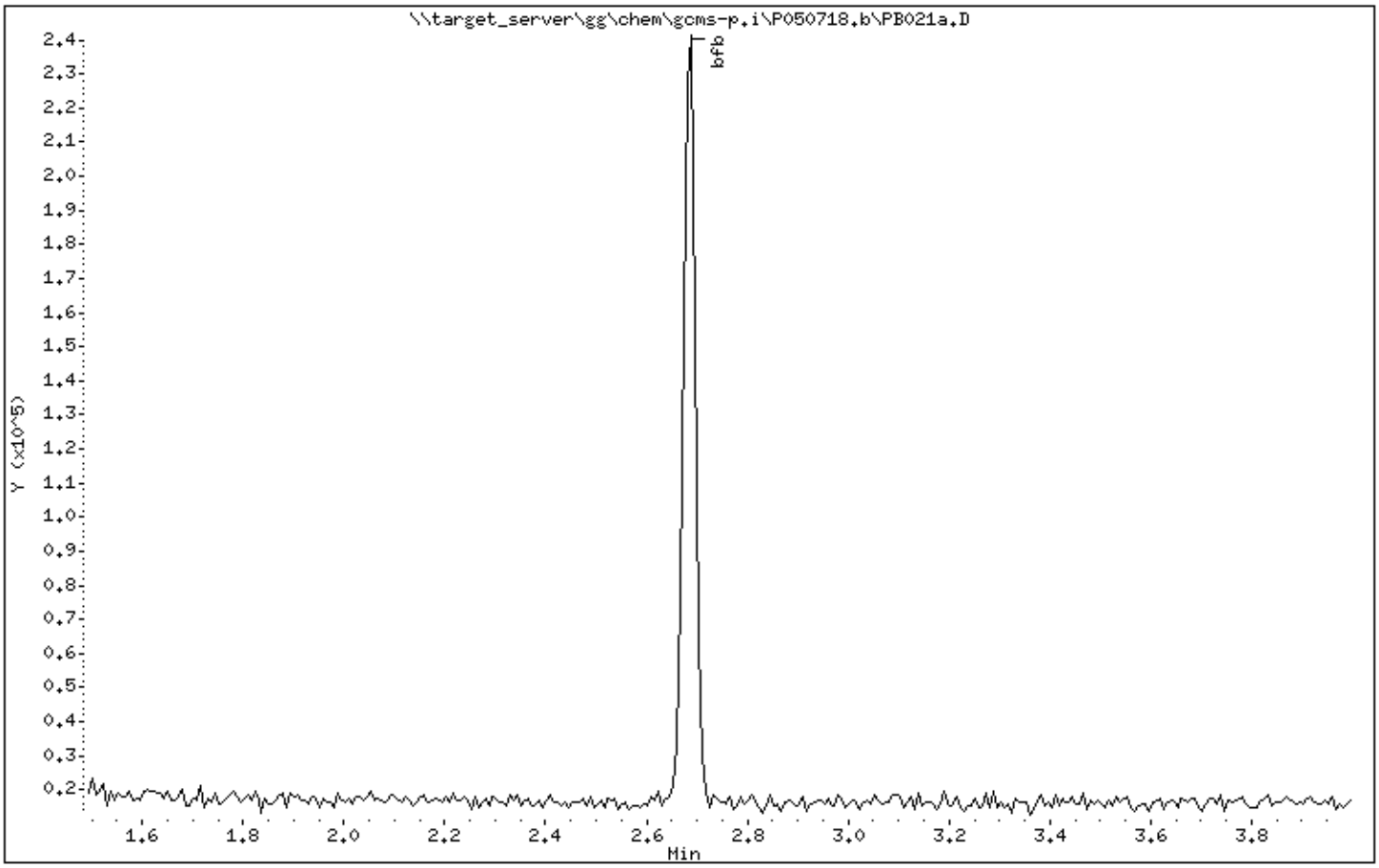
Instrument: gcms-p.i

Sample Info: WG227763-3,SL3841

Operator: hg

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\PB021a.D

Date : 07-MAY-2018 07:45

Client ID:

Instrument: gcms-p.i

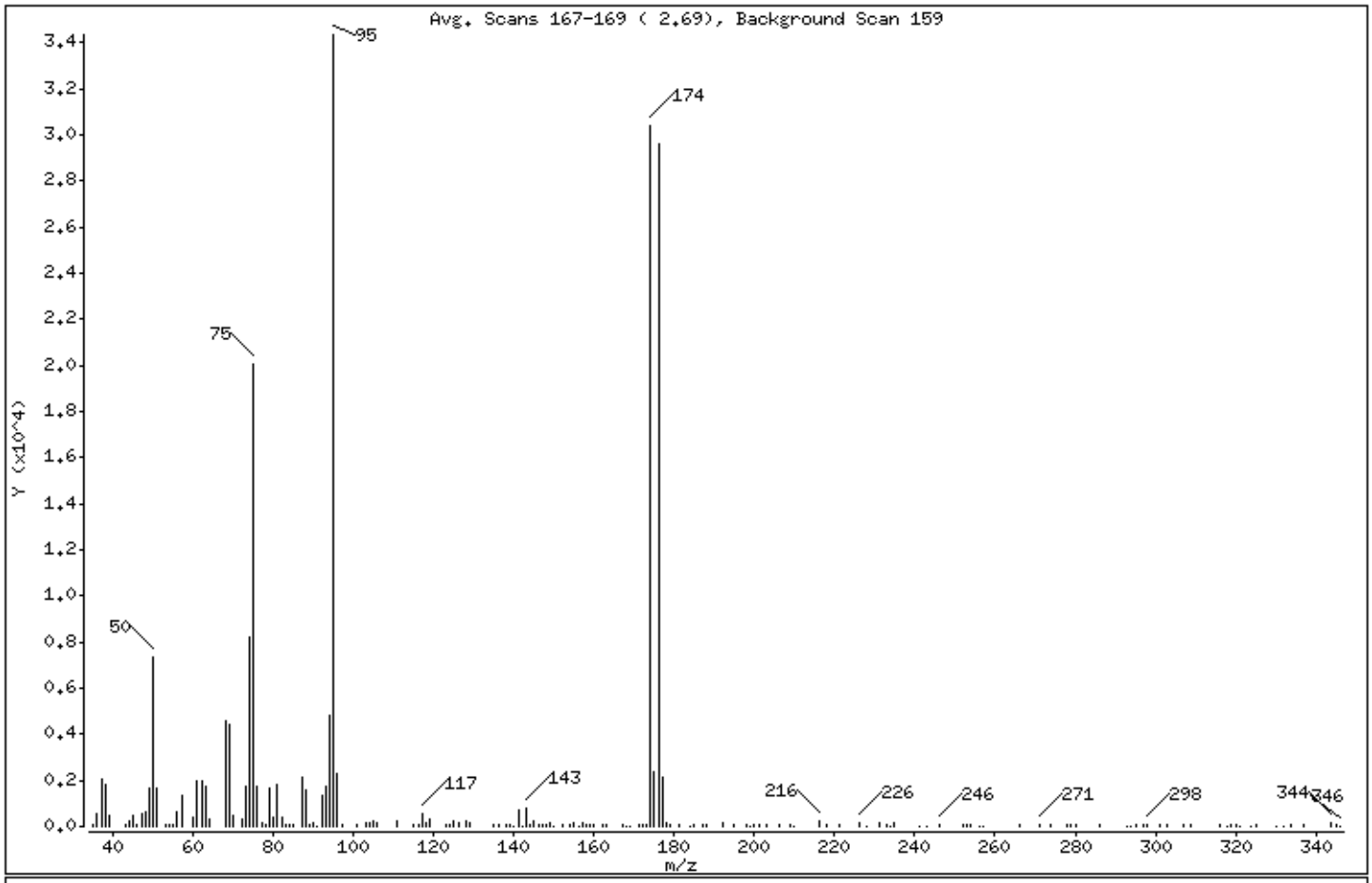
Sample Info: WG227763-3,SL3841

Operator: hg

Column phase: RTX-VMS

Column diameter: 0.18

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	21.27
75	30.00 - 60.00% of mass 95	58.44
96	5.00 - 9.00% of mass 95	6.76
173	Less than 2.00% of mass 174	0.17 (0.19)
174	Greater than 50.00% of mass 95	88.47
175	5.00 - 9.00% of mass 174	6.86 (7.75)
176	95.00 - 101.00% of mass 174	86.26 (97.50)
177	5.00 - 9.00% of mass 176	6.22 (7.21)

Date : 07-MAY-2018 07:45

Client ID: Instrument: gcms-p.i

Sample Info: WG227763-3,SL3841

Operator: hg

Column phase: RTX-VMS Column diameter: 0.18

Data File: PB021a.D
Spectrum: Avg. Scans 167-169 (2.69), Background Scan 159
Location of Maximum: 95.00
Number of points: 168

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	76	89.00	54	155.00	191	235.00	119
36.00	537	90.00	156	156.00	35	241.00	39
37.00	2072	91.00	34	157.00	179	243.00	36
38.00	1808	92.00	1359	158.00	64	246.00	87
39.00	479	93.00	1739	159.00	87	252.00	77
43.00	55	94.00	4782	160.00	47	253.00	42
44.00	224	95.00	34344	162.00	73	254.00	79
45.00	437	96.00	2320	163.00	76	256.00	36
46.00	82	97.00	68	167.00	57	257.00	38
47.00	549	101.00	72	168.00	14	266.00	48
48.00	600	103.00	121	169.00	36	271.00	77
49.00	1672	104.00	156	171.00	46	274.00	48
50.00	7304	105.00	224	172.00	109	278.00	50
51.00	1660	106.00	148	173.00	57	279.00	45
53.00	91	111.00	212	174.00	30384	280.00	68
54.00	70	115.00	111	175.00	2356	286.00	40
55.00	45	116.00	55	176.00	29624	293.00	38
56.00	655	117.00	531	177.00	2137	294.00	37
57.00	1309	118.00	180	178.00	129	295.00	53
60.00	386	119.00	303	179.00	80	297.00	40
61.00	1997	123.00	83	181.00	54	298.00	81
62.00	1964	124.00	75	184.00	38	301.00	40
63.00	1702	125.00	210	185.00	112	303.00	44
64.00	298	126.00	172	187.00	44	307.00	62
68.00	4599	128.00	268	188.00	72	309.00	53
69.00	4407	129.00	183	192.00	143	316.00	75
70.00	503	135.00	84	195.00	94	318.00	35
72.00	293	136.00	48	198.00	84	319.00	71
73.00	1735	138.00	40	199.00	37	320.00	45
74.00	8242	139.00	109	200.00	47	321.00	39
75.00	20072	140.00	39	201.00	98	324.00	33
76.00	1749	141.00	693	203.00	60	325.00	41
77.00	191	142.00	36	206.00	82	330.00	34
78.00	58	143.00	814	209.00	53	332.00	35
79.00	1680	144.00	58	210.00	35	334.00	97

Date : 07-MAY-2018 07:45

Client ID: Instrument: gcms-p.i

Sample Info: WG227763-3,SL3841

Operator: hg

Column phase: RTX-VMS Column diameter: 0.18

Data File: PB021a.D
Spectrum: Avg. Scans 167-169 (2.69), Background Scan 159
Location of Maximum: 95.00
Number of points: 168

m/z	Y	m/z	Y	m/z	Y	m/z	Y
80.00	369	145.00	222	216.00	233	337.00	91
81.00	1829	146.00	118	218.00	40	344.00	128
82.00	380	147.00	88	221.00	74	345.00	46
83.00	66	148.00	78	226.00	147	346.00	36
84.00	48	149.00	126	228.00	11		
85.00	65	150.00	10	231.00	123		
87.00	2138	152.00	65	233.00	55		
88.00	1589	154.00	46	234.00	17		

Raw QC Data Section

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG228421-2
Client ID: Method Blank Sample
Project:
SDG: SL3841
Lab File ID: D1331.D

Sample Date:
Received Date:
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG228421-2
Client ID: Method Blank Sample
Project:
SDG: SL3841
Lab File ID: D1331.D

Sample Date:
Received Date:
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		108.	%					
1,2-Dichloroethane-d4		119.	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG228421-2
Client ID: Method Blank Sample
Project:
SDG: SL3841
Lab File ID: D1331.D

Sample Date:
Received Date:
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		99.2	%					
P-Bromofluorobenzene		98.7	%					

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Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1331.d
Report Date: 21-May-2018 08:12

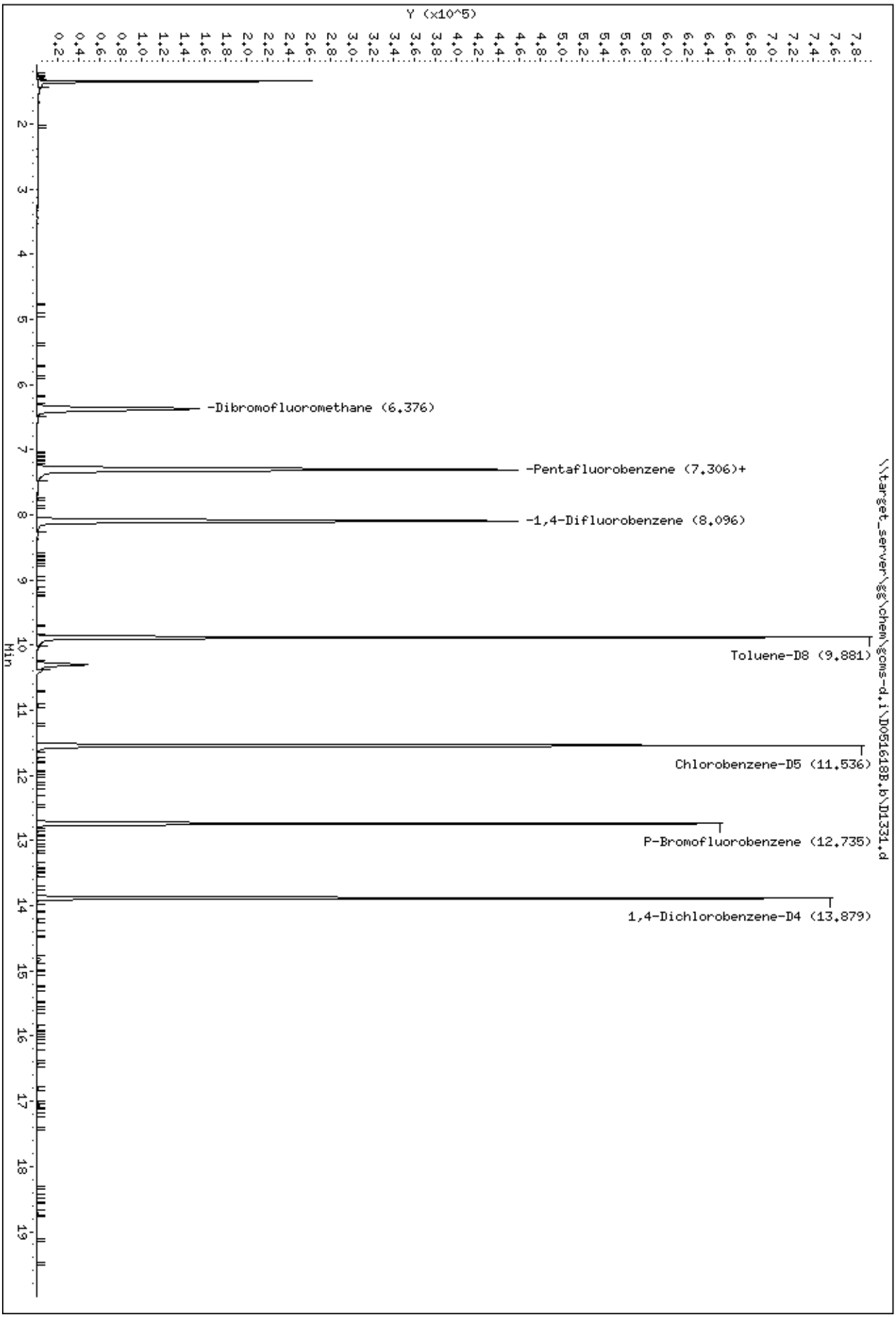
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051618B.b\D1331.d
Lab Smp Id: WG228421-2
Inj Date : 16-MAY-2018 14:47 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228421-2,SL3841
Misc Info : WG228421,WG227999-4,SL3841-1
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-d.i\D051618B.b\D8A05(21)D.m
Meth Date : 21-May-2018 08:09 gcms-d.i Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 4 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	163490	53.7538	53.8	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	258692	50.0000		
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	229617	59.7090	59.7	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	435671	50.0000		
$	55 Toluene-D8	98	9.881	9.881	(1.220)	526753	49.5780	49.6	
*	66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	395426	50.0000		
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	209354	49.3630	49.4	
*	91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	192344	50.0000		


Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1331.d
Date : 16-MAY-2018 14:47
Client ID:
Sample Info: WG228421-2,SL3841
Instrument: gcms-d.i
Y (x10^5)
Min
-Dibromofluoromethane (6.376)
-Pentafluorobenzene (7.306)+
-1,4-Difluorobenzene (8.096)
Toluene-D8 (9.881)
Chlorobenzene-D5 (11.536)
P-Bromofluorobenzene (12.735)
1,4-Dichlorobenzene-D4 (13.879)
\\target_server\gg\chem\gcms-d.i\D051618B.b\D1331.d

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227763-2
Client ID: Method Blank Sample
Project:
SDG: SL3841
Lab File ID: P5548.D

Sample Date:
Received Date:
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227763-2
Client ID: Method Blank Sample
Project:
SDG: SL3841
Lab File ID: P5548.D

Sample Date:
Received Date:
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		98.4	%					
1,2-Dichloroethane-d4		102.	%					

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Report of Analytical Results

Client:
Lab ID: WG227763-2
Client ID: Method Blank Sample
Project:
SDG: SL3841
Lab File ID: P5548.D

Sample Date:
Received Date:
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		101.	%					
P-Bromofluorobenzene		96.5	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5548.D
Report Date: 21-May-2018 08:14

Katahdin Analytical Services

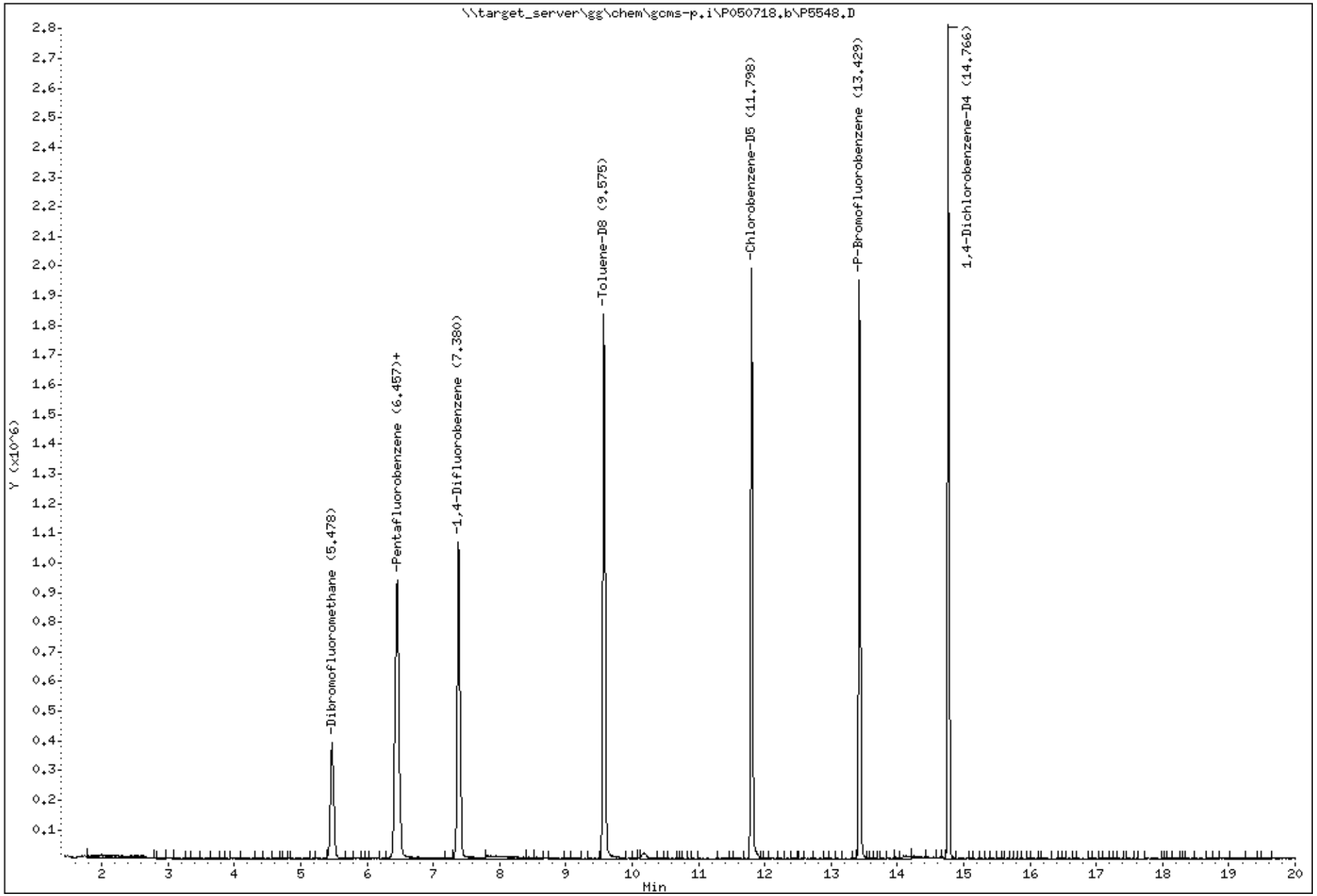
Data file : \\target_server\gg\chem\gcms-p.i\P050718.b\P5548.D
Lab Smp Id: WG227763-2
Inj Date : 07-MAY-2018 10:51 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227763-2,SL3841
Misc Info : WG227763,WG227568-4,SL3841-1
Comment : SW846 5030,AQ
Method : \\TARGET_SERVER\GG\chem\gcms-p.i\P050718.b\P8A05(68)D.m
Meth Date : 21-May-2018 08:13 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 5 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
$ 34 Dibromofluoromethane	113	5.477	5.469	(0.849)	393110	49.1779	49.2	
* 41 Pentafluorobenzene	168	6.450	6.441	(1.000)	808263	50.0000		
$ 42 1,2-Dichloroethane-D4	65	6.471	6.470	(1.003)	537643	51.0060	51.0	
* 48 1,4-Difluorobenzene	114	7.379	7.385	(1.000)	1322931	50.0000		
$ 58 Toluene-D8	98	9.574	9.573	(1.297)	1578122	50.3553	50.4	
* 68 Chlorobenzene-D5	117	11.805	11.804	(1.000)	1360309	50.0000		
$ 78 P-Bromofluorobenzene	95	13.428	13.427	(1.820)	670469	48.2496	48.2	
* 94 1,4-Dichlorobenzene-D4	152	14.772	14.771	(1.000)	728553	50.0000		

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5548.D
Date : 07-MAY-2018 10:51
Client ID:
Instrument: gcms-p.i
Sample Info: WG227763-2,SL3841



Katahdin Analytical Services 1000178

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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG228421-1
Client ID: LCS
Project:
SDG: SL3841
LCS File ID: D1329.D

Sample Date:
Received Date:
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	98.8	50.0	49.4	ug/L	78-125
1,1,1-Trichloroethane	98.8	50.0	49.4	ug/L	74-131
1,1,2,2-Tetrachloroethane	97.4	50.0	48.7	ug/L	71-121
Freon-113	85.6	50.0	42.8	ug/L	70-136
1,1,2-Trichloroethane	96.6	50.0	48.3	ug/L	80-120
1,1-Dichloroethane	104.	50.0	52.0	ug/L	77-125
1,1-Dichloroethene	96.0	50.0	48.0	ug/L	71-131
1,1-Dichloropropene	95.0	50.0	47.5	ug/L	79-125
1,2,3-Trichlorobenzene	98.0	50.0	49.0	ug/L	69-129
1,2,3-Trichloropropane	98.0	50.0	49.0	ug/L	73-122
1,2,4-Trichlorobenzene	98.8	50.0	49.4	ug/L	69-130
1,2,4-Trimethylbenzene	98.4	50.0	49.2	ug/L	76-124
1,2-Dibromo-3-Chloropropane	103.	50.0	51.7	ug/L	62-128
1,2-Dichlorobenzene	94.2	50.0	47.1	ug/L	80-120
1,2-Dichloroethane	100.	50.0	50.0	ug/L	73-128
1,2-Dichloropropane	97.0	50.0	48.5	ug/L	78-122
1,3,5-Trimethylbenzene	98.2	50.0	49.1	ug/L	75-124
1,3-Dichlorobenzene	94.0	50.0	47.0	ug/L	80-120
1,3-Dichloropropane	94.4	50.0	47.2	ug/L	80-120
1,4-Dichlorobenzene	91.8	50.0	45.9	ug/L	79-120
2,2-Dichloropropane	95.8	50.0	47.9	ug/L	60-139
2-Butanone	102.	50.0	50.9	ug/L	56-143
2-Chlorotoluene	96.4	50.0	48.2	ug/L	79-122
2-Hexanone	103.	50.0	51.6	ug/L	57-139
4-Chlorotoluene	97.6	50.0	48.8	ug/L	78-122
P-Isopropyltoluene	101.	50.0	50.7	ug/L	77-127
4-Methyl-2-Pentanone	104.	50.0	51.8	ug/L	67-130
Acetone	104.	50.0	52.0	ug/L	39-160
Benzene	93.8	50.0	46.9	ug/L	79-120
Bromobenzene	92.0	50.0	46.0	ug/L	80-120
Bromoform	94.8	50.0	47.4	ug/L	66-130
Bromomethane	100.	50.0	50.0	ug/L	53-141
Carbon Disulfide	97.6	50.0	48.8	ug/L	64-133
Carbon Tetrachloride	98.2	50.0	49.1	ug/L	72-136
Chlorobenzene	92.8	50.0	46.4	ug/L	82-120

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LCS Recovery Report

Client:
Lab ID: WG228421-1
Client ID: LCS
Project:
SDG: SL3841
LCS File ID: D1329.D

Sample Date:
Received Date:
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	98.0	50.0	49.0	ug/L	78-123
Dibromochloromethane	104.	50.0	51.9	ug/L	74-126
Chloroethane	114.	50.0	56.9	ug/L	60-138
Chloroform	98.4	50.0	49.2	ug/L	79-124
Chloromethane	112.	50.0	56.2	ug/L	50-139
cis-1,2-Dichloroethene	93.6	50.0	46.8	ug/L	78-123
cis-1,3-Dichloropropene	99.8	50.0	49.9	ug/L	75-124
Dibromomethane	102.	50.0	51.0	ug/L	79-123
Bromodichloromethane	104.	50.0	52.2	ug/L	79-125
Dichlorodifluoromethane	127.	50.0	63.6	ug/L	32-152
Ethylbenzene	94.8	50.0	47.4	ug/L	79-121
1,2-Dibromoethane	98.6	50.0	49.3	ug/L	77-121
Hexachlorobutadiene	103.	50.0	51.6	ug/L	66-134
Isopropylbenzene	102.	50.0	51.1	ug/L	72-131
Methyl tert-butyl Ether	96.6	50.0	48.3	ug/L	71-124
Methylene Chloride	94.0	50.0	47.0	ug/L	74-124
m+p-Xylenes	96.1	100.	96.1	ug/L	80-121
Naphthalene	91.4	50.0	45.7	ug/L	61-128
N-Butylbenzene	106.	50.0	53.2	ug/L	75-128
N-Propylbenzene	95.8	50.0	47.9	ug/L	76-126
o-Xylene	98.0	50.0	49.0	ug/L	78-122
sec-Butylbenzene	100.	50.0	50.2	ug/L	77-126
Styrene	99.6	50.0	49.8	ug/L	78-123
tert-Butylbenzene	98.8	50.0	49.4	ug/L	78-124
Tetrachloroethene	91.0	50.0	45.5	ug/L	74-129
Toluene	92.6	50.0	46.3	ug/L	80-121
trans-1,2-Dichloroethene	91.4	50.0	45.7	ug/L	75-124
trans-1,3-Dichloropropene	107.	50.0	53.6	ug/L	73-127
Trichloroethene	94.6	50.0	47.3	ug/L	79-123
Trichlorofluoromethane	102.	50.0	51.0	ug/L	65-141
Vinyl Chloride	107.	50.0	53.7	ug/L	58-137
Dibromofluoromethane	104.				80-120
1,2-Dichloroethane-d4	110.				81-120
Toluene-d8	99.7				89-120
P-Bromofluorobenzene	101.				85-120

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1329.d
Report Date: 21-May-2018 08:12

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051618B.b\D1329.d
Lab Smp Id: WG228421-1
Inj Date : 16-MAY-2018 13:32 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228421-1,SL3841
Misc Info : WG228421,WG227999-4,SL3841-1
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-d.i\D051618B.b\D8A05(21)D.m
Meth Date : 21-May-2018 08:09 gcms-d.i Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 2 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	221093	63.6445	63.6	
2	Chloromethane	50	1.663	1.663	(0.227)	209740	56.1746	56.2	
3	Vinyl chloride	62	1.728	1.728	(0.236)	156799	53.7409	53.7	
4	Bromomethane	94	2.025	2.025	(0.277)	75412	50.0570	50.0	
5	Chloroethane	64	2.146	2.137	(0.293)	75972	56.8956	56.9	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	231008	51.0313	51.0	
7	Diethyl Ether	59	2.583	2.583	(0.353)	77099	51.5148	51.5	
8	Tertiary-butyl alcohol	59	3.959	3.969	(0.541)	47364	243.193	243	
9	1,1-Dichloroethene	96	2.778	2.788	(0.380)	93096	47.9820	48.0	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	293009	48.8335	48.8	
11	Freon-113	151	2.834	2.835	(0.387)	72689	42.8323	42.8	
12	Iodomethane	142	2.936	2.937	(0.401)	104879	51.9790	52.0	
13	Acrolein	56	3.160	3.160	(0.432)	116750	239.968	240	
14	Methylene Chloride	84	3.448	3.448	(0.471)	152145	46.9766	47.0	
15	Acetone	43	3.522	3.522	(0.482)	46745	51.9703	52.0	
16	Isobutyl Alcohol	43	7.603	7.604	(1.039)	114169	935.742	936	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	135448	45.7121	45.7	
18	Allyl Chloride	41	3.318	3.318	(0.454)	213426	49.2518	49.2	
19	Methyl tert-butyl ether	73	3.801	3.811	(0.520)	370215	48.3095	48.3	
20	Acetonitrile	39	4.136	4.136	(0.565)	41549	507.888	508	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	461224	50.3630	50.4	
22	Chloroprene	53	4.480	4.480	(0.612)	226511	49.4216	49.4	
23	Propionitrile	54	7.148	7.148	(0.977)	208409	498.313	498	
24	Methacrylonitrile	41	7.176	7.185	(0.981)	995221	533.506	534	

Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1329.d
Report Date: 21-May-2018 08:12

							CONCENTRATIONS		
		QUANT SIG					ON-COLUMN	FINAL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	25 1,1-Dichloroethane	63	4.517	4.517	(0.617)	288284	52.0368	52.0	
	26 Acrylonitrile	52	4.610	4.610	(0.630)	246934	253.500	254	
	27 Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	390091	50.4947	50.5	
	28 Vinyl Acetate	43	4.982	4.982	(0.615)	393856	58.7017	58.7	
	29 cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	147726	46.8357	46.8	
M	30 1,2-Dichloroethylene (total)	96				283174	92.5478	92.5	
	31 Methyl Methacrylate	41	10.643	10.643	(1.315)	141016	49.4477	49.4	
	32 2,2-Dichloropropane	77	5.642	5.642	(0.771)	174779	47.8864	47.9	
	33 Bromochloromethane	128	5.809	5.809	(0.794)	76219	49.0130	49.0	
	34 Chloroform	83	6.014	6.014	(0.822)	285574	49.1739	49.2	
	35 Carbon Tetrachloride	117	6.227	6.237	(0.769)	199433	49.1267	49.1	
	36 Tetrahydrofuran	42	6.311	6.302	(0.863)	41448	49.8889	49.9	
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	175423	51.9867	52.0	
	38 1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	236122	49.4157	49.4	
	39 1,1-Dichloropropene	75	6.618	6.627	(0.817)	204839	47.5385	47.5	
	40 2-Butanone	43	6.655	6.655	(0.910)	71034	50.9416	50.9	
	41 Benzene	78	7.055	7.055	(0.871)	544796	46.8734	46.9	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	287009	50.0000		
	43 Cyclohexane	56	5.790	5.791	(0.792)	210746	44.6525	44.6	
	44 Ethyl Methacrylate	69	9.137	9.137	(1.129)	99390	44.6903	44.7	
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	235612	55.2231	55.2	
	46 Tertiary-amyl methyl ether	73	7.334	7.334	(1.003)	310081	48.3748	48.4	
	47 1,2-Dichloroethane	62	7.408	7.408	(0.915)	242978	50.0104	50.0	
	48 Trichloroethene	95	8.003	8.003	(0.989)	149822	47.2815	47.3	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	471055	50.0000		
	50 Dibromomethane	93	8.589	8.589	(1.061)	109248	51.0030	51.0	
	51 1,2-Dichloropropane	63	8.737	8.738	(1.079)	152324	48.4764	48.5	
	52 Bromodichloromethane	83	8.849	8.859	(1.093)	227328	52.2020	52.2	
	53 cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	252716	49.8804	49.9	
	54 1,4-Dioxane	88	9.137	9.137	(1.129)	28684	892.717	893	
$	55 Toluene-D8	98	9.881	9.881	(1.220)	572762	49.8590	49.8	
	56 2-Chloroethylvinylether	63	9.639	9.639	(1.191)	96426	49.2913	49.3	
	57 Toluene	92	9.937	9.937	(1.227)	329103	46.3431	46.3	
	58 4-methyl-2-pentanone	43	10.411	10.411	(1.286)	148623	51.8194	51.8	
	59 Tetrachloroethene	164	10.364	10.365	(0.898)	105539	45.5318	45.5	
	60 trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	235309	53.5904	53.6	
	61 1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	120916	48.3429	48.3	
	62 Dibromochloromethane	129	10.773	10.774	(0.934)	165718	51.8983	51.9	
	63 1,3-Dichloropropane	76	10.876	10.876	(0.943)	245344	47.2125	47.2	
	64 1,2-Dibromoethane	107	10.996	10.997	(1.358)	148681	49.2999	49.3	
	65 2-Hexanone	43	11.294	11.294	(0.979)	101334	51.6488	51.6	
*	66 Chlorobenzene-D5	117	11.536	11.536	(1.000)	425102	50.0000		
	67 Chlorobenzene	112	11.554	11.555	(1.002)	364841	46.4312	46.4	
	68 Ethylbenzene	91	11.601	11.601	(1.006)	637872	47.3730	47.4	
	69 1,1,1,2-Tetrachloroethane	131	11.629	11.629	(1.008)	138348	49.4108	49.4	
M	70 Xylenes (total)	106				1489781	145.092	145	
	71 m+p-Xylenes	91	11.749	11.750	(1.019)	983705	96.0957	96.1	
	72 o-Xylene	91	12.168	12.168	(1.055)	506076	48.9964	49.0	
	73 Styrene	104	12.223	12.224	(1.060)	388988	49.7793	49.8	
	74 Bromoform	173	12.233	12.233	(1.060)	101219	47.3518	47.4	
	75 Isopropylbenzene	105	12.474	12.475	(0.899)	592054	51.1049	51.1	
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	231555	50.4965	50.5	
	77 cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	59129	48.3135	48.3	
	78 trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	47478	47.6765	47.7	

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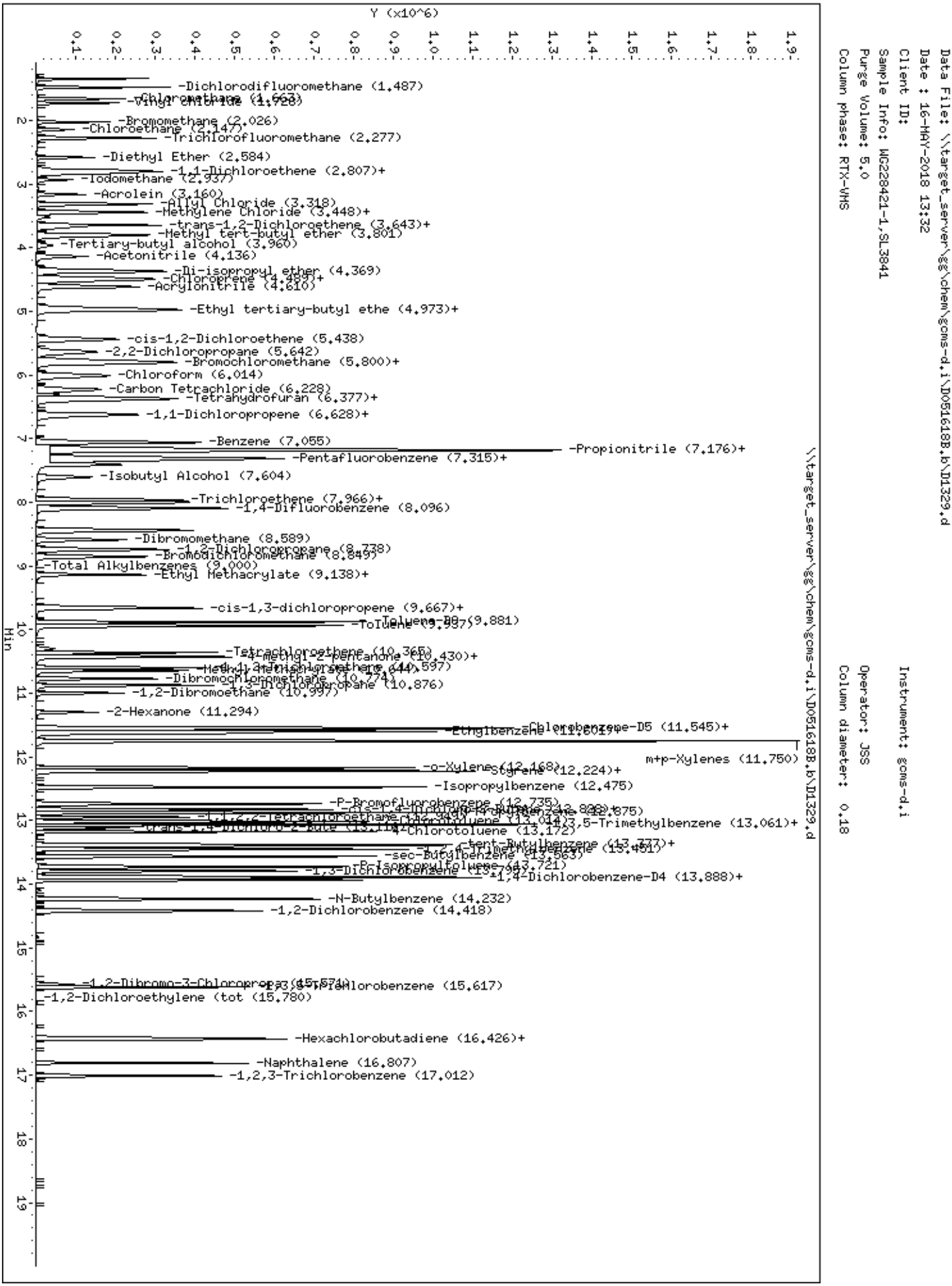
Report Date: 21-May-2018 08:12

		QUANT SIG					CONCENTRATIONS ON-COLUMN	CONCENTRATIONS FINAL	
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
79	Bromobenzene	156	12.828	12.828	(0.924)	150253	46.0534	46.0	
80	N-Propylbenzene	91	12.874	12.875	(0.928)	726411	47.9407	47.9	
81	1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.933)	184747	48.6773	48.7	
82	1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	493784	49.1323	49.1	
83	2-Chlorotoluene	91	13.014	13.014	(0.938)	437238	48.1765	48.2	
84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	160015	48.9585	49.0	
85	4-Chlorotoluene	91	13.172	13.172	(0.949)	470696	48.8104	48.8	
86	tert-Butylbenzene	119	13.376	13.377	(0.964)	467265	49.4041	49.4	
87	Pentachloroethane	117	13.395	13.395	(0.965)	111231	49.0512	49.0	
88	1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	511881	49.1595	49.2	
89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	491522	50.7002	50.7	
90	1,3-Dichlorobenzene	146	13.795	13.795	(0.994)	273484	47.0033	47.0	
* 91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	218190	50.0000		
92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	277409	45.9451	45.9	
93	N-Butylbenzene	91	14.231	14.232	(1.025)	480683	53.2105	53.2	
94	sec-Butylbenzene	105	13.562	13.563	(0.977)	599518	50.2396	50.2	
95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	260120	47.1264	47.1	
96	1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	31177	51.7152	51.7	
97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	182577	49.0203	49.0	
98	Hexachlorobutadiene	225	16.416	16.416	(1.183)	66909	51.5987	51.6	
99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	160287	49.3742	49.4	
100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	514697	49.1590	49.2	
101	Naphthalene	128	16.807	16.806	(1.211)	358477	45.7120	45.7	
102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	129889	48.9839	49.0	
103	Methyl Acetate	43	3.689	3.690	(0.504)	118656	46.2872	46.3	
104	Methylcyclohexane	83	7.966	7.966	(1.089)	199532	44.9869	45.0	
M 153	Total Alkylbenzenes	100				3771064	349.787	350	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Date : 16-MAY-2018 13:32
Client ID:
Sample Info: WG228421-1,SL3841
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051618B.b\D1329.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)
-Vinyl chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)+
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.801)
-Tertiary-butyl alcohol (3.960)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.369)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.438)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.228)
-Tetrahydrofuran (6.377)+
-1,1-Dichloropropene (6.628)+
-Benzene (7.055)
-Propionitrile (7.176)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.604)
-Trichloroethene (7.966)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.849)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.881)
-Toluene (9.937)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.430)+
-Methyl Methacrylate (10.644)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-Ethylbenzene (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-1,3,5-Trimethylbenzene (13.061)+
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.337)+
-sec-Butylbenzene (13.563)
-P-Isopropyltoluene (13.721)
-1,3-Dichlorobenzene (13.795)
-1,4-Dichlorobenzene-D4 (13.888)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.571)
-1,3,5-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)

Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227763-1
Client ID: LCS
Project:
SDG: SL3841
LCS File ID: P5546.D

Sample Date:
Received Date:
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	91.8	50.0	45.9	ug/L	78-125
1,1,1-Trichloroethane	96.6	50.0	48.3	ug/L	74-131
1,1,2,2-Tetrachloroethane	102.	50.0	50.8	ug/L	71-121
Freon-113	95.2	50.0	47.6	ug/L	70-136
1,1,2-Trichloroethane	98.6	50.0	49.3	ug/L	80-120
1,1-Dichloroethane	100.	50.0	50.2	ug/L	77-125
1,1-Dichloroethene	92.2	50.0	46.1	ug/L	71-131
1,1-Dichloropropene	95.2	50.0	47.6	ug/L	79-125
1,2,3-Trichlorobenzene	111.	50.0	55.4	ug/L	69-129
1,2,3-Trichloropropane	96.8	50.0	48.4	ug/L	73-122
1,2,4-Trichlorobenzene	95.6	50.0	47.8	ug/L	69-130
1,2,4-Trimethylbenzene	96.8	50.0	48.4	ug/L	76-124
1,2-Dibromo-3-Chloropropane	102.	50.0	51.2	ug/L	62-128
1,2-Dichlorobenzene	96.0	50.0	48.0	ug/L	80-120
1,2-Dichloroethane	93.8	50.0	46.9	ug/L	73-128
1,2-Dichloropropane	100.	50.0	50.1	ug/L	78-122
1,3,5-Trimethylbenzene	96.2	50.0	48.1	ug/L	75-124
1,3-Dichlorobenzene	96.8	50.0	48.4	ug/L	80-120
1,3-Dichloropropane	95.8	50.0	47.9	ug/L	80-120
1,4-Dichlorobenzene	94.0	50.0	47.0	ug/L	79-120
2,2-Dichloropropane	106.	50.0	52.8	ug/L	60-139
2-Butanone	115.	50.0	57.3	ug/L	56-143
2-Chlorotoluene	93.4	50.0	46.7	ug/L	79-122
2-Hexanone	114.	50.0	56.8	ug/L	57-139
4-Chlorotoluene	92.0	50.0	46.0	ug/L	78-122
P-Isopropyltoluene	98.2	50.0	49.1	ug/L	77-127
4-Methyl-2-Pentanone	112.	50.0	55.9	ug/L	67-130
Acetone	110.	50.0	55.2	ug/L	39-160
Benzene	97.0	50.0	48.5	ug/L	79-120
Bromobenzene	94.0	50.0	47.0	ug/L	80-120
Bromoform	107.	50.0	53.6	ug/L	66-130
Bromomethane	114.	50.0	56.9	ug/L	53-141
Carbon Disulfide	91.4	50.0	45.7	ug/L	64-133
Carbon Tetrachloride	98.4	50.0	49.2	ug/L	72-136
Chlorobenzene	96.0	50.0	48.0	ug/L	82-120

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227763-1
Client ID: LCS
Project:
SDG: SL3841
LCS File ID: P5546.D

Sample Date:
Received Date:
Extract Date: 07-MAY-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG227763

Analysis Date: 07-MAY-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	96.0	50.0	48.0	ug/L	78-123
Dibromochloromethane	100.	50.0	50.2	ug/L	74-126
Chloroethane	99.2	50.0	49.6	ug/L	60-138
Chloroform	98.0	50.0	49.0	ug/L	79-124
Chloromethane	105.	50.0	52.3	ug/L	50-139
cis-1,2-Dichloroethene	98.0	50.0	49.0	ug/L	78-123
cis-1,3-Dichloropropene	101.	50.0	50.3	ug/L	75-124
Dibromomethane	106.	50.0	52.8	ug/L	79-123
Bromodichloromethane	103.	50.0	51.4	ug/L	79-125
Dichlorodifluoromethane	92.0	50.0	46.0	ug/L	32-152
Ethylbenzene	96.4	50.0	48.2	ug/L	79-121
1,2-Dibromoethane	108.	50.0	53.8	ug/L	77-121
Hexachlorobutadiene	90.8	50.0	45.4	ug/L	66-134
Isopropylbenzene	98.4	50.0	49.2	ug/L	72-131
Methyl tert-butyl Ether	98.2	50.0	49.1	ug/L	71-124
Methylene Chloride	93.0	50.0	46.5	ug/L	74-124
m+p-Xylenes	97.2	100.	97.2	ug/L	80-121
Naphthalene	107.	50.0	53.5	ug/L	61-128
N-Butylbenzene	99.4	50.0	49.7	ug/L	75-128
N-Propylbenzene	95.4	50.0	47.7	ug/L	76-126
o-Xylene	98.8	50.0	49.4	ug/L	78-122
sec-Butylbenzene	97.4	50.0	48.7	ug/L	77-126
Styrene	102.	50.0	51.2	ug/L	78-123
tert-Butylbenzene	96.0	50.0	48.0	ug/L	78-124
Tetrachloroethene	96.8	50.0	48.4	ug/L	74-129
Toluene	98.8	50.0	49.4	ug/L	80-121
trans-1,2-Dichloroethene	94.4	50.0	47.2	ug/L	75-124
trans-1,3-Dichloropropene	96.8	50.0	48.4	ug/L	73-127
Trichloroethene	96.6	50.0	48.3	ug/L	79-123
Trichlorofluoromethane	94.6	50.0	47.3	ug/L	65-141
Vinyl Chloride	101.	50.0	50.7	ug/L	58-137
Dibromofluoromethane	98.2				80-120
1,2-Dichloroethane-d4	98.4				81-120
Toluene-d8	101.				89-120
P-Bromofluorobenzene	104.				85-120

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P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5546.D
Report Date: 21-May-2018 08:14

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P050718.b\P5546.D
Lab Smp Id: WG227763-1
Inj Date : 07-MAY-2018 09:38 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG227763-1,SL3841
Misc Info : WG227763,WG227568-4,SL3841-1
Comment : SW846 5030,AQ
Method : \\TARGET_SERVER\GG\chem\gcms-p.i\P050718.b\P8A05(68)D.m
Meth Date : 21-May-2018 08:13 gcms-p.i Quant Type: ISTD
Cal Date : 03-MAY-2018 14:39 Cal File: P5511.D
Als bottle: 3 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.516	1.515	(0.235)	380296	46.0044	46.0	
2	Chloromethane	50	1.666	1.665	(0.259)	413932	52.2887	52.3	
3	Vinyl chloride	62	1.723	1.729	(0.268)	438876	50.6959	50.7	
4	Bromomethane	94	1.973	1.987	(0.306)	225664	56.9089	56.9	
5	Chloroethane	64	2.066	2.080	(0.321)	240632	49.6572	49.6	
6	Trichlorofluoromethane	101	2.173	2.180	(0.337)	725605	47.2800	47.3	
7	Diethyl Ether	59	2.417	2.416	(0.375)	284525	51.3182	51.3	
19	Tertiary-butyl alcohol	59	3.503	3.510	(0.544)	143086	297.547	298	WKS
8	1,1-Dichloroethene	96	2.595	2.587	(0.403)	294374	46.0994	46.1	
10	Carbon Disulfide	76	2.624	2.623	(0.407)	986654	45.6893	45.7	8:23 am, May 21, 2018
9	Freon-113	151	2.624	2.637	(0.407)	292487	47.5794	47.6	
11	Iodomethane	142	2.724	2.730	(0.423)	283704	60.7252	60.7	
12	Acrolein	56	2.903	2.902	(0.451)	290499	267.970	268	
14	Methylene Chloride	84	3.132	3.131	(0.486)	382589	46.5020	46.5	
15	Acetone	43	3.182	3.188	(0.494)	109082	55.2200	55.2	
45	Isobutyl Alcohol	43	6.792	6.792	(1.054)	266790	1143.20	1140(M)	M6
16	trans-1,2-Dichloroethene	96	3.282	3.281	(0.509)	362821	47.2295	47.2	
13	Allyl Chloride	41	3.024	3.016	(0.469)	520753	48.7199	48.7	
18	Methyl tert-butyl ether	73	3.396	3.395	(0.527)	1102782	49.0672	49.1	
20	Acetonitrile	41	3.689	3.696	(0.573)	519620	496.223	496	
21	Di-isopropyl ether	45	3.825	3.824	(0.594)	1213076	47.4828	47.5	
22	Chloroprene	53	3.947	3.960	(0.613)	605093	47.2304	47.2	
39	Propionitrile	54	6.299	6.298	(0.978)	681347	564.234	564	
40	Methacrylonitrile	41	6.328	6.327	(0.982)	2682623	549.943	550	

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5546.D
Report Date: 21-May-2018 08:14

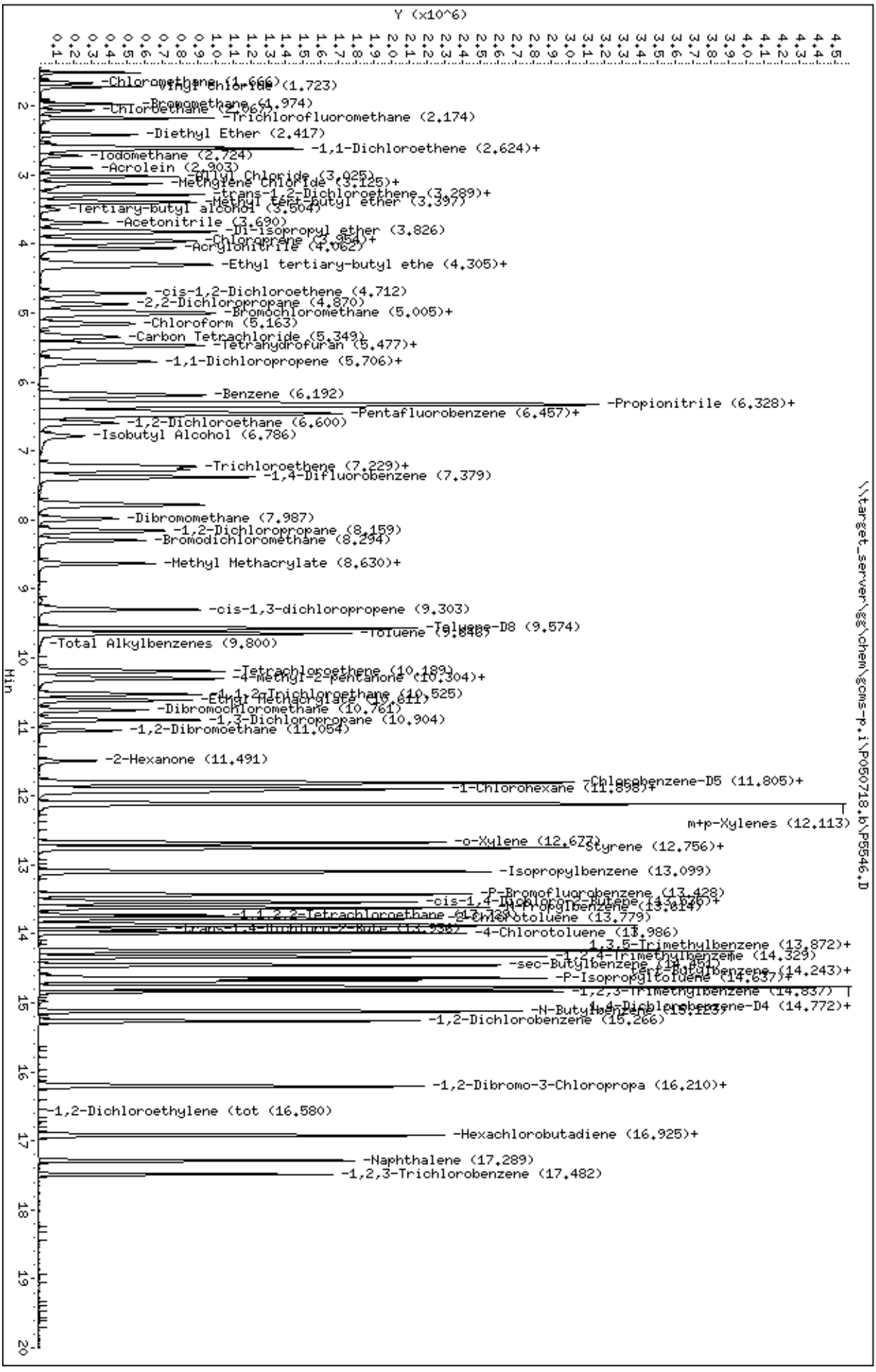
							CONCENTRATIONS		
		QUANT SIG					ON-COLUMN	FINAL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	3.982	3.989	(0.618)	738177	50.1582	50.2	
	24 Acrylonitrile	52	4.068	4.067	(0.632)	703100	268.995	269	
	25 Ethyl tertiary-butyl ether	59	4.290	4.303	(0.666)	1158754	48.7507	48.8	
	26 Vinyl Acetate	43	4.326	4.325	(0.586)	995164	56.5443	56.5	
	27 cis-1,2-Dichloroethene	96	4.712	4.732	(0.731)	402700	48.9520	49.0	
M	98 1,2-Dichloroethylene (total)	96				765521	96.1815	96.2	
	52 Methyl Methacrylate	41	8.630	8.643	(1.170)	377150	55.5011	55.5	
	28 2,2-Dichloropropane	77	4.869	4.890	(0.756)	547123	52.7811	52.8	
	29 Bromochloromethane	128	5.019	5.026	(0.779)	175579	48.0227	48.0	
	31 Chloroform	83	5.155	5.154	(0.800)	708420	49.0599	49.0	
	32 Carbon Tetrachloride	117	5.355	5.347	(0.726)	534507	49.2182	49.2	
	33 Tetrahydrofuran	42	5.420	5.419	(0.841)	116583	53.3203	53.3	
$	34 Dibromofluoromethane	113	5.470	5.469	(0.849)	465672	49.1276	49.1	
	35 1,1,1-Trichloroethane	97	5.484	5.483	(0.851)	623422	48.3009	48.3	
	37 1,1-Dichloropropene	75	5.706	5.698	(0.773)	560802	47.5637	47.6	
	36 2-Butanone	43	5.727	5.741	(0.889)	183414	57.2899	57.3	
	38 Benzene	78	6.192	6.184	(0.839)	1585715	48.4849	48.5	
*	41 Pentafluorobenzene	168	6.442	6.441	(1.000)	958436	50.0000		
	30 Cyclohexane	56	4.998	4.990	(0.776)	636822	45.7352	45.7	
	53 Ethyl Methacrylate	69	10.611	10.617	(1.438)	587221	48.5460	48.5	
$	42 1,2-Dichloroethane-D4	65	6.463	6.470	(1.003)	614781	49.1855	49.2	
	43 Tertiary-amyl methyl ether	73	6.471	6.463	(1.004)	1051333	49.8512	49.8	
	44 1,2-Dichloroethane	62	6.599	6.591	(0.894)	599340	46.8825	46.9	
	47 Trichloroethene	95	7.279	7.264	(0.986)	389628	48.3373	48.3	
*	48 1,4-Difluorobenzene	114	7.379	7.385	(1.000)	1552546	50.0000		
	49 Dibromomethane	93	7.979	7.979	(1.081)	257273	52.7759	52.8	
	50 1,2-Dichloropropane	63	8.158	8.164	(1.106)	412323	50.0633	50.1	
	51 Bromodichloromethane	83	8.301	8.307	(1.125)	579938	51.4207	51.4	
	57 cis-1,3-dichloropropene	75	9.302	9.301	(1.261)	710524	50.3321	50.3	
	54 1,4-Dioxane	88	8.637	8.664	(1.171)	82305	1023.50	1020	
$	58 Toluene-D8	98	9.574	9.573	(1.297)	1854762	50.4296	50.4	
	59 Toluene	92	9.645	9.652	(1.307)	1017046	49.4582	49.4	
	61 4-methyl-2-pentanone	43	10.275	10.281	(1.392)	393377	55.8682	55.9	
	60 Tetrachloroethene	164	10.189	10.188	(0.863)	318045	48.4435	48.4	
	62 trans-1,3-Dichloropropene	75	10.303	10.302	(1.396)	663975	48.3948	48.4	
	63 1,1,2-Trichloroethane	83	10.525	10.531	(1.426)	308806	49.2754	49.3	
	64 Dibromochloromethane	129	10.761	10.767	(0.912)	413732	50.1988	50.2	
	65 1,3-Dichloropropane	76	10.904	10.896	(0.924)	723756	47.9441	47.9	
	66 1,2-Dibromoethane	107	11.054	11.053	(1.498)	403503	53.8005	53.8	
	67 2-Hexanone	43	11.490	11.496	(0.973)	277447	56.8325	56.8	
*	68 Chlorobenzene-D5	117	11.805	11.804	(1.000)	1623933	50.0000		
	69 Chlorobenzene	112	11.826	11.825	(1.002)	1167094	48.0088	48.0	
	70 1-Chlorohexane	91	11.898	11.861	(1.008)	2016580	169.066	169(R)	
	71 Ethylbenzene	106	11.898	11.904	(1.008)	644080	48.2366	48.2	
	72 1,1,1,2-Tetrachloroethane	131	11.933	11.940	(1.011)	386492	45.9164	45.9	
M	106 Xylenes (total)	106				2345632	146.650	147	
	73 m+p-Xylenes	106	12.112	12.111	(1.026)	1577990	97.2341	97.2	
	74 o-Xylene	106	12.677	12.683	(1.074)	767642	49.4161	49.4	
	75 Styrene	104	12.756	12.755	(1.081)	1349400	51.2464	51.2	
	76 Bromoform	173	12.756	12.755	(1.081)	311116	53.6287	53.6	
	77 Isopropylbenzene	105	13.099	13.098	(0.887)	1996408	49.2259	49.2	
$	78 P-Bromofluorobenzene	95	13.428	13.427	(1.820)	845759	51.8626	51.9	
	79 cis-1,4-Dichloro-2-Butene	53	13.549	13.548	(0.917)	203226	52.3528	52.4	
	86 trans-1,4-Dichloro-2-Butene	53	13.935	13.942	(0.943)	167938	57.2087	57.2	

Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5546.D
Report Date: 21-May-2018 08:14

			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	80	Bromobenzene	156	13.535	13.527	(0.916)	500480	47.0391	47.0	
	81	N-Propylbenzene	91	13.621	13.613	(0.922)	2332962	47.7045	47.7	
	82	1,1,2,2-Tetrachloroethane	83	13.728	13.727	(0.929)	534301	50.7859	50.8	
	85	1,3,5-Trimethylbenzene	105	13.871	13.877	(0.939)	1665374	48.1179	48.1	
	83	2-Chlorotoluene	91	13.778	13.777	(0.933)	1385329	46.6750	46.7	
	84	1,2,3-Trichloropropane	75	13.864	13.856	(0.939)	467303	48.4226	48.4	
	87	4-Chlorotoluene	91	13.985	13.985	(0.947)	1454515	45.9731	46.0	
	88	tert-Butylbenzene	119	14.243	14.242	(0.964)	1602573	47.9591	48.0	
	89	Pentachloroethane	165	14.250	14.249	(0.965)	240840	49.5168	49.5	
	90	1,2,4-Trimethylbenzene	105	14.329	14.335	(0.970)	1733085	48.4064	48.4	
	92	P-Isopropyltoluene	119	14.636	14.635	(0.991)	1704757	49.0984	49.1	
	93	1,3-Dichlorobenzene	146	14.679	14.678	(0.994)	914018	48.4531	48.4	
*	94	1,4-Dichlorobenzene-D4	152	14.772	14.771	(1.000)	958018	50.0000		
	95	1,4-Dichlorobenzene	146	14.786	14.785	(1.001)	942186	46.9903	47.0	
	97	N-Butylbenzene	91	15.122	15.122	(1.024)	1549584	49.7112	49.7	
	91	sec-Butylbenzene	105	14.450	14.457	(0.978)	2056897	48.6925	48.7	
	99	1,2-Dichlorobenzene	146	15.265	15.265	(1.033)	878051	47.9621	48.0	
	100	1,2-Dibromo-3-Chloropropane	157	16.181	16.172	(1.095)	110263	51.1597	51.2	
	101	1,3,5-Trichlorobenzene	180	16.209	16.207	(1.097)	663201	48.7181	48.7	
	102	Hexachlorobutadiene	225	16.910	16.908	(1.145)	219256	45.3734	45.4	
	103	1,2,4-Trichlorobenzene	180	16.924	16.922	(1.146)	576897	47.7789	47.8	
	96	1,2,3-Trimethylbenzene	105	14.836	14.835	(1.004)	1820691	48.6223	48.6	
	104	Naphthalene	128	17.289	17.288	(1.170)	1317181	53.5393	53.5	
	105	1,2,3-Trichlorobenzene	180	17.489	17.488	(1.184)	474664	55.3957	55.4	
	17	Methyl Acetate	43	3.303	3.302	(0.513)	299289	48.1873	48.2	
	46	Methylcyclohexane	83	7.221	7.228	(1.121)	650084	49.4966	49.5	
M	55	Total Alkylbenzenes	100				12645232	339.690	340	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.


Data File: \\target_server\gg\chem\gcms-p.i\P050718.b\P5546.D
Date : 07-MAY-2018 09:38
Client ID:
Sample Info: WG227763-1,SL3841
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
\\target_server\gg\chem\gcms-p.i\P050718.b\P5546.D
Y (x10^6)
Min
-Chloromethane (1.666)
-Vinyl Chloride (1.723)
-Bromomethane (1.974)
-Chloroethane (2.067)
-Trichlorofluoromethane (2.174)
-Diethyl Ether (2.417)
-1,1-Dichloroethene (2.624)+
-Iodomethane (2.724)
-Acrolein (2.903)
-Allyl Chloride (3.025)
-Methylene Chloride (3.125)+
-trans-1,2-Dichloroethene (3.289)+
-Methyl tert-butyl ether (3.397)
-Tertiary-Butyl alcohol (3.504)
-Acetonitrile (3.690)
-Di-isopropyl ether (3.826)
-Chloroprene (3.959)+
-Acrylonitrile (4.062)
-Ethyl tertiary-butyl ethe (4.305)+
-cis-1,2-Dichloroethene (4.712)
-2,2-Dichloropropane (4.870)
-Bromochloromethane (5.005)+
-Chloroform (5.163)
-Carbon Tetrachloride (5.349)
-Tetrahydrofuran (5.477)+
-1,1-Dichloropropene (5.706)+
-Benzene (6.192)
-Propionitrile (6.328)+
-Pentafluorobenzene (6.457)+
-1,2-Dichloroethane (6.600)
-Isobutyl Alcohol (6.786)
-Trichloroethene (7.229)+
-1,4-Difluorobenzene (7.379)
-Dibromomethane (7.987)
-1,2-Dichloropropane (8.159)
-Bromodichloromethane (8.294)
-Methyl Methacrylate (8.630)+
-cis-1,3-dichloropropene (9.303)
-Toluene-D8 (9.574)
-Toluene (9.8485)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.189)
-4-Methyl-2-pentanone (10.304)+
-1,1,2-Trichloroethane (10.525)
-Ethyl Methacrylate (10.611)
-Dibromochloromethane (10.761)
-1,3-Dichloropropane (10.904)
-1,2-Dibromoethane (11.054)
-2-Hexanone (11.491)
-Chlorobenzene-D5 (11.805)+
-1-Chlorohexane (11.898)+
m+p-Xylenes (12.113)
-o-Xylene (12.672)
-Styrene (12.756)+
-Isopropylbenzene (13.099)
-P-Bromofluorobenzene (13.428)
-cis-1,4-Dichloro-2-Butene (13.546)+
-n-Propylbenzene (13.614)
-1,1,2,2-Tetrachloroethane (13.734)
-2-Chlorotoluene (13.779)
-trans-1,4-Dichloro-2-Bute (13.936)
-4-Chlorotoluene (13.986)
-1,3,5-Trimethylbenzene (13.872)+
-1,2,4-Trimethylbenzene (14.329)
-sec-Butylbenzene (14.454)
-tert-Butylbenzene (14.243)+
-P-Isopropyltoluene (14.637)+
-1,2,3-Trimethylbenzene (14.837)
-1,4-Dichlorobenzene-D4 (14.772)+
-N-Butylbenzene (15.123)
-1,2-Dichlorobenzene (15.266)
-1,2-Dibromo-3-Chloropropa (16.210)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.925)+
-Naphthalene (17.289)
-1,2,3-Trichlorobenzene (17.482)

Logbooks and Supporting Documents

KATAHDIN ANALYTICAL SERVICES

GCMS-D INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 051018

					PREP METHOD			Criteria			pH Paper Lot #:			KI Paper Lot #:	
SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	5030	5035	1311	KAS	DoD	QAPP	Y/N	ANALYST	PH	TRC	COMMENTS
WG227999-10	DB173	1	-1	VMBFBA02							Y		NA	NA	
Rinse	D1258	1	1	D8A05(21)							N				
WG227999-4	59	1	2								Y				
-3	60	1	3								Y				
-2	61	1	4								Y				
-1	62	1	5								Y				
-6	63	1	6								Y				
-5	64	1	7								Y				
-7	65	1	8								N				
-7	66	1	9								N				
-7	67	1	10								N				
VBLK	68	1	11								N				
WG227999-9	69	1	12								N				

5-11-18

STANDARD	CODE
BFB	V1052
CAL. STD.	
LCS/MS MIX	
EXTRAS MIX	

STANDARD	CODE
IS MIX	V1084
SS MIX	

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

Katahdin Analytical Services 1000192

GCMS-D INSTRUMENT RUNLOG

KATAHDIN ANALYTICAL SERVICES

DATE/TIME OF BFB INJECTION: 051118 7:52

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	5035	1311	Criteria KAS	DoD	QAPP	pH Paper Lot #: Y/N	ANALYST	PH	TRC	KI Paper Lot # COMMENTS
WG228096 -3	DB174	1	-1	VOABFBAQ2							Y	HG			
-4	D1271	1	1	D8A05(21)							Y				
-1/9	72	1	2								Y				Ind
VBLKA	73	1	3								N				
WG228096 -2	74	1	4								Y				
SL3807-5 B	75	1	5						5.0		N		<2		No CCV
SL3992-9 B	76	1	6						↓		N		<2		
SL4035-2DL A	77	20	7				X		5.1		N		—		
SL3992-8 B	78	1	8						5.0		N		<2		
-7 B	79	1	9								N		<2		
-2DL D	80	4	10								N		<2		Over-dilute Run 1:1
-6DL E	81	2	11								N		<2		DL 1:10
-2 D	82	1	12						↓		N		<2		↓
SL3777-1RA G	83	1	13					X			Y		<2		1558✓
SL3992-2MS E	84	1	14						5.0						Didn't run, Archer fault
-2MSD F	85	1	15												
-6MS G	86	1	16												
-6MSD F	87	1	17						↓						
CCV1	88	1	18												
2	89	1	19												
3	90	1	20												
Rinse	91	1	21												
Rinse	92	1	22												

TTC 5/14/18

STANDARD	CODE
BFB	V1052
CAL. STD.	V1092/V1093A
LCS/MS MIX	V1096
EXTRAS MIX	V1094

STANDARD	CODE
IS MIX	V1084
SS MIX	↓

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

VOA-012 - Revision 2 - 11/22/2017

QAMS655

0000010

Katahdin Analytical Services 1000193

GCMS-D INSTRUMENT RUNLOG

KATAHDIN ANALYTICAL SERVICES

DATE/TIME OF BFB INJECTION: 5-16-18 12:14

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	5035	1311	Criteria KAS	DoD	QAPP	pH Paper Lot #: Y/N	ANALYST	PH	TRC	KI Paper Lot # COMMENTS
WG228421-3	D3179	1	—	V0ABFBAQ	✓						Y	TB			
rstd50	D1328		1	D8A05(21)							Y				
LCS	29		2								Y				
rBlmkA	30		3								N				~~1ss↑~~
↓ B	31		4								Y				1ss↑ ~~no hits~~ no hits
SL3902-1A	32		5						50		Y		<2		1ss↑
↓ -14A	33		6								Y				
SL3841-4B	34		7								Y				1ss↑
-6B	35		8								Y				1ss↑
-8B	36		9								Y				1ss↑
-10B	37		10								Y				1ss↑
-12B	38		11								Y				1ss↑
-14B	39		12								Y				1ss↑
-16B	40		13								Y				1ss↑
-18B	41		14								Y				1ss↑
SL3902-2B	42		15								Y				1ss↑
-4B	43		16								Y				1ss↑
-6B	44		17								Y				1ss↑
CCV1	45		18								Y				23106 ✓
2	46		19								N				not needed
↓ 3	47		20								N				↓
Rmse	48		21												
↓	49		22												

TB 5-17-18

STANDARD	CODE
BFB	V1098
CAL. STD.	V1099 | V1093B
LCS/MS MIX	V1090
EXTRAS MIX	V1094

STANDARD	CODE
IS MIX	V1084
SS MIX	↓

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

VOA-012 - Revision 2 - 11/22/2017

QAMS655

0000014

Katahdin Analytical Services 1000194

KATAHDIN ANALYTICAL SERVICES

GCMS-P INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 050318B

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	5035	1311	Criteria KAS	DoD	QAPP	pH Paper Lot #: Y/N	ANALYST	PH	TRC	KI Paper Lot # COMMENTS
WG227568-10	BB016	1	-1	VOA3FBA8	✓						Y	[illegible]			
-4	P5508	1	1	P8A05(68)							Y				
-3	09	1	2								Y				Curve ok
-2	10	1	3								Y				[illegible]
-1	11	1	4								Y				
-6	12	1	5								Y				
-5	13	1	6								Y				
-7	14	1	7								N				
VBLK	15	1	8								N				
WG227568-9	16	1	9								N				

5-4-18

STANDARD	CODE
BFB	V1052
CAL. STD.	V1088/V1089B
LCS/MS MIX	V1075
EXTRAS MIX	V1087

STANDARD	CODE
IS MIX	V1074
SS MIX	↓

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM	EPA 624
(heated purge)	EPA 524

GCMS-P INSTRUMENT RUNLOG

KATAHDIN ANALYTICAL SERVICES

DATE/TIME OF BFB INJECTION: 5-4-18 1113

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	PREP METHOD 5035	PREP METHOD 1311	Criteria KAS	Criteria DoD	Criteria QAPP	pH Paper Lot #: Y/N	pH Paper Lot #: ANALYST	pH	TRC	KI Paper Lot # COMMENTS
WG227659-3	PB020	1	—	VOAB[illegible]	✓						Y	[illegible]			
VS+250	P5521		1	[illegible]							N				
↓	22		2								Y				
LLC	23		3								Y				
VBlankA	24		4								N				Ind Check 'A' File
B	25		5								Y				Target hits
TLLPBlank	26		6								Y		—		PBT1451A
SL3858-1 A	27		7						5.0		Y		<2		
-14A	28		8						↓		Y		<2		
SL3707-20L A	29	20	9				✓		5.1		Y		—		
SL3670-10L A+B+C	30	20	10				✓		4.2		Y		—		
SL3638-15DL A	31	50	11						4.2		Y		<2		
-260L A	32	10	12								Y		<2		
-300L A	33	5	13								N		<2		over-dil.
-26 A	34	1	14								Y		<2		
-30 A	35	↓	15								N		<2		C.O.
-15DL2 A	36	5	16								Y		<2		
-3	37	1	17								Y				
CCV1	38		18								Y				2146✓
↓ 2	39		19								N				Not needed
3	40		20								N				↓
Rmx	41		21								—				
↓	42	↓	22								—				

TC 5/7/18

STANDARD	CODE
BFB	Y1052
CAL. STD.	Y1058
LCS/MS MIX	Y1075
EXTRAS MIX	Y1087

STANDARD	CODE
IS MIX	Y1074
SS MIX	

Circle Methods:

SW846 8260 — OLM 04.2

SW846 8260 SIM — OLC 03.2

SW846 8260 SIM (heated purge) — EPA 624

EPA 524

VOA-024 - Revision 3 - 02/26/2018

0000066

GCMS-P INSTRUMENT RUNLOG

KATAHDIN ANALYTICAL SERVICES

DATE/TIME OF BFB INJECTION: 5-7-18 7:45

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	5035	1311	Criteria KAS	DoD	QAPP	pH Paper Lot #: Y/N	ANALYST	PH	KI Paper Lot # TRC	COMMENTS
WS227763-3	P0021	1	—	V8260B(8)	✓						Y	TR	NA	NA	
WSQ50	P5544		1	P8A05(68)						SW-A	XN				
-4	45		2								Y				
LCS -1	46		3								Y				
MBlank A	47		4								N				
B -2	48		5								Y				
MeoHblank -10	49		6								Y		↓		50ml MeoH + 4o ml DI
SL36164-1A	50		7					✓			Y		<2		
-2 B	51		8					✓			Y		7		
SL3541-1A	52		9						5.0		Y		<2		
-20A	53		10						5.0		Y		<2		
SL3635-30	54		11						4.9		Y		<2		
SL3781-10LA	55		12					✓			Y		NA		50ml MeoH+4oml DI
-30LA	56		13					✓			Y				↓
-20LA	57		14					✓			Y		↓		40ml MeoH + 4o ml DI
SL3855-2A	58		15						5.0		Y		<2		
-10A	59		16						5.0		Y		<2		
-5A	60		17						5.0		Y		<2		
SL3781-20L2	61		18					✓			Y		NA		50ml MeoH + 4oml DI
CCV, -5	62		19								Y				18:51
2	63		20								N				not needed
3	64		21								N				
Price	65		22		✓						N	✓	✓	✓	✓

STANDARD	CODE
BFB	V1052
CAL. STD.	V1088 V1089A
LCS/MS MIX	V1091
EXTRAS MIX	V1087

STANDARD	CODE
IS MIX	V1074
SS MIX	↓

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

Cont'd

SW8270 SIM
POLYNUCLEAR AROMATIC HYDROCARBONS DATA

QC Summary Section

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** AQ
Lab Code: KAS **SDG:** SL3841

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
CHAAP-19C-LGIA-DPT16	SL3841-10RA2		65.6		64.9		77.8	
CHAAP-19C-LGIA-DPT11	SL3841-12RA		76.7		71.6		79.5	
CHAAP-19C-UGIA-DPT15	SL3841-14RA		72.6		68.1		74.6	
CHAAP-19C-LGIA-DPT12	SL3841-16RA		78.4		73.9		87.6	
CHAAP-19C-UGIA-DPT11	SL3841-18RA		78.0		75.6		87.4	
CHAAP-EB-050318	SL3841-20RA		73.6		68.7		86.8	
CHAAP-19C-UGIA-DPT19	SL3841-2RA2		62.8		60.4		68.8	
CHAAP-19C-LGIA-DPT20	SL3841-4RA		80.4		77.3		91.7	
CHAAP-19C-LGIA-DPT24	SL3841-6RA		76.5		71.4		85.2	
CHAAP-19C-UGIA-DPT23	SL3841-8RA		66.7		62.0		70.0	
Method Blank Sample	WG227847-1RA		69.1		66.2		79.4	
Laboratory Control S	WG227847-2RA		74.2		69.8		71.1	

		QC Limits
FLO	FLUORENE-D10	29-120
PYR	PYRENE-D10	53-166
2MN	2-METHYLNAPHTHALENE-D10	43-120

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : N8613.D
Instrument ID : GCMS-N
Matrix : AQ

SDG : SL3841
Lab Sample ID : WG227847-1RA3
Date Extracted : 08-MAY-18
Date Analyzed : 21-MAY-18
Time Analyzed : 12:10

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG227847-2RA	N8588.D	05/18/18	16:58
CHAAP-19C-UGIA-DPT19	SL3841-2RA2	N8589.D	05/18/18	17:29
CHAAP-19C-LGIA-DPT20	SL3841-4RA	N8590.D	05/18/18	18:01
CHAAP-19C-LGIA-DPT24	SL3841-6RA	N8591.D	05/18/18	18:32
CHAAP-19C-UGIA-DPT23	SL3841-8RA	N8592.D	05/18/18	19:04
CHAAP-19C-LGIA-DPT16	SL3841-10RA2	N8593.D	05/18/18	19:36
CHAAP-19C-LGIA-DPT116	SL3841-12RA	N8594.D	05/18/18	20:09
CHAAP-19C-UGIA-DPT15	SL3841-14RA	N8595.D	05/18/18	20:41
CHAAP-19C-LGIA-DPT12	SL3841-16RA	N8596.D	05/18/18	21:13
CHAAP-19C-UGIA-DPT11	SL3841-18RA	N8597.D	05/18/18	21:45
CHAAP-EB-050318	SL3841-20RA	N8598.D	05/18/18	22:17

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : ND519.D
Instrument ID : GCMS-N

SDG : SL3841
Date Analyzed : 18-MAY-18
Time Analyzed : 12:30

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	40.9		
68	Less than 2.0% of mass 69	0.7	1.53	1
69	Less than 100.0% of mass 198	44.8		
70	Less than 2.0% of mass 69	0.3	0.63	1
127	40.0 - 60.0% of mass 198	57.7		
197	Less than 1.0% of mass 198	0.5		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	7.0		
275	10.0 - 30.0% of mass 198	25.0		
365	1.0 - 100.0% of mass 198	3.1		
441	0.0 - 100.0% of mass 443	10.2	74.10	2
442	40.0 - 100.0% of mass 198	68.8		
443	17.0 - 23.0% of mass 442	13.8	19.99	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG228639-4	N8580.D	05/18/18	12:47
Initial Calibration	WG228639-2	N8581.D	05/18/18	13:18
Initial Calibration	WG228639-3	N8582.D	05/18/18	13:49
Initial Calibration	WG228639-5	N8583.D	05/18/18	14:21
Initial Calibration	WG228639-6	N8584.D	05/18/18	14:52
Initial Calibration	WG228639-7	N8585.D	05/18/18	15:24
Independent Source	WG228639-8	N8586.D	05/18/18	15:55
Laboratory Control S	WG227847-2RA	N8588.D	05/18/18	16:58
CHAAP-19C-UGIA-DPT19	SL3841-2RA2	N8589.D	05/18/18	17:29
CHAAP-19C-LGIA-DPT20	SL3841-4RA	N8590.D	05/18/18	18:01
CHAAP-19C-LGIA-DPT24	SL3841-6RA	N8591.D	05/18/18	18:32
CHAAP-19C-UGIA-DPT23	SL3841-8RA	N8592.D	05/18/18	19:04
CHAAP-19C-LGIA-DPT16	SL3841-10RA2	N8593.D	05/18/18	19:36
CHAAP-19C-LGIA-DPT116	SL3841-12RA	N8594.D	05/18/18	20:09
CHAAP-19C-UGIA-DPT15	SL3841-14RA	N8595.D	05/18/18	20:41
CHAAP-19C-LGIA-DPT12	SL3841-16RA	N8596.D	05/18/18	21:13
CHAAP-19C-UGIA-DPT11	SL3841-18RA	N8597.D	05/18/18	21:45
CHAAP-EB-050318	SL3841-20RA	N8598.D	05/18/18	22:17
Continuing Calibrati	WG228639-9	N8601.D	05/18/18	23:53

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : ND520.D
Instrument ID : GCMS-N

SDG : SL3841
Date Analyzed : 21-MAY-18
Time Analyzed : 10:50

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	32.4		
68	Less than 2.0% of mass 69	0.4	0.98	1
69	Less than 100.0% of mass 198	41.2		
70	Less than 2.0% of mass 69	0.0	0.09	1
127	40.0 - 60.0% of mass 198	58.7		
197	Less than 1.0% of mass 198	0.3		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.9		
275	10.0 - 30.0% of mass 198	24.4		
365	1.0 - 100.0% of mass 198	3.1		
441	0.0 - 100.0% of mass 443	10.4	72.36	2
442	40.0 - 100.0% of mass 198	72.5		
443	17.0 - 23.0% of mass 442	14.4	19.81	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG228771-2	N8611.D	05/21/18	11:07
Method Blank Sample	WG227847-1RA3	N8613.D	05/21/18	12:10
Continuing Calibrati	WG228771-3	N8633.D	05/21/18	22:44
Continuing Calibrati	WG228771-4	N8634.D	05/21/18	23:16
Continuing Calibrati	WG228771-5	N8635.D	05/21/18	23:49

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Katahdin
ANALYTICAL SERVICES

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG228639-4
Lab File ID : N8580.D

SDG: SL3841
Analytical Date: 05/18/18 12:47
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4				NAPHTHALENE-D8				ACENAPHTHENE-D10			
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	40620		7.48		122433		9.11		51505		11.44	
	Upper Limit	81240		7.65		244866		9.28		103010		11.61	
	Lower Limit	20310		7.31		61216.5		8.94		25752.5		11.28	
Client Sample ID	Lab Sample ID												
Laboratory Control S	WG227847-2RA	32745		7.48		101415		9.11		44646		11.44	
CHAAP-19C-UGIA-DI	SL3841-2RA2	29612		7.48		94176		9.11		40941		11.44	
CHAAP-19C-LGIA-DI	SL3841-4RA	31139		7.48		99420		9.11		43777		11.44	
CHAAP-19C-LGIA-DI	SL3841-6RA	30337		7.48		93847		9.11		40608		11.44	
CHAAP-19C-UGIA-DI	SL3841-8RA	32253		7.48		102602		9.11		44862		11.44	
CHAAP-19C-LGIA-DI	SL3841-10RA2	33120		7.48		105091		9.11		45695		11.44	
CHAAP-19C-LGIA-DI	SL3841-12RA	32138		7.48		99103		9.11		42907		11.44	
CHAAP-19C-UGIA-DI	SL3841-14RA	34069		7.48		109006		9.11		47065		11.44	
CHAAP-19C-LGIA-DI	SL3841-16RA	32949		7.48		107571		9.11		47907		11.44	
CHAAP-19C-UGIA-DI	SL3841-18RA	35611		7.48		113814		9.11		49557		11.44	
CHAAP-EB-050318	SL3841-20RA	29953		7.48		89932		9.11		36643		11.44	
Continuing Calibrati	WG228639-9	33684		7.48		102776		9.11		44350		11.44	
Continuing Calibrati	WG228771-2	48948		7.47		159326		9.10		73241		11.43	
Method Blank Sample	WG227847-1RA3	49918		7.48		159137		9.11		70613		11.44	
Continuing Calibrati	WG228771-3	47808		7.47		163087		9.10		73786		11.43	
Continuing Calibrati	WG228771-4	47792		7.47		169901		9.10		81863		11.43	
Continuing Calibrati	WG228771-5	46171		7.47		154869		9.10		68518		11.43	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG228639-4
Lab File ID : N8580.D

SDG: SL3841
Analytical Date: 05/18/18 12:47
Instrument ID: GCMS-N

		PHENANTHRENE-D10			CHRYSENE-D12			PERYLENE-D12		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	83835		13.42		40695		17.24		22745		20.24	
	Upper Limit	167670		13.59		81390		17.40		45490		20.41	
	Lower Limit	41917.5		13.25		20347.5		17.07		11372.5		20.08	
Client Sample ID	Lab Sample ID												
Laboratory Control S	WG227847-2RA	72941		13.42		34703		17.23		19797		20.24	
CHAAP-19C-UGIA-DI	SL3841-2RA2	65041		13.42		25532		17.23		14170		20.24	
CHAAP-19C-LGIA-DI	SL3841-4RA	71419		13.42		27862		17.23		14663		20.24	
CHAAP-19C-LGIA-DI	SL3841-6RA	63815		13.42		24305		17.23		13385		20.24	
CHAAP-19C-UGIA-DI	SL3841-8RA	73465		13.42		29583		17.23		16187		20.24	
CHAAP-19C-LGIA-DI	SL3841-10RA2	76362		13.42		31173		17.23		15866		20.24	
CHAAP-19C-LGIA-DI	SL3841-12RA	67829		13.42		29271		17.23		16876		20.24	
CHAAP-19C-UGIA-DI	SL3841-14RA	79051		13.42		32113		17.23		16371		20.24	
CHAAP-19C-LGIA-DI	SL3841-16RA	78491		13.42		31379		17.23		17170		20.24	
CHAAP-19C-UGIA-DI	SL3841-18RA	82839		13.42		34185		17.23		19350		20.24	
CHAAP-EB-050318	SL3841-20RA	54402		13.42		21013		17.23		12476		20.24	
Continuing Calibrati	WG228639-9	67585		13.42		29010		17.23		17279		20.24	
Continuing Calibrati	WG228771-2	120646		13.42		57631		17.23		36015		20.23	
Method Blank Sample	WG227847-1RA3	117351		13.42		45572		17.23		24574		20.23	
Continuing Calibrati	WG228771-3	130924		13.42		66980		17.23		40706		20.24	
Continuing Calibrati	WG228771-4	146822		13.42		65550		17.23		36296		20.24	
Continuing Calibrati	WG228771-5	118090		13.42		57738		17.23		35238		20.24	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Sample Data Section

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-2RA2
Client ID: CHAAP-19C-UGIA-DPT19
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: N8589.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.061	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	J	0.050	ug/L	1	.2	0.20	0.046	0.10
Chrysene	J	0.064	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene-D10		62.8	%					
Fluorene-D10		60.4	%					
Pyrene-D10		68.8	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8589.D
Report Date: 23-May-2018 13:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N051818.b\N8589.D
Lab Smp Id: SL3841-2RA2 Client Smp ID: HAAP-19C-UGIA-DPT19
Inj Date : 18-MAY-2018 17:29 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL3841-2RA2
Misc Info : WG228639,WG227847,WG227639-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N051818.b\NSPSIM94.m
Meth Date : 21-May-2018 08:44 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 15:24 Cal File: N8585.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

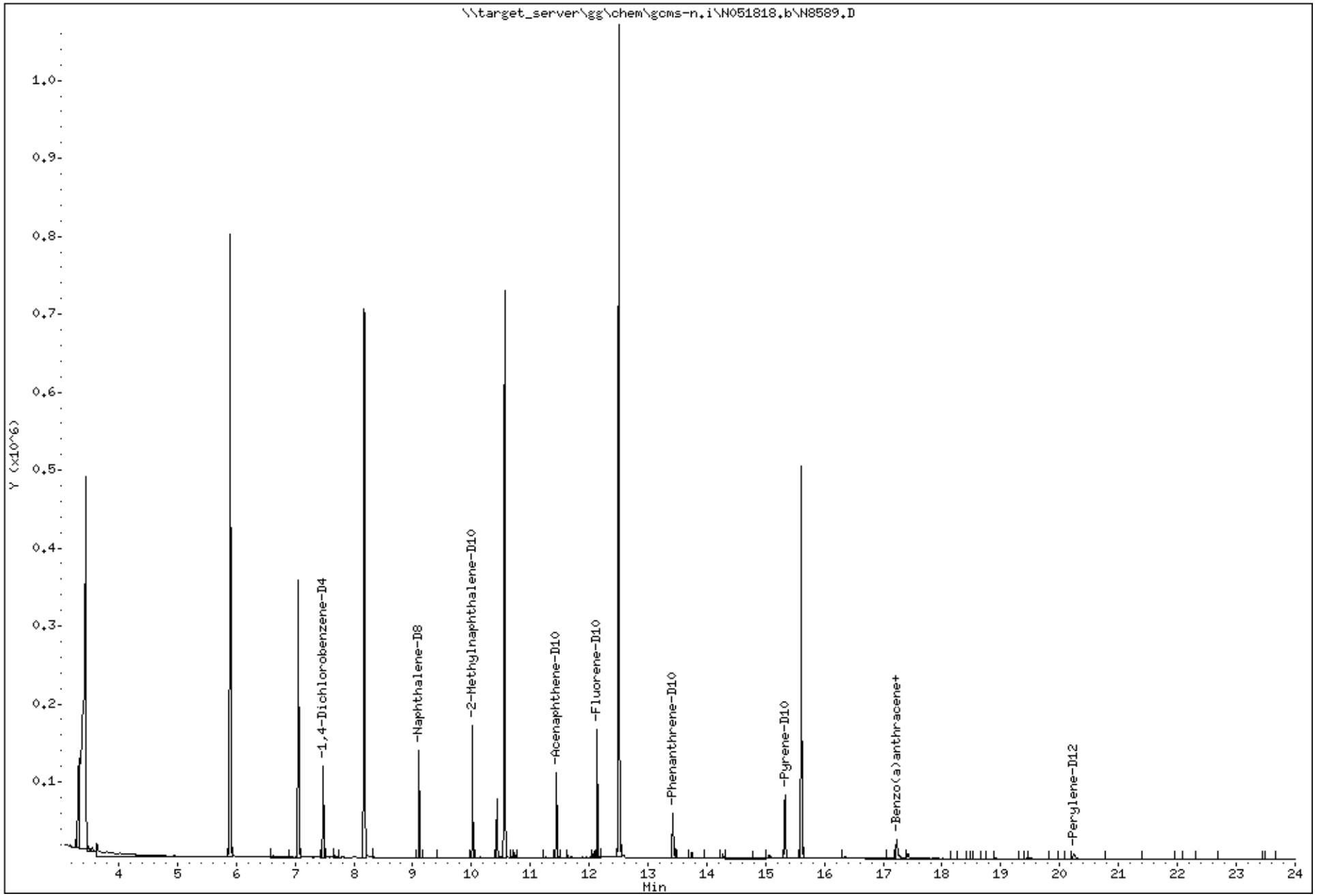
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.479	7.479	(1.000)	29612	0.80000	(aQ)	
*	26 Naphthalene-D8	136	9.110	9.110	(1.000)	94176	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	10.014	10.014	(1.099)	72885	1.25519	1.26	
*	47 Acenaphthene-D10	164	11.443	11.443	(1.000)	40941	0.80000	(a)	
$	55 Fluorene-D10	174	12.141	12.141	(1.061)	64904	1.20826	1.21	
*	65 Phenanthrene-D10	188	13.421	13.431	(1.000)	65041	0.80000	(a)	
$	71 Pyrene-D10	212	15.332	15.332	(0.890)	70616	1.37646	1.38	
	75 Benzo(a)anthracene	228	17.218	17.218	(0.999)	2252	0.04961	0.0496(a)	
*	76 Chrysene-D12	240	17.227	17.236	(1.000)	25532	0.80000	(a)	
	77 Chrysene	228	17.274	17.283	(1.003)	3100	0.06366	0.0636(a)	
*	83 Perylene-D12	264	20.244	20.244	(1.000)	14170	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8589.D
Date : 18-MAY-2018 17:29
Client ID: HAAP-19C-UGIA-DPT19 Instrument: gcms-n.i
Sample Info: SL3841-2RA2



Katahdin Analytical Services 2000014

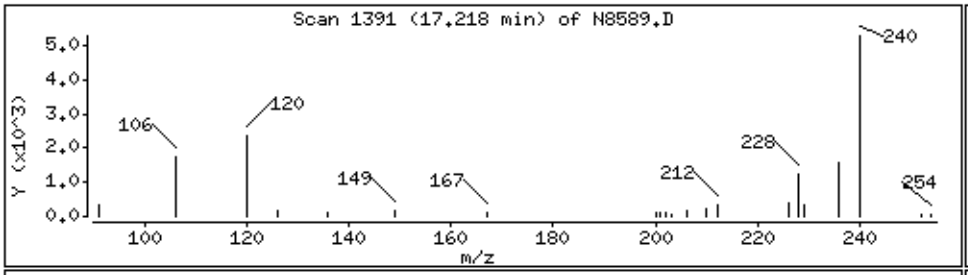
Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8589.D

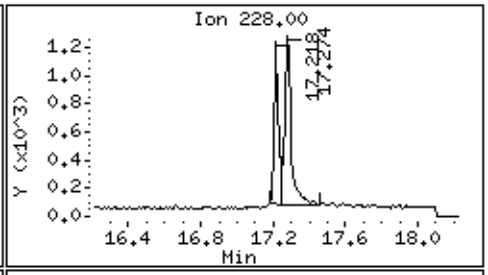
Date : 18-MAY-2018 17:29

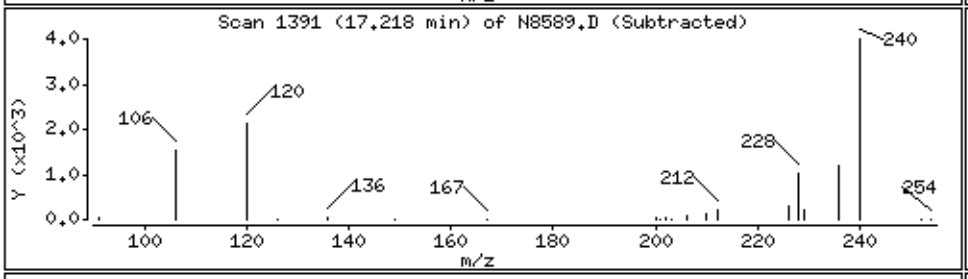
Client ID: HAAP-19C-UGIA-DPT19 Instrument: gcms-n.i

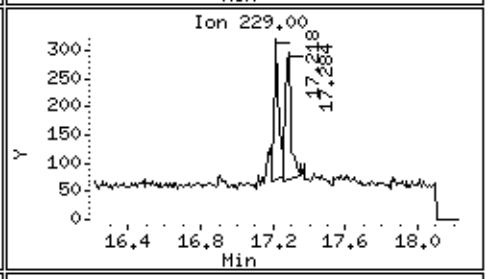
Sample Info: SL3841-2RA2

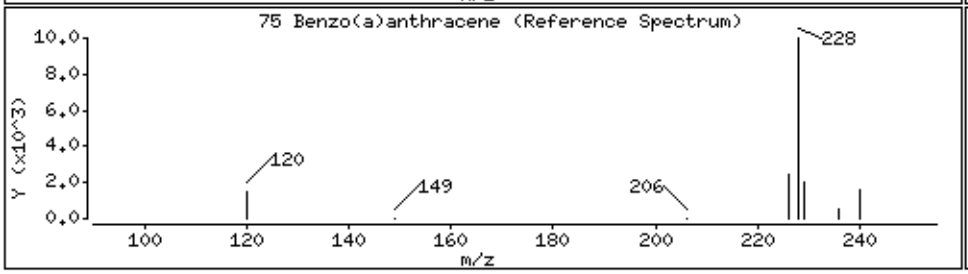
75 Benzo(a)anthracene Concentration: 0.0496 ug/L

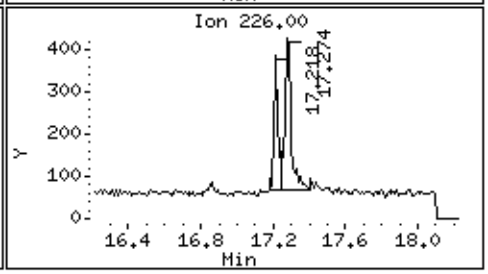




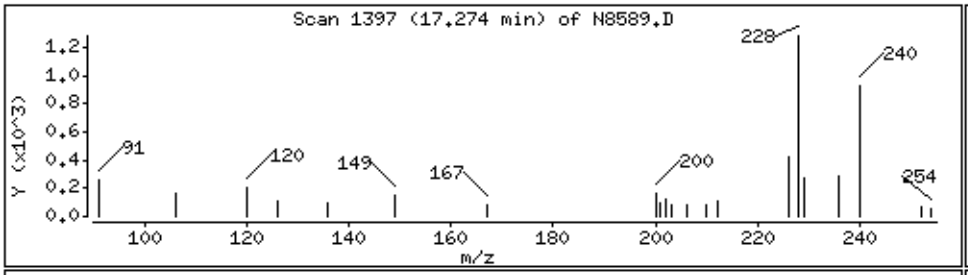


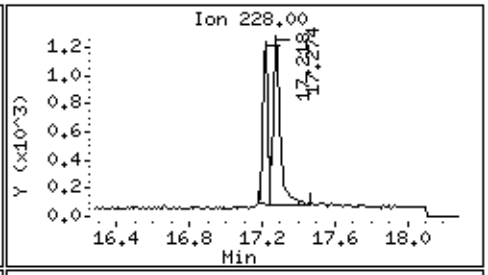


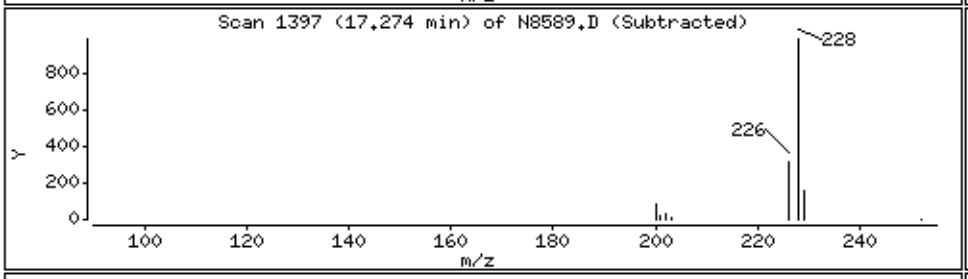


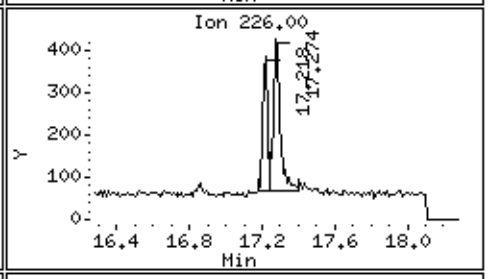


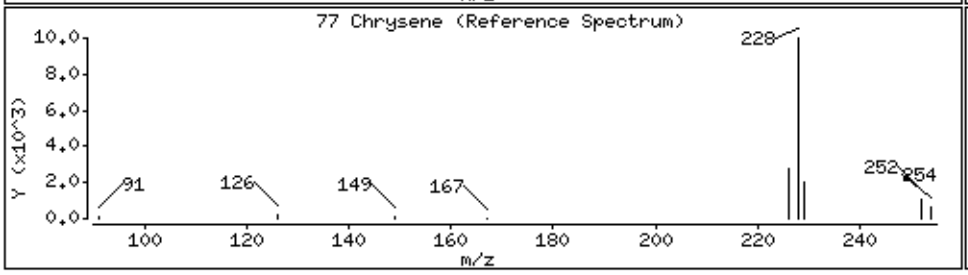
77 Chrysene Concentration: 0.0636 ug/L

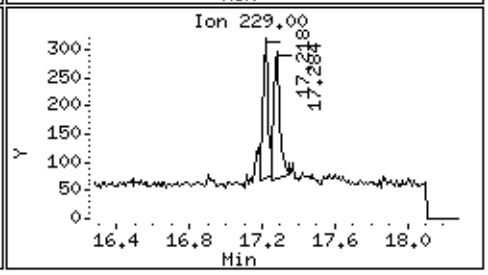












Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-4RA
Client ID: CHAAP-19C-LGIA-DPT20
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: N8590.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
2-Methylnaphthalene	U	0.097	ug/L	1	.2	0.19	0.075	0.097
Acenaphthylene	U	0.097	ug/L	1	.2	0.19	0.052	0.097
Acenaphthene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
Fluorene	U	0.097	ug/L	1	.2	0.19	0.059	0.097
Phenanthrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Anthracene	U	0.097	ug/L	1	.2	0.19	0.043	0.097
Fluoranthene	U	0.097	ug/L	1	.2	0.19	0.071	0.097
Pyrene	U	0.097	ug/L	1	.2	0.19	0.057	0.097
Benzo(a)anthracene	U	0.097	ug/L	1	.2	0.19	0.045	0.097
Chrysene	J	0.051	ug/L	1	.2	0.19	0.035	0.097
Benzo(b)Fluoranthene	U	0.097	ug/L	1	.2	0.19	0.086	0.097
Benzo(k)fluoranthene	U	0.097	ug/L	1	.2	0.19	0.048	0.097
Benzo(a)pyrene	U	0.097	ug/L	1	.2	0.19	0.064	0.097
Indeno(1,2,3-cd)pyrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Dibenzo(a,h)anthracene	U	0.097	ug/L	1	.2	0.19	0.068	0.097
Benzo(g,h,i)perylene	U	0.097	ug/L	1	.2	0.19	0.063	0.097
2-Methylnaphthalene-D10		80.4	%					
Fluorene-D10		77.3	%					
Pyrene-D10		91.7	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8590.D
Report Date: 23-May-2018 13:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N051818.b\N8590.D
Lab Smp Id: SL3841-4RA Client Smp ID: HAAP-19C-LGIA-DPT20
Inj Date : 18-MAY-2018 18:01 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL3841-4RA
Misc Info : WG228639,WG227847,WG227639-4
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N051818.b\NSPSIM94.m
Meth Date : 21-May-2018 08:44 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 15:24 Cal File: N8585.D
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

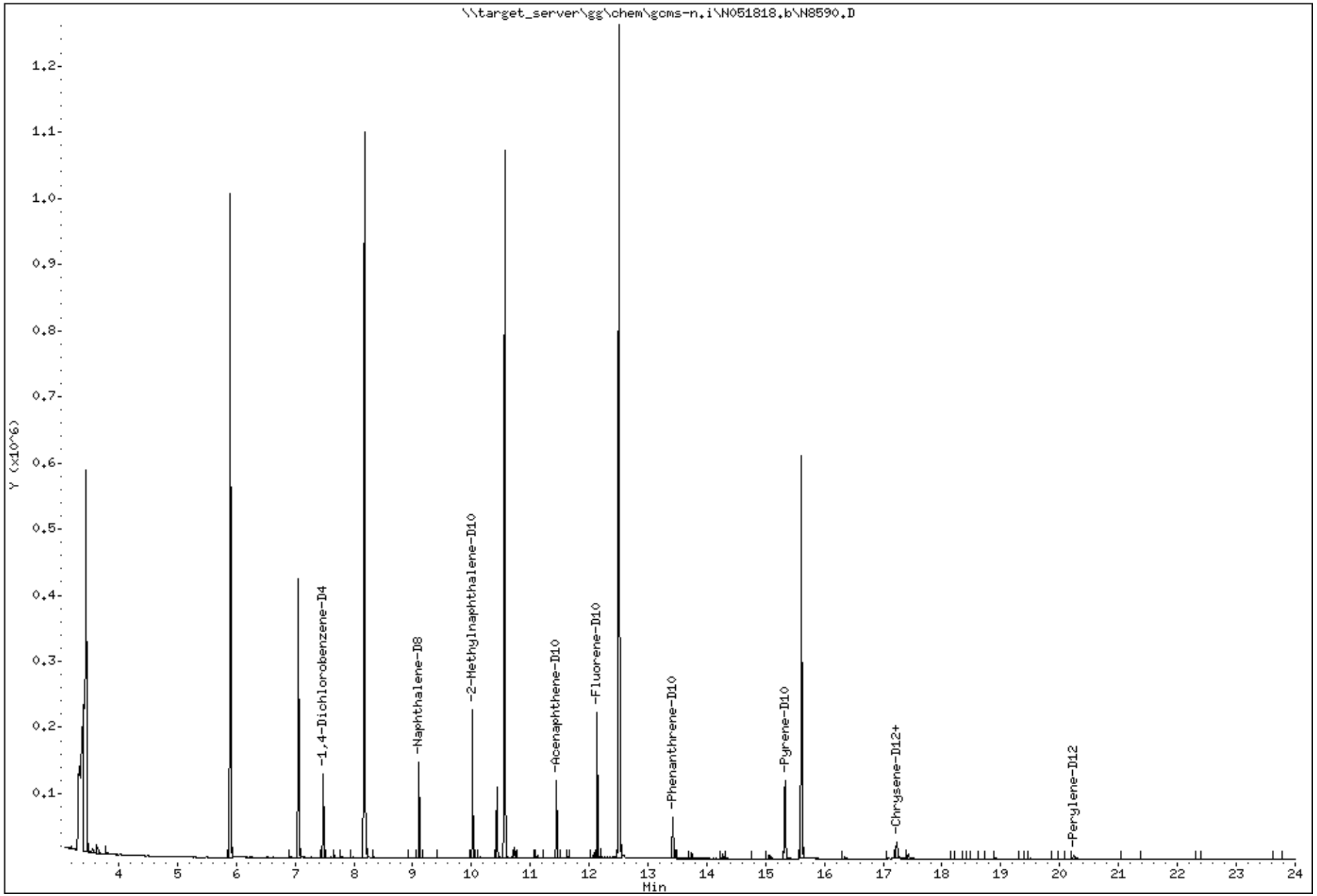
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.030	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
* 10 1,4-Dichlorobenzene-D4	152	7.479	7.479	(1.000)	31139	0.80000	(aQ)	
* 26 Naphthalene-D8	136	9.110	9.110	(1.000)	99420	0.80000	(a)	
$ 32 2-Methylnaphthalene-D10	152	10.013	10.014	(1.099)	98635	1.60905	1.56	
* 47 Acenaphthene-D10	164	11.443	11.443	(1.000)	43777	0.80000	(a)	
$ 55 Fluorene-D10	174	12.141	12.141	(1.061)	88763	1.54538	1.50	
* 65 Phenanthrene-D10	188	13.421	13.431	(1.000)	71419	0.80000	(a)	
$ 71 Pyrene-D10	212	15.332	15.332	(0.890)	102634	1.83326	1.78	
* 76 Chrysene-D12	240	17.227	17.236	(1.000)	27862	0.80000	(a)	
77 Chrysene	228	17.274	17.283	(1.003)	2789	0.05248	0.0510(a)	
* 83 Perylene-D12	264	20.244	20.244	(1.000)	14663	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8590.D
Date : 18-MAY-2018 18:01
Client ID: HAAP-19C-LGIA-DPT20 Instrument: gcms-n.i
Sample Info: SL3841-4RA



Katahdin Analytical Services 2000018

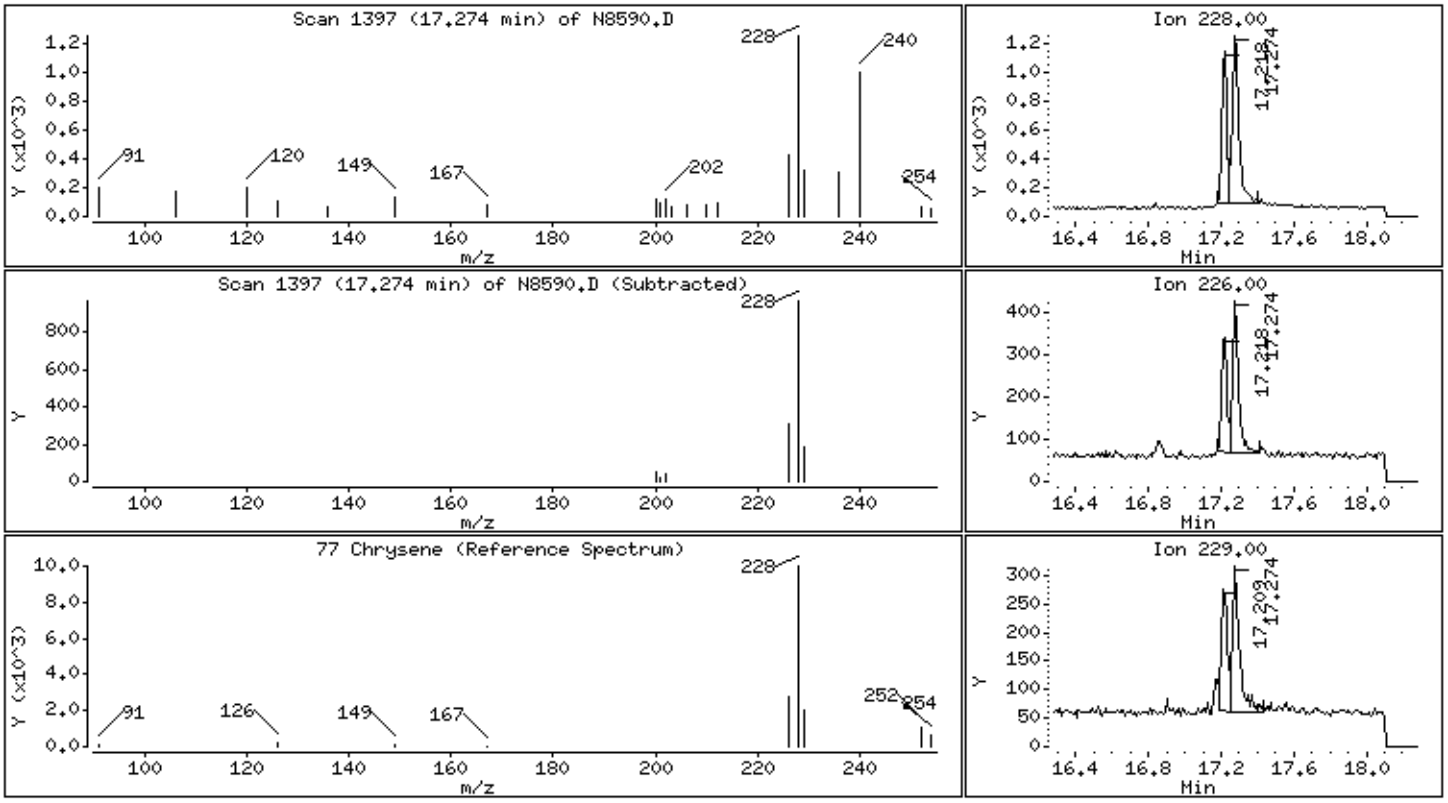
Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8590.D

Date : 18-MAY-2018 18:01

Client ID: HAAP-19C-LGIA-DPT20 Instrument: gcms-n.i

Sample Info: SL3841-4RA

77 Chrysene Concentration: 0.0510 ug/L



Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-6RA
Client ID: CHAAP-19C-LGIA-DPT24
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: N8591.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
2-Methylnaphthalene	U	0.095	ug/L	1	.2	0.19	0.073	0.095
Acenaphthylene	U	0.095	ug/L	1	.2	0.19	0.051	0.095
Acenaphthene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
Fluorene	U	0.095	ug/L	1	.2	0.19	0.058	0.095
Phenanthrene	U	0.095	ug/L	1	.2	0.19	0.048	0.095
Anthracene	U	0.095	ug/L	1	.2	0.19	0.042	0.095
Fluoranthene	U	0.095	ug/L	1	.2	0.19	0.070	0.095
Pyrene	U	0.095	ug/L	1	.2	0.19	0.056	0.095
Benzo(a)anthracene	J	0.044	ug/L	1	.2	0.19	0.044	0.095
Chrysene	J	0.057	ug/L	1	.2	0.19	0.034	0.095
Benzo(b)Fluoranthene	U	0.095	ug/L	1	.2	0.19	0.085	0.095
Benzo(k)fluoranthene	U	0.095	ug/L	1	.2	0.19	0.047	0.095
Benzo(a)pyrene	U	0.095	ug/L	1	.2	0.19	0.063	0.095
Indeno(1,2,3-cd)pyrene	U	0.095	ug/L	1	.2	0.19	0.050	0.095
Dibenzo(a,h)anthracene	U	0.095	ug/L	1	.2	0.19	0.067	0.095
Benzo(g,h,i)perylene	U	0.095	ug/L	1	.2	0.19	0.062	0.095
2-Methylnaphthalene-D10		76.5	%					
Fluorene-D10		71.4	%					
Pyrene-D10		85.2	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8591.D
Report Date: 23-May-2018 13:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N051818.b\N8591.D
Lab Smp Id: SL3841-6RA Client Smp ID: HAAP-19C-LGIA-DPT24
Inj Date : 18-MAY-2018 18:32 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL3841-6RA
Misc Info : WG228639,WG227847,WG227639-4
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N051818.b\NSPSIM94.m
Meth Date : 21-May-2018 08:44 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 15:24 Cal File: N8585.D
Als bottle: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

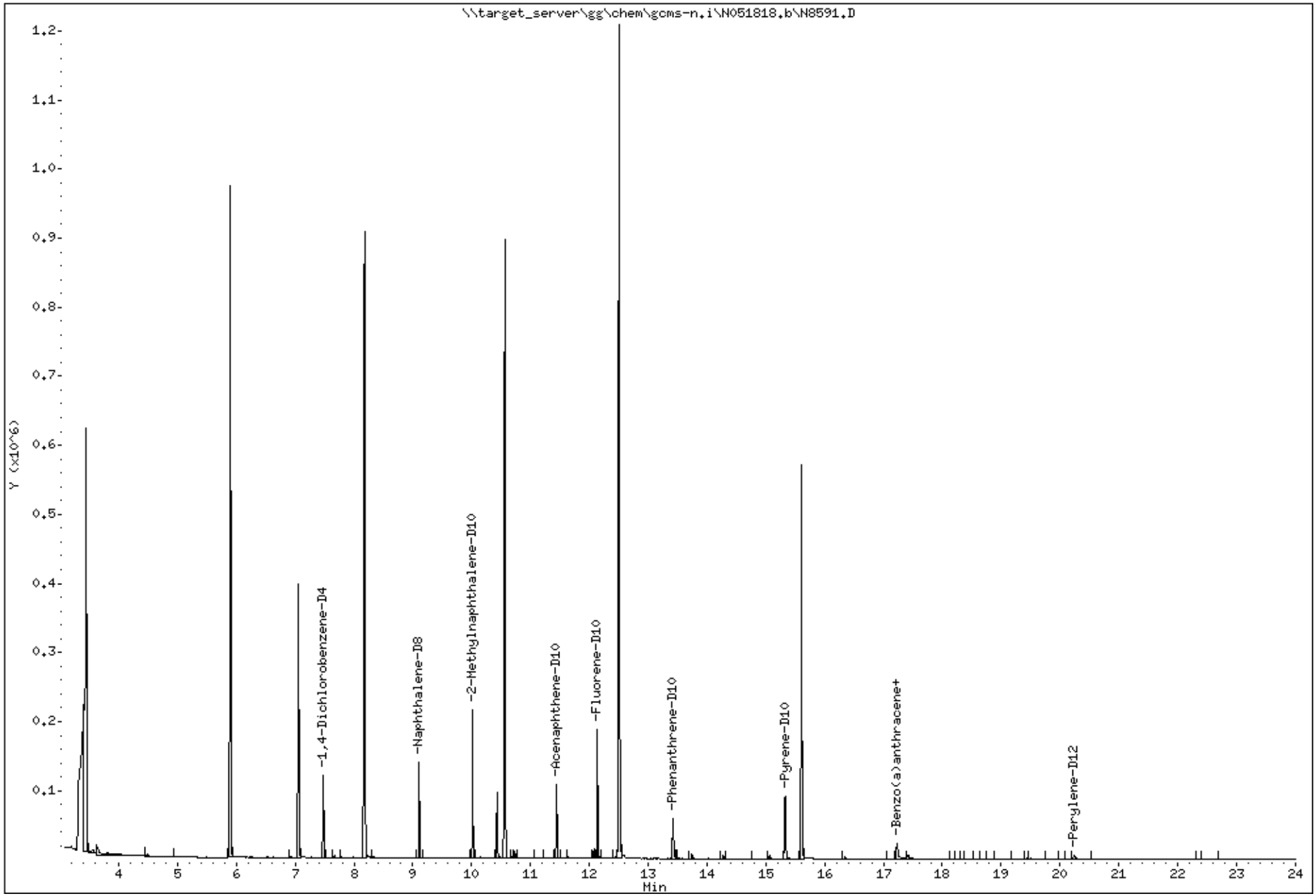
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.479	7.479	(1.000)	30337	0.80000	(aQ)	
*	26 Naphthalene-D8	136	9.110	9.110	(1.000)	93847	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	10.013	10.014	(1.099)	88494	1.52934	1.46	
*	47 Acenaphthene-D10	164	11.443	11.443	(1.000)	40608	0.80000	(a)	
$	55 Fluorene-D10	174	12.141	12.141	(1.061)	76098	1.42827	1.36	
*	65 Phenanthrene-D10	188	13.421	13.431	(1.000)	63815	0.80000	(a)	
$	71 Pyrene-D10	212	15.332	15.332	(0.890)	83251	1.70466	1.62	
	75 Benzo(a)anthracene	228	17.208	17.218	(0.999)	1998	0.04624	0.0440(a)	
*	76 Chrysene-D12	240	17.227	17.236	(1.000)	24305	0.80000	(a)	
	77 Chrysene	228	17.274	17.283	(1.003)	2782	0.06001	0.0572(a)	
*	83 Perylene-D12	264	20.244	20.244	(1.000)	13385	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8591.D
Date : 18-MAY-2018 18:32
Client ID: HAAP-19C-LGIA-DPT24 Instrument: gcms-n.i
Sample Info: SL3841-6RA



Katahdin Analytical Services 2000022

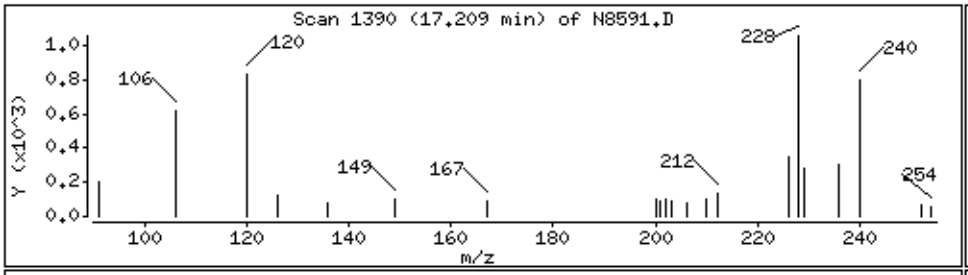
Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8591.D

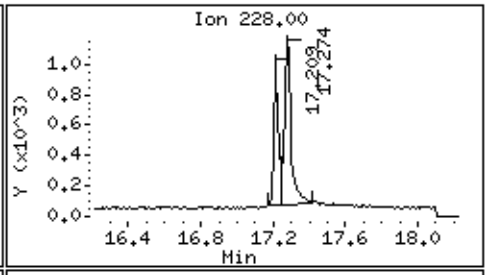
Date : 18-MAY-2018 18:32

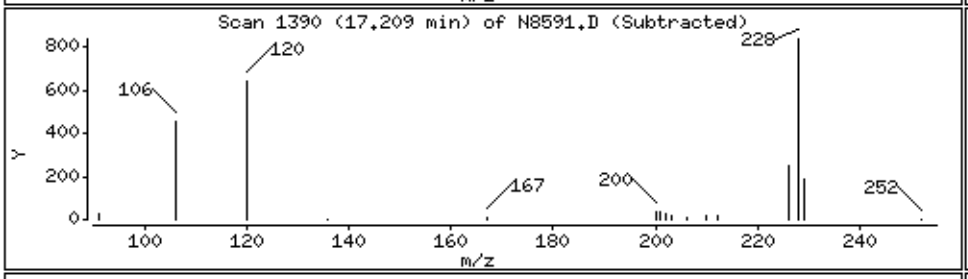
Client ID: HAAP-19C-LGIA-DPT24 Instrument: gcms-n.i

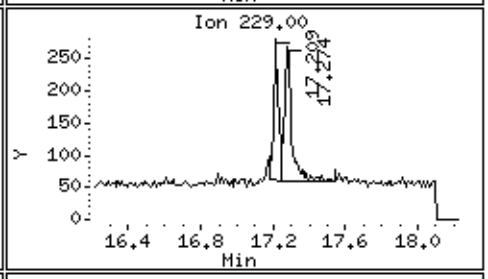
Sample Info: SL3841-6RA

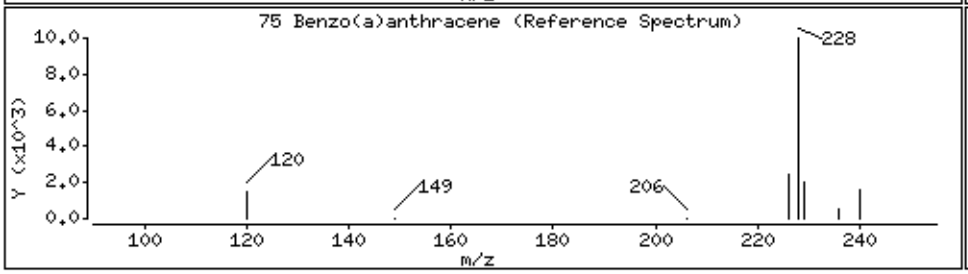
75 Benzo(a)anthracene Concentration: 0.0440 ug/L

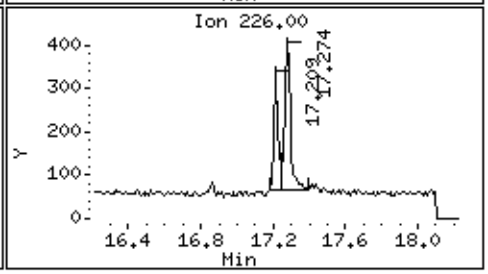




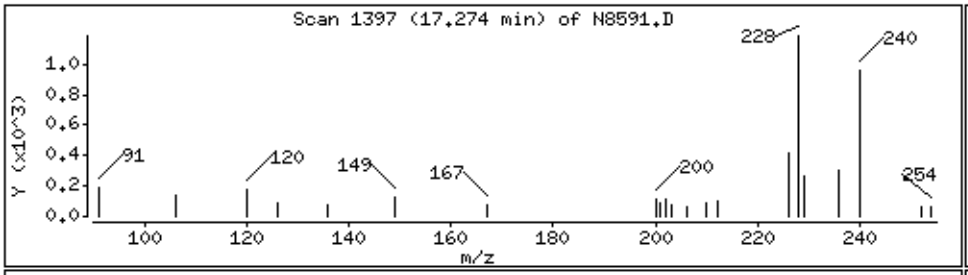


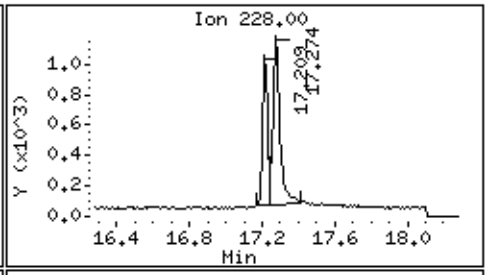


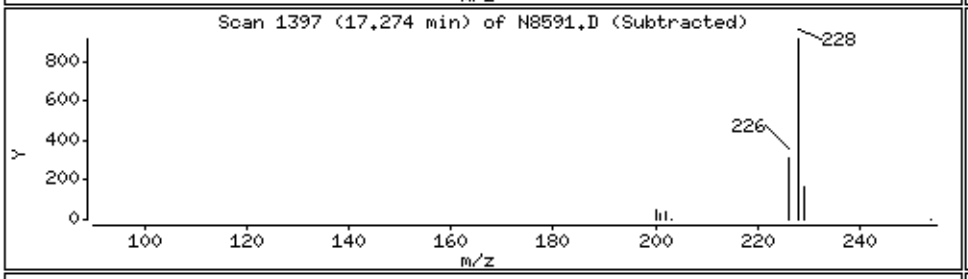


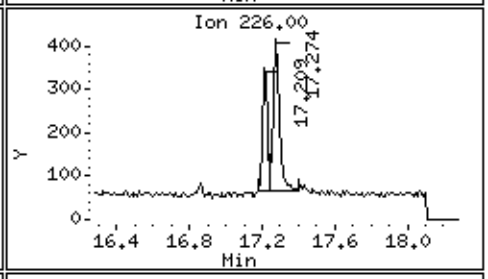


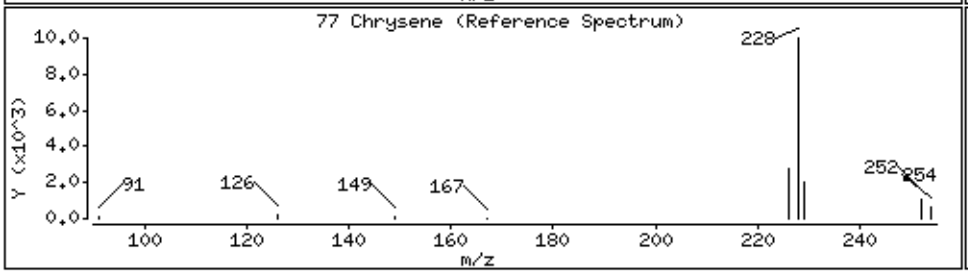
77 Chrysene Concentration: 0.0572 ug/L

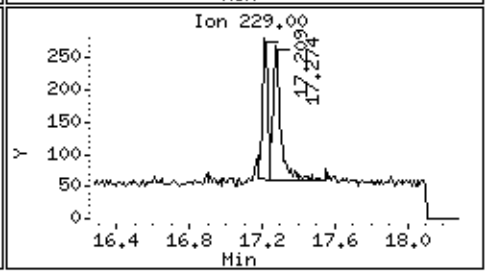












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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-8RA
Client ID: CHAAP-19C-UGIA-DPT23
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: N8592.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.094	ug/L	1	.2	0.19	0.060	0.094
2-Methylnaphthalene	U	0.094	ug/L	1	.2	0.19	0.073	0.094
Acenaphthylene	U	0.094	ug/L	1	.2	0.19	0.051	0.094
Acenaphthene	U	0.094	ug/L	1	.2	0.19	0.060	0.094
Fluorene	U	0.094	ug/L	1	.2	0.19	0.058	0.094
Phenanthrene	U	0.094	ug/L	1	.2	0.19	0.048	0.094
Anthracene	U	0.094	ug/L	1	.2	0.19	0.042	0.094
Fluoranthene	U	0.094	ug/L	1	.2	0.19	0.069	0.094
Pyrene	U	0.094	ug/L	1	.2	0.19	0.056	0.094
Benzo(a)anthracene	U	0.094	ug/L	1	.2	0.19	0.043	0.094
Chrysene	J	0.052	ug/L	1	.2	0.19	0.034	0.094
Benzo(b)Fluoranthene	U	0.094	ug/L	1	.2	0.19	0.084	0.094
Benzo(k)fluoranthene	U	0.094	ug/L	1	.2	0.19	0.046	0.094
Benzo(a)pyrene	U	0.094	ug/L	1	.2	0.19	0.062	0.094
Indeno(1,2,3-cd)pyrene	U	0.094	ug/L	1	.2	0.19	0.049	0.094
Dibenzo(a,h)anthracene	U	0.094	ug/L	1	.2	0.19	0.066	0.094
Benzo(g,h,i)perylene	U	0.094	ug/L	1	.2	0.19	0.061	0.094
2-Methylnaphthalene-D10		66.7	%					
Fluorene-D10		62.0	%					
Pyrene-D10		70.0	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8592.D
Report Date: 23-May-2018 13:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N051818.b\N8592.D
Lab Smp Id: SL3841-8RA Client Smp ID: HAAP-19C-UGIA-DPT23
Inj Date : 18-MAY-2018 19:04 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL3841-8RA
Misc Info : WG228639,WG227847,WG227639-4
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N051818.b\NSPSIM94.m
Meth Date : 21-May-2018 08:44 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 15:24 Cal File: N8585.D
Als bottle: 14
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

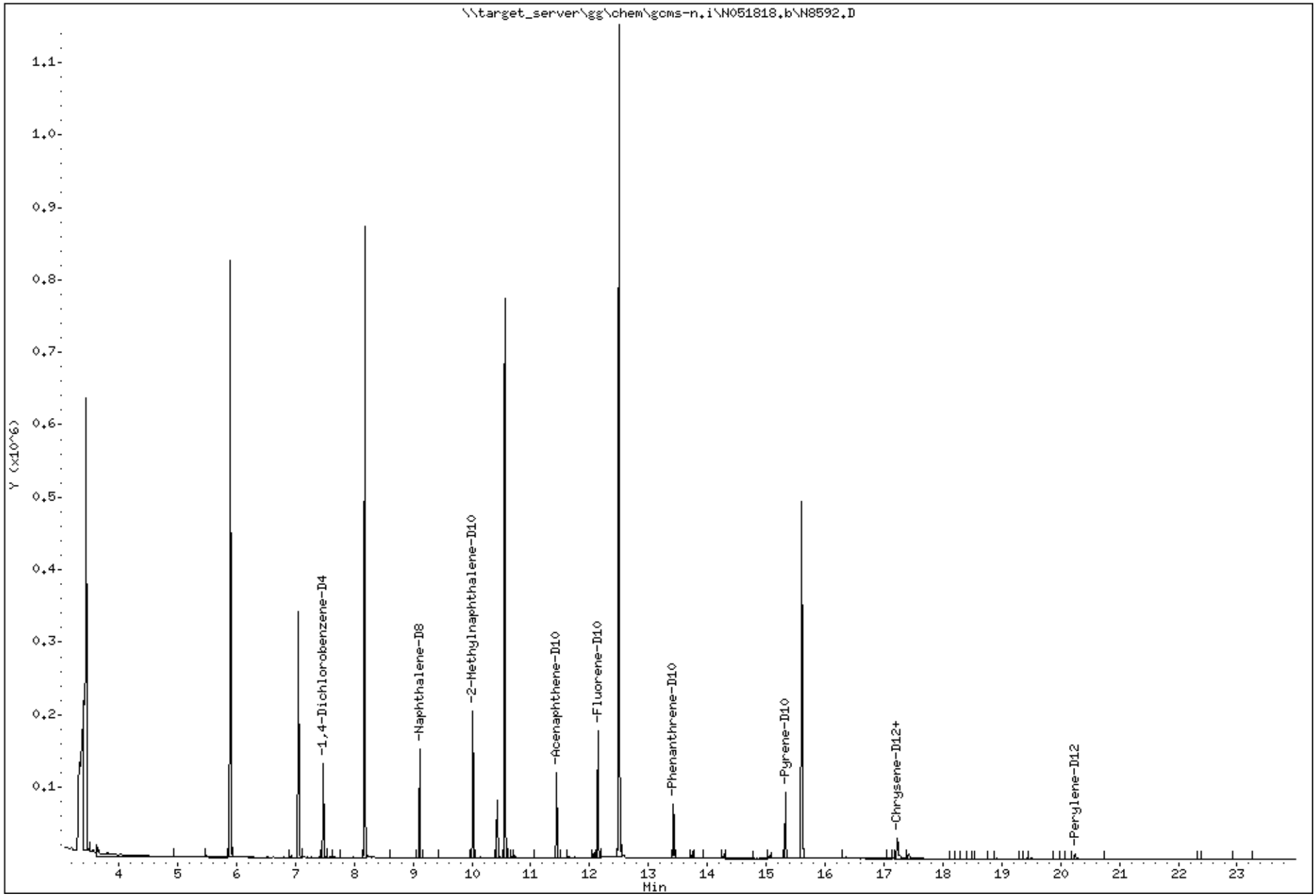
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.060	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
* 10 1,4-Dichlorobenzene-D4	152	7.479	7.479	(1.000)	32253	0.80000	(aQ)	
* 26 Naphthalene-D8	136	9.110	9.110	(1.000)	102602	0.80000	(a)	
$ 32 2-Methylnaphthalene-D10	152	10.013	10.014	(1.099)	84362	1.33353	1.26	
* 47 Acenaphthene-D10	164	11.443	11.443	(1.000)	44862	0.80000	(a)	
$ 55 Fluorene-D10	174	12.141	12.141	(1.061)	73043	1.24093	1.17	
* 65 Phenanthrene-D10	188	13.421	13.431	(1.000)	73465	0.80000	(a)	
$ 71 Pyrene-D10	212	15.332	15.332	(0.890)	83217	1.39995	1.32	
* 76 Chrysene-D12	240	17.227	17.236	(1.000)	29583	0.80000	(a)	
77 Chrysene	228	17.274	17.283	(1.003)	3102	0.05498	0.0519(a)	
* 83 Perylene-D12	264	20.244	20.244	(1.000)	16187	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8592.D
Date : 18-MAY-2018 19:04
Client ID: HAAP-19C-UGIA-DPT23 Instrument: gcms-n.i
Sample Info: SL3841-8RA



Katahdin Analytical Services 2000026

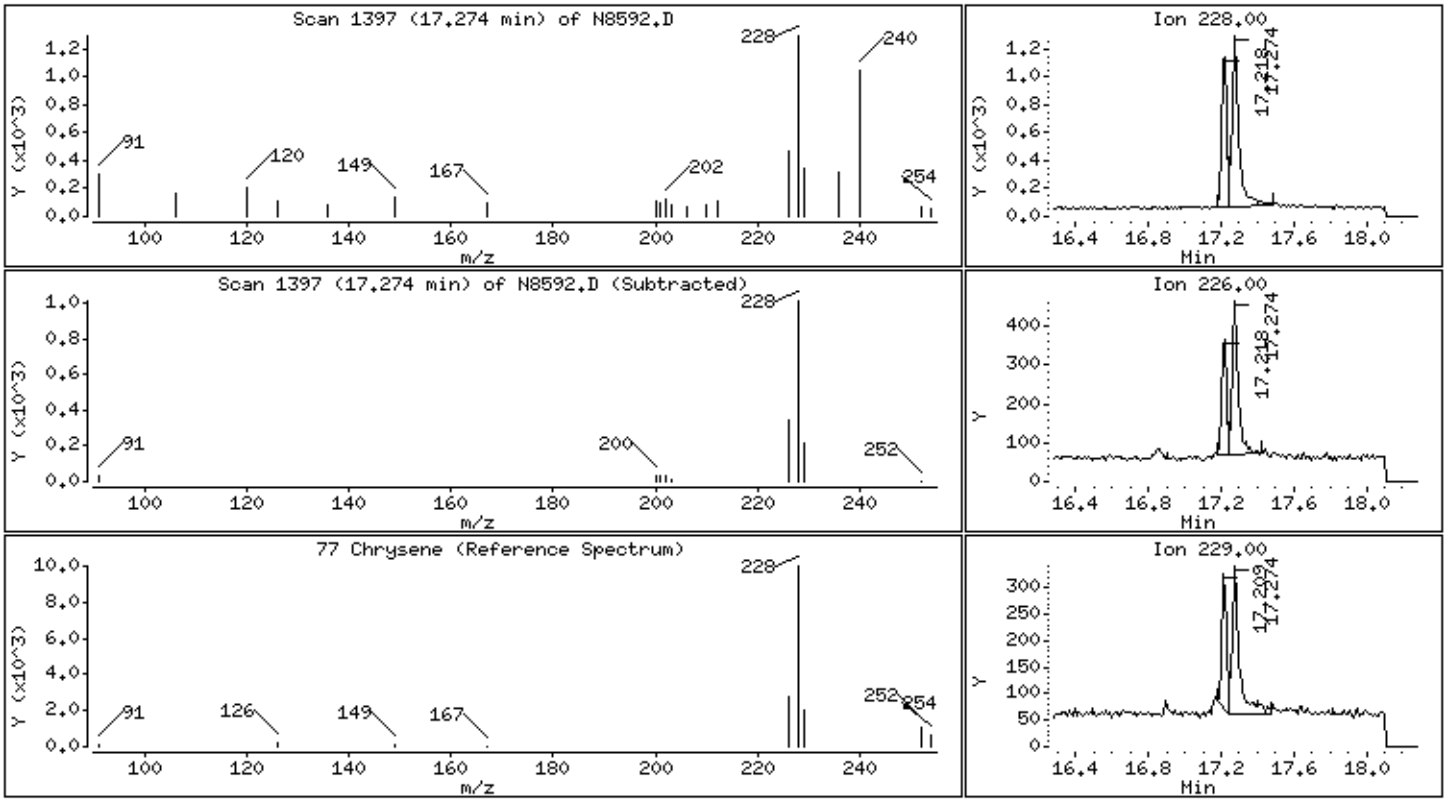
Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8592.D

Date : 18-MAY-2018 19:04

Client ID: HAAP-19C-UGIA-DPT23 Instrument: gcms-n.i

Sample Info: SL3841-8RA

77 Chrysene Concentration: 0.0519 ug/L



Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-10RA2
Client ID: CHAAP-19C-LGIA-DPT16
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: N8593.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.061	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.046	0.10
Chrysene	J	0.053	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene-D10		65.6	%					
Fluorene-D10		64.9	%					
Pyrene-D10		77.8	%					

600 Technology Way
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Tel:(207) 874-2400 Fax:(207) 775-4029
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Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8593.D
Report Date: 23-May-2018 13:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N051818.b\N8593.D
Lab Smp Id: SL3841-10RA2 Client Smp ID: HAAP-19C-LGIA-DPT16
Inj Date : 18-MAY-2018 19:36 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL3841-10RA2
Misc Info : WG228639,WG227847,WG227639-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N051818.b\NSPSIM94.m
Meth Date : 21-May-2018 08:44 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 15:24 Cal File: N8585.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

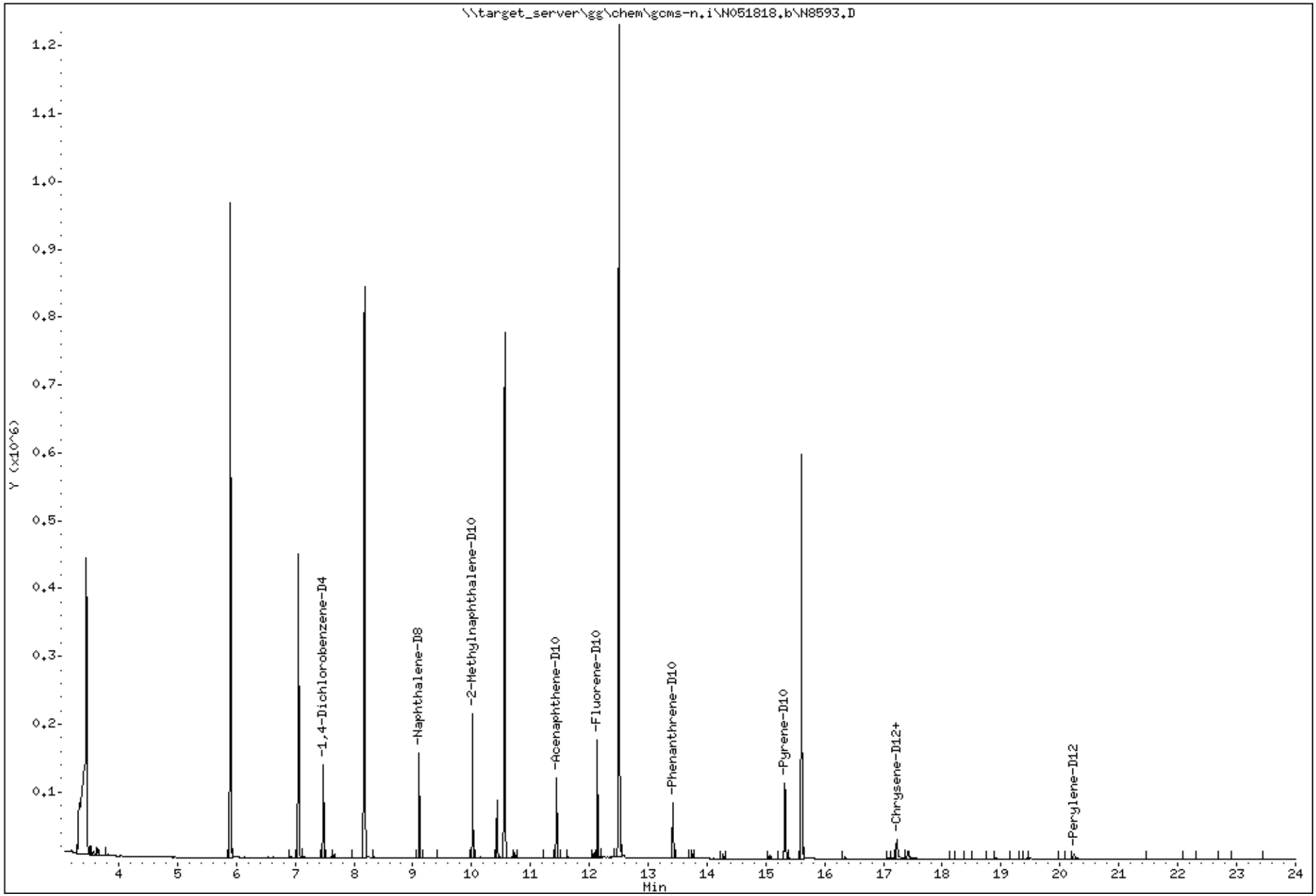
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.479	7.479	(1.000)	33120	0.80000	(aQ)	
*	26 Naphthalene-D8	136	9.110	9.110	(1.000)	105091	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	10.013	10.014	(1.099)	85061	1.31273	1.31	
*	47 Acenaphthene-D10	164	11.443	11.443	(1.000)	45695	0.80000	(a)	
$	55 Fluorene-D10	174	12.141	12.141	(1.061)	77819	1.29797	1.30	
*	65 Phenanthrene-D10	188	13.421	13.431	(1.000)	76362	0.80000	(a)	
$	71 Pyrene-D10	212	15.322	15.332	(0.889)	97485	1.55634	1.56	
*	76 Chrysene-D12	240	17.227	17.236	(1.000)	31173	0.80000	(a)	
	77 Chrysene	228	17.274	17.283	(1.003)	3172	0.05335	0.0534(a)	
*	83 Perylene-D12	264	20.244	20.244	(1.000)	15866	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8593.D
Date : 18-MAY-2018 19:36
Client ID: HAAP-19C-LGIA-DPT16 Instrument: gcms-n.i
Sample Info: SL3841-10RA2



Katahdin Analytical Services 2000030

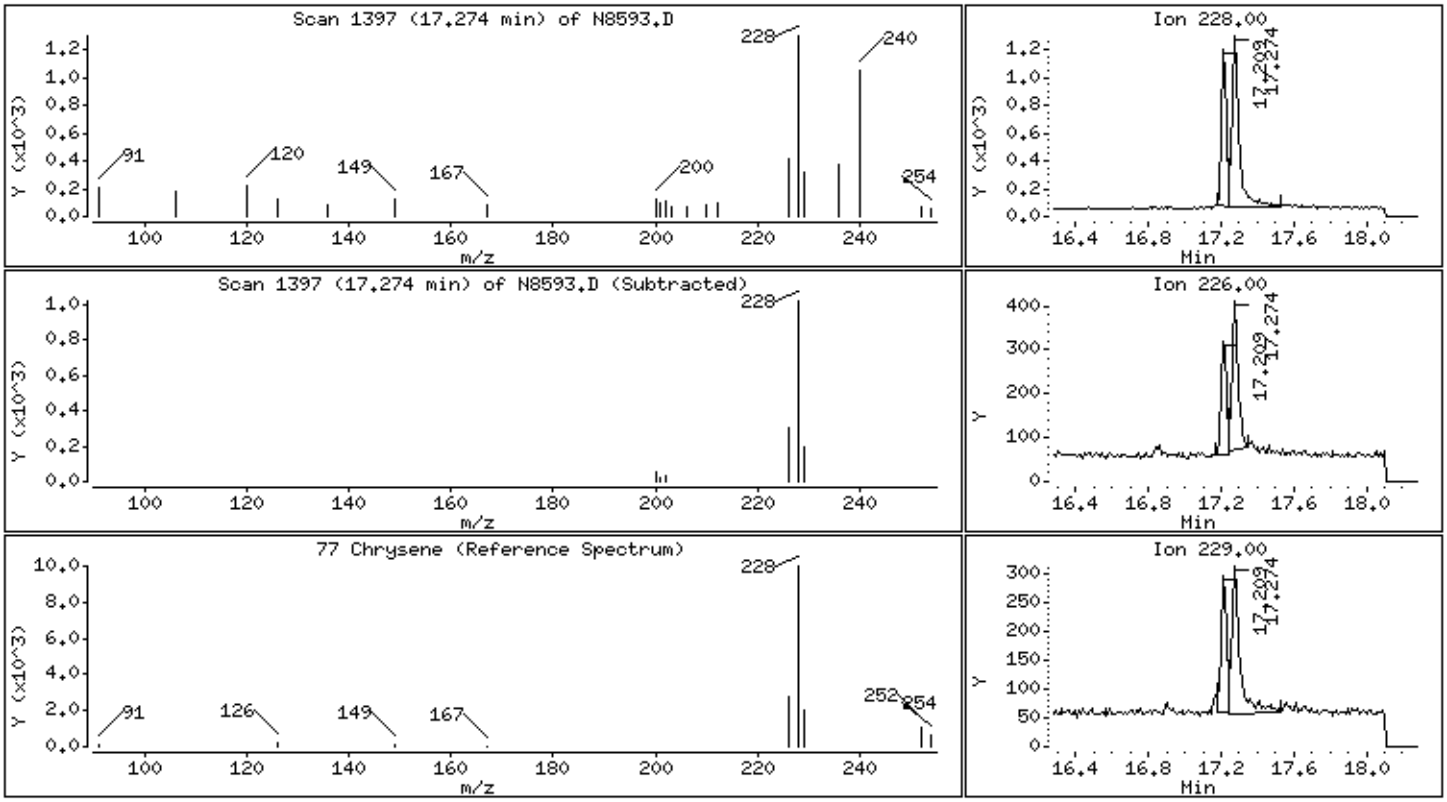
Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8593.D

Date : 18-MAY-2018 19:36

Client ID: HAAP-19C-LGIA-DPT16 Instrument: gcms-n.i

Sample Info: SL3841-10RA2

77 Chrysene Concentration: 0.0534 ug/L



Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-12RA
Client ID: CHAAP-19C-LGIA-DPT116
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: N8594.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
2-Methylnaphthalene	U	0.097	ug/L	1	.2	0.19	0.075	0.097
Acenaphthylene	U	0.097	ug/L	1	.2	0.19	0.052	0.097
Acenaphthene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
Fluorene	U	0.097	ug/L	1	.2	0.19	0.059	0.097
Phenanthrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Anthracene	U	0.097	ug/L	1	.2	0.19	0.043	0.097
Fluoranthene	U	0.097	ug/L	1	.2	0.19	0.071	0.097
Pyrene	U	0.097	ug/L	1	.2	0.19	0.057	0.097
Benzo(a)anthracene	U	0.097	ug/L	1	.2	0.19	0.045	0.097
Chrysene	J	0.061	ug/L	1	.2	0.19	0.035	0.097
Benzo(b)Fluoranthene	U	0.097	ug/L	1	.2	0.19	0.086	0.097
Benzo(k)fluoranthene	U	0.097	ug/L	1	.2	0.19	0.048	0.097
Benzo(a)pyrene	U	0.097	ug/L	1	.2	0.19	0.064	0.097
Indeno(1,2,3-cd)pyrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Dibenzo(a,h)anthracene	U	0.097	ug/L	1	.2	0.19	0.068	0.097
Benzo(g,h,i)perylene	U	0.097	ug/L	1	.2	0.19	0.063	0.097
2-Methylnaphthalene-D10		76.7	%					
Fluorene-D10		71.6	%					
Pyrene-D10		79.5	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8594.D
Report Date: 23-May-2018 13:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N051818.b\N8594.D
Lab Smp Id: SL3841-12RA Client Smp ID: HAAP-19C-LGIA-DPT11
Inj Date : 18-MAY-2018 20:09 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL3841-12RA
Misc Info : WG228639,WG227847,WG227639-4
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N051818.b\NSPSIM94.m
Meth Date : 21-May-2018 08:44 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 15:24 Cal File: N8585.D
Als bottle: 16
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

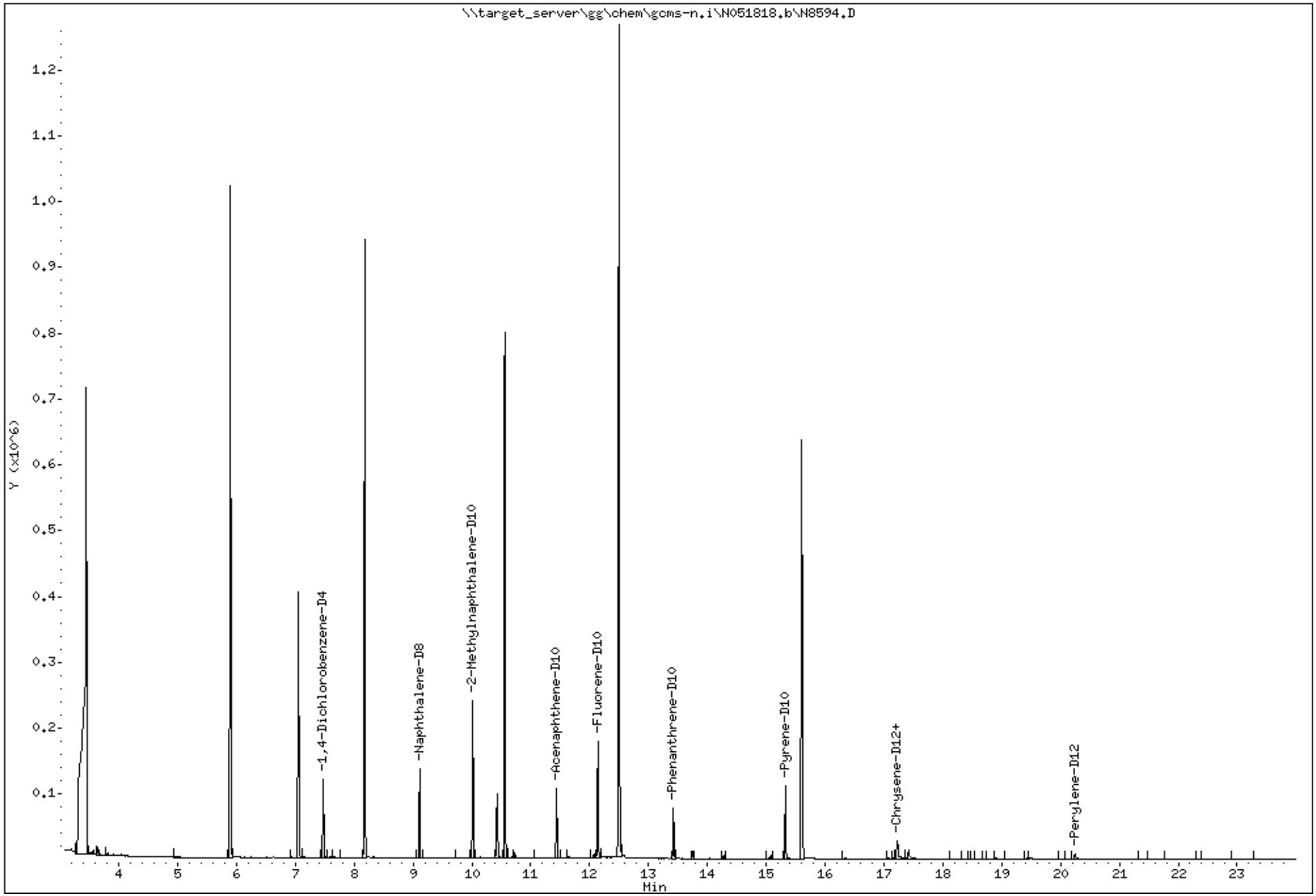
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.030	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.479	7.479	(1.000)	32138	0.80000	(aQ)	
*	26 Naphthalene-D8	136	9.110	9.110	(1.000)	99103	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	10.014	10.014	(1.099)	93758	1.53438	1.49	
*	47 Acenaphthene-D10	164	11.444	11.443	(1.000)	42907	0.80000	(a)	
$	55 Fluorene-D10	174	12.141	12.141	(1.061)	80625	1.43216	1.39	
*	65 Phenanthrene-D10	188	13.421	13.431	(1.000)	67829	0.80000	(a)	
$	71 Pyrene-D10	212	15.323	15.332	(0.889)	93476	1.58930	1.54	
*	76 Chrysene-D12	240	17.227	17.236	(1.000)	29271	0.80000	(a)	
	77 Chrysene	228	17.274	17.283	(1.003)	3530	0.06323	0.0614(a)	
*	83 Perylene-D12	264	20.244	20.244	(1.000)	16876	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8594.D
Date : 18-MAY-2018 20:09
Client ID: HAAP-19C-LGIA-DPT11 Instrument: gcms-n.i
Sample Info: SL3841-12RA



Katahdin Analytical Services 2000034

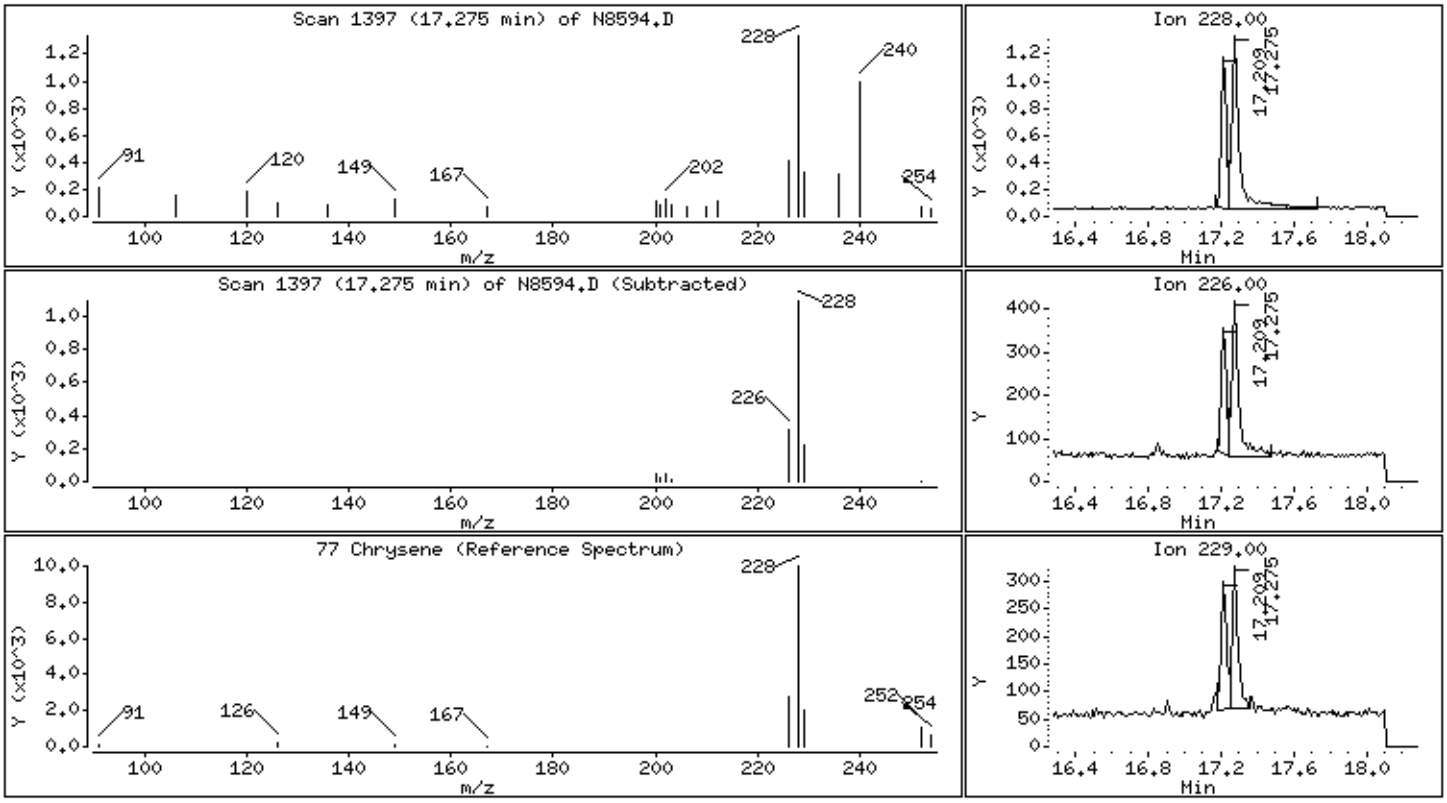
Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8594.D

Date : 18-MAY-2018 20:09

Client ID: HAAP-19C-LGIA-DPT11 Instrument: gcms-n.i

Sample Info: SL3841-12RA

77 Chrysene Concentration: 0.0614 ug/L



Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-14RA
Client ID: CHAAP-19C-UGIA-DPT15
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: N8595.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.11	ug/L	1	.2	0.22	0.069	0.11
2-Methylnaphthalene	U	0.11	ug/L	1	.2	0.22	0.083	0.11
Acenaphthylene	U	0.11	ug/L	1	.2	0.22	0.058	0.11
Acenaphthene	U	0.11	ug/L	1	.2	0.22	0.069	0.11
Fluorene	U	0.11	ug/L	1	.2	0.22	0.066	0.11
Phenanthrene	U	0.11	ug/L	1	.2	0.22	0.055	0.11
Anthracene	U	0.11	ug/L	1	.2	0.22	0.047	0.11
Fluoranthene	U	0.11	ug/L	1	.2	0.22	0.078	0.11
Pyrene	U	0.11	ug/L	1	.2	0.22	0.063	0.11
Benzo(a)anthracene	U	0.11	ug/L	1	.2	0.22	0.049	0.11
Chrysene	J	0.053	ug/L	1	.2	0.22	0.039	0.11
Benzo(b)Fluoranthene	U	0.11	ug/L	1	.2	0.22	0.096	0.11
Benzo(k)fluoranthene	U	0.11	ug/L	1	.2	0.22	0.053	0.11
Benzo(a)pyrene	U	0.11	ug/L	1	.2	0.22	0.071	0.11
Indeno(1,2,3-cd)pyrene	U	0.11	ug/L	1	.2	0.22	0.056	0.11
Dibenzo(a,h)anthracene	U	0.11	ug/L	1	.2	0.22	0.075	0.11
Benzo(g,h,i)perylene	U	0.11	ug/L	1	.2	0.22	0.070	0.11
2-Methylnaphthalene-D10		72.6	%					
Fluorene-D10		68.1	%					
Pyrene-D10		74.6	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8595.D
Report Date: 23-May-2018 13:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N051818.b\N8595.D
Lab Smp Id: SL3841-14RA Client Smp ID: HAAP-19C-UGIA-DPT15
Inj Date : 18-MAY-2018 20:41 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL3841-14RA
Misc Info : WG228639,WG227847,WG227639-4
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N051818.b\NSPSIM94.m
Meth Date : 21-May-2018 08:44 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 15:24 Cal File: N8585.D
Als bottle: 17
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

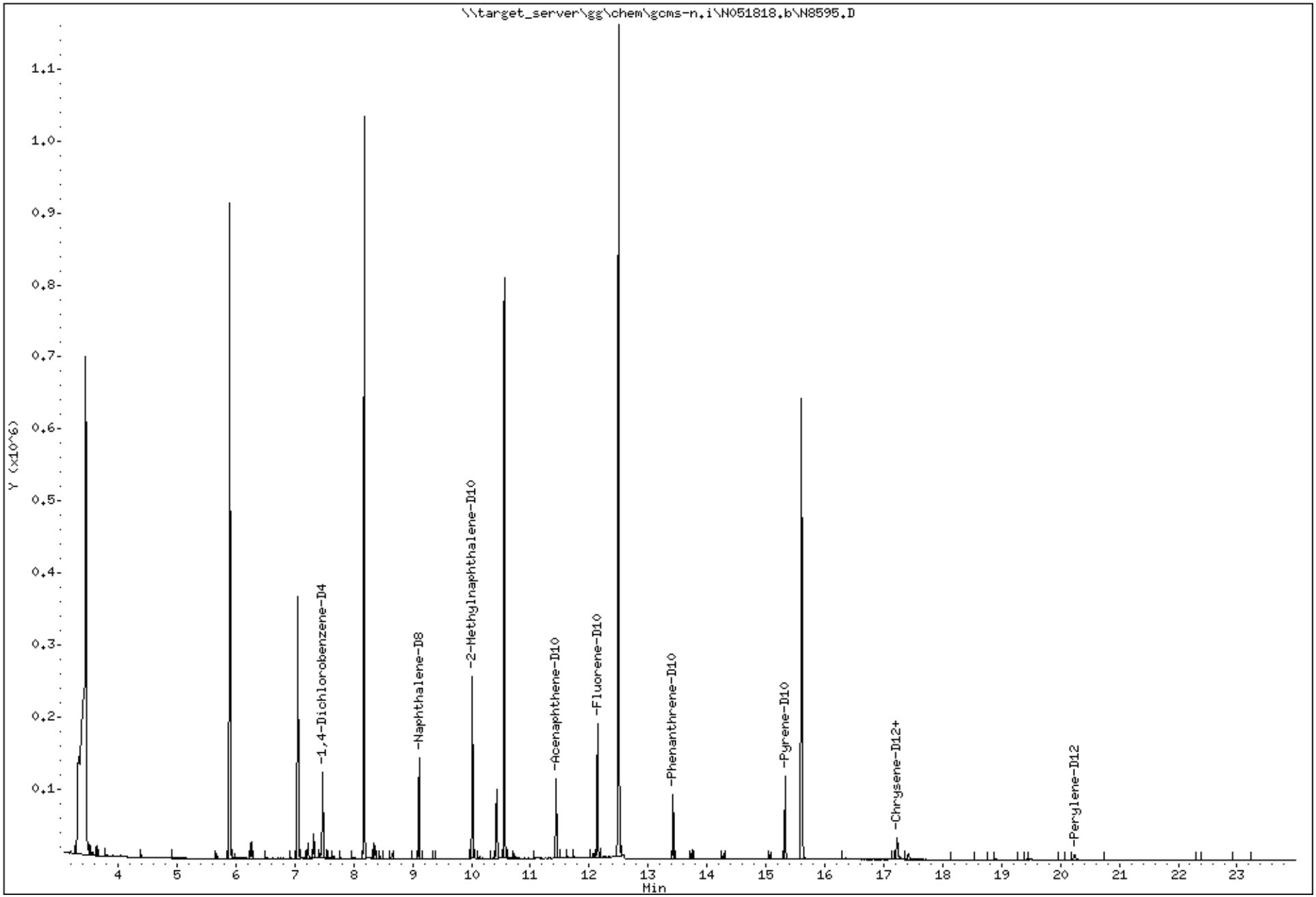
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	0.93000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
* 10 1,4-Dichlorobenzene-D4	152	7.479	7.479	(1.000)	34069	0.80000	(aQ)	
* 26 Naphthalene-D8	136	9.110	9.110	(1.000)	109006	0.80000	(a)	
$ 32 2-Methylnaphthalene-D10	152	10.014	10.014	(1.099)	97574	1.45176	1.56	
* 47 Acenaphthene-D10	164	11.444	11.443	(1.000)	47065	0.80000	(a)	
$ 55 Fluorene-D10	174	12.141	12.141	(1.061)	84140	1.36255	1.46	
* 65 Phenanthrene-D10	188	13.421	13.431	(1.000)	79051	0.80000	(a)	
$ 71 Pyrene-D10	212	15.323	15.332	(0.889)	96244	1.49155	1.60	
* 76 Chrysene-D12	240	17.227	17.236	(1.000)	32113	0.80000	(a)	
77 Chrysene	228	17.274	17.283	(1.003)	2997	0.04893	0.0526(a)	
* 83 Perylene-D12	264	20.244	20.244	(1.000)	16371	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8595.D
Date : 18-MAY-2018 20:41
Client ID: HAAP-19C-UGIA-DPT15 Instrument: gcms-n.i
Sample Info: SL3841-14RA



Katahdin Analytical Services 2000038

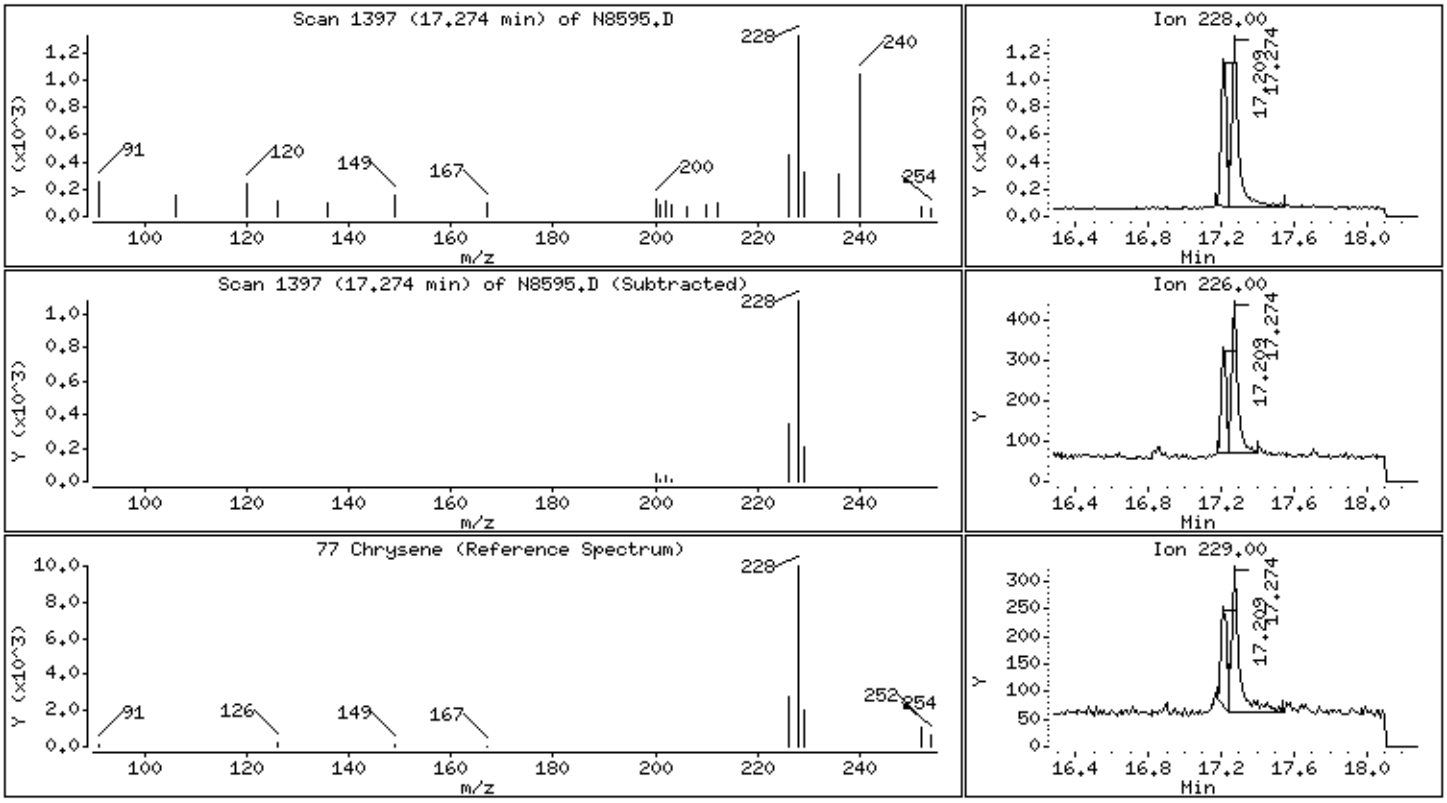
Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8595.D

Date : 18-MAY-2018 20:41

Client ID: HAAP-19C-UGIA-DPT15 Instrument: gcms-n.i

Sample Info: SL3841-14RA

77 Chrysene Concentration: 0.0526 ug/L



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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-16RA
Client ID: CHAAP-19C-LGIA-DPT12
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: N8596.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.098	ug/L	1	.2	0.20	0.063	0.098
2-Methylnaphthalene	U	0.098	ug/L	1	.2	0.20	0.075	0.098
Acenaphthylene	U	0.098	ug/L	1	.2	0.20	0.053	0.098
Acenaphthene	U	0.098	ug/L	1	.2	0.20	0.063	0.098
Fluorene	U	0.098	ug/L	1	.2	0.20	0.060	0.098
Phenanthrene	U	0.098	ug/L	1	.2	0.20	0.050	0.098
Anthracene	U	0.098	ug/L	1	.2	0.20	0.043	0.098
Fluoranthene	U	0.098	ug/L	1	.2	0.20	0.072	0.098
Pyrene	U	0.098	ug/L	1	.2	0.20	0.058	0.098
Benzo(a)anthracene	U	0.098	ug/L	1	.2	0.20	0.045	0.098
Chrysene	J	0.050	ug/L	1	.2	0.20	0.035	0.098
Benzo(b)Fluoranthene	U	0.098	ug/L	1	.2	0.20	0.087	0.098
Benzo(k)fluoranthene	U	0.098	ug/L	1	.2	0.20	0.048	0.098
Benzo(a)pyrene	U	0.098	ug/L	1	.2	0.20	0.065	0.098
Indeno(1,2,3-cd)pyrene	U	0.098	ug/L	1	.2	0.20	0.051	0.098
Dibenzo(a,h)anthracene	U	0.098	ug/L	1	.2	0.20	0.069	0.098
Benzo(g,h,i)perylene	U	0.098	ug/L	1	.2	0.20	0.064	0.098
2-Methylnaphthalene-D10		78.4	%					
Fluorene-D10		73.9	%					
Pyrene-D10		87.6	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8596.D
Report Date: 23-May-2018 13:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N051818.b\N8596.D
Lab Smp Id: SL3841-16RA Client Smp ID: HAAP-19C-LGIA-DPT12
Inj Date : 18-MAY-2018 21:13 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL3841-16RA
Misc Info : WG228639,WG227847,WG227639-4
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N051818.b\NSPSIM94.m
Meth Date : 21-May-2018 08:44 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 15:24 Cal File: N8585.D
Als bottle: 18
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

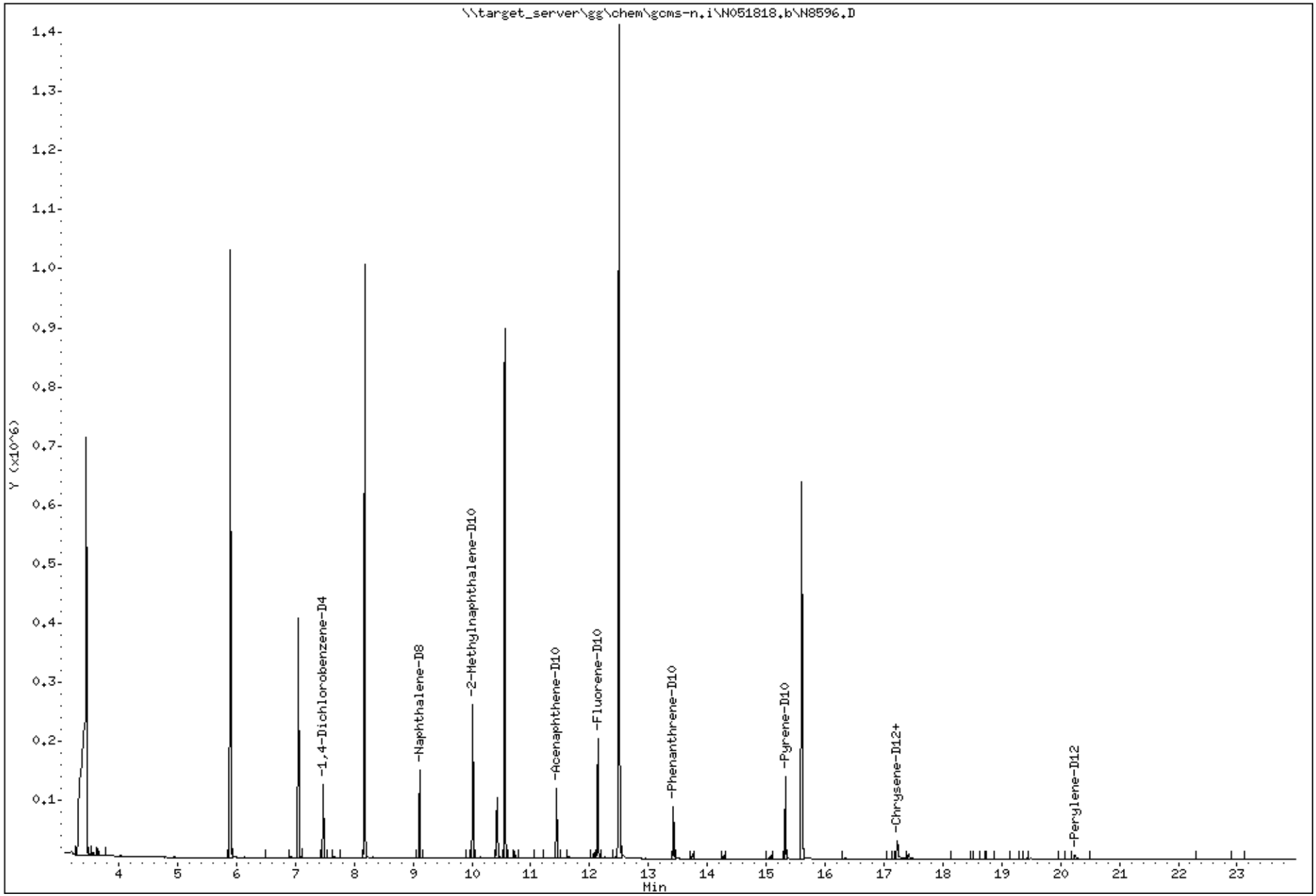
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.020	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.479	7.479	(1.000)	32949	0.80000	(aQ)	
*	26 Naphthalene-D8	136	9.110	9.110	(1.000)	107571	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	10.014	10.014	(1.099)	103974	1.56762	1.54	
*	47 Acenaphthene-D10	164	11.444	11.443	(1.000)	47907	0.80000	(a)	
$	55 Fluorene-D10	174	12.141	12.141	(1.061)	92904	1.47803	1.45	
*	65 Phenanthrene-D10	188	13.421	13.431	(1.000)	78491	0.80000	(a)	
$	71 Pyrene-D10	212	15.323	15.332	(0.889)	110445	1.75167	1.72	
*	76 Chrysene-D12	240	17.227	17.236	(1.000)	31379	0.80000	(a)	
	77 Chrysene	228	17.274	17.283	(1.003)	3023	0.05051	0.0495(a)	
*	83 Perylene-D12	264	20.244	20.244	(1.000)	17170	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8596.D
Date : 18-MAY-2018 21:13
Client ID: HAAP-19C-LGIA-DPT12 Instrument: gcms-n.i
Sample Info: SL3841-16RA



Katahdin Analytical Services 2000042

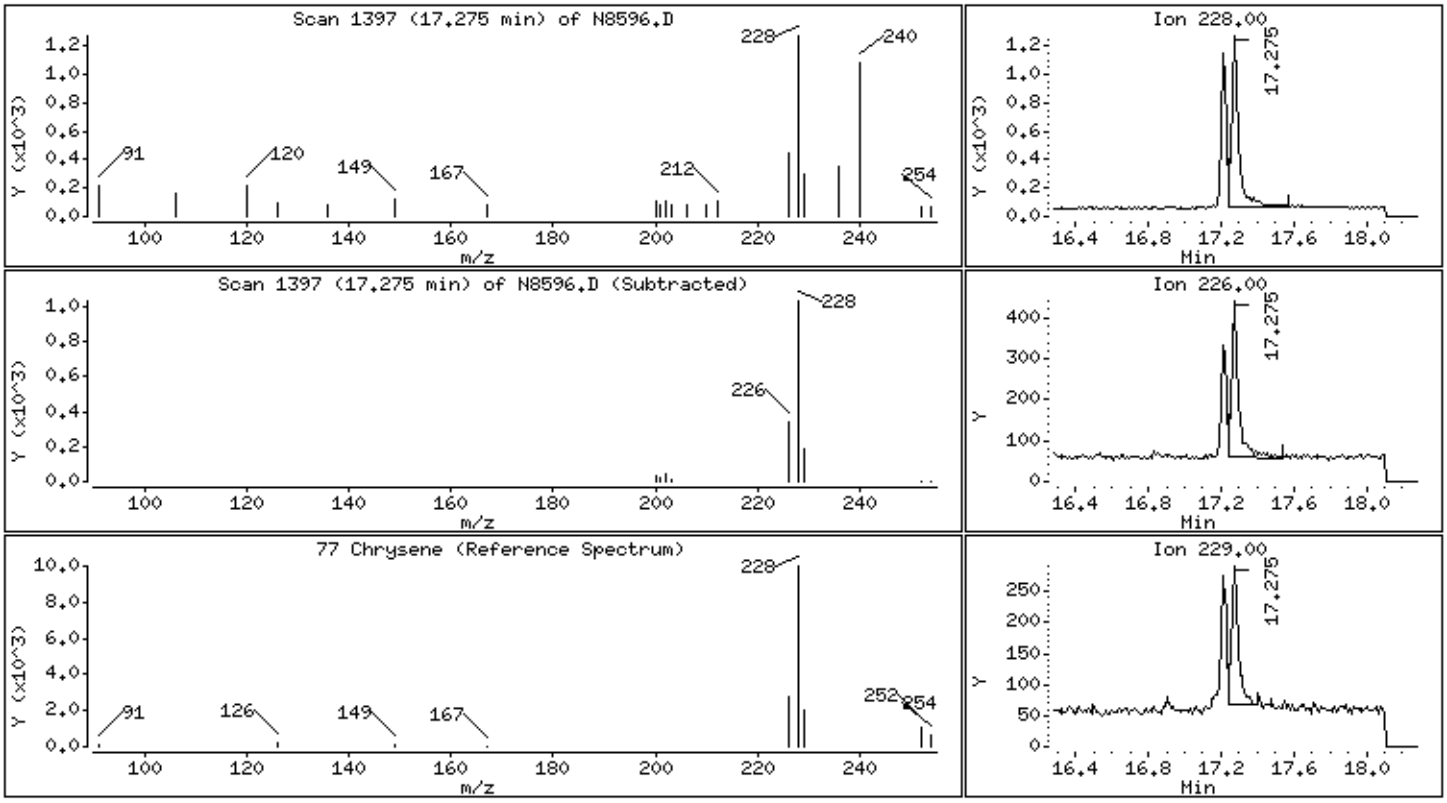
Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8596.D

Date : 18-MAY-2018 21:13

Client ID: HAAP-19C-LGIA-DPT12 Instrument: gcms-n.i

Sample Info: SL3841-16RA

77 Chrysene Concentration: 0.0495 ug/L



Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-18RA
Client ID: CHAAP-19C-UGIA-DPT11
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: N8597.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.078	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.062	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.074	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.060	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.046	0.10
Chrysene	J	0.041	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.090	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.067	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.071	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
2-Methylnaphthalene-D10		78.0	%					
Fluorene-D10		75.6	%					
Pyrene-D10		87.4	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8597.D
Report Date: 23-May-2018 13:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N051818.b\N8597.D
Lab Smp Id: SL3841-18RA Client Smp ID: HAAP-19C-UGIA-DPT11
Inj Date : 18-MAY-2018 21:45 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL3841-18RA
Misc Info : WG228639,WG227847,WG227639-4
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N051818.b\NSPSIM94.m
Meth Date : 21-May-2018 08:44 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 15:24 Cal File: N8585.D
Als bottle: 19
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

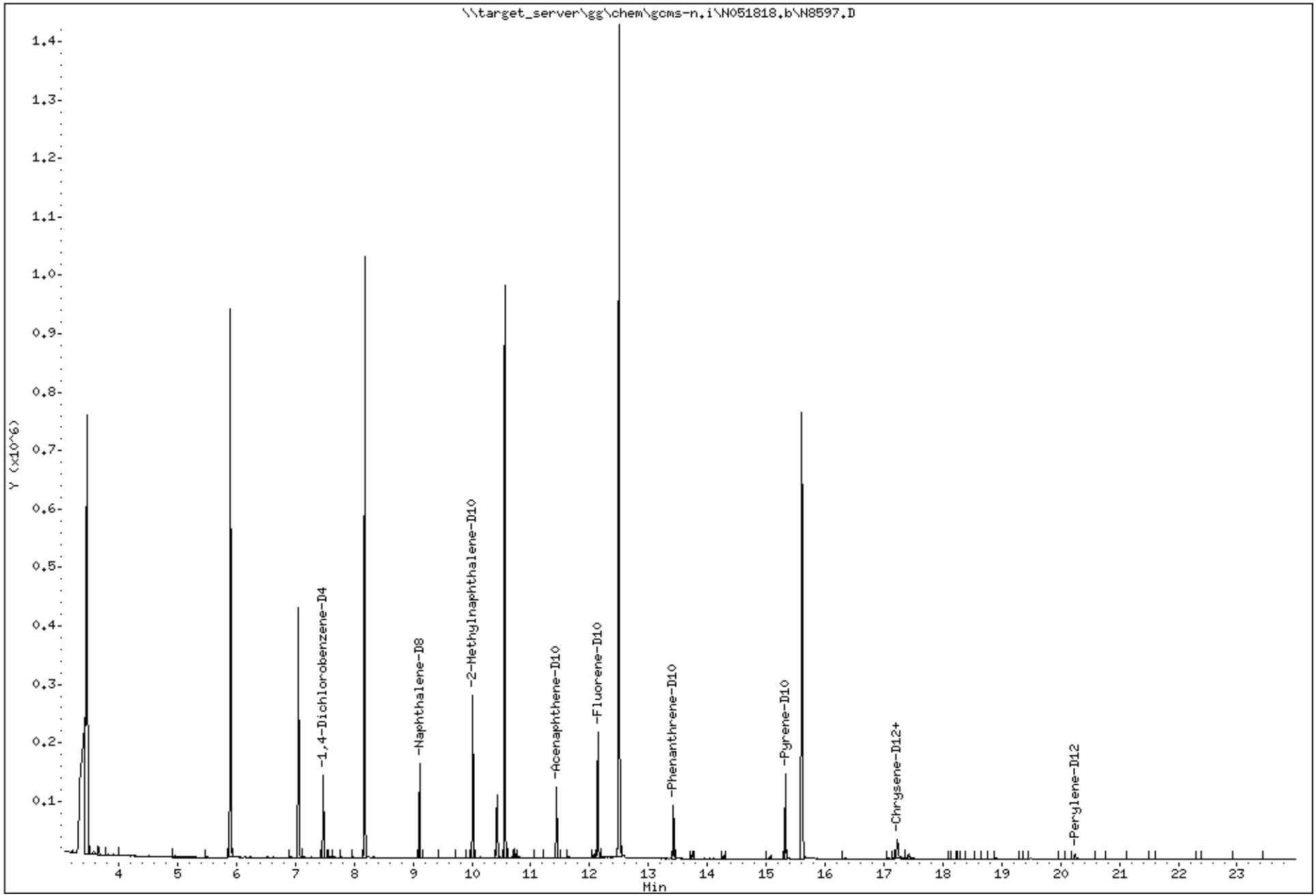
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	0.99000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.479	7.479	(1.000)	35611	0.80000	(aQ)	
*	26 Naphthalene-D8	136	9.110	9.110	(1.000)	113814	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	10.014	10.014	(1.099)	109518	1.56063	1.58	
*	47 Acenaphthene-D10	164	11.444	11.443	(1.000)	49557	0.80000	(a)	
$	55 Fluorene-D10	174	12.141	12.141	(1.061)	98345	1.51250	1.53	
*	65 Phenanthrene-D10	188	13.421	13.431	(1.000)	82839	0.80000	(a)	
$	71 Pyrene-D10	212	15.322	15.332	(0.889)	120059	1.74785	1.76	
*	76 Chrysene-D12	240	17.227	17.236	(1.000)	34185	0.80000	(a)	
	77 Chrysene	228	17.274	17.283	(1.003)	2649	0.04063	0.0410(a)	
*	83 Perylene-D12	264	20.244	20.244	(1.000)	19350	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8597.D
Date : 18-MAY-2018 21:45
Client ID: HAAP-19C-UGIA-DPT11 Instrument: gcms-n.i
Sample Info: SL3841-18RA



Katahdin Analytical Services 2000046

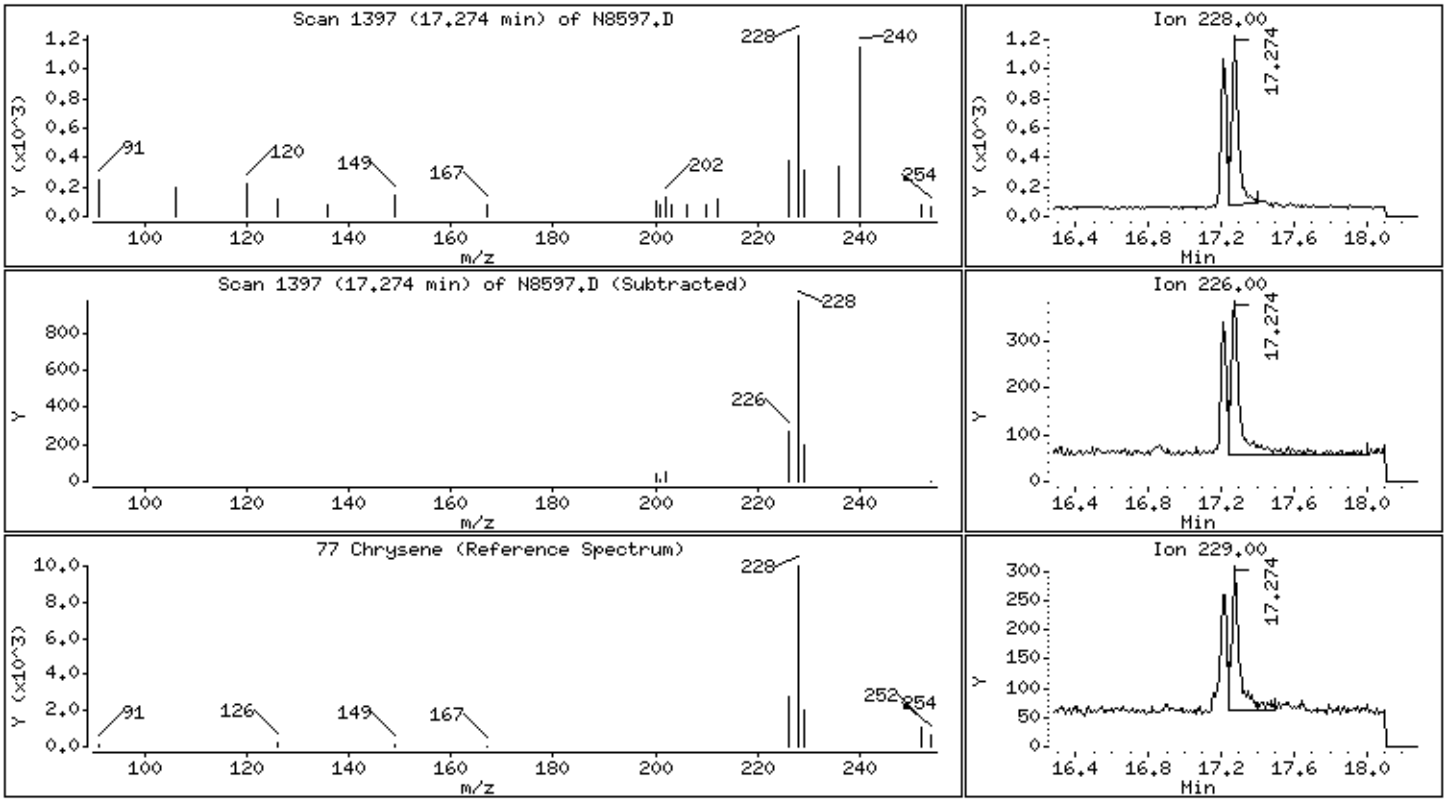
Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8597.D

Date : 18-MAY-2018 21:45

Client ID: HAAP-19C-UGIA-DPT11 Instrument: gcms-n.i

Sample Info: SL3841-18RA

77 Chrysene Concentration: 0.0410 ug/L



Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-20RA
Client ID: CHAAP-EB-050318
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: N8598.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.11	ug/L	1	.2	0.21	0.068	0.11
2-Methylnaphthalene	U	0.11	ug/L	1	.2	0.21	0.082	0.11
Acenaphthylene	U	0.11	ug/L	1	.2	0.21	0.057	0.11
Acenaphthene	U	0.11	ug/L	1	.2	0.21	0.068	0.11
Fluorene	U	0.11	ug/L	1	.2	0.21	0.065	0.11
Phenanthrene	U	0.11	ug/L	1	.2	0.21	0.054	0.11
Anthracene	U	0.11	ug/L	1	.2	0.21	0.047	0.11
Fluoranthene	U	0.11	ug/L	1	.2	0.21	0.078	0.11
Pyrene	U	0.11	ug/L	1	.2	0.21	0.063	0.11
Benzo(a)anthracene	J	0.052	ug/L	1	.2	0.21	0.049	0.11
Chrysene	J	0.076	ug/L	1	.2	0.21	0.038	0.11
Benzo(b)Fluoranthene	U	0.11	ug/L	1	.2	0.21	0.095	0.11
Benzo(k)fluoranthene	U	0.11	ug/L	1	.2	0.21	0.052	0.11
Benzo(a)pyrene	U	0.11	ug/L	1	.2	0.21	0.070	0.11
Indeno(1,2,3-cd)pyrene	U	0.11	ug/L	1	.2	0.21	0.055	0.11
Dibenzo(a,h)anthracene	U	0.11	ug/L	1	.2	0.21	0.074	0.11
Benzo(g,h,i)perylene	U	0.11	ug/L	1	.2	0.21	0.069	0.11
2-Methylnaphthalene-D10		73.6	%					
Fluorene-D10		68.7	%					
Pyrene-D10		86.8	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8598.D
Report Date: 23-May-2018 13:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N051818.b\N8598.D
Lab Smp Id: SL3841-20RA Client Smp ID: CHAAP-EB-050318
Inj Date : 18-MAY-2018 22:17 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL3841-20RA
Misc Info : WG228639,WG227847,WG227639-4
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N051818.b\NSPSIM94.m
Meth Date : 21-May-2018 08:44 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 15:24 Cal File: N8585.D
Als bottle: 20
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

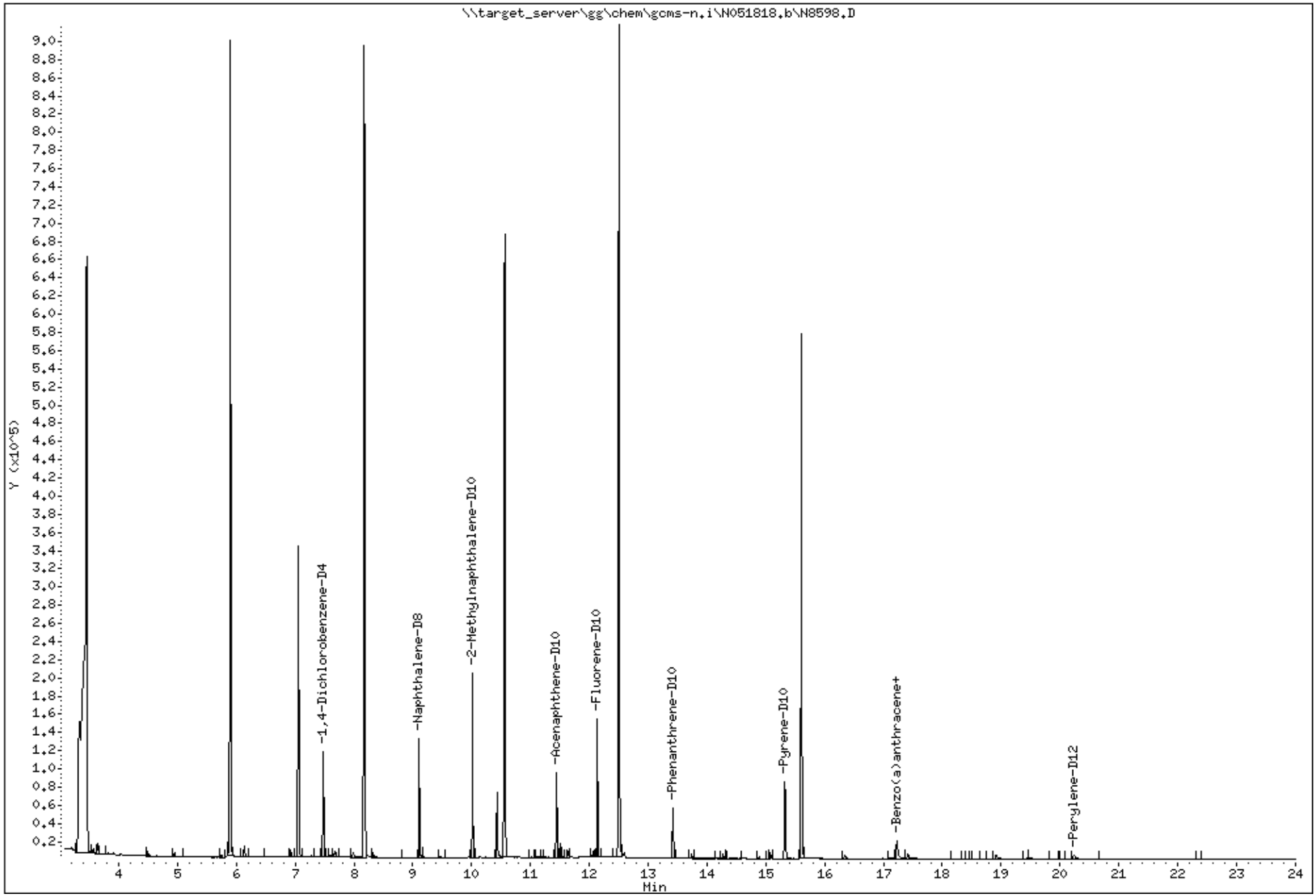
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	0.94000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.479	7.479	(1.000)	29953	0.80000	(aQ)	
*	26 Naphthalene-D8	136	9.110	9.110	(1.000)	89932	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	10.013	10.014	(1.099)	81639	1.47230	1.57	
*	47 Acenaphthene-D10	164	11.443	11.443	(1.000)	36643	0.80000	(a)	
$	55 Fluorene-D10	174	12.141	12.141	(1.061)	66045	1.37372	1.46	
*	65 Phenanthrene-D10	188	13.421	13.431	(1.000)	54402	0.80000	(a)	
$	71 Pyrene-D10	212	15.322	15.332	(0.889)	73322	1.73656	1.85	
	75 Benzo(a)anthracene	228	17.208	17.218	(0.999)	1825	0.04885	0.0520(a)	
*	76 Chrysene-D12	240	17.227	17.236	(1.000)	21013	0.80000	(a)	
	77 Chrysene	228	17.274	17.283	(1.003)	2868	0.07156	0.0761(a)	
*	83 Perylene-D12	264	20.244	20.244	(1.000)	12476	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8598.D
Date : 18-MAY-2018 22:17
Client ID: CHAAP-EB-050318 Instrument: gcms-n.i
Sample Info: SL3841-20RA



Katahdin Analytical Services 2000050

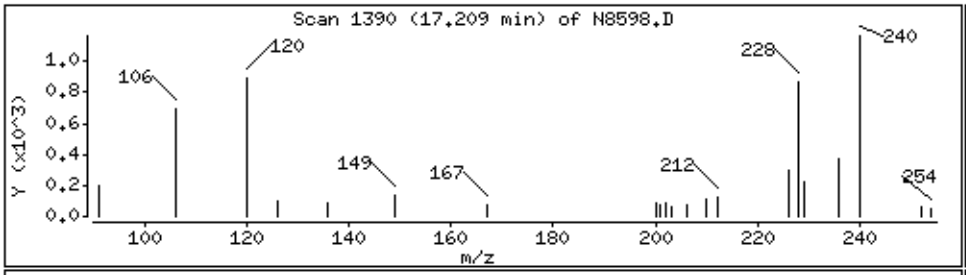
Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8598.D

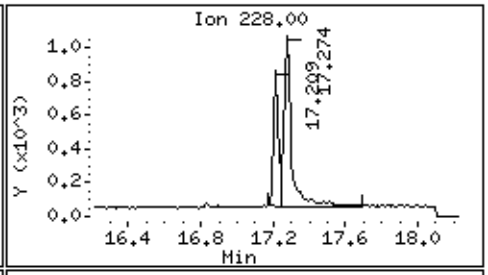
Date : 18-MAY-2018 22:17

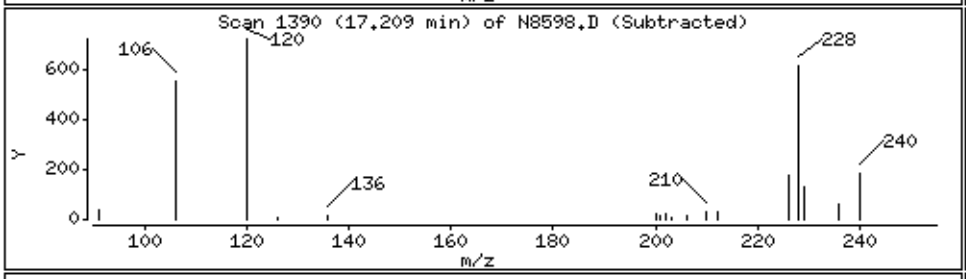
Client ID: CHAAP-EB-050318 Instrument: gcms-n.i

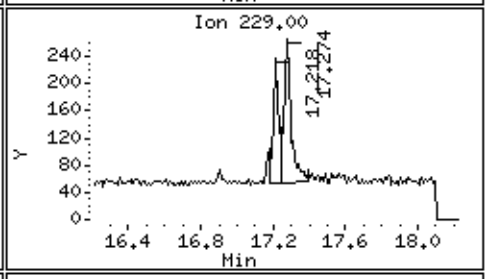
Sample Info: SL3841-20RA

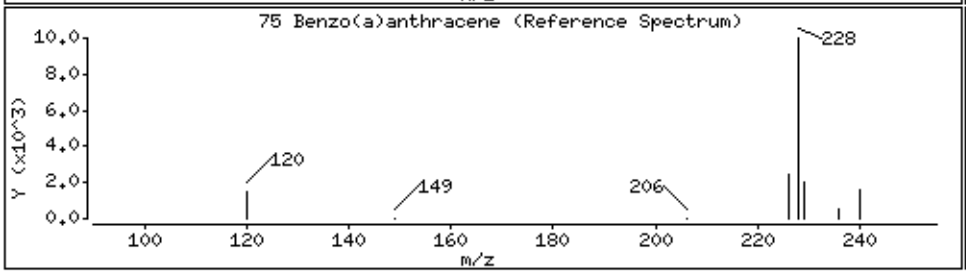
75 Benzo(a)anthracene Concentration: 0.0520 ug/L

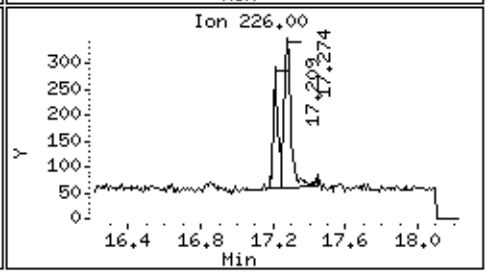




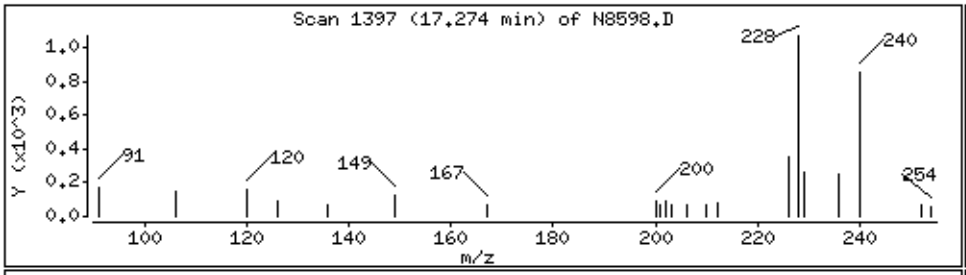


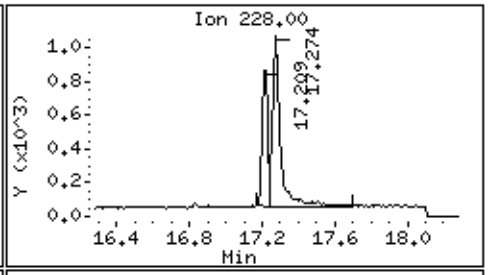


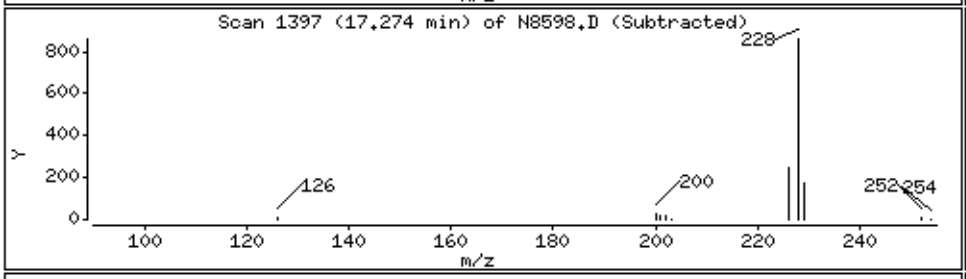


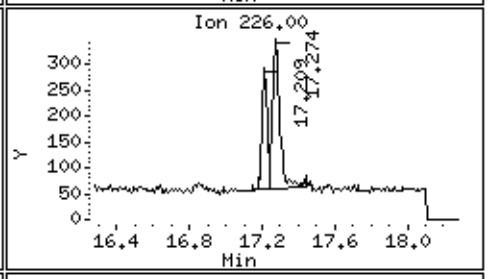


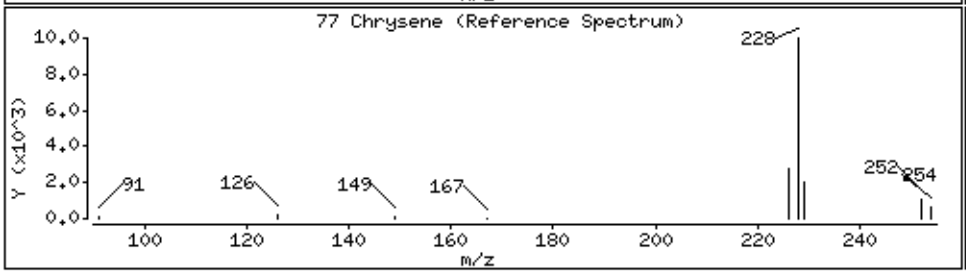
77 Chrysene Concentration: 0.0761 ug/L

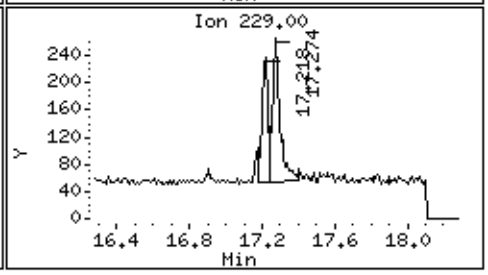












Standards Data Section

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3841
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-N
Lab File IDs : N8581.D N8582.D N8580.D N8583.D N8584.D N8585.D
Column ID:
Calibration Date(s): 18-MAY-18 12:47, 18-MAY-18 15:24

	0.200000(Level 1	0.500000(Level 2	2.0000 Level 3	7.0000 Level 4	10.0000 Level 5	15.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Naphthalene	0.99439	1.01918	1.03259	0.99876	1.03513	0.97057	AVG		1.00844		2.48374	15.00000	O
2-Methylnaphthalene	0.61288	0.61409	0.64340	0.62270	0.65406	0.60707	AVG		0.62570		3.00919	15.00000	O
Acenaphthylene	1.95594	2.12025	2.19410	2.17395	2.19751	2.14139	AVG		2.13052		4.25641	15.00000	O
Acenaphthene	1.30331	1.37665	1.39882	1.37707	1.41434	1.39314	AVG		1.37722		2.82351	15.00000	O
Fluorene	1.30306	1.41426	1.44386	1.43602	1.47896	1.48512	AVG		1.42688		4.64521	15.00000	O
Phenanthrene	1.18885	1.23709	1.19607	1.17020	1.19669	1.15589	AVG		1.19080		2.33089	15.00000	O
Anthracene	1.02386	1.09190	1.16970	1.17488	1.21454	1.12596	AVG		1.13347		6.03514	15.00000	O
Fluoranthene	1.06825	1.08750	1.17806	1.17846	1.23166	1.09571	AVG		1.13994		5.71153	15.00000	O
Pyrene	3.18810	2.95793	2.53166	2.44690	2.47227	2.48776	AVG		2.68077		11.69973	15.00000	O
Benzo(a)anthracene	1.53180	1.37833	1.42782	1.37086	1.43873	1.38653	AVG		1.42234		4.23593	15.00000	O
Chrysene	1.92863	1.60357	1.45301	1.37891	1.42869	1.36222	AVG		1.52584		14.09842	15.00000	O
Benzo(b)fluoranthene	1.68690	1.36156	1.40834	1.46232	1.63705	1.56118	AVG		1.51956		8.53712	15.00000	O
Benzo(k)fluoranthene	9384	21625	110390	348754	476521	632232	LNR	-0.20709	1.81376		0.99835	0.99000	O
Benzo(a)pyrene	1.13243	1.29705	1.16115	1.27629	1.33367	1.32421	AVG		1.25413		6.86161	15.00000	O
Indeno(1,2,3-cd)pyrene	2469	2850	21416	84364	140688	215483	QUA	0.12790	4.16525	-0.18526	0.99745	0.99000	O
Dibenzo(a,h)anthracene	1163	3504	23439	98456	149488	226618	QUA	0.18187	1.92431	-0.03212	0.99938	0.99000	O
Benzo(g,h,i)perylene	1.02358	0.74875	0.76085	0.91965	0.95268	0.99193	AVG		0.89957		13.0702(	15.00000	O
2-Methylnaphthalene-D10	0.48116	0.48741	0.50883	0.49470	0.51171	0.47576	AVG		0.49326		2.96820	15.00000	
Fluorene-D10	0.97974	1.03907	1.06538	1.07320	1.08216	1.05830	AVG		1.04964		3.54753	15.00000	
Pyrene-D10	1.85868	1.71219	1.53524	1.48519	1.51808	1.53551	AVG		1.60748		9.11803	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8586.D
Report Date: 23-May-2018 11:04

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: 021497
Sample Matrix: SOLID Fraction: SV
Lab Smp Id: WG228639-8
Level: LOW Operator: JCG
Data Type: MS DATA SampleType: INDCHECK
SpikeList File: SIM_IND_CHK5.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-n.i\N051818.b\NSPSIM94.m
Misc Info: WG228639,WG228639,WG228639-4

SPIKE	COMPOUND	CONC ADDED ug/Kgdrywt	CONC RECOVERED ug/Kgdrywt	% RECOVERED	LIMITS
2	1,4-Dioxane	5.00	4.68	93.52	80-120
3	N-Nitrosodimethyla	5.00	4.95	99.04	80-120
4	Pyridine	5.00	5.45	108.99	80-120
5	Benzaldehyde	5.00	1.21	24.27*	80-120
7	Bis(2-Chloroethyl)	5.00	5.02	100.36	80-120
6	Phenol	5.00	5.17	103.37	80-120
8	2-Chlorophenol	5.00	5.06	101.16	80-120
9	1,3-Dichlorobenzen	5.00	4.97	99.49	80-120
11	1,4-Dichlorobenzen	5.00	5.03	100.61	80-120
12	1,2-Dichlorobenzen	5.00	5.02	100.52	80-120
14	2,2'-Oxybis(1-chlo	5.00	3.68	73.53*	80-120
13	2-Methylphenol	5.00	4.97	99.40	80-120
15	Acetophenone	5.00	4.72	94.34	80-120
16	N-Nitroso-di-n-pro	5.00	4.93	98.56	80-120
18	Hexachloroethane	5.00	4.93	98.68	80-120
17	3&4-Methylphenol	5.00	5.01	100.17	80-120
19	Nitrobenzene	5.00	5.04	100.91	80-120
20	Isophorone	5.00	5.06	101.19	80-120
21	2-Nitrophenol	5.00	5.29	105.79	80-120
22	2,4-Dimethylphenol	5.00	4.79	95.84	80-120
23	bis(2-Chloroethoxy	5.00	5.16	103.17	80-120
24	2,4-Dichlorophenol	5.00	5.10	101.91	80-120
25	1,2,4-Trichloroben	5.00	4.96	99.21	80-120
27	Naphthalene	5.00	5.05	101.07	80-120
28	4-Chloroaniline	5.00	5.89	117.86	80-120
29	Hexachlorobutadien	5.00	5.05	101.01	80-120
30	Caprolactam	5.00	5.93	118.66	80-120
33	2-Methylnaphthalen	5.00	5.29	105.80	80-120
31	4-Chloro-3-Methylp	5.00	5.09	101.83	80-120
34	1-Methylnaphthalen	5.00	5.01	100.18	80-120
35	1,2,4,5-Tetrachlor	5.00	4.85	97.05	80-120
36	Hexachlorocyclopen	5.00	3.34	66.79*	80-120
38	2,4,6-Trichlorophe	5.00	5.09	101.85	80-120
39	2,4,5-Trichlorophe	5.00	5.09	101.73	80-120
41	2-Chloronaphthalen	5.00	5.14	102.88	80-120
40	1,1'-Biphenyl	5.00	4.69	93.73	80-120
42	2-Nitroaniline	5.00	5.46	109.22	80-120
43	Dimethyl Phthalate	5.00	5.36	107.29	80-120
45	Acenaphthylene	5.00	4.87	97.37	80-120
44	2,6-Dinitrotoluene	5.00	5.40	108.11	80-120

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8586.D
Report Date: 23-May-2018 11:04

SPIKE COMPOUND	CONC ADDED ug/Kgdrywt	CONC RECOVERED ug/Kgdrywt	% RECOVERED	LIMITS
48 Acenaphthene	5.00	5.36	107.27	80-120
46 3-Nitroaniline	5.00	5.40	107.90	80-120
49 2,4-Dinitrophenol	5.00	4.83	96.68	80-120
52 Dibenzofuran	5.00	5.23	104.54	80-120
51 2,4-Dinitrotoluene	5.00	5.81	116.29	80-120
53 2,3,4,6-Tetrachlor	5.00	5.03	100.60	80-120
50 4-Nitrophenol	5.00	4.64	92.70	80-120
54 Diethylphthalate	5.00	5.54	110.87	80-120
56 Fluorene	5.00	5.27	105.48	80-120
57 4-Chlorophenyl-phe	5.00	5.32	106.35	80-120
59 4,6-Dinitro-2-Meth	5.00	5.26	105.29	80-120
58 4-Nitroaniline	5.00	5.14	102.71	80-120
60 N-Nitrosodiphenyla	5.00	4.35	86.98	80-120
61 4-Bromophenyl-phen	5.00	5.37	107.39	80-120
62 Hexachlorobenzene	5.00	5.09	101.72	80-120
63 Atrazine	5.00	4.96	99.25	80-120
64 Pentachlorophenol	5.00	5.14	102.75	80-120
66 Phenanthrene	5.00	5.19	103.79	80-120
67 Anthracene	5.00	5.18	103.62	80-120
68 Carbazole	5.00	4.70	94.02	80-120
69 Di-n-butylphthalat	5.00	5.40	107.97	80-120
70 Fluoranthene	5.00	5.47	109.48	80-120
72 Pyrene	5.00	5.09	101.89	80-120
73 Butylbenzylphthala	5.00	5.09	101.72	80-120
75 Benzo(a)anthracene	5.00	5.15	103.02	80-120
77 Chrysene	5.00	4.77	95.38	80-120
74 3,3'-Dichlorobenzi	5.00	3.09	61.84*	80-120
78 bis(2-Ethylhexyl)p	5.00	5.08	101.64	80-120
79 Di-n-octylphthalat	5.00	4.98	99.57	80-120
80 Benzo(b)fluoranthe	5.00	5.16	103.25	80-120
81 Benzo(k)fluoranthe	5.00	5.50	109.98	80-120
82 Benzo(a)pyrene	5.00	5.04	100.70	80-120
84 Indeno(1,2,3-cd)py	5.00	4.54	90.70	80-120
85 Dibenzo(a,h)anthra	5.00	4.68	93.51	80-120
86 Benzo(g,h,i)peryle	5.00	4.83	96.56	80-120

SURROGATE COMPOUND	CONC ADDED ug/Kgdrywt	CONC RECOVERED ug/Kgdrywt	% RECOVERED	LIMITS
$ 1 1,4-Dioxane-d8	2.00	0.000	*	30-150
$ 32 2-Methylnaphthale	2.00	0.000	*	19-94
$ 37 2,4-Dibromophenol	4.00	0.000	*	20-116
$ 55 Fluorene-D10	2.00	0.000	*	20-96
$ 71 Pyrene-D10	2.00	0.000	*	31-128

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8580.D
Report Date: 23-May-2018 10:23

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N051818.b\N8580.D
Lab Smp Id: WG228639-4
Inj Date : 18-MAY-2018 12:47
Operator : JCG   Inst ID: gcms-n.i
Smp Info : WG228639-4
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N051818.b\NSPSIM94.m
Meth Date : 21-May-2018 08:44 cgomez   Quant Type: ISTD
Cal Date : 17-MAY-2018 17:52   Cal File: N8559.D
Als bottle: 2   Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.663	3.642	(0.490)	48829	2.00000	2.00	
	2 1,4-Dioxane	88	3.705	3.684	(0.495)	52431	2.00000	1.98	
	3 N-Nitrosodimethylamine	74	4.125	4.104	(0.552)	73517	2.00000	2.04	
	4 Pyridine	79	4.157	4.125	(0.556)	124745	2.00000	2.02	
	5 Benzaldehyde	77	6.926	6.916	(0.926)	29079	2.00000	1.88	
	6 Phenol	94	7.077	7.077	(0.946)	337095	4.50000	4.48	
	7 Bis(2-Chloroethyl)ether	93	7.157	7.157	(0.957)	125239	2.00000	2.02	
	8 2-Chlorophenol	128	7.218	7.218	(0.965)	291623	4.50000	4.58	
	9 1,3-Dichlorobenzene	146	7.409	7.409	(0.991)	142995	2.00000	2.04	
*	10 1,4-Dichlorobenzene-D4	152	7.479	7.479	(1.000)	40620	0.80000	(a)	
	11 1,4-Dichlorobenzene	146	7.499	7.499	(1.003)	143581	2.00000	2.02	
	12 1,2-Dichlorobenzene	146	7.691	7.691	(1.028)	134030	2.00000	2.00	
	13 2-Methylphenol	108	7.831	7.832	(1.047)	242466	4.50000	4.58	
	14 2,2'-Oxybis(1-chloropropane)	45	7.842	7.842	(1.048)	138620	2.00000	2.06(Q)	
	15 Acetophenone	105	7.993	7.993	(0.877)	179339	2.00000	2.07	
	16 N-Nitroso-di-n-propylamine	70	8.013	8.013	(1.071)	86609	2.00000	2.03	
	17 3&4-Methylphenol	108	8.023	8.033	(1.073)	251941	4.50000	4.56	
	18 Hexachloroethane	117	8.123	8.113	(1.086)	54265	2.00000	2.01	
	19 Nitrobenzene	77	8.204	8.194	(0.901)	125708	2.00000	2.08	
	20 Isophorone	82	8.516	8.516	(0.935)	230474	2.00000	2.10	
	21 2-Nitrophenol	139	8.617	8.617	(0.946)	136302	4.50000	4.85	

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8580.D
Report Date: 23-May-2018 10:23

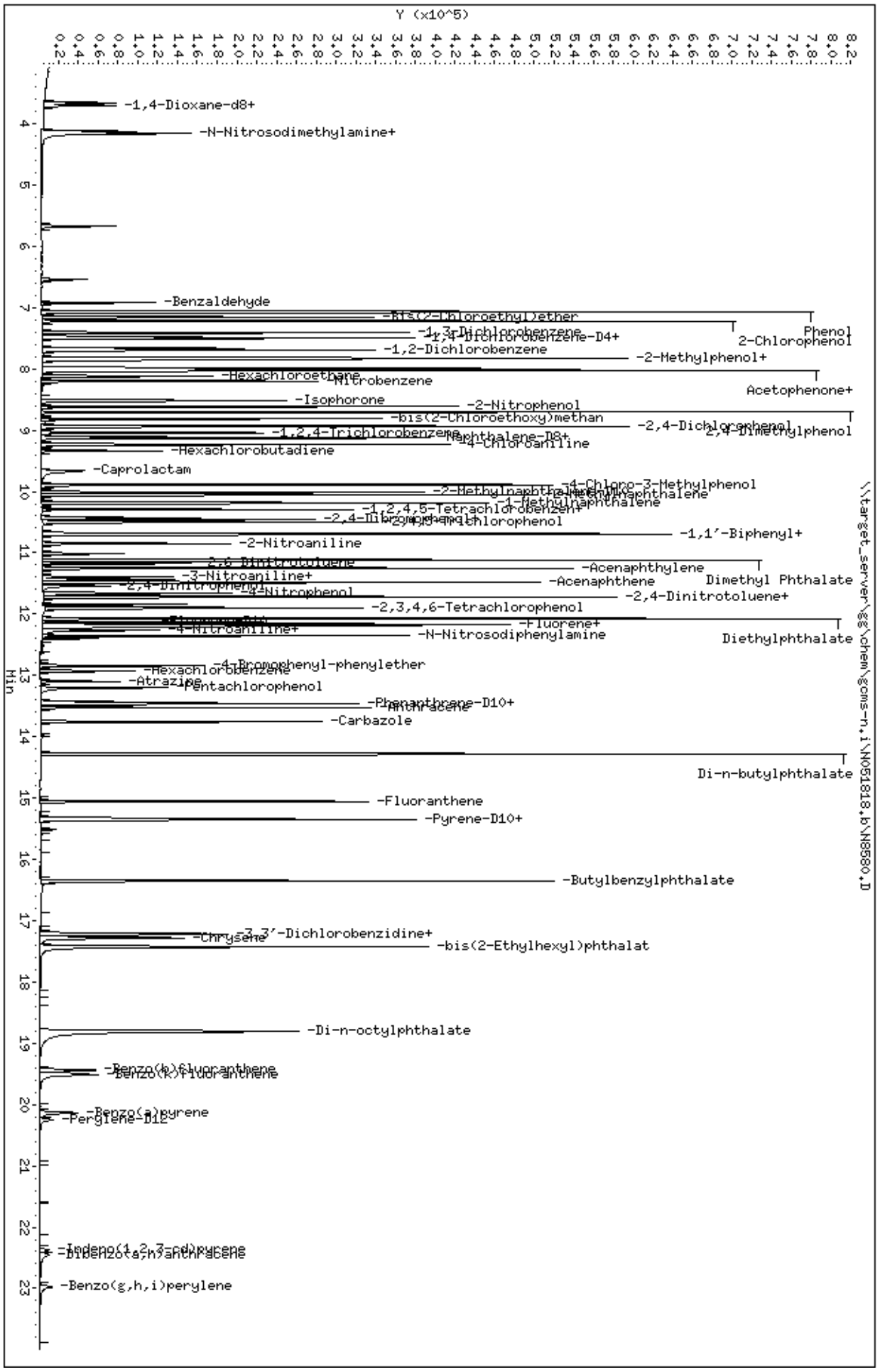
							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.707	8.707	(0.956)	274566	4.50000	4.62	
	23 bis(2-Chloroethoxy)methane	93	8.818	8.818	(0.968)	143711	2.00000	2.07	
	24 2,4-Dichlorophenol	162	8.939	8.939	(0.981)	209722	4.50000	4.72	
	25 1,2,4-Trichlorobenzene	180	9.049	9.050	(0.993)	96022	2.00000	2.02	
*	26 Naphthalene-D8	136	9.110	9.110	(1.000)	122433	0.80000	(a)	
	27 Naphthalene	128	9.130	9.130	(1.002)	316059	2.00000	2.05	
	28 4-Chloroaniline	127	9.231	9.221	(1.013)	127985	2.00000	2.27	
	29 Hexachlorobutadiene	225	9.341	9.331	(1.025)	58352	2.00000	2.01	
	30 Caprolactam	113	9.659	9.689	(1.060)	32235	2.00000	2.39	
	31 4-Chloro-3-Methylphenol	107	9.895	9.895	(1.086)	216339	4.50000	4.54	
$	32 2-Methylnaphthalene-D10	152	10.013	10.014	(1.099)	155743	2.00000	2.06	
	33 2-Methylnaphthalene	142	10.053	10.053	(1.103)	196932	2.00000	2.06	
	34 1-Methylnaphthalene	142	10.181	10.181	(1.118)	189651	2.00000	2.03	
	35 1,2,4,5-Tetrachlorobenzene	216	10.289	10.289	(0.899)	90286	2.00000	2.04	
	36 Hexachlorocyclopentadiene	237	10.299	10.299	(0.900)	44087	2.00000	1.92	
$	37 2,4-Dibromophenol	252	10.427	10.427	(0.911)	48180	2.00000	2.08	
	38 2,4,6-Trichlorophenol	196	10.456	10.456	(0.914)	130943	4.50000	4.75	
	39 2,4,5-Trichlorophenol	196	10.496	10.496	(0.917)	129115	4.50000	4.48	
	40 1,1'-Biphenyl	154	10.683	10.693	(0.934)	243263	2.00000	2.06	
	41 2-Chloronaphthalene	164	10.702	10.703	(0.935)	62678	2.00000	2.06	
	42 2-Nitroaniline	65	10.850	10.850	(0.948)	57943	2.00000	2.13	
	43 Dimethyl Phthalate	163	11.116	11.127	(0.971)	482104	4.50000	4.48	
	44 2,6-Dinitrotoluene	165	11.182	11.182	(0.977)	49161	2.00000	2.06	
	45 Acenaphthylene	152	11.247	11.247	(0.983)	282518	2.00000	2.06	
	46 3-Nitroaniline	138	11.400	11.411	(0.996)	32919	2.00000	2.05	
*	47 Acenaphthene-D10	164	11.443	11.443	(1.000)	51505	0.80000	(a)	
	48 Acenaphthene	153	11.487	11.487	(1.004)	180116	2.00000	2.03	
	49 2,4-Dinitrophenol	184	11.541	11.542	(1.009)	29913	4.50000	4.15	
	50 4-Nitrophenol	109	11.661	11.661	(1.019)	64496	4.50000	4.80	
	51 2,4-Dinitrotoluene	165	11.716	11.727	(1.024)	62438	2.00000	2.13	
	52 Dibenzofuran	168	11.716	11.727	(1.024)	252066	2.00000	2.06	
	53 2,3,4,6-Tetrachlorophenol	232	11.901	11.912	(1.040)	103023	4.50000	4.66	
	54 Diethylphthalate	149	12.075	12.075	(1.055)	533317	4.50000	4.48	
$	55 Fluorene-D10	174	12.141	12.141	(1.061)	137181	2.00000	2.03	
	56 Fluorene	166	12.173	12.184	(1.064)	185915	2.00000	2.02	
	57 4-Chlorophenyl-phenylether	204	12.195	12.195	(1.066)	102810	2.00000	2.03	
	58 4-Nitroaniline	138	12.217	12.228	(1.068)	25932	2.00000	2.31(Q)	
	59 4,6-Dinitro-2-Methylphenol	198	12.261	12.272	(0.914)	57411	4.50000	4.49	
	60 N-Nitrosodiphenylamine	169	12.359	12.359	(0.921)	158632	2.00000	2.06	
	61 4-Bromophenyl-phenylether	248	12.844	12.844	(0.957)	53851	2.00000	2.03	
	62 Hexachlorobenzene	284	12.930	12.930	(0.963)	48253	2.00000	1.97	
	63 Atrazine	200	13.100	13.101	(0.976)	38298	2.00000	2.05	
	64 Pentachlorophenol	266	13.196	13.197	(0.983)	57396	4.50000	4.77	
*	65 Phenanthrene-D10	188	13.421	13.431	(1.000)	83835	0.80000	(a)	
	66 Phenanthrene	178	13.453	13.464	(1.002)	250681	2.00000	2.01	
	67 Anthracene	178	13.527	13.528	(1.008)	245154	2.00000	2.06	
	68 Carbazole	167	13.752	13.752	(1.025)	196518	2.00000	2.16	
	69 Di-n-butylphthalate	149	14.275	14.286	(1.064)	856961	4.50000	4.46	
	70 Fluoranthene	202	15.060	15.060	(1.122)	246906	2.00000	2.07	
$	71 Pyrene-D10	212	15.332	15.332	(0.890)	156191	2.00000	1.91	
	72 Pyrene	202	15.350	15.360	(0.891)	257565	2.00000	1.89	
	73 Butylbenzylphthalate	149	16.354	16.355	(0.949)	361980	4.50000	4.37	
	74 3,3'-Dichlorobenzidine	252	17.218	17.218	(0.999)	28705	2.00000	2.24	
	75 Benzo(a)anthracene	228	17.218	17.218	(0.999)	145263	2.00000	2.01	

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8580.D
Report Date: 23-May-2018 10:23

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76	Chrysene-D12	240	17.236	17.236	(1.000)	40695	0.80000	(a)	
	77	Chrysene	228	17.283	17.283	(1.003)	147826	2.00000	1.90	
	78	bis(2-Ethylhexyl)phthalate	149	17.424	17.424	(1.011)	476686	4.50000	4.41	
	79	Di-n-octylphthalate	149	18.813	18.813	(1.091)	666598	4.50000	4.73	
	80	Benzo(b)fluoranthene	252	19.449	19.449	(0.961)	80082	2.00000	1.85	
	81	Benzo(k)fluoranthene	252	19.506	19.517	(0.964)	110390	2.00000	1.98(H)	
	82	Benzo(a)pyrene	252	20.130	20.130	(0.994)	66026	2.00000	1.85	
*	83	Perylene-D12	264	20.244	20.244	(1.000)	22745	0.80000	(a)	
	84	Indeno(1,2,3-cd)pyrene	276	22.368	22.379	(1.298)	21416	2.00000	1.81	
	85	Dibenzo(a,h)anthracene	278	22.447	22.447	(1.109)	23439	2.00000	1.70	
	86	Benzo(g,h,i)perylene	276	22.969	22.981	(1.135)	43264	2.00000	1.69	
M	87	Total PAHs	100				444803	36.0000	(a)	
M	88	Total Low PAHs	100				1657375	14.0000	(a)	
M	89	Total High PAHs	100				887025	12.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.


Data File: \\target_server\gg\chem\gcms-n,i\N051818,b\N8580,D
Date : 18-MAY-2018 12:47
Client ID:
Sample Info: MG228639-4
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N051818,b\N8580,D
Y (x10^5)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine+
-Benzaldehyde
-Bis(2-Chloroethyl)ether
-1,3-Dichlorobenzene
Phenol
-1,4-Dichlorobenzene-D4+
2-Chlorophenol
-1,2-Dichlorobenzene
-2-Methylphenol+
-Hexachloroethane
-Nitrobenzene
Acetophenone+
-Isophorone
-2-Nitrophenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
2,4-Dimethylphenol
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4-Dichlorophenol
-1,1'-Biphenyl+
-2-Nitroaniline
-Acenaphthylene
-3-Nitroaniline+
-Acenaphthene
Dimethyl Phthalate
-2,4-Dinitrophenol
-4-Nitrophenol
-2,4-Dinitrotoluene+
-2,3,4,6-Tetrachlorophenol
-Fluorene+
-4-Nitroaniline+
-N-Nitrosodiphenylamine
Diethylphthalate
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenzo(a,h)anthracene
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8581.D
Report Date: 23-May-2018 10:23

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N051818.b\N8581.D
Lab Smp Id: WG228639-2
Inj Date : 18-MAY-2018 13:18 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228639-2
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N051818.b\NSPSIM94.m
Meth Date : 21-May-2018 08:44 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 13:18 Cal File: N8581.D
Als bottle: 3 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.663	3.642	(0.490)	4196	0.20000	0.194(a)	
	2 1,4-Dioxane	88	3.705	3.684	(0.495)	4633	0.20000	0.198(a)	
	3 N-Nitrosodimethylamine	74	4.136	4.104	(0.553)	5813	0.20000	0.182(a)	
	4 Pyridine	79	4.199	4.125	(0.561)	9023	0.20000	0.165(a)	
	5 Benzaldehyde	77	6.936	6.916	(0.927)	3165	0.20000	0.232	
	6 Phenol	94	7.077	7.077	(0.946)	62503	1.00000	0.940(a)	
	7 Bis(2-Chloroethyl)ether	93	7.167	7.157	(0.958)	10444	0.20000	0.190(a)	
	8 2-Chlorophenol	128	7.228	7.218	(0.966)	54275	1.00000	0.964(a)	
	9 1,3-Dichlorobenzene	146	7.409	7.409	(0.991)	11699	0.20000	0.188(a)	
*	10 1,4-Dichlorobenzene-D4	152	7.479	7.479	(1.000)	35924	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	7.499	7.499	(1.003)	12008	0.20000	0.191(a)	
	12 1,2-Dichlorobenzene	146	7.701	7.691	(1.030)	11282	0.20000	0.191(a)	
	13 2-Methylphenol	108	7.832	7.832	(1.047)	44835	1.00000	0.957(a)	
	14 2,2'-Oxybis(1-chloropropane)	45	7.852	7.842	(1.050)	11321	0.20000	0.190(aQ)	
	15 Acetophenone	105	8.003	7.993	(0.878)	14689	0.20000	0.191(a)	
	16 N-Nitroso-di-n-propylamine	70	8.023	8.013	(1.073)	7118	0.20000	0.188(a)	
	17 3&4-Methylphenol	108	8.023	8.033	(1.073)	47095	1.00000	0.965(a)	
	18 Hexachloroethane	117	8.123	8.113	(1.086)	4613	0.20000	0.193(a)	
	19 Nitrobenzene	77	8.204	8.194	(0.901)	10062	0.20000	0.187(aQ)	
	20 Isophorone	82	8.536	8.516	(0.937)	17424	0.20000	0.178(a)	
	21 2-Nitrophenol	139	8.627	8.617	(0.947)	21778	1.00000	0.870(a)	

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8581.D
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							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.707	8.707	(0.956)	51707	1.00000	0.977	
	23 bis(2-Chloroethoxy)methane	93	8.828	8.818	(0.969)	11680	0.20000	0.189(a)	
	24 2,4-Dichlorophenol	162	8.949	8.939	(0.982)	37376	1.00000	0.945	
	25 1,2,4-Trichlorobenzene	180	9.050	9.050	(0.993)	8294	0.20000	0.196(a)	
*	26 Naphthalene-D8	136	9.110	9.110	(1.000)	108903	0.80000	(a)	
	27 Naphthalene	128	9.140	9.130	(1.003)	27073	0.20000	0.197(a)	
	28 4-Chloroaniline	127	9.241	9.221	(1.014)	8889	0.20000	0.177(a)	
	29 Hexachlorobutadiene	225	9.342	9.331	(1.025)	5079	0.20000	0.197(a)	
	30 Caprolactam	113	9.728	9.689	(1.068)	1893	0.20000	0.158(aM)	M9
	31 4-Chloro-3-Methylphenol	107	9.895	9.895	(1.086)	40872	1.00000	0.965(a)	
$	32 2-Methylnaphthalene-D10	152	10.023	10.014	(1.100)	13100	0.20000	0.195(a)	
	33 2-Methylnaphthalene	142	10.063	10.053	(1.105)	16686	0.20000	0.196(a)	
	34 1-Methylnaphthalene	142	10.191	10.181	(1.119)	16283	0.20000	0.196(a)	
	35 1,2,4,5-Tetrachlorobenzene	216	10.299	10.289	(0.900)	7863	0.20000	0.193(a)	
	36 Hexachlorocyclopentadiene	237	10.299	10.299	(0.900)	2674	0.20000	0.388	
$	37 2,4-Dibromophenol	252	10.437	10.427	(0.912)	3572	0.20000	0.167(a)	
	38 2,4,6-Trichlorophenol	196	10.456	10.456	(0.914)	22399	1.00000	0.882(a)	
	39 2,4,5-Trichlorophenol	196	10.506	10.496	(0.918)	25096	1.00000	0.946(a)	
	40 1,1'-Biphenyl	154	10.693	10.693	(0.934)	20821	0.20000	0.192(a)	
	41 2-Chloronaphthalene	164	10.702	10.703	(0.935)	5193	0.20000	0.185(a)	
	42 2-Nitroaniline	65	10.860	10.850	(0.949)	4082	0.20000	0.162(a)	
	43 Dimethyl Phthalate	163	11.127	11.127	(0.972)	96458	1.00000	0.973(a)	
	44 2,6-Dinitrotoluene	165	11.182	11.182	(0.977)	3596	0.20000	0.163(a)	
	45 Acenaphthylene	152	11.247	11.247	(0.983)	23218	0.20000	0.184(a)	
	46 3-Nitroaniline	138	11.411	11.411	(0.997)	2540	0.20000	0.171(a)	
*	47 Acenaphthene-D10	164	11.443	11.443	(1.000)	47482	0.80000	(a)	
	48 Acenaphthene	153	11.487	11.487	(1.004)	15471	0.20000	0.189(a)	
	50 4-Nitrophenol	109	11.672	11.661	(1.020)	8625	1.00000	0.968(a)	
	51 2,4-Dinitrotoluene	165	11.727	11.727	(1.025)	4105	0.20000	0.152(a)	
	52 Dibenzofuran	168	11.727	11.727	(1.025)	21784	0.20000	0.193(a)	
	53 2,3,4,6-Tetrachlorophenol	232	11.912	11.912	(1.041)	15184	1.00000	0.746(a)	
	54 Diethylphthalate	149	12.075	12.075	(1.055)	104329	1.00000	0.950(a)	WAS
$	55 Fluorene-D10	174	12.141	12.141	(1.061)	11630	0.20000	0.187(a)	
	56 Fluorene	166	12.184	12.184	(1.065)	15468	0.20000	0.183(a)	*1:47 pm, May 23, 2018*
	57 4-Chlorophenyl-phenylether	204	12.206	12.195	(1.067)	8885	0.20000	0.190(a)	
	58 4-Nitroaniline	138	12.228	12.228	(1.069)	2182	0.20000	0.211	
	59 4,6-Dinitro-2-Methylphenol	198	12.272	12.272	(0.914)	4214	1.00000	0.914(a)	
	60 N-Nitrosodiphenylamine	169	12.359	12.359	(0.920)	12575	0.20000	0.191(a)	
	61 4-Bromophenyl-phenylether	248	12.855	12.844	(0.957)	4379	0.20000	0.193(a)	
	62 Hexachlorobenzene	284	12.930	12.930	(0.963)	4312	0.20000	0.205	
	63 Atrazine	200	13.100	13.101	(0.975)	2876	0.20000	0.180(a)	
	64 Pentachlorophenol	266	13.218	13.197	(0.984)	998	1.00000	0.844(a)	
*	65 Phenanthrene-D10	188	13.431	13.431	(1.000)	71740	0.80000	(a)	
	66 Phenanthrene	178	13.463	13.464	(1.002)	21322	0.20000	0.200	
	67 Anthracene	178	13.528	13.528	(1.007)	18363	0.20000	0.181(a)	
	68 Carbazole	167	13.752	13.752	(1.024)	14420	0.20000	0.185(a)	
	69 Di-n-butylphthalate	149	14.286	14.286	(1.064)	160720	1.00000	0.977(a)	
	70 Fluoranthene	202	15.060	15.060	(1.121)	19159	0.20000	0.187(a)	
$	71 Pyrene-D10	212	15.332	15.332	(0.890)	11719	0.20000	0.231(a)	
	72 Pyrene	202	15.351	15.360	(0.891)	20101	0.20000	0.238	
	73 Butylbenzylphthalate	149	16.354	16.355	(0.949)	59213	1.00000	1.15	
	74 3,3'-Dichlorobenzidine	252	17.218	17.218	(0.999)	1160	0.20000	0.146(a)	
	75 Benzo(a)anthracene	228	17.218	17.218	(0.999)	9658	0.20000	0.215	
*	76 Chrysene-D12	240	17.236	17.236	(1.000)	25220	0.80000	(a)	

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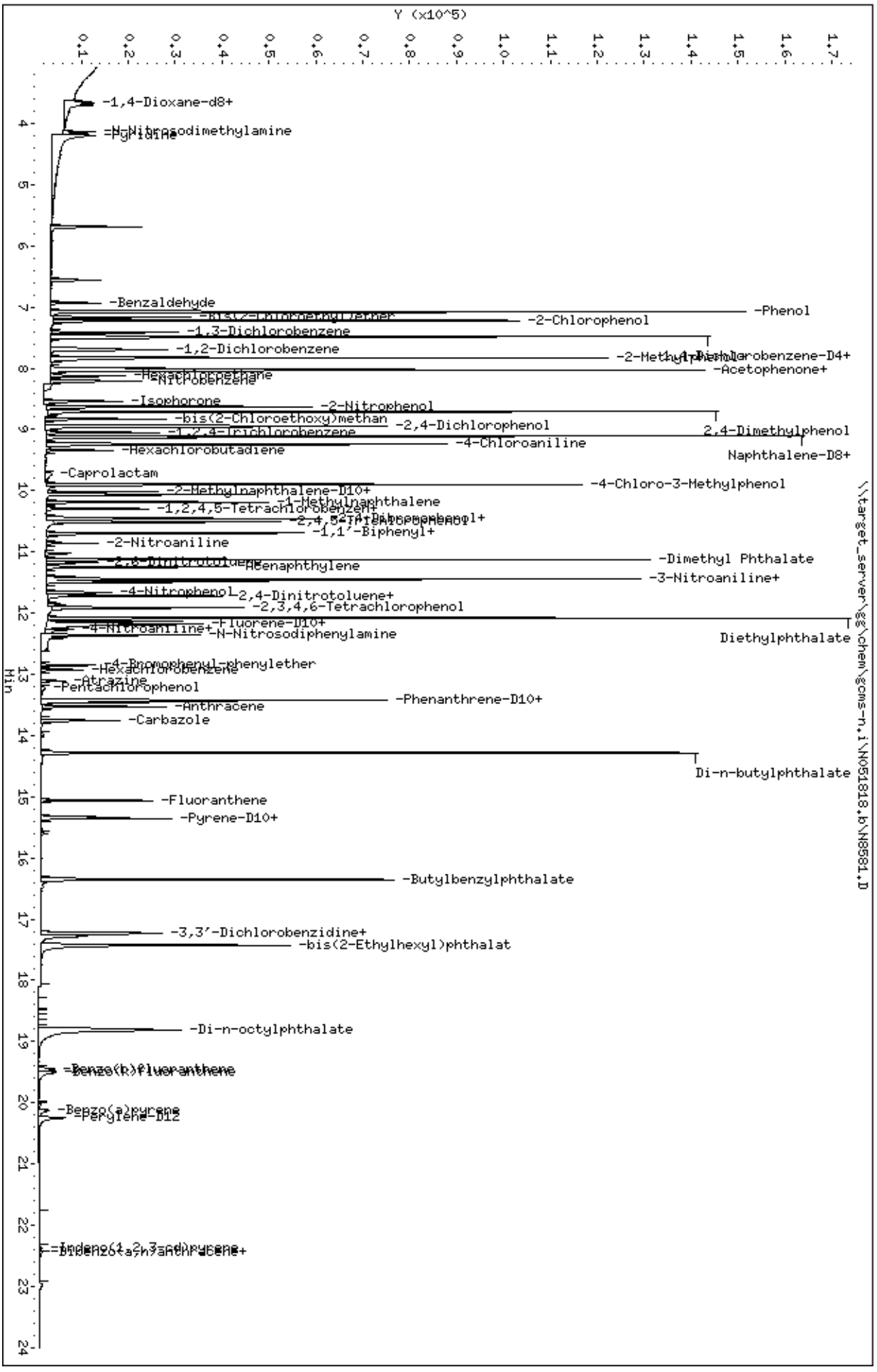
			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	77	Chrysene	228	17.283	17.283	(1.003)	12160	0.20000	0.253	
	78	bis(2-Ethylhexyl)phthalate	149	17.424	17.424	(1.011)	77321	1.00000	1.15	
	79	Di-n-octylphthalate	149	18.802	18.813	(1.091)	90279	1.00000	1.03	
	80	Benzo(b)fluoranthene	252	19.449	19.449	(0.961)	5455	0.20000	0.222	
	81	Benzo(k)fluoranthene	252	19.506	19.517	(0.964)	9384	0.20000	0.154(aH)	
	82	Benzo(a)pyrene	252	20.130	20.130	(0.994)	3662	0.20000	0.180(a)	
*	83	Perylene-D12	264	20.244	20.244	(1.000)	12935	0.80000	(a)	
	84	Indeno(1,2,3-cd)pyrene	276	22.368	22.379	(1.298)	2469	0.20000	0.427	
	85	Dibenzo(a,h)anthracene	278	22.447	22.447	(1.109)	1163	0.20000	0.284	
	86	Benzo(g,h,i)perylene	276	22.970	22.981	(1.135)	3310	0.20000	0.228	
M	87	Total PAHs	100				36901	3.60000	(a)	
M	88	Total Low PAHs	100				137601	1.40000	(a)	
M	89	Total High PAHs	100				65903	1.20000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.


Data File: \\target_server\gg\chem\gcms-n,i\N051818,b\N8581.D
Date : 18-MAY-2018 13:18
Client ID:
Sample Info: WG228639-2
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N051818,b\N8581.D
Y (x10^5)
Min
-1,4-Dioxane-d8+
-Benzaldehyde
-Phenol
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,2-Dichlorobenzene
-Acetophenone+
-Isophorone
-2-Nitrophenol
-2,4-Dichlorophenol
2,4-Dimethylphenol
-4-Chloroaniline
Naphthalene-D8+
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene-D10+
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzene+
-1,1'-Biphenyl+
-2-Nitroaniline
-Dimethyl Phthalate
-3-Nitroaniline+
-4-Nitrophenol
-2,3,4,6-Tetrachlorophenol
-Fluorene-D10+
-4-Nitroaniline+
Diethylphthalate
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(a)pyrene
-Perylene-D12

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8582.D
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Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N051818.b\N8582.D
Lab Smp Id: WG228639-3
Inj Date : 18-MAY-2018 13:49 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228639-3
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N051818.b\NSPSIM94.m
Meth Date : 21-May-2018 08:44 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 13:49 Cal File: N8582.D
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.663	3.642	(0.490)	11032	0.50000	0.495(a)	
	2 1,4-Dioxane	88	3.705	3.684	(0.495)	12624	0.50000	0.524(a)	
	3 N-Nitrosodimethylamine	74	4.136	4.104	(0.553)	16194	0.50000	0.492	
	4 Pyridine	79	4.178	4.125	(0.559)	28105	0.50000	0.498	
	5 Benzaldehyde	77	6.926	6.916	(0.926)	8065	0.50000	0.573	
	6 Phenol	94	7.077	7.077	(0.946)	131333	2.00000	1.92	
	7 Bis(2-Chloroethyl)ether	93	7.167	7.157	(0.958)	27654	0.50000	0.489	
	8 2-Chlorophenol	128	7.228	7.218	(0.966)	113685	2.00000	1.96	
	9 1,3-Dichlorobenzene	146	7.409	7.409	(0.991)	31914	0.50000	0.499	
*	10 1,4-Dichlorobenzene-D4	152	7.479	7.479	(1.000)	37015	0.80000	(a)	
	11 1,4-Dichlorobenzene	146	7.499	7.499	(1.003)	32254	0.50000	0.498	
	12 1,2-Dichlorobenzene	146	7.691	7.691	(1.028)	30410	0.50000	0.499	
	13 2-Methylphenol	108	7.832	7.832	(1.047)	94035	2.00000	1.95	
	14 2,2'-Oxybis(1-chloropropane)	45	7.852	7.842	(1.050)	30836	0.50000	0.504(Q)	
	15 Acetophenone	105	7.993	7.993	(0.877)	39745	0.50000	0.501	
	16 N-Nitroso-di-n-propylamine	70	8.013	8.013	(1.071)	18765	0.50000	0.482	
	17 3&4-Methylphenol	108	8.023	8.033	(1.073)	99617	2.00000	1.98	
	18 Hexachloroethane	117	8.123	8.113	(1.086)	12296	0.50000	0.499	
	19 Nitrobenzene	77	8.204	8.194	(0.901)	27430	0.50000	0.497(Q)	
	20 Isophorone	82	8.526	8.516	(0.936)	47862	0.50000	0.476	
	21 2-Nitrophenol	139	8.627	8.617	(0.947)	45706	2.00000	1.78	

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8582.D
Report Date: 23-May-2018 10:23

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.707	8.707	(0.956)	108405	2.00000	1.99	
	23 bis(2-Chloroethoxy)methane	93	8.828	8.818	(0.969)	31065	0.50000	0.490	
	24 2,4-Dichlorophenol	162	8.939	8.939	(0.981)	79322	2.00000	1.95	
	25 1,2,4-Trichlorobenzene	180	9.050	9.050	(0.993)	21803	0.50000	0.501	
*	26 Naphthalene-D8	136	9.110	9.110	(1.000)	112056	0.80000	(a)	
	27 Naphthalene	128	9.140	9.130	(1.003)	71378	0.50000	0.505	
	28 4-Chloroaniline	127	9.231	9.221	(1.013)	25901	0.50000	0.502(a)	
	29 Hexachlorobutadiene	225	9.342	9.331	(1.025)	13205	0.50000	0.497	
	30 Caprolactam	113	9.689	9.689	(1.064)	5518	0.50000	0.446	
	31 4-Chloro-3-Methylphenol	107	9.895	9.895	(1.086)	84299	2.00000	1.93	
$	32 2-Methylnaphthalene-D10	152	10.014	10.014	(1.099)	34136	0.50000	0.494(a)	
	33 2-Methylnaphthalene	142	10.063	10.053	(1.105)	43008	0.50000	0.491	
	34 1-Methylnaphthalene	142	10.191	10.181	(1.119)	41793	0.50000	0.489	
	35 1,2,4,5-Tetrachlorobenzene	216	10.289	10.289	(0.899)	20301	0.50000	0.510	
	36 Hexachlorocyclopentadiene	237	10.299	10.299	(0.900)	7691	0.50000	0.598	
$	37 2,4-Dibromophenol	252	10.427	10.427	(0.911)	9456	0.50000	0.455(a)	
	38 2,4,6-Trichlorophenol	196	10.456	10.456	(0.914)	48205	2.00000	1.95	
	39 2,4,5-Trichlorophenol	196	10.496	10.496	(0.917)	52106	2.00000	2.01	
	40 1,1'-Biphenyl	154	10.693	10.693	(0.934)	53741	0.50000	0.507	
	41 2-Chloronaphthalene	164	10.702	10.703	(0.935)	13674	0.50000	0.500	
	42 2-Nitroaniline	65	10.850	10.850	(0.948)	11089	0.50000	0.453	
	43 Dimethyl Phthalate	163	11.117	11.127	(0.971)	186929	2.00000	1.93	
	44 2,6-Dinitrotoluene	165	11.182	11.182	(0.977)	9854	0.50000	0.459	
	45 Acenaphthylene	152	11.247	11.247	(0.983)	61344	0.50000	0.498	
	46 3-Nitroaniline	138	11.411	11.411	(0.997)	6362	0.50000	0.440	
*	47 Acenaphthene-D10	164	11.443	11.443	(1.000)	46292	0.80000	(a)	
	48 Acenaphthene	153	11.487	11.487	(1.004)	39830	0.50000	0.500	
	49 2,4-Dinitrophenol	184	11.552	11.542	(1.010)	2176	2.00000	0.336(a)	
	50 4-Nitrophenol	109	11.661	11.661	(1.019)	20014	2.00000	1.87	
	51 2,4-Dinitrotoluene	165	11.716	11.727	(1.024)	11309	0.50000	0.429	
	52 Dibenzofuran	168	11.716	11.727	(1.024)	54190	0.50000	0.493	
	53 2,3,4,6-Tetrachlorophenol	232	11.912	11.912	(1.041)	36343	2.00000	1.83	
	54 Diethylphthalate	149	12.075	12.075	(1.055)	204226	2.00000	1.91	
$	55 Fluorene-D10	174	12.141	12.141	(1.061)	30063	0.50000	0.495(a)	
	56 Fluorene	166	12.174	12.184	(1.064)	40918	0.50000	0.496	
	57 4-Chlorophenyl-phenylether	204	12.195	12.195	(1.066)	22259	0.50000	0.488	
	58 4-Nitroaniline	138	12.228	12.228	(1.069)	5603	0.50000	0.556	
	59 4,6-Dinitro-2-Methylphenol	198	12.272	12.272	(0.914)	13432	2.00000	1.68	
	60 N-Nitrosodiphenylamine	169	12.359	12.359	(0.920)	32626	0.50000	0.508	
	61 4-Bromophenyl-phenylether	248	12.844	12.844	(0.956)	11045	0.50000	0.501	
	62 Hexachlorobenzene	284	12.930	12.930	(0.963)	10857	0.50000	0.532	
	63 Atrazine	200	13.100	13.101	(0.975)	7403	0.50000	0.475	
	64 Pentachlorophenol	266	13.207	13.197	(0.983)	6735	2.00000	1.32	
*	65 Phenanthrene-D10	188	13.431	13.431	(1.000)	69791	0.80000	(a)	
	66 Phenanthrene	178	13.453	13.464	(1.002)	53961	0.50000	0.519	
	67 Anthracene	178	13.528	13.528	(1.007)	47628	0.50000	0.482	
	68 Carbazole	167	13.752	13.752	(1.024)	38035	0.50000	0.502	
	69 Di-n-butylphthalate	149	14.286	14.286	(1.064)	320479	2.00000	2.00	
	70 Fluoranthene	202	15.060	15.060	(1.121)	47436	0.50000	0.477	
$	71 Pyrene-D10	212	15.332	15.332	(0.890)	29714	0.50000	0.532(a)	
	72 Pyrene	202	15.351	15.360	(0.891)	51333	0.50000	0.552	
	73 Butylbenzylphthalate	149	16.354	16.355	(0.949)	119970	2.00000	2.12	
	74 3,3'-Dichlorobenzidine	252	17.218	17.218	(0.999)	3888	0.50000	0.444	
	75 Benzo(a)anthracene	228	17.218	17.218	(0.999)	23920	0.50000	0.484	

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8582.D
Report Date: 23-May-2018 10:23

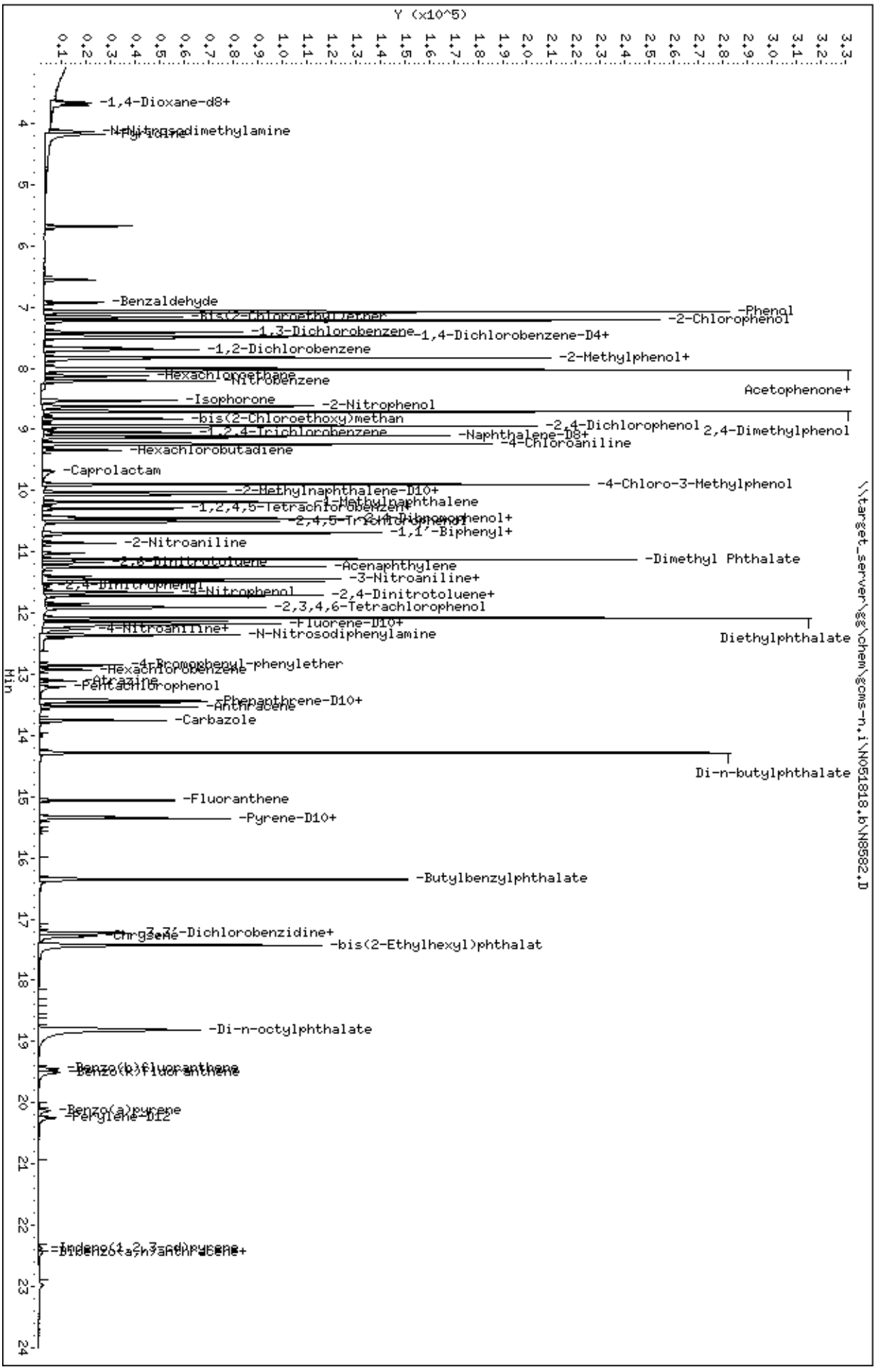
							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76 Chrysene-D12	240	17.236	17.236	(1.000)	27767	0.80000	(a)	
	77 Chrysene	228	17.283	17.283	(1.003)	27829	0.50000	0.525	
	78 bis(2-Ethylhexyl)phthalate	149	17.424	17.424	(1.011)	157240	2.00000	2.13	
	79 Di-n-octylphthalate	149	18.802	18.813	(1.091)	191589	2.00000	1.99	
	80 Benzo(b)fluoranthene	252	19.438	19.449	(0.960)	12620	0.50000	0.448	
	81 Benzo(k)fluoranthene	252	19.506	19.517	(0.964)	21625	0.50000	0.477(H)	
	82 Benzo(a)pyrene	252	20.130	20.130	(0.994)	12022	0.50000	0.517	
*	83 Perylene-D12	264	20.244	20.244	(1.000)	14830	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	22.368	22.379	(1.298)	2850	0.50000	0.443(M)	M3
	85 Dibenzo(a,h)anthracene	278	22.447	22.447	(1.109)	3504	0.50000	0.508	
	86 Benzo(g,h,i)perylene	276	22.970	22.981	(1.135)	6940	0.50000	0.416	
M	87 Total PAHs	100				85828	9.00000	(a)	
M	88 Total Low PAHs	100				358067	3.50000	(a)	
M	89 Total High PAHs	100				166044	3.00000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

WAS

1:48 pm, May 23, 2018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Date : 18-MAY-2018 13:49
Client ID:
Sample Info: WG228639-3
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N051818,b\N8582,D
Y (x10^5)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine
-Benzaldehyde
-Phenol
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Hexachloroethane
-Nitrobenzene
Acetophenone+
-Isophorone
-2-Nitrophenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
2,4-Dimethylphenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene-D10+
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4-Dibromophenol+
-1,1'-Biphenyl+
-2-Nitroaniline
-Dimethyl Phthalate
-Acenaphthylene
-3-Nitroaniline+
-2,4-Dinitrotoluene+
-2,3,4,6-Tetrachlorophenol
-Fluorene-D10+
-4-Nitroaniline+
-N-Nitrosodiphenylamine
Diethylphthalate
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+
-Dibenz(a,h)anthracene+

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8583.D
Report Date: 23-May-2018 10:23

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N051818.b\N8583.D
Lab Smp Id: WG228639-5
Inj Date : 18-MAY-2018 14:21 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228639-5
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N051818.b\NSPSIM94.m
Meth Date : 21-May-2018 08:44 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 14:21 Cal File: N8583.D
Als bottle: 5 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.642	3.642	(0.487)	145136	7.00000	6.87	
	2 1,4-Dioxane	88	3.684	3.684	(0.493)	152957	7.00000	6.69	
	3 N-Nitrosodimethylamine	74	4.104	4.104	(0.549)	219543	7.00000	7.03	
	4 Pyridine	79	4.125	4.125	(0.552)	387292	7.00000	7.24	
	5 Benzaldehyde	77	6.916	6.916	(0.925)	92810	7.00000	6.94	
	6 Phenol	94	7.077	7.077	(0.946)	456447	7.00000	7.02(Q)	
	7 Bis(2-Chloroethyl)ether	93	7.157	7.157	(0.957)	376472	7.00000	7.02	
	8 2-Chlorophenol	128	7.218	7.218	(0.965)	379672	7.00000	6.90	
	9 1,3-Dichlorobenzene	146	7.409	7.409	(0.991)	421737	7.00000	6.95	
*	10 1,4-Dichlorobenzene-D4	152	7.479	7.479	(1.000)	35128	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	7.499	7.499	(1.003)	427871	7.00000	6.97	
	12 1,2-Dichlorobenzene	146	7.691	7.691	(1.028)	403938	7.00000	6.99	
	13 2-Methylphenol	108	7.832	7.832	(1.047)	319836	7.00000	6.98	
	14 2,2'-Oxybis(1-chloropropane)	45	7.842	7.842	(1.048)	407344	7.00000	7.01(Q)	
	15 Acetophenone	105	7.993	7.993	(0.877)	540111	7.00000	6.89	
	16 N-Nitroso-di-n-propylamine	70	8.003	8.013	(1.070)	258870	7.00000	7.00	
	17 3&4-Methylphenol	108	8.023	8.033	(1.073)	328536	7.00000	6.88	
	18 Hexachloroethane	117	8.123	8.113	(1.086)	163532	7.00000	7.00	
	19 Nitrobenzene	77	8.194	8.194	(0.899)	376736	7.00000	6.90(Q)	
	20 Isophorone	82	8.516	8.516	(0.935)	706673	7.00000	7.11	
	21 2-Nitrophenol	139	8.617	8.617	(0.946)	181265	7.00000	7.12	

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8583.D
Report Date: 23-May-2018 10:23

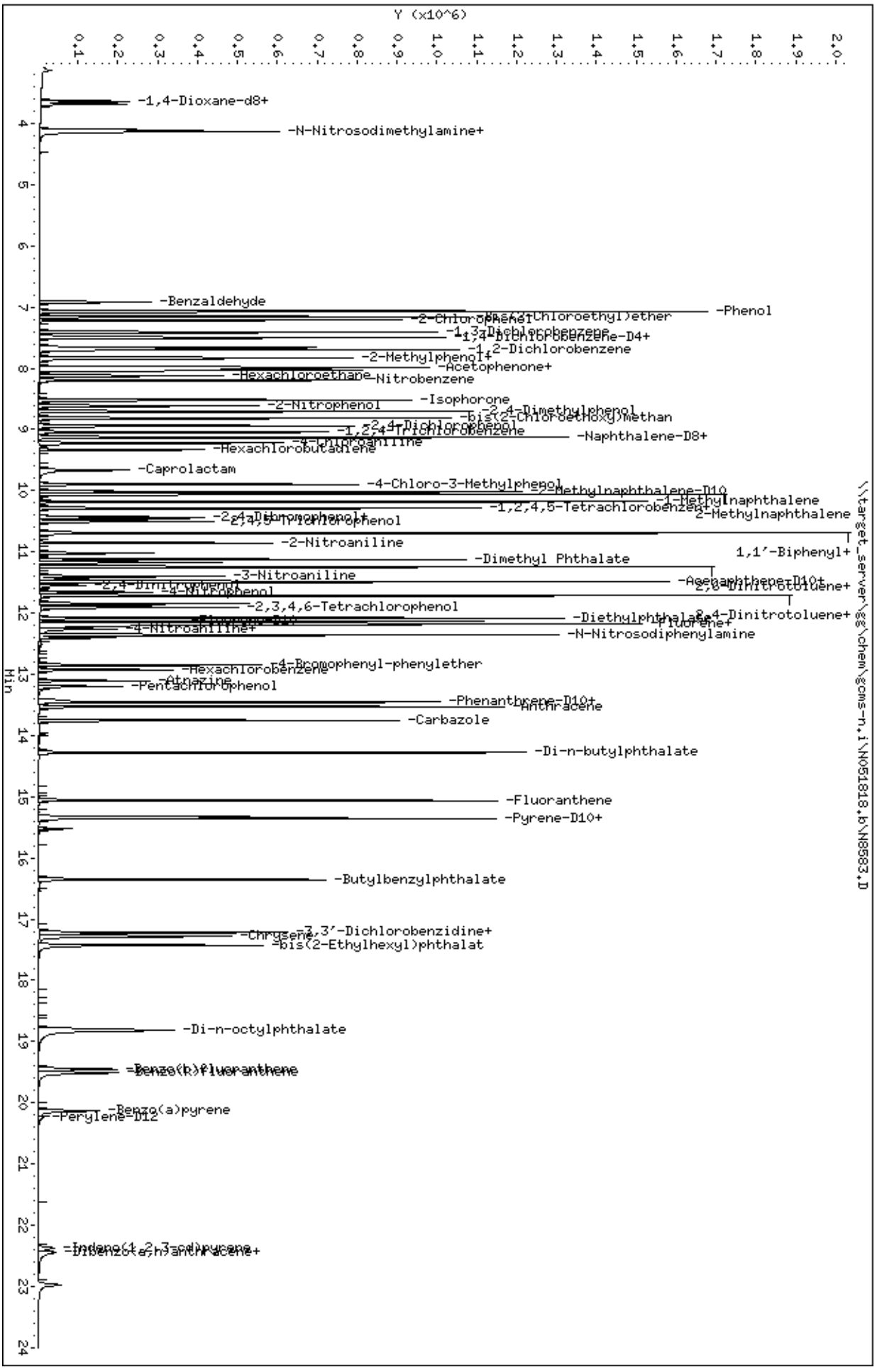
							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.707	8.707	(0.956)	370134	7.00000	6.87	
	23 bis(2-Chloroethoxy)methane	93	8.818	8.818	(0.968)	437004	7.00000	6.96	
	24 2,4-Dichlorophenol	162	8.939	8.939	(0.981)	278511	7.00000	6.92	
	25 1,2,4-Trichlorobenzene	180	9.050	9.050	(0.993)	297924	7.00000	6.92	
*	26 Naphthalene-D8	136	9.110	9.110	(1.000)	110814	0.80000	(a)	
	27 Naphthalene	128	9.130	9.130	(1.002)	968416	7.00000	6.93	
	28 4-Chloroaniline	127	9.221	9.221	(1.012)	376190	7.00000	7.37	
	29 Hexachlorobutadiene	225	9.331	9.331	(1.024)	180919	7.00000	6.89	
	30 Caprolactam	113	9.659	9.689	(1.060)	84985	7.00000	6.95(H)	
	31 4-Chloro-3-Methylphenol	107	9.895	9.895	(1.086)	300221	7.00000	6.96	
$	32 2-Methylnaphthalene-D10	152	10.013	10.014	(1.099)	479674	7.00000	7.02	
	33 2-Methylnaphthalene	142	10.053	10.053	(1.103)	603784	7.00000	6.97	
	34 1-Methylnaphthalene	142	10.181	10.181	(1.118)	588147	7.00000	6.95	
	35 1,2,4,5-Tetrachlorobenzene	216	10.289	10.289	(0.899)	286520	7.00000	6.87	
	36 Hexachlorocyclopentadiene	237	10.289	10.299	(0.899)	156158	7.00000	6.42	
$	37 2,4-Dibromophenol	252	10.427	10.427	(0.911)	158390	7.00000	7.26	
	38 2,4,6-Trichlorophenol	196	10.447	10.456	(0.913)	181958	7.00000	7.01	
	39 2,4,5-Trichlorophenol	196	10.496	10.496	(0.917)	187343	7.00000	6.90	
	40 1,1'-Biphenyl	154	10.683	10.693	(0.934)	764553	7.00000	6.88	
	41 2-Chloronaphthalene	164	10.702	10.703	(0.935)	199519	7.00000	6.96	
	42 2-Nitroaniline	65	10.850	10.850	(0.948)	190421	7.00000	7.42	
	43 Dimethyl Phthalate	163	11.117	11.127	(0.971)	702590	7.00000	6.93	
	44 2,6-Dinitrotoluene	165	11.182	11.182	(0.977)	165871	7.00000	7.37	
	45 Acenaphthylene	152	11.247	11.247	(0.983)	923599	7.00000	7.14	
	46 3-Nitroaniline	138	11.400	11.411	(0.996)	116490	7.00000	7.69	
*	47 Acenaphthene-D10	164	11.443	11.443	(1.000)	48554	0.80000	(a)	
	48 Acenaphthene	153	11.487	11.487	(1.004)	585043	7.00000	7.00	
	49 2,4-Dinitrophenol	184	11.541	11.542	(1.009)	49512	7.00000	7.29	
	50 4-Nitrophenol	109	11.661	11.661	(1.019)	85608	7.00000	6.63	
	51 2,4-Dinitrotoluene	165	11.716	11.727	(1.024)	206297	7.00000	7.46	
	52 Dibenzofuran	168	11.716	11.727	(1.024)	811514	7.00000	7.04	
	53 2,3,4,6-Tetrachlorophenol	232	11.901	11.912	(1.040)	152462	7.00000	7.32	
	54 Diethylphthalate	149	12.075	12.075	(1.055)	810180	7.00000	7.21	
$	55 Fluorene-D10	174	12.141	12.141	(1.061)	455945	7.00000	7.16	
	56 Fluorene	166	12.173	12.184	(1.064)	610088	7.00000	7.04	
	57 4-Chlorophenyl-phenylether	204	12.195	12.195	(1.066)	336396	7.00000	7.04	
	58 4-Nitroaniline	138	12.217	12.228	(1.068)	71287	7.00000	6.74(Q)	
	59 4,6-Dinitro-2-Methylphenol	198	12.261	12.272	(0.914)	88668	7.00000	6.90	
	60 N-Nitrosodiphenylamine	169	12.359	12.359	(0.921)	519615	7.00000	7.06	
	61 4-Bromophenyl-phenylether	248	12.844	12.844	(0.957)	175728	7.00000	6.95	
	62 Hexachlorobenzene	284	12.930	12.930	(0.963)	159764	7.00000	6.81	
	63 Atrazine	200	13.100	13.101	(0.976)	130562	7.00000	7.30	
	64 Pentachlorophenol	266	13.197	13.197	(0.983)	78534	7.00000	6.53	
*	65 Phenanthrene-D10	188	13.421	13.431	(1.000)	80103	0.80000	(a)	
	66 Phenanthrene	178	13.453	13.464	(1.002)	820197	7.00000	6.88	
	67 Anthracene	178	13.527	13.528	(1.008)	823478	7.00000	7.26	
	68 Carbazole	167	13.752	13.752	(1.025)	634113	7.00000	7.30	
	69 Di-n-butylphthalate	149	14.275	14.286	(1.064)	1308167	7.00000	7.12	
	70 Fluoranthene	202	15.060	15.060	(1.122)	825986	7.00000	7.24	
$	71 Pyrene-D10	212	15.332	15.332	(0.890)	511446	7.00000	6.47	
	72 Pyrene	202	15.351	15.360	(0.891)	842626	7.00000	6.39	
	73 Butylbenzylphthalate	149	16.354	16.355	(0.949)	525265	7.00000	6.56	
	74 3,3'-Dichlorobenzidine	252	17.218	17.218	(0.999)	95240	7.00000	7.68	
	75 Benzo(a)anthracene	228	17.218	17.218	(0.999)	472077	7.00000	6.75	

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8583.D
Report Date: 23-May-2018 10:23

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76	Chrysene-D12	240	17.236	17.236	(1.000)	39356	0.80000	(a)	
	77	Chrysene	228	17.283	17.283	(1.003)	474848	7.00000	6.32	
	78	bis(2-Ethylhexyl)phthalate	149	17.424	17.424	(1.011)	683817	7.00000	6.54	
	79	Di-n-octylphthalate	149	18.802	18.813	(1.091)	920416	7.00000	6.75	
	80	Benzo(b)fluoranthene	252	19.449	19.449	(0.961)	260577	7.00000	6.74	
	81	Benzo(k)fluoranthene	252	19.506	19.517	(0.964)	348754	7.00000	7.39(H)	
	82	Benzo(a)pyrene	252	20.130	20.130	(0.994)	227427	7.00000	7.12	
*	83	Perylene-D12	264	20.244	20.244	(1.000)	20365	0.80000	(a)	
	84	Indeno(1,2,3-cd)pyrene	276	22.368	22.379	(1.298)	84364	7.00000	6.56	
	85	Dibenzo(a,h)anthracene	278	22.447	22.447	(1.109)	98456	7.00000	6.99	
	86	Benzo(g,h,i)perylene	276	22.970	22.981	(1.135)	163876	7.00000	7.16	
M	87	Total PAHs	100				1445718	126.000	(a)	
M	88	Total Low PAHs	100				5334605	49.0000	(a)	
M	89	Total High PAHs	100				2941420	42.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.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Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N051818,b\N8583,D
Y (x10^6)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine+
-Benzaldehyde
-Phenol
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-Hexachloroethane
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)Methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene-D10
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzene
2-Methylnaphthalene
-2,4-Dibromophenol+
2,4,5-Trichlorophenol
-2-Nitroaniline
1,1'-Biphenyl+
-Dimethyl Phthalate
-3-Nitroaniline
-Acenaphthene-D10+
2,6-Dinitrotoluene+
-2,4-Dinitrophenol
-4-Nitrophenol
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
2,4-Dinitrotoluene+
-Fluorene+
-4-Nitroaniline+
-N-Nitrosodiphenylamine
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+
-Dibenz(a,h)anthracene+

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8584.D
Report Date: 23-May-2018 10:23

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N051818.b\N8584.D
Lab Smp Id: WG228639-6
Inj Date : 18-MAY-2018 14:52 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228639-6
Misc Info :
Comment   :
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Meth Date : 21-May-2018 08:44 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 14:52 Cal File: N8584.D
Als bottle: 6 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.632	3.642	(0.486)	200577	10.0000	10.5	
	2 1,4-Dioxane	88	3.674	3.684	(0.491)	212936	10.0000	10.3	
	3 N-Nitrosodimethylamine	74	4.094	4.104	(0.547)	296203	10.0000	10.5	
	4 Pyridine	79	4.125	4.125	(0.552)	525289	10.0000	10.8	
	5 Benzaldehyde	77	6.916	6.916	(0.925)	127958	10.0000	10.6	
	6 Phenol	94	7.077	7.077	(0.946)	623028	10.0000	10.6	
	7 Bis(2-Chloroethyl)ether	93	7.157	7.157	(0.957)	507674	10.0000	10.5	
	8 2-Chlorophenol	128	7.218	7.218	(0.965)	521955	10.0000	10.5	
	9 1,3-Dichlorobenzene	146	7.409	7.409	(0.991)	567017	10.0000	10.3	
*	10 1,4-Dichlorobenzene-D4	152	7.479	7.479	(1.000)	31758	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	7.499	7.499	(1.003)	572172	10.0000	10.3	
	12 1,2-Dichlorobenzene	146	7.691	7.691	(1.028)	541717	10.0000	10.4	
	13 2-Methylphenol	108	7.832	7.832	(1.047)	433405	10.0000	10.5	
	14 2,2'-Oxybis(1-chloropropane)	45	7.842	7.842	(1.048)	542791	10.0000	10.3	
	15 Acetophenone	105	7.993	7.993	(0.877)	730389	10.0000	10.4	
	16 N-Nitroso-di-n-propylamine	70	8.003	8.013	(1.070)	352926	10.0000	10.6	
	17 3&4-Methylphenol	108	8.033	8.033	(1.074)	447342	10.0000	10.4	
	18 Hexachloroethane	117	8.123	8.113	(1.086)	218921	10.0000	10.4	
	19 Nitrobenzene	77	8.194	8.194	(0.899)	510463	10.0000	10.4	
	20 Isophorone	82	8.516	8.516	(0.935)	957814	10.0000	10.8	
	21 2-Nitrophenol	139	8.617	8.617	(0.946)	249650	10.0000	10.9	

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8584.D
Report Date: 23-May-2018 10:23

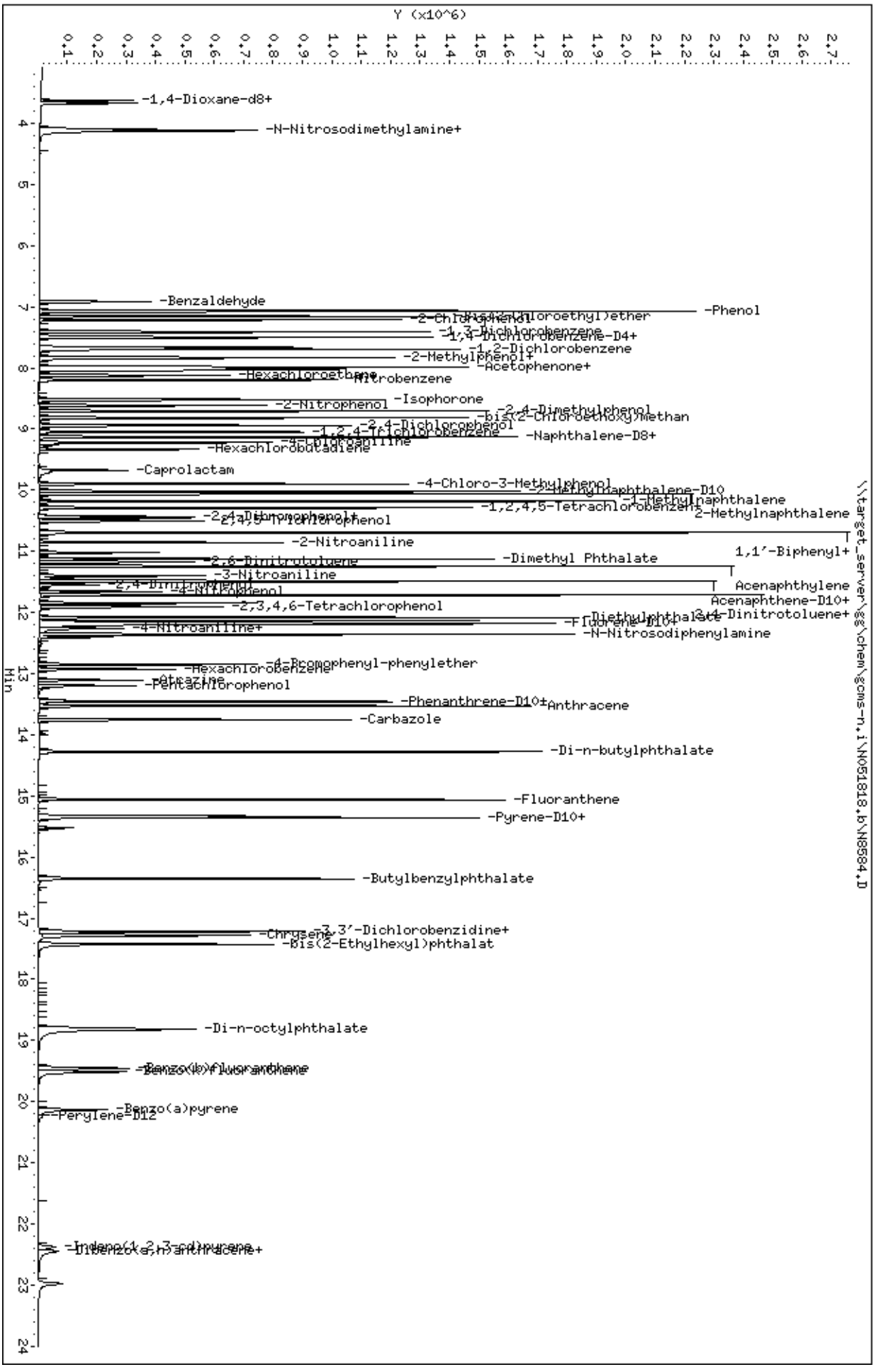
			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22	2,4-Dimethylphenol	107	8.707	8.707	(0.956)	505415	10.0000	10.5	
	23	bis(2-Chloroethoxy)methane	93	8.818	8.818	(0.968)	590690	10.0000	10.5	
	24	2,4-Dichlorophenol	162	8.939	8.939	(0.981)	379473	10.0000	10.5	
	25	1,2,4-Trichlorobenzene	180	9.050	9.050	(0.993)	397156	10.0000	10.3	
*	26	Naphthalene-D8	136	9.110	9.110	(1.000)	99261	0.80000	(a)	
	27	Naphthalene	128	9.130	9.130	(1.002)	1284355	10.0000	10.3	
	28	4-Chloroaniline	127	9.221	9.221	(1.012)	485591	10.0000	10.6	
	29	Hexachlorobutadiene	225	9.331	9.331	(1.024)	243302	10.0000	10.3	
	30	Caprolactam	113	9.669	9.689	(1.061)	120187	10.0000	11.0(H)	
	31	4-Chloro-3-Methylphenol	107	9.895	9.895	(1.086)	413098	10.0000	10.7	
$	32	2-Methylnaphthalene-D10	152	10.013	10.014	(1.099)	634916	10.0000	10.4	
	33	2-Methylnaphthalene	142	10.053	10.053	(1.103)	811529	10.0000	10.4	
	34	1-Methylnaphthalene	142	10.181	10.181	(1.118)	802416	10.0000	10.6	
	35	1,2,4,5-Tetrachlorobenzene	216	10.289	10.289	(0.899)	388021	10.0000	10.0	
	36	Hexachlorocyclopentadiene	237	10.299	10.299	(0.900)	220782	10.0000	9.63	
$	37	2,4-Dibromophenol	252	10.427	10.427	(0.911)	216553	10.0000	10.7	
	38	2,4,6-Trichlorophenol	196	10.456	10.456	(0.914)	248287	10.0000	10.3	
	39	2,4,5-Trichlorophenol	196	10.496	10.496	(0.917)	257498	10.0000	10.2	
	40	1,1'-Biphenyl	154	10.693	10.693	(0.934)	1030439	10.0000	9.99	
	41	2-Chloronaphthalene	164	10.702	10.703	(0.935)	271835	10.0000	10.2	
	42	2-Nitroaniline	65	10.850	10.850	(0.948)	255378	10.0000	10.7	
	43	Dimethyl Phthalate	163	11.127	11.127	(0.972)	976851	10.0000	10.4	
	44	2,6-Dinitrotoluene	165	11.182	11.182	(0.977)	234011	10.0000	11.2	
	45	Acenaphthylene	152	11.247	11.247	(0.983)	1238954	10.0000	10.3	
	46	3-Nitroaniline	138	11.400	11.411	(0.996)	150073	10.0000	10.7	
*	47	Acenaphthene-D10	164	11.443	11.443	(1.000)	45104	0.80000	(a)	
	48	Acenaphthene	153	11.487	11.487	(1.004)	797406	10.0000	10.3	
	49	2,4-Dinitrophenol	184	11.542	11.542	(1.009)	80390	10.0000	12.7	
	50	4-Nitrophenol	109	11.661	11.661	(1.019)	116413	10.0000	9.56	
	51	2,4-Dinitrotoluene	165	11.716	11.727	(1.024)	282748	10.0000	11.0	
	52	Dibenzofuran	168	11.716	11.727	(1.024)	1072892	10.0000	10.0	
	53	2,3,4,6-Tetrachlorophenol	232	11.912	11.912	(1.041)	214653	10.0000	11.1	
	54	Diethylphthalate	149	12.075	12.075	(1.055)	1108340	10.0000	10.6	
$	55	Fluorene-D10	174	12.141	12.141	(1.061)	610120	10.0000	10.3(A)	
	56	Fluorene	166	12.173	12.184	(1.064)	833839	10.0000	10.4	
	57	4-Chlorophenyl-phenylether	204	12.195	12.195	(1.066)	455206	10.0000	10.2	
	58	4-Nitroaniline	138	12.228	12.228	(1.069)	81939	10.0000	8.34	
	59	4,6-Dinitro-2-Methylphenol	198	12.272	12.272	(0.914)	117961	10.0000	9.66	
	60	N-Nitrosodiphenylamine	169	12.359	12.359	(0.921)	698353	10.0000	10.2	
	61	4-Bromophenyl-phenylether	248	12.844	12.844	(0.957)	241479	10.0000	10.3	
	62	Hexachlorobenzene	284	12.930	12.930	(0.963)	218667	10.0000	10.1	
	63	Atrazine	200	13.100	13.101	(0.976)	178297	10.0000	10.8	
	64	Pentachlorophenol	266	13.197	13.197	(0.983)	120495	10.0000	10.4	
*	65	Phenanthrene-D10	188	13.421	13.431	(1.000)	74129	0.80000	(a)	
	66	Phenanthrene	178	13.463	13.464	(1.003)	1108871	10.0000	10.0	
	67	Anthracene	178	13.528	13.528	(1.008)	1125406	10.0000	10.7	
	68	Carbazole	167	13.752	13.752	(1.025)	811354	10.0000	10.1	
	69	Di-n-butylphthalate	149	14.275	14.286	(1.064)	1827400	10.0000	10.8	
	70	Fluoranthene	202	15.060	15.060	(1.122)	1141269	10.0000	10.8	
$	71	Pyrene-D10	212	15.332	15.332	(0.890)	715660	10.0000	9.44	
	72	Pyrene	202	15.360	15.360	(0.891)	1165488	10.0000	9.22	
	73	Butylbenzylphthalate	149	16.354	16.355	(0.949)	745348	10.0000	9.71	
	74	3,3'-Dichlorobenzidine	252	17.218	17.218	(0.999)	143356	10.0000	12.1	
	75	Benzo(a)anthracene	228	17.218	17.218	(0.999)	678253	10.0000	10.1	

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8584.D
Report Date: 23-May-2018 10:23

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76	Chrysene-D12	240	17.236	17.236	(1.000)	37714	0.80000	(a)	
	77	Chrysene	228	17.283	17.283	(1.003)	673521	10.0000	9.36	
	78	bis(2-Ethylhexyl)phthalate	149	17.424	17.424	(1.011)	970672	10.0000	9.69	
	79	Di-n-octylphthalate	149	18.813	18.813	(1.091)	1339818	10.0000	10.2	
	80	Benzo(b)fluoranthene	252	19.449	19.449	(0.961)	414522	10.0000	10.8	
	81	Benzo(k)fluoranthene	252	19.506	19.517	(0.964)	476521	10.0000	10.2(H)	
	82	Benzo(a)pyrene	252	20.130	20.130	(0.994)	337703	10.0000	10.6	
*	83	Perylene-D12	264	20.244	20.244	(1.000)	20257	0.80000	(a)	
	84	Indeno(1,2,3-cd)pyrene	276	22.368	22.379	(1.298)	140688	10.0000	10.5	
	85	Dibenzo(a,h)anthracene	278	22.447	22.447	(1.109)	149488	10.0000	10.1	
	86	Benzo(g,h,i)perylene	276	22.970	22.981	(1.135)	241230	10.0000	10.6	
M	87	Total PAHs	100				2075377	180.000	(a)	
M	88	Total Low PAHs	100				7200360	70.0000	(a)	
M	89	Total High PAHs	100				4145722	60.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.
Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.


Data File: \\target_server\gg\chem\gcms-n,i\N051818,b\N8584,D
Date : 18-MAY-2018 14:52
Client ID:
Sample Info: WG228639-6
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N051818,b\N8584,D
Y (x10^6)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine+
-Benzaldehyde
-Phenol
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-Hexachloroethane
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene-D10
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzene
2-Methylnaphthalene
-2,4-Dinitrophenol+
2,4,5-Trichlorophenol
-2-Nitroaniline
1,1'-Biphenyl+
-2,6-Dinitrotoluene
-Dimethyl Phthalate
-3-Nitroaniline
-2,4-Dinitrophenol
Acenaphthylene
-4-Nitrophenol
Acenaphthene-D10+
-2,3,4,6-Tetrachlorophenol
2,4-Dinitrotoluene+
-Diethylphthalate
-Fluorene-D10+
-4-Nitroaniline+
-N-Nitrosodiphenylamine
-4-Bromophenyl-phenylether
-Hexachlorobenzene
Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-Bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenz(a,h)anthracene+

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8585.D
Report Date: 23-May-2018 10:23

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N051818.b\N8585.D
Lab Smp Id: WG228639-7
Inj Date : 18-MAY-2018 15:24 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228639-7
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N051818.b\NSPSIM94.m
Meth Date : 21-May-2018 08:44 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 15:24 Cal File: N8585.D
Als bottle: 7 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.642	3.642	(0.487)	319402	15.0000	15.1(A)	
	2 1,4-Dioxane	88	3.684	3.684	(0.493)	336733	15.0000	14.7	
	3 N-Nitrosodimethylamine	74	4.104	4.104	(0.549)	484813	15.0000	15.5(A)	
	4 Pyridine	79	4.125	4.125	(0.552)	843877	15.0000	15.8(A)	
	5 Benzaldehyde	77	6.916	6.916	(0.925)	141113	15.0000	10.6	
	6 Phenol	94	7.077	7.077	(0.946)	1012713	15.0000	15.6(A)	
	7 Bis(2-Chloroethyl)ether	93	7.157	7.157	(0.957)	810097	15.0000	15.1(A)	
	8 2-Chlorophenol	128	7.218	7.218	(0.965)	828318	15.0000	15.1(A)	
	9 1,3-Dichlorobenzene	146	7.409	7.409	(0.991)	919918	15.0000	15.2(A)	
*	10 1,4-Dichlorobenzene-D4	152	7.479	7.479	(1.000)	35095	0.80000	(a)	
	11 1,4-Dichlorobenzene	146	7.499	7.499	(1.003)	929657	15.0000	15.2(A)	
	12 1,2-Dichlorobenzene	146	7.691	7.691	(1.028)	874425	15.0000	15.1(A)	
	13 2-Methylphenol	108	7.832	7.832	(1.047)	690160	15.0000	15.1(A)	
	14 2,2'-Oxybis(1-chloropropane)	45	7.842	7.842	(1.048)	845883	15.0000	14.6	
	15 Acetophenone	105	7.993	7.993	(0.877)	1165152	15.0000	14.8	
	16 N-Nitroso-di-n-propylamine	70	8.013	8.013	(1.071)	568352	15.0000	15.4(A)	
	17 3&4-Methylphenol	108	8.033	8.033	(1.074)	721927	15.0000	15.1(A)	
	18 Hexachloroethane	117	8.113	8.113	(1.085)	348474	15.0000	14.9	
	19 Nitrobenzene	77	8.194	8.194	(0.899)	823657	15.0000	15.0	
	20 Isophorone	82	8.516	8.516	(0.935)	1516445	15.0000	15.2(A)	
	21 2-Nitrophenol	139	8.617	8.617	(0.946)	404386	15.0000	15.8(A)	

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8585.D
Report Date: 23-May-2018 10:23

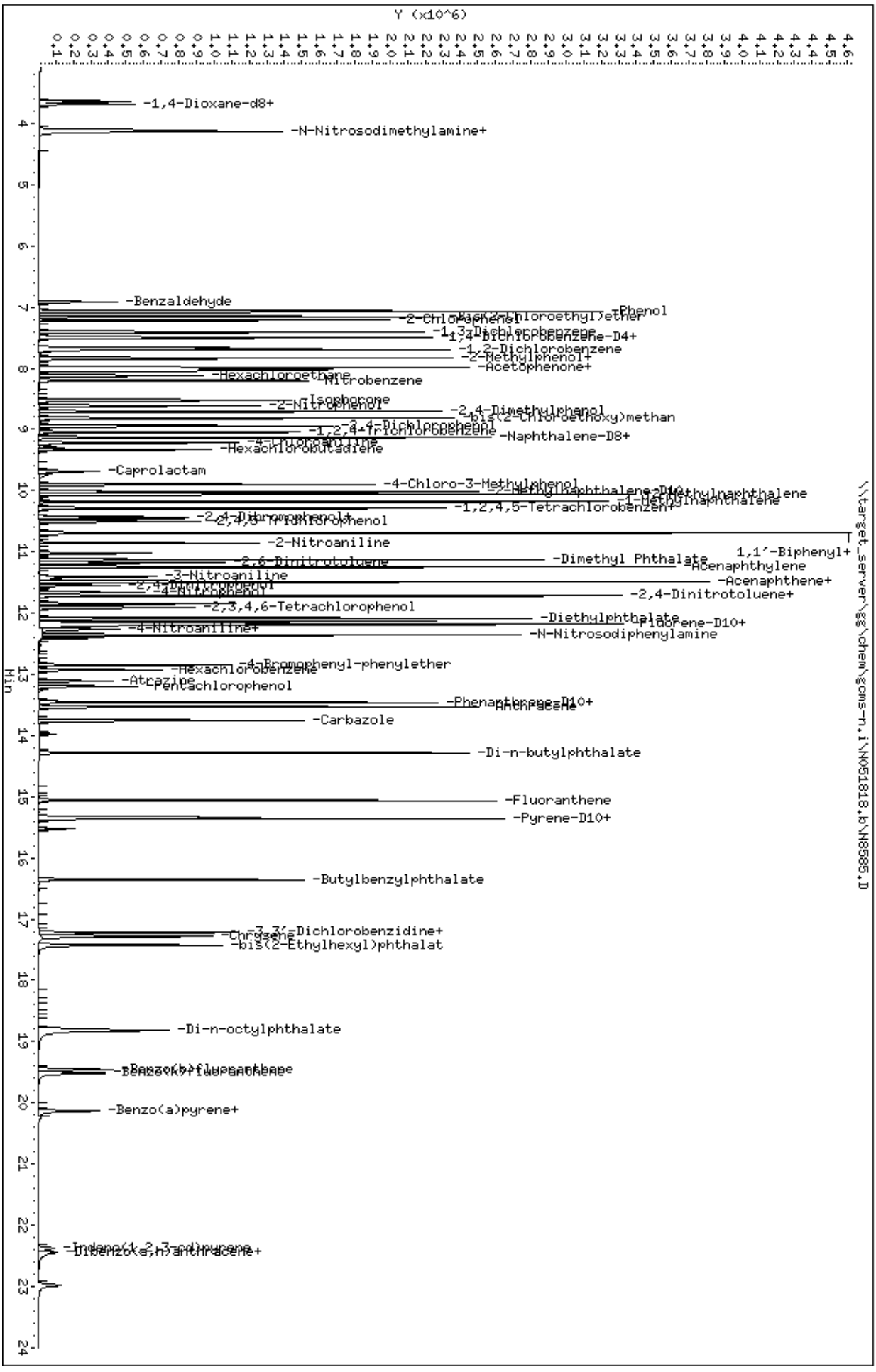
			QUANT SIG					AMOUNTS CAL-AMT	ON-COL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/ml)	(ug/ml)	REVIEW CODE
	22	2,4-Dimethylphenol	107	8.707	8.707	(0.956)	789007	15.0000	14.6	
	23	bis(2-Chloroethoxy)methane	93	8.818	8.818	(0.968)	939715	15.0000	14.9	
	24	2,4-Dichlorophenol	162	8.939	8.939	(0.981)	601735	15.0000	14.9	
	25	1,2,4-Trichlorobenzene	180	9.050	9.050	(0.993)	642507	15.0000	14.8	
*	26	Naphthalene-D8	136	9.110	9.110	(1.000)	111480	0.80000	(a)	
	27	Naphthalene	128	9.130	9.130	(1.002)	2028729	15.0000	14.4	
	28	4-Chloroaniline	127	9.221	9.221	(1.012)	665277	15.0000	12.9	
	29	Hexachlorobutadiene	225	9.331	9.331	(1.024)	394235	15.0000	14.9	
	30	Caprolactam	113	9.689	9.689	(1.064)	191125	15.0000	15.5(A)	
	31	4-Chloro-3-Methylphenol	107	9.895	9.895	(1.086)	647340	15.0000	14.9	
$	32	2-Methylnaphthalene-D10	152	10.014	10.014	(1.099)	994455	15.0000	14.5	
	33	2-Methylnaphthalene	142	10.053	10.053	(1.103)	1268924	15.0000	14.6	
	34	1-Methylnaphthalene	142	10.181	10.181	(1.118)	1245243	15.0000	14.6	
	35	1,2,4,5-Tetrachlorobenzene	216	10.289	10.289	(1.000)	616580	15.0000	15.2(A)	
	36	Hexachlorocyclopentadiene	237	10.299	10.299	(1.000)	375484	15.0000	15.5(A)	
$	37	2,4-Dibromophenol	252	10.427	10.427	(1.000)	351963	15.0000	16.6	
	38	2,4,6-Trichlorophenol	196	10.456	10.456	(1.000)	400784	15.0000	15.9(A)	
	39	2,4,5-Trichlorophenol	196	10.496	10.496	(1.000)	413265	15.0000	15.6(A)	
	40	1,1'-Biphenyl	154	10.693	10.693	(1.000)	1640562	15.0000	15.2(A)	
	41	2-Chloronaphthalene	164	10.703	10.703	(1.000)	429766	15.0000	15.4(A)	
	42	2-Nitroaniline	65	10.850	10.850	(1.000)	407076	15.0000	16.3(A)	
	43	Dimethyl Phthalate	163	11.127	11.127	(1.000)	1528466	15.0000	15.5(A)	
	44	2,6-Dinitrotoluene	165	11.182	11.182	(1.000)	348971	15.0000	15.9(A)	
	45	Acenaphthylene	152	11.247	11.247	(1.000)	1895849	15.0000	15.1(A)	
	46	3-Nitroaniline	138	11.411	11.411	(1.000)	236803	15.0000	16.1(A)	
*	47	Acenaphthene-D10	164	11.443	11.443	(1.000)	47218	0.80000	(aM)	M6
	48	Acenaphthene	153	11.487	11.487	(1.000)	1233403	15.0000	15.2(A)	
	49	2,4-Dinitrophenol	184	11.542	11.542	(1.000)	157738	15.0000	23.9(A)	
	50	4-Nitrophenol	109	11.661	11.661	(1.000)	198041	15.0000	15.3(A)	
	51	2,4-Dinitrotoluene	165	11.727	11.727	(1.000)	463982	15.0000	17.2(A)	
	52	Dibenzofuran	168	11.727	11.727	(1.000)	1701918	15.0000	15.2(A)	
	53	2,3,4,6-Tetrachlorophenol	232	11.912	11.912	(1.000)	348697	15.0000	17.2(A)	
	54	Diethylphthalate	149	12.075	12.075	(1.000)	1655143	15.0000	15.2(A)	
$	55	Fluorene-D10	174	12.141	12.141	(1.000)	936954	15.0000	15.1(A)	
	56	Fluorene	166	12.184	12.184	(1.000)	1314831	15.0000	15.6(A)	WAS
	57	4-Chlorophenyl-phenylether	204	12.195	12.195	(1.000)	716729	15.0000	15.4(A)	
	58	4-Nitroaniline	138	12.228	12.228	(1.000)	136015	15.0000	13.2	*1:48 pm, May 23, 2018*
	59	4,6-Dinitro-2-Methylphenol	198	12.272	12.272	(0.914)	207781	15.0000	15.3(A)	
	60	N-Nitrosodiphenylamine	169	12.359	12.359	(0.920)	1075794	15.0000	14.5	
	61	4-Bromophenyl-phenylether	248	12.844	12.844	(0.956)	378686	15.0000	14.9	
	62	Hexachlorobenzene	284	12.930	12.930	(0.963)	334770	15.0000	14.2	
	63	Atrazine	200	13.101	13.101	(0.975)	271631	15.0000	15.1(A)	
	64	Pentachlorophenol	266	13.197	13.197	(0.983)	189853	15.0000	14.9	
*	65	Phenanthrene-D10	188	13.431	13.431	(1.000)	80669	0.80000	(a)	
	66	Phenanthrene	178	13.464	13.464	(1.002)	1748329	15.0000	14.6	
	67	Anthracene	178	13.528	13.528	(1.007)	1703071	15.0000	14.9	
	68	Carbazole	167	13.752	13.752	(1.024)	1228884	15.0000	14.0	
	69	Di-n-butylphthalate	149	14.286	14.286	(1.064)	2600344	15.0000	14.1	
	70	Fluoranthene	202	15.060	15.060	(1.121)	1657311	15.0000	14.4	
$	71	Pyrene-D10	212	15.332	15.332	(0.890)	1020953	15.0000	14.3(A)	
	72	Pyrene	202	15.360	15.360	(0.891)	1654099	15.0000	13.9	
	73	Butylbenzylphthalate	149	16.355	16.355	(0.949)	982478	15.0000	13.6	
	74	3,3'-Dichlorobenzidine	252	17.218	17.218	(0.999)	160787	15.0000	14.4	
	75	Benzo(a)anthracene	228	17.218	17.218	(0.999)	921892	15.0000	14.6	

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8585.D
Report Date: 23-May-2018 10:23

								AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)		REVIEW CODE
*	76 Chrysene-D12	240	17.236	17.236	(1.000)	35461	0.80000		(a)	
	77 Chrysene	228	17.283	17.283	(1.003)	905733	15.0000	13.4		
	78 bis(2-Ethylhexyl)phthalate	149	17.424	17.424	(1.011)	1264420	15.0000	13.4		
	79 Di-n-octylphthalate	149	18.813	18.813	(1.091)	1714020	15.0000	14.0		
	80 Benzo(b)fluoranthene	252	19.449	19.449	(0.961)	550549	15.0000	15.4	(A)	
	81 Benzo(k)fluoranthene	252	19.517	19.517	(0.964)	632232	15.0000	14.7	(H)	
	82 Benzo(a)pyrene	252	20.130	20.130	(0.994)	466981	15.0000	15.8	(A)	
*	83 Perylene-D12	264	20.244	20.244	(1.000)	18808	0.80000		(a)	
	84 Indeno(1,2,3-cd)pyrene	276	22.379	22.379	(1.298)	215483	15.0000	14.9		
	85 Dibenzo(a,h)anthracene	278	22.447	22.447	(1.109)	226618	15.0000	15.0		
	86 Benzo(g,h,i)perylene	276	22.981	22.981	(1.135)	349804	15.0000	16.5	(A)	
M	87 Total PAHs	100				2993311	270.000		(a)	
M	88 Total Low PAHs	100				11193136	105.000		(a)	
M	89 Total High PAHs	100				5832634	90.0000		(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.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Date : 18-MAY-2018 15:24
Client ID:
Sample Info: WG228639-7
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N051818,b\N8585,D
Y (x10^6)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine+
-Benzaldehyde
-Phenol
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-Hexachloroethane
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Fluoroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene-D10
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4-Dibromophenol+
-2,4,5-Trichlorophenol
-2-Nitroaniline
1,1'-Biphenyl+
-Dimethyl Phthalate
-2,6-Dinitrotoluene
-Acenaphthylene
-3-Nitroaniline
-Acenaphthene+
-2,4-Dinitrophenol
-2,4-Dinitrotoluene+
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-Fluorene-D10+
-4-Nitroaniline+
-N-Nitrosodiphenylamine
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene+
-Indeno(1,2,3-cd)pyrene
-Dibenzo(a,h)anthracene+

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8586.D
Report Date: 23-May-2018 11:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N051818.b\N8586.D
Lab Smp Id: WG228639-8
Inj Date : 18-MAY-2018 15:55 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228639-8
Misc Info : WG228639,WG228639,WG228639-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N051818.b\NSPSIM94.m
Meth Date : 21-May-2018 08:44 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 15:24 Cal File: N8585.D
Als bottle: 8 QC Sample: INDCHECK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03000	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
2	1,4-Dioxane	88	3.684	3.684	(0.493)	101661	4.67601	4.68	
3	N-Nitrosodimethylamine	74	4.104	4.104	(0.549)	147122	4.95214	4.95	
4	Pyridine	79	4.136	4.125	(0.553)	277405	5.44954	5.45	
5	Benzaldehyde	77	6.926	6.916	(0.926)	15421	1.21329	1.21(R)	
6	Phenol	94	7.067	7.077	(0.945)	319438	5.16839	5.17	
7	Bis(2-Chloroethyl)ether	93	7.157	7.157	(0.957)	255889	5.01816	5.02	
8	2-Chlorophenol	128	7.218	7.218	(0.965)	264835	5.05824	5.06	
9	1,3-Dichlorobenzene	146	7.409	7.409	(0.991)	286985	4.97452	4.97	
* 10	1,4-Dichlorobenzene-D4	152	7.479	7.479	(1.000)	33409	0.80000	(aQ)	
11	1,4-Dichlorobenzene	146	7.499	7.499	(1.003)	293800	5.03038	5.03	
12	1,2-Dichlorobenzene	146	7.691	7.691	(1.028)	276292	5.02596	5.02	
13	2-Methylphenol	108	7.821	7.832	(1.046)	216442	4.97000	4.97	
14	2,2'-Oxybis(1-chloropropane)	45	7.842	7.842	(1.048)	203079	3.67630	3.68(R)	
15	Acetophenone	105	7.993	7.993	(0.877)	354623	4.71706	4.72	
16	N-Nitroso-di-n-propylamine	70	8.003	8.013	(1.070)	173273	4.92817	4.93	
17	3&4-Methylphenol	108	8.023	8.033	(1.073)	227313	5.00846	5.01	
18	Hexachloroethane	117	8.113	8.113	(1.085)	109644	4.93423	4.93	
19	Nitrobenzene	77	8.194	8.194	(0.899)	264262	5.04559	5.04	
20	Isophorone	82	8.516	8.516	(0.935)	481914	5.05960	5.06	
21	2-Nitrophenol	139	8.617	8.617	(0.946)	129115	5.28948	5.29	

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8586.D
Report Date: 23-May-2018 11:04

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
22	2,4-Dimethylphenol	107	8.707	8.707	(0.956)	247376	4.79185	4.79	
23	bis(2-Chloroethoxy)methane	93	8.818	8.818	(0.968)	310423	5.15842	5.16	
24	2,4-Dichlorophenol	162	8.939	8.939	(0.981)	196629	5.09544	5.10	
25	1,2,4-Trichlorobenzene	180	9.039	9.050	(0.992)	204728	4.96042	4.96	
* 26	Naphthalene-D8	136	9.110	9.110	(1.000)	106258	0.80000	(a)	
27	Naphthalene	128	9.130	9.130	(1.002)	676870	5.05342	5.05	
28	4-Chloroaniline	127	9.221	9.221	(1.012)	288578	5.89308	5.89	
29	Hexachlorobutadiene	225	9.331	9.331	(1.024)	127117	5.05025	5.05	
30	Caprolactam	113	9.659	9.689	(1.060)	69553	5.93282	5.93	
31	4-Chloro-3-Methylphenol	107	9.885	9.895	(1.085)	210488	5.09135	5.09	
33	2-Methylnaphthalene	142	10.053	10.053	(1.103)	439616	5.28977	5.29	
34	1-Methylnaphthalene	142	10.181	10.181	(1.118)	406217	5.00896	5.01	
35	1,2,4,5-Tetrachlorobenzene	216	10.289	10.289	(0.899)	195917	4.85270	4.85	
36	Hexachlorocyclopentadiene	237	10.289	10.299	(0.899)	75259	3.33928	3.34(R)	
38	2,4,6-Trichlorophenol	196	10.447	10.456	(0.913)	127978	5.09249	5.09	
39	2,4,5-Trichlorophenol	196	10.496	10.496	(0.917)	133600	5.08647	5.09	
40	1,1'-Biphenyl	154	10.683	10.693	(0.934)	503741	4.68628	4.69	
41	2-Chloronaphthalene	164	10.702	10.703	(0.935)	142711	5.14413	5.14	
42	2-Nitroaniline	65	10.850	10.850	(0.948)	135686	5.46119	5.46	
43	Dimethyl Phthalate	163	11.117	11.127	(0.971)	526055	5.36472	5.36	
44	2,6-Dinitrotoluene	165	11.182	11.182	(0.977)	117731	5.40543	5.40	
45	Acenaphthylene	152	11.247	11.247	(0.983)	609218	4.86854	4.87	
46	3-Nitroaniline	138	11.400	11.411	(0.996)	79080	5.39512	5.40	
* 47	Acenaphthene-D10	164	11.443	11.443	(1.000)	46987	0.80000	(a)	
48	Acenaphthene	153	11.487	11.487	(1.004)	433865	5.36367	5.36	
49	2,4-Dinitrophenol	184	11.541	11.542	(1.009)	31762	4.83404	4.83	
50	4-Nitrophenol	109	11.661	11.661	(1.019)	56625	4.63510	4.64	
51	2,4-Dinitrotoluene	165	11.716	11.727	(1.024)	155546	5.81462	5.81	
52	Dibenzofuran	168	11.716	11.727	(1.024)	583374	5.22711	5.23	
53	2,3,4,6-Tetrachlorophenol	232	11.901	11.912	(1.040)	101376	5.02993	5.03	
54	Diethylphthalate	149	12.075	12.075	(1.055)	602660	5.54361	5.54	
56	Fluorene	166	12.173	12.184	(1.064)	441998	5.27406	5.27	
57	4-Chlorophenyl-phenylether	204	12.195	12.195	(1.066)	245955	5.31759	5.32	
58	4-Nitroaniline	138	12.228	12.228	(1.069)	52563	5.13531	5.14(Q)	
59	4,6-Dinitro-2-Methylphenol	198	12.261	12.272	(0.914)	63596	5.26452	5.26	
60	N-Nitrosodiphenylamine	169	12.359	12.359	(0.921)	309708	4.34882	4.35	
61	4-Bromophenyl-phenylether	248	12.844	12.844	(0.957)	131388	5.36954	5.37	
62	Hexachlorobenzene	284	12.930	12.930	(0.963)	115323	5.08602	5.09	
63	Atrazine	200	13.100	13.101	(0.976)	85788	4.96229	4.96	
64	Pentachlorophenol	266	13.197	13.197	(0.983)	57839	5.13728	5.14	
* 65	Phenanthrene-D10	188	13.421	13.431	(1.000)	77475	0.80000	(a)	
66	Phenanthrene	178	13.453	13.464	(1.002)	598445	5.18937	5.19	
67	Anthracene	178	13.527	13.528	(1.008)	568699	5.18083	5.18	
68	Carbazole	167	13.752	13.752	(1.025)	395031	4.70080	4.70	
69	Di-n-butylphthalate	149	14.275	14.286	(1.064)	958837	5.39850	5.40	
70	Fluoranthene	202	15.060	15.060	(1.122)	604320	5.47411	5.47	
72	Pyrene	202	15.351	15.360	(0.891)	601713	5.09431	5.09	
73	Butylbenzylphthalate	149	16.354	16.355	(0.949)	364963	5.08602	5.09	
74	3,3'-Dichlorobenzidine	252	17.218	17.218	(0.999)	34345	3.09195	3.09(R)	
75	Benzo(a)anthracene	228	17.218	17.218	(0.999)	322800	5.15091	5.15	
* 76	Chrysene-D12	240	17.236	17.236	(1.000)	35248	0.80000	(a)	
77	Chrysene	228	17.283	17.283	(1.003)	320604	4.76887	4.77	
78	bis(2-Ethylhexyl)phthalate	149	17.424	17.424	(1.011)	475682	5.08190	5.08	
79	Di-n-octylphthalate	149	18.802	18.813	(1.091)	607918	4.97851	4.98	

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8586.D
Report Date: 23-May-2018 11:04

			QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/ml)	(ug/Kgdrywt)	REVIEW COD
	80	Benzo(b)fluoranthene	252	19.438	19.449	(0.960)	173978	5.16255	5.16	
	81	Benzo(k)fluoranthene	252	19.506	19.517	(0.964)	227854	5.49887	5.50(H)	
	82	Benzo(a)pyrene	252	20.130	20.130	(0.994)	140048	5.03525	5.04	
*	83	Perylene-D12	264	20.244	20.244	(1.000)	17742	0.80000	(a)	
	84	Indeno(1,2,3-cd)pyrene	276	22.368	22.379	(1.298)	50052	4.53519	4.54(M)	M3
	85	Dibenzo(a,h)anthracene	278	22.447	22.447	(1.109)	55063	4.67575	4.68	
	86	Benzo(g,h,i)perylene	276	22.969	22.981	(1.135)	96324	4.82820	4.83	
M	87	Total PAHs	100				954425	25.0338	25.0	
M	88	Total Low PAHs	100				3768711	36.2197	36.2	
M	89	Total High PAHs	100				2044548	30.1992	30.2	

WKS

1:34 pm, May 23, 2018

QC Flag Legend

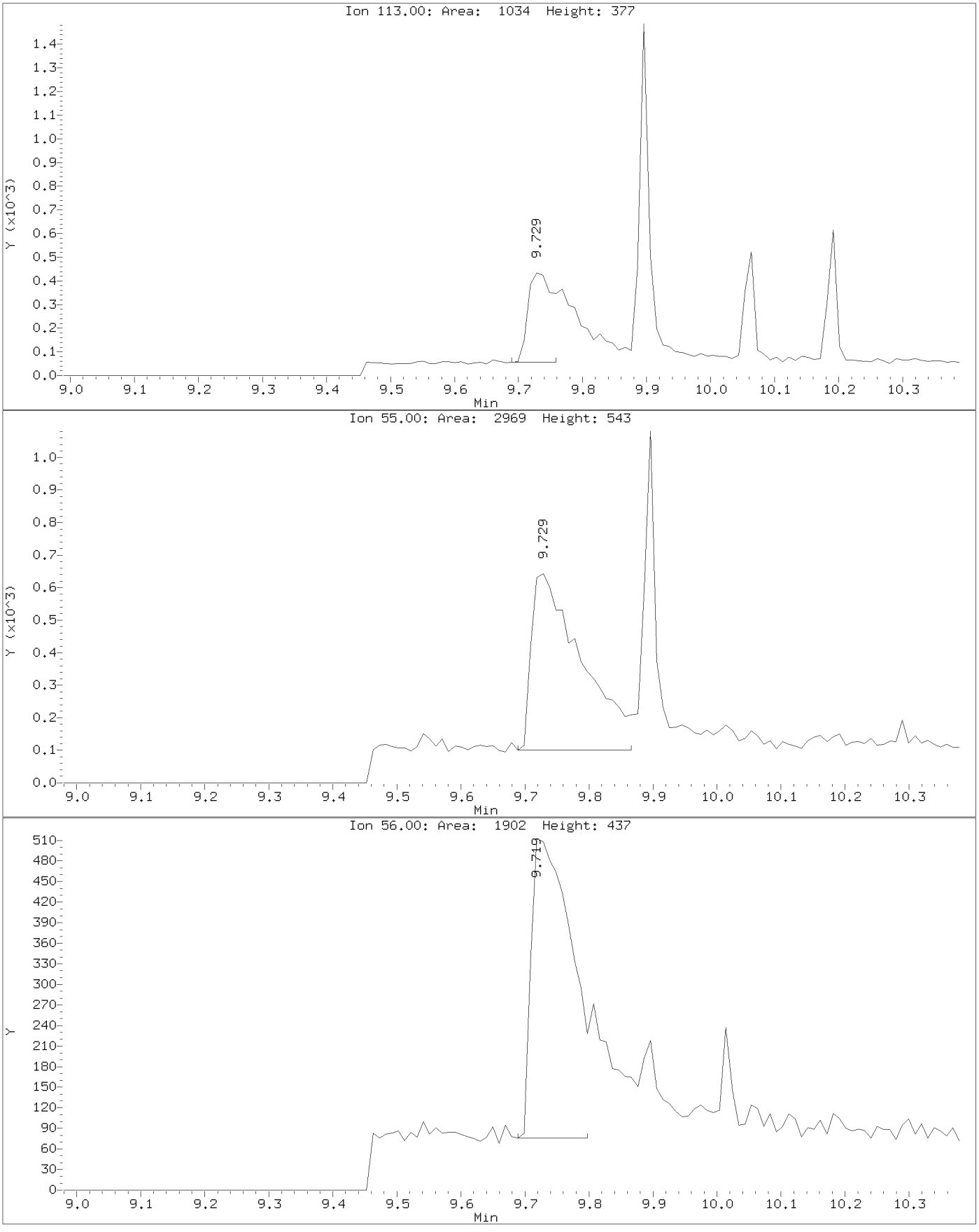
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

Data File: \\target_server\gg\chem\gcms-n,i\N051818,b\N8586,D
Date : 18-MAY-2018 15:55
Client ID:
Sample Info: WG228639-8
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N051818,b\N8586,D
Y (x10^7)
Min
-1,4-Dioxane
-N-Nitrosodimethylamine+
-Benzaldehyde
-2-Chlorophenol
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-1,1'-Biphenyl+
-2-Nitroaniline
-Dimethyl Phthalate
-3-Nitroaniline
-Acenaphthene-D10+
-2,4-Dinitrotoluene+
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-N-Nitrosodiphenylamine
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenz(a,h)anthracene

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8581.D
Injection Date: 18-MAY-2018 13:18
Instrument: gcms-n.i
Client Sample ID:

Compound: Caprolactam
CAS Number: 105-60-2

BEFORE MANUAL INTEGRATION



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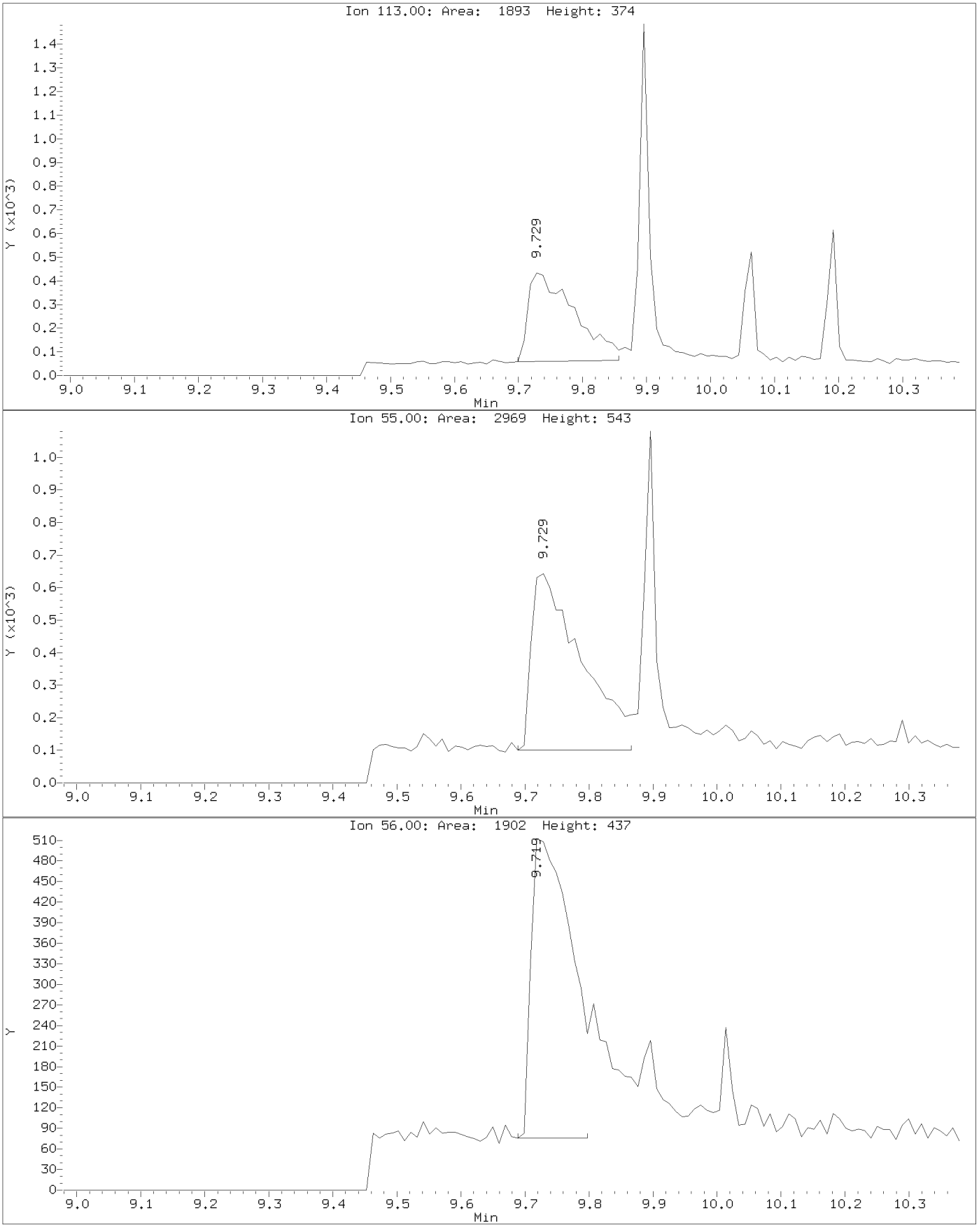
Client Sample ID:

Compound: Caprolactam
CAS Number: 105-60-2

AFTER MANUAL INTEGRATION



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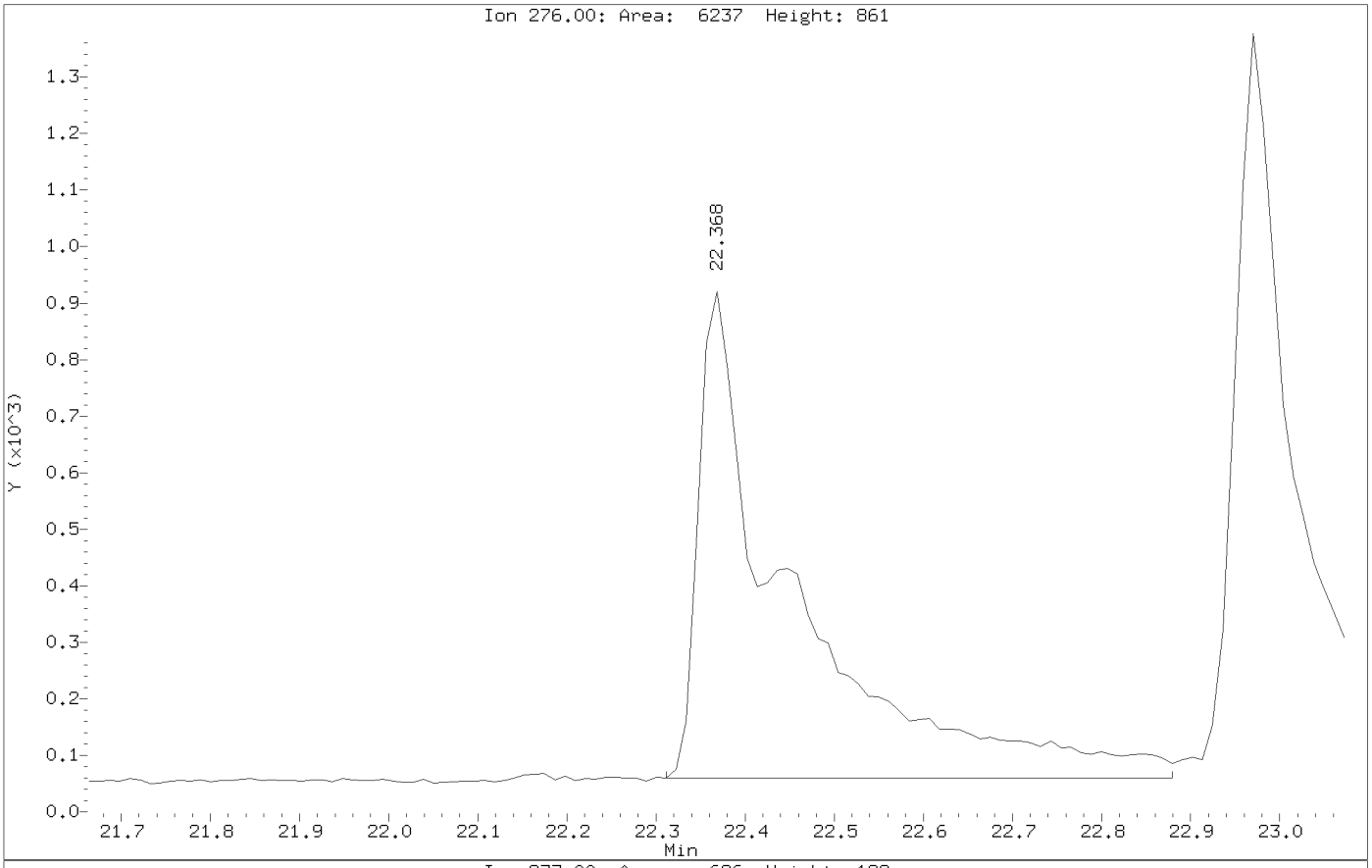
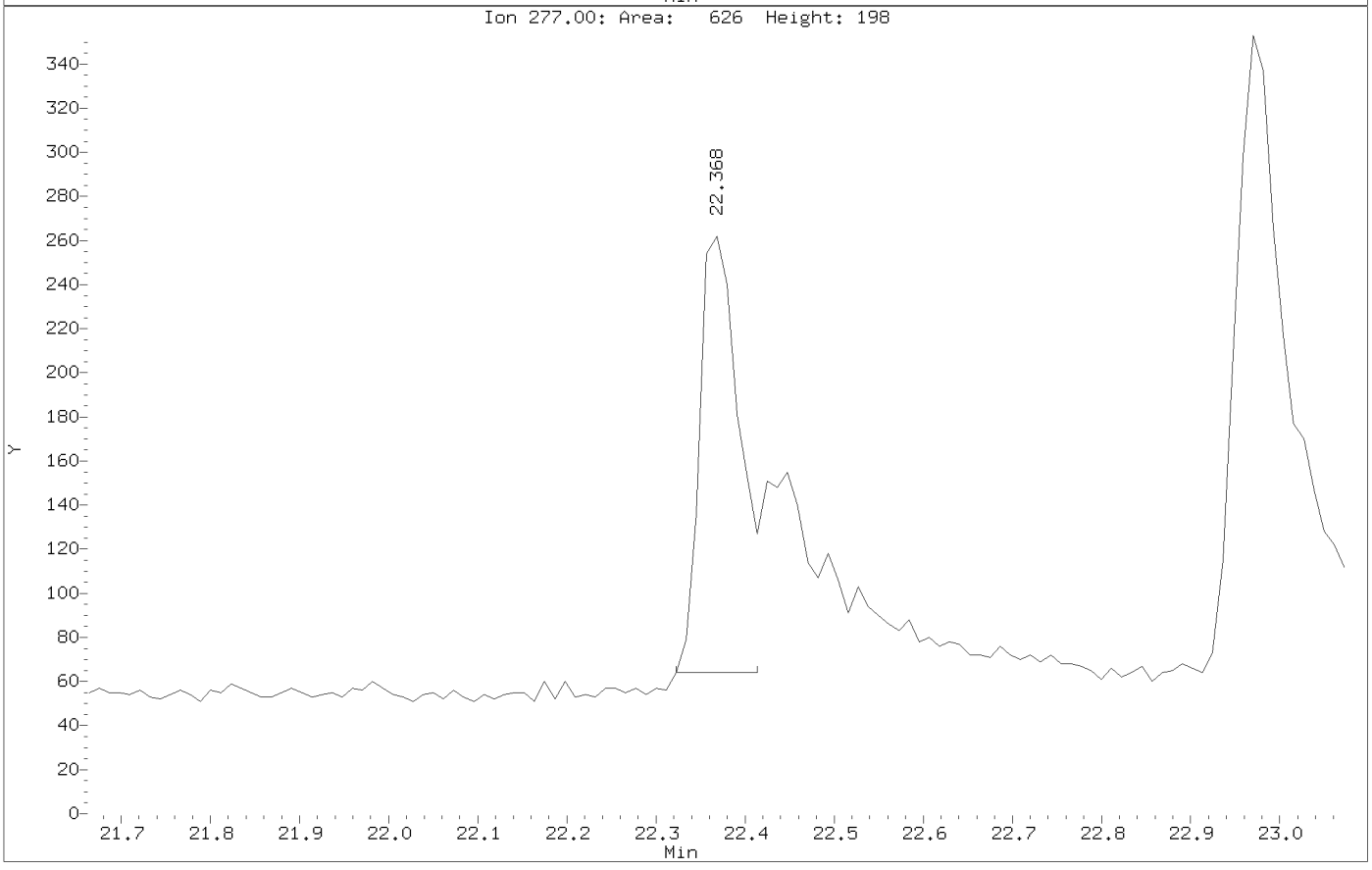
Injection Date: 18-MAY-2018 13:49
Instrument: gcms-n.i
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

BEFORE MANUAL INTEGRATION





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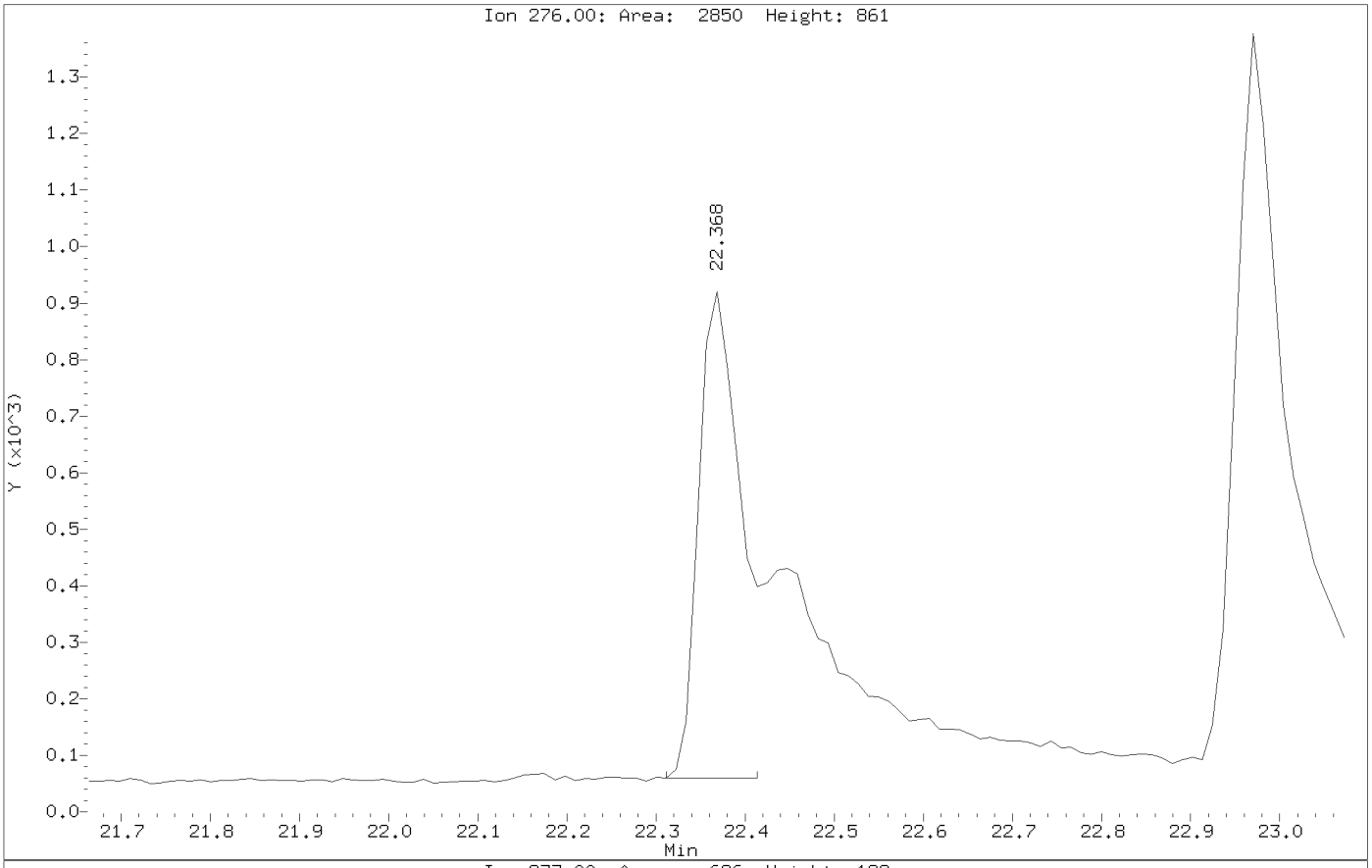
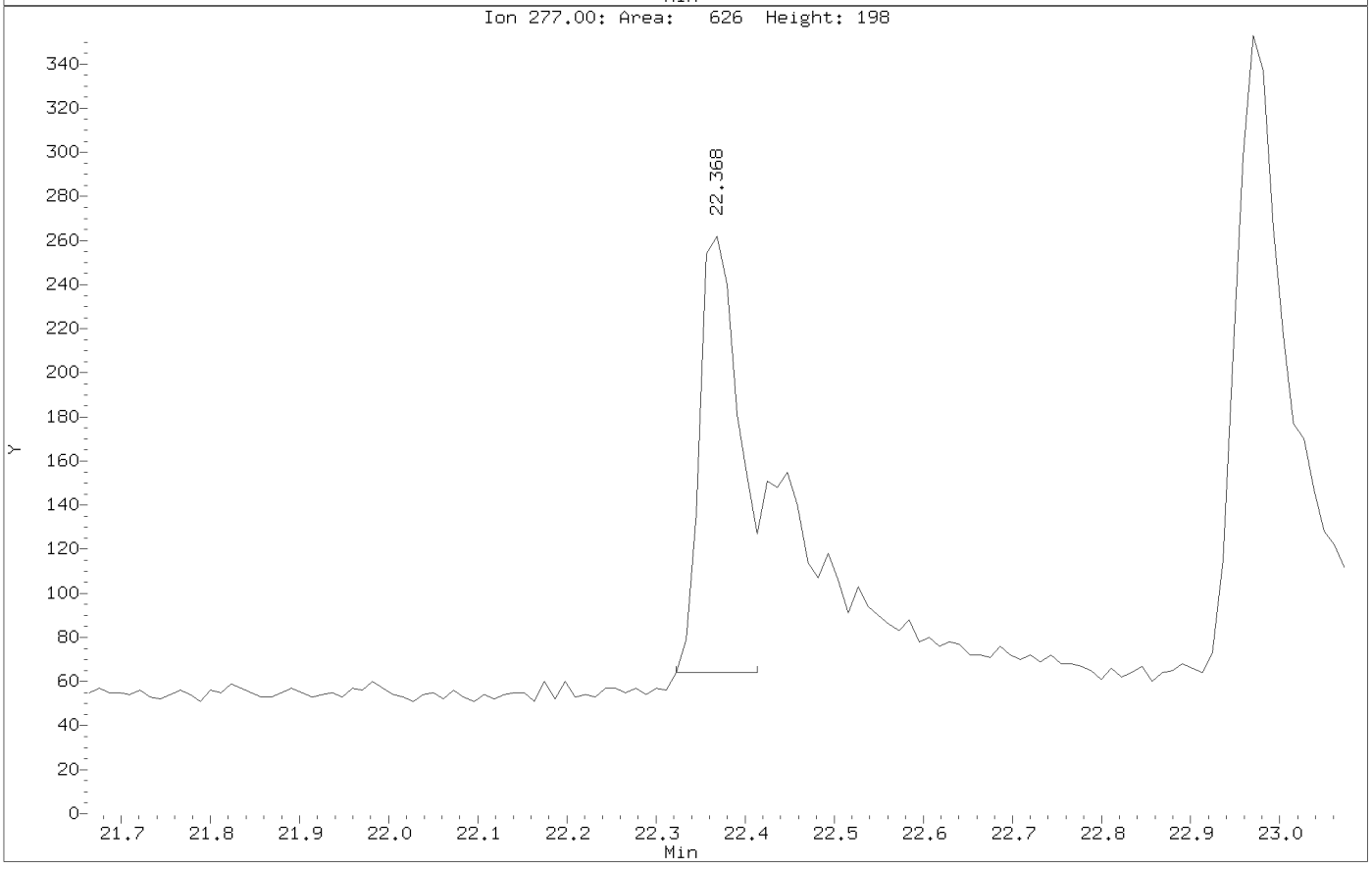
Injection Date: 18-MAY-2018 13:49
Instrument: gcms-n.i
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

AFTER MANUAL INTEGRATION





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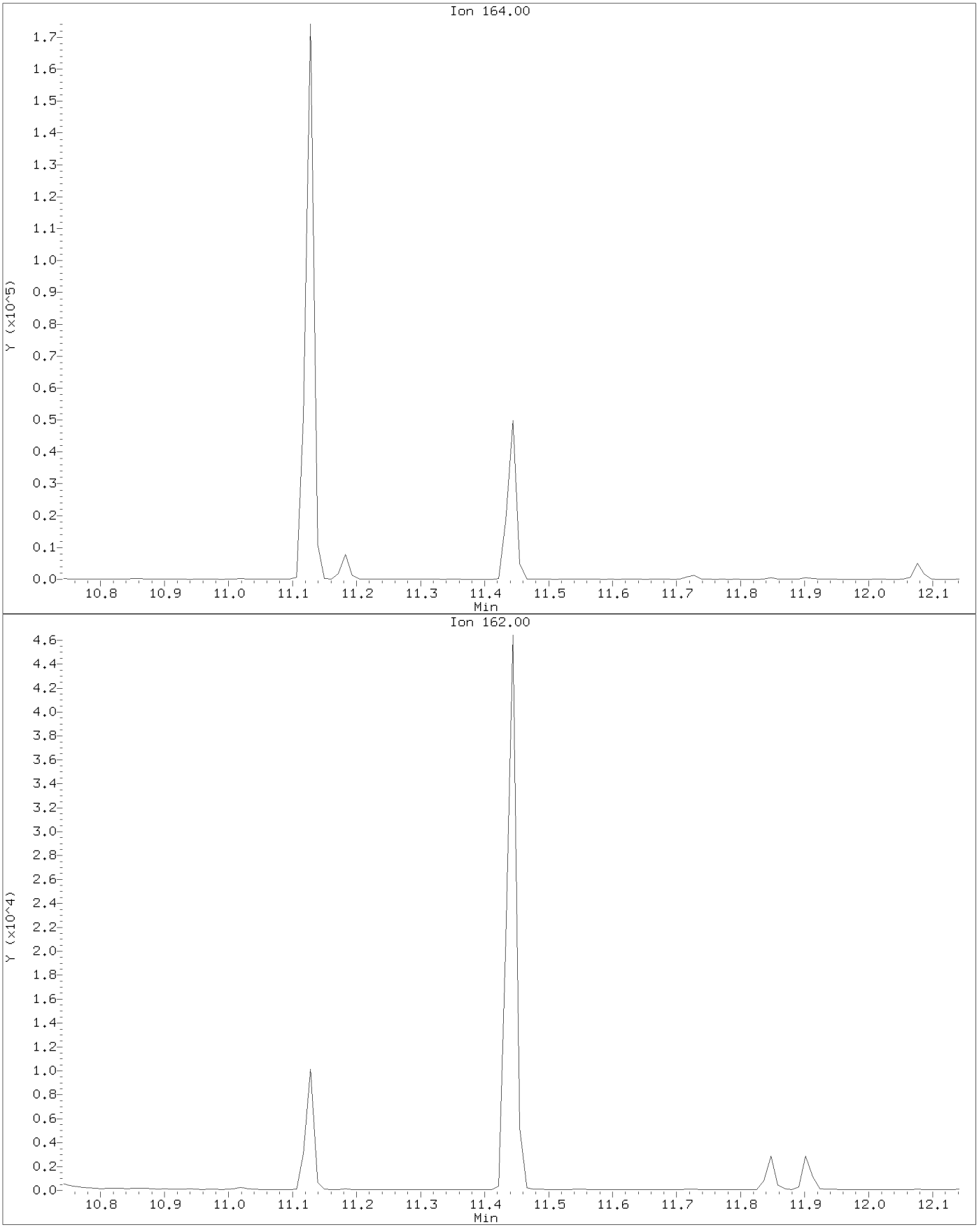
Injection Date: 18-MAY-2018 15:24
Instrument: gcms-n.i
Client Sample ID:

Compound: Acenaphthene-D10
CAS Number: 15067-26-2

BEFORE MANUAL INTEGRATION



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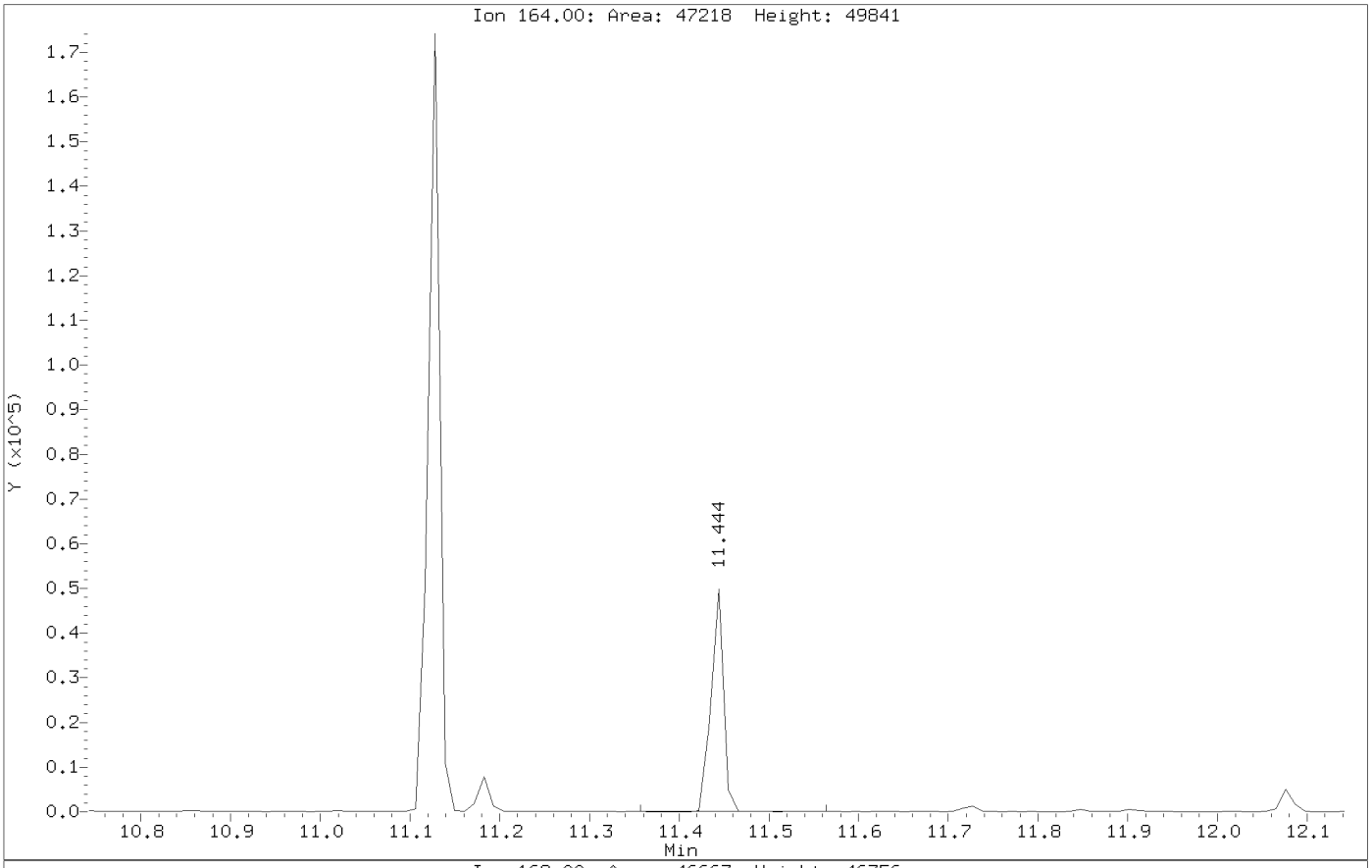
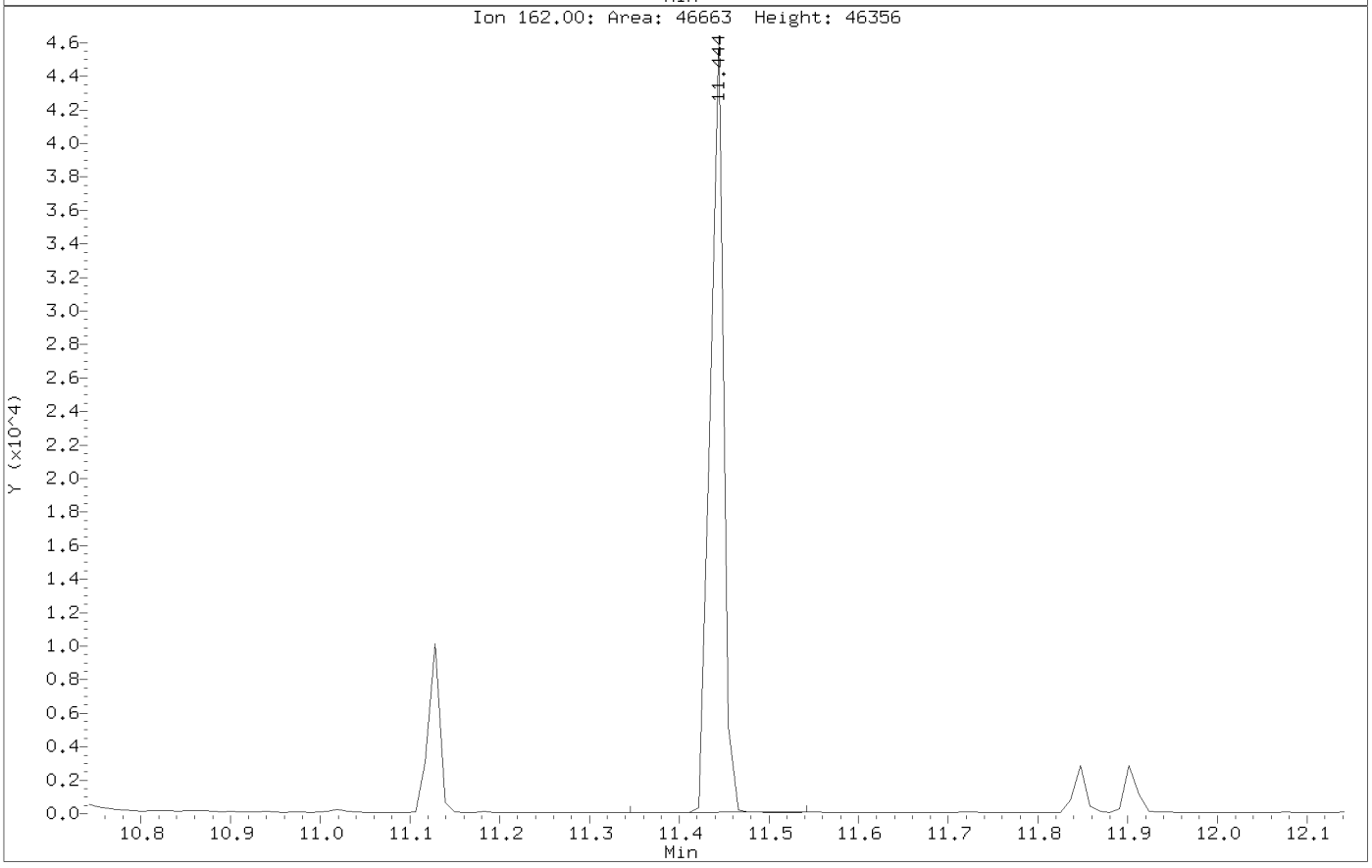
Injection Date: 18-MAY-2018 15:24
Instrument: gcms-n.i
Client Sample ID:

Compound: Acenaphthene-D10
CAS Number: 15067-26-2

AFTER MANUAL INTEGRATION





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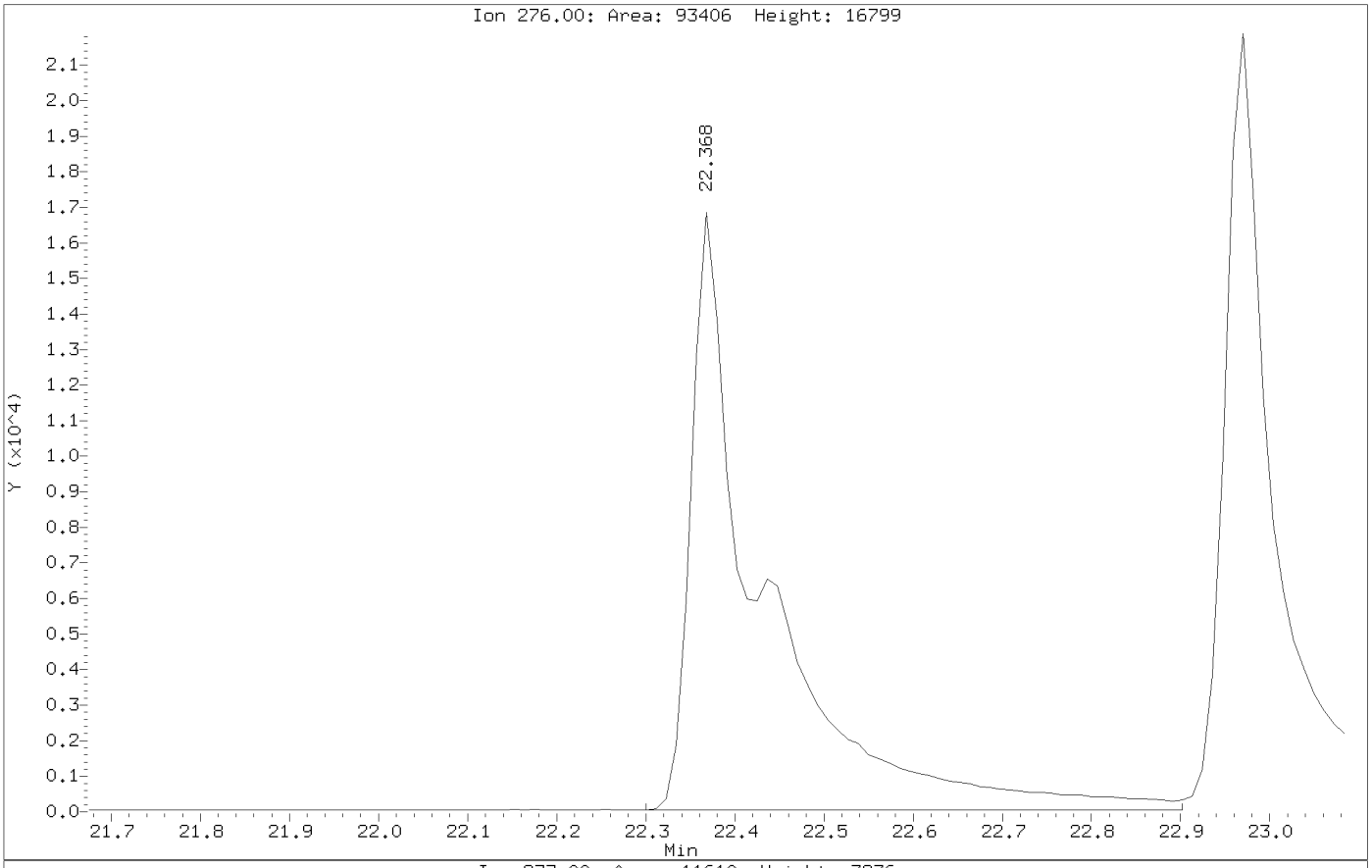
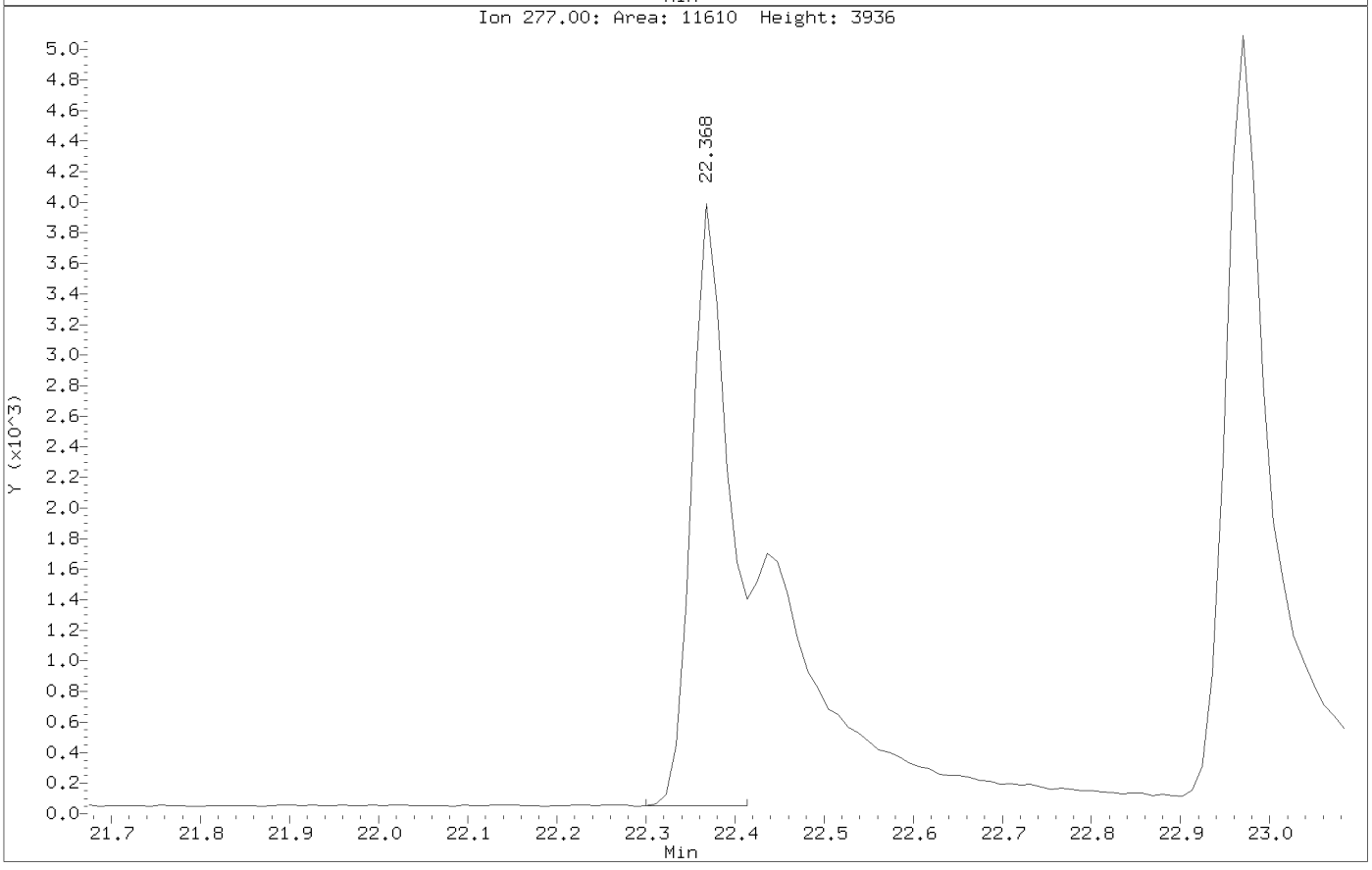
Injection Date: 18-MAY-2018 15:55
Instrument: gcms-n.i
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

BEFORE MANUAL INTEGRATION





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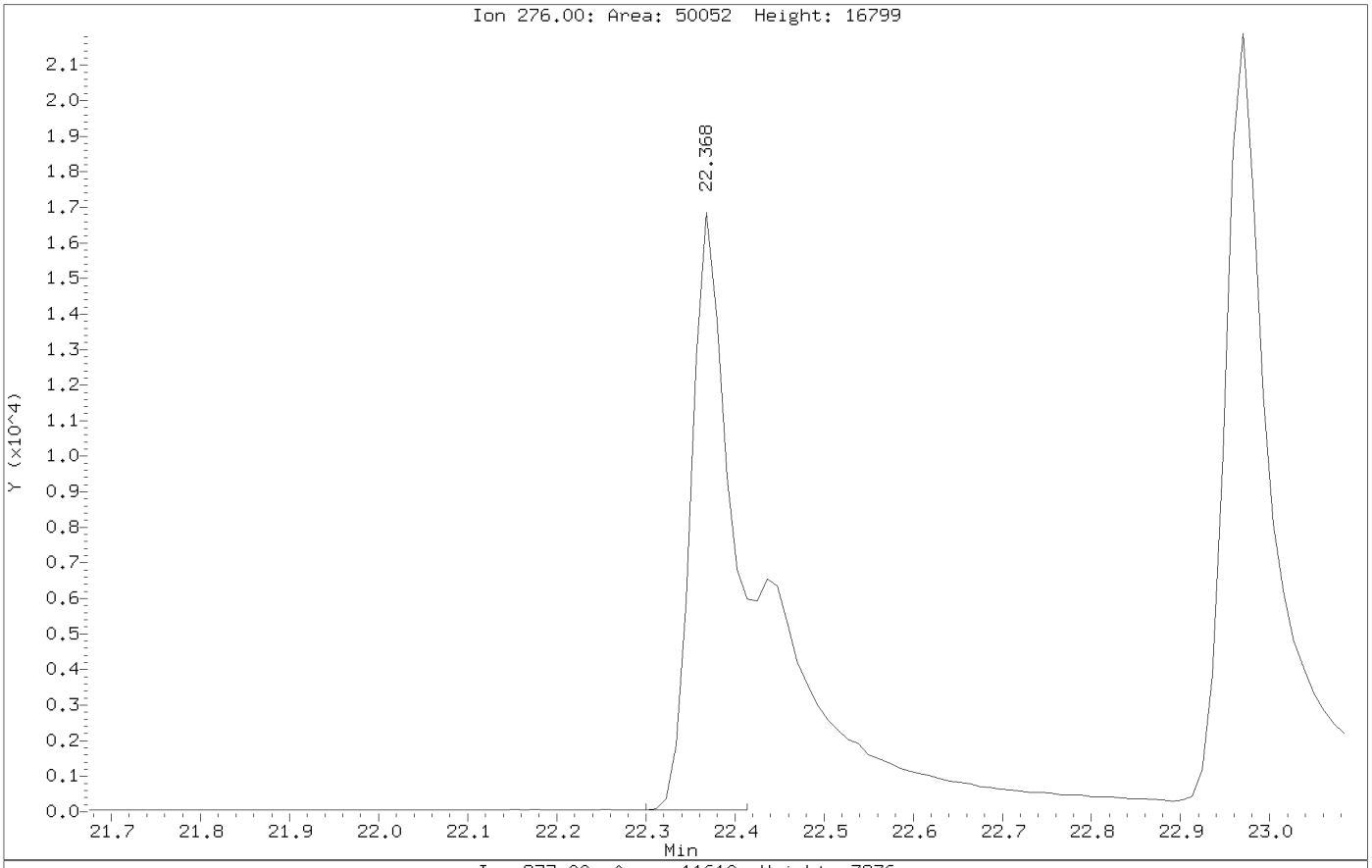
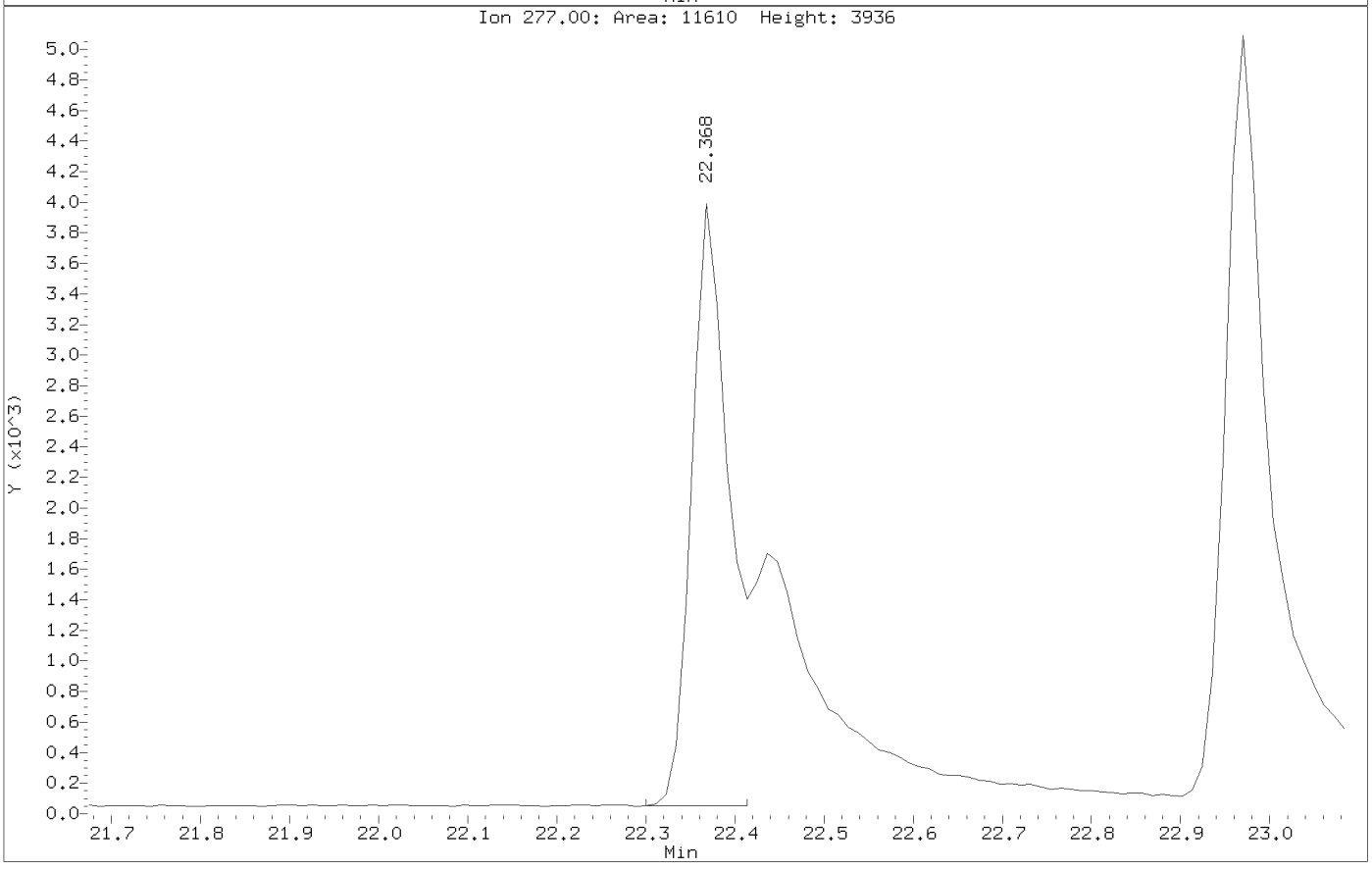
Injection Date: 18-MAY-2018 15:55
Instrument: gcms-n.i
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

AFTER MANUAL INTEGRATION





Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG228639-9
Analytical Date: 05/18/18 23:53
Lab File ID : N8601.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 05/18/18 12:47 05/18/18 15:24
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
27 Naphthalene	1.00844	1.02414	1.02414	0.010	1.55704	20.00000	Averaged
33 2-Methylnaphthalene	0.62570	0.65001	0.65001	0.010	3.88583	20.00000	Averaged
45 Acenaphthylene	2.13052	2.14428	2.14428	0.010	0.64572	20.00000	Averaged
48 Acenaphthene	1.37722	1.36044	1.36044	0.010	-1.21853	20.01000	Averaged
56 Fluorene	1.42688	1.41702	1.41702	0.010	-0.69104	20.00000	Averaged
66 Phenanthrene	1.19080	1.22292	1.22292	0.010	2.69721	20.00000	Averaged
67 Anthracene	1.13347	1.13751	1.13751	0.010	0.35624	20.00000	Averaged
70 Fluoranthene	1.13994	1.13626	1.13626	0.010	-0.32237	20.01000	Averaged
72 Pyrene	2.68077	2.71977	2.71977	0.010	1.45462	20.00000	Averaged
75 Benzo(a)anthracene	1.42234	1.36943	1.36943	0.010	-3.72013	20.00000	Averaged
77 Chrysene	1.52584	1.44394	1.44394	0.010	-5.36728	20.00000	Averaged
80 Benzo(b)fluoranthene	1.51956	1.40385	1.40385	0.010	-7.61439	20.00000	Averaged
81 Benzo(k)fluoranthene	2.00000	1.81562	1.79679	0.010	-9.21899	20.00000	Linear
82 Benzo(a)pyrene	1.25413	1.21813	1.21813	0.010	-2.87109	20.01000	Averaged
84 Indeno(1,2,3-cd)pyrene	2.00000	2.22679	0.26270	0.010	11.33935	20.00000	Quadratic
85 Dibenzo(a,h)anthracene	2.00000	2.02900	0.49982	0.010	1.44988	20.00000	Quadratic
86 Benzo(g,h,i)perylene	0.89957	0.97617	0.97617	0.010	8.51444	20.00000	Averaged
32 2-Methylnaphthalene-D10	0.49326	0.50778	0.50778	0.010	2.94387	20.00000	Averaged
55 Fluorene-D10	1.04964	1.02308	1.02308	0.010	-2.53052	20.00000	Averaged
71 Pyrene-D10	1.60748	1.68802	1.68802	0.010	5.01055	20.00000	Averaged

*** = Compound out of QC criteria**

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8601.D
Report Date: 23-May-2018 13:41

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N051818.b\N8601.D
Lab Smp Id: WG228639-9
Inj Date : 18-MAY-2018 23:53 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228639-9,SL3841
Misc Info : WG228639,WG228639,WG227639-4,SL3841-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N051818.b\NSPSIM94.m
Meth Date : 21-May-2018 08:44 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 15:24 Cal File: N8585.D
Als bottle: 23 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$ 1	1,4-Dioxane-d8	96	3.642	3.642	(0.487)	41804	2.00000	2.06	
2	1,4-Dioxane	88	3.684	3.684	(0.493)	43642	2.00000	1.99	
3	N-Nitrosodimethylamine	74	4.104	4.104	(0.549)	60807	2.00000	2.03	
4	Pyridine	79	4.136	4.125	(0.553)	102206	2.00000	1.99	
5	Benzaldehyde	77	6.926	6.916	(0.926)	20483	2.00000	1.60	
6	Phenol	94	7.067	7.077	(0.945)	280006	4.50000	4.49	
7	Bis(2-Chloroethyl)ether	93	7.157	7.157	(0.957)	105293	2.00000	2.05	
8	2-Chlorophenol	128	7.218	7.218	(0.965)	242441	4.50000	4.59	
9	1,3-Dichlorobenzene	146	7.409	7.409	(0.991)	117367	2.00000	2.02	
* 10	1,4-Dichlorobenzene-D4	152	7.479	7.479	(1.000)	33684	0.80000	(a)	
11	1,4-Dichlorobenzene	146	7.499	7.499	(1.003)	118487	2.00000	2.01	
12	1,2-Dichlorobenzene	146	7.691	7.691	(1.028)	112456	2.00000	2.03	
13	2-Methylphenol	108	7.822	7.832	(1.046)	201338	4.50000	4.58	
14	2,2'-Oxybis(1-chloropropane)	45	7.842	7.842	(1.048)	116424	2.00000	2.09	
15	Acetophenone	105	7.993	7.993	(0.877)	149174	2.00000	2.05	
16	N-Nitroso-di-n-propylamine	70	8.003	8.013	(1.070)	72639	2.00000	2.05	
17	3&4-Methylphenol	108	8.023	8.033	(1.073)	207552	4.50000	4.54	
18	Hexachloroethane	117	8.113	8.113	(1.085)	45701	2.00000	2.04	
19	Nitrobenzene	77	8.194	8.194	(0.899)	104078	2.00000	2.05	
20	Isophorone	82	8.516	8.516	(0.935)	193015	2.00000	2.10	

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8601.D
Report Date: 23-May-2018 13:41

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	21 2-Nitrophenol	139	8.617	8.617	(0.946)	109817	4.50000	4.65	
	22 2,4-Dimethylphenol	107	8.707	8.707	(0.956)	227474	4.50000	4.56	
	23 bis(2-Chloroethoxy)methane	93	8.818	8.818	(0.968)	119257	2.00000	2.05	
	24 2,4-Dichlorophenol	162	8.939	8.939	(0.981)	175126	4.50000	4.69	
	25 1,2,4-Trichlorobenzene	180	9.040	9.050	(0.992)	79581	2.00000	1.99	
*	26 Naphthalene-D8	136	9.110	9.110	(1.000)	102776	0.80000	(a)	
	27 Naphthalene	128	9.130	9.130	(1.002)	263142	2.00000	2.03	
	28 4-Chloroaniline	127	9.231	9.221	(1.013)	101831	2.00000	2.15	
	29 Hexachlorobutadiene	225	9.331	9.331	(1.024)	49114	2.00000	2.02	
	30 Caprolactam	113	9.659	9.689	(1.060)	27085	2.00000	2.39	
	31 4-Chloro-3-Methylphenol	107	9.886	9.895	(1.085)	177098	4.50000	4.43	
$	32 2-Methylnaphthalene-D10	152	10.014	10.014	(1.099)	130470	2.00000	2.06	
	33 2-Methylnaphthalene	142	10.053	10.053	(1.103)	167014	2.00000	2.08	
	34 1-Methylnaphthalene	142	10.181	10.181	(1.118)	160734	2.00000	2.05	
	35 1,2,4,5-Tetrachlorobenzene	216	10.289	10.289	(0.899)	76178	2.00000	2.00	
	36 Hexachlorocyclopentadiene	237	10.289	10.299	(0.899)	37242	2.00000	1.88	
$	37 2,4-Dibromophenol	252	10.427	10.427	(0.911)	39559	2.00000	1.98	
	38 2,4,6-Trichlorophenol	196	10.447	10.456	(0.913)	107010	4.50000	4.51	
	39 2,4,5-Trichlorophenol	196	10.496	10.496	(0.917)	104177	4.50000	4.20	
	40 1,1'-Biphenyl	154	10.683	10.693	(0.934)	202631	2.00000	2.00	
	41 2-Chloronaphthalene	164	10.703	10.703	(0.935)	51156	2.00000	1.95	
	42 2-Nitroaniline	65	10.850	10.850	(0.948)	46326	2.00000	1.98	
	43 Dimethyl Phthalate	163	11.117	11.127	(0.971)	409385	4.50000	4.42	
	44 2,6-Dinitrotoluene	165	11.171	11.182	(0.976)	40051	2.00000	1.95	
	45 Acenaphthylene	152	11.247	11.247	(0.983)	237747	2.00000	2.01	
	46 3-Nitroaniline	138	11.400	11.411	(0.996)	22813	2.00000	1.65	
*	47 Acenaphthene-D10	164	11.443	11.443	(1.000)	44350	0.80000	(a)	
	48 Acenaphthene	153	11.476	11.487	(1.003)	150839	2.00000	1.98	
	49 2,4-Dinitrophenol	184	11.542	11.542	(1.009)	19606	4.50000	3.16	
	50 4-Nitrophenol	109	11.661	11.661	(1.019)	45811	4.50000	4.02	
	51 2,4-Dinitrotoluene	165	11.716	11.727	(1.024)	49926	2.00000	1.98	
	52 Dibenzofuran	168	11.716	11.727	(1.024)	207807	2.00000	1.97	
	53 2,3,4,6-Tetrachlorophenol	232	11.901	11.912	(1.040)	81576	4.50000	4.29	
	54 Diethylphthalate	149	12.065	12.075	(1.054)	449041	4.50000	4.38	
$	55 Fluorene-D10	174	12.141	12.141	(1.061)	113434	2.00000	1.95	
	56 Fluorene	166	12.174	12.184	(1.064)	157112	2.00000	1.99	
	57 4-Chlorophenyl-phenylether	204	12.195	12.195	(1.066)	86300	2.00000	1.98	
	58 4-Nitroaniline	138	12.217	12.228	(1.068)	17180	2.00000	1.78	
	59 4,6-Dinitro-2-Methylphenol	198	12.261	12.272	(0.914)	46134	4.50000	4.48	
	60 N-Nitrosodiphenylamine	169	12.359	12.359	(0.921)	128467	2.00000	2.07	
	61 4-Bromophenyl-phenylether	248	12.844	12.844	(0.957)	44717	2.00000	2.09	
	62 Hexachlorobenzene	284	12.930	12.930	(0.963)	38919	2.00000	1.97	
	63 Atrazine	200	13.101	13.101	(0.976)	31934	2.00000	2.12	
	64 Pentachlorophenol	266	13.197	13.197	(0.983)	39451	4.50000	4.18	
*	65 Phenanthrene-D10	188	13.421	13.431	(1.000)	67585	0.80000	(a)	
	66 Phenanthrene	178	13.453	13.464	(1.002)	206627	2.00000	2.05	
	67 Anthracene	178	13.517	13.528	(1.007)	192197	2.00000	2.01	
	68 Carbazole	167	13.752	13.752	(1.025)	150759	2.00000	2.06	
	69 Di-n-butylphthalate	149	14.275	14.286	(1.064)	729307	4.50000	4.71	
	70 Fluoranthene	202	15.050	15.060	(1.121)	191986	2.00000	1.99	
$	71 Pyrene-D10	212	15.322	15.332	(0.889)	122424	2.00000	2.10	
	72 Pyrene	202	15.351	15.360	(0.891)	197251	2.00000	2.03	
	73 Butylbenzylphthalate	149	16.345	16.355	(0.949)	279900	4.50000	4.74	
	74 3,3'-Dichlorobenzidine	252	17.208	17.218	(0.999)	19460	2.00000	2.13	

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8601.D
Report Date: 23-May-2018 13:41

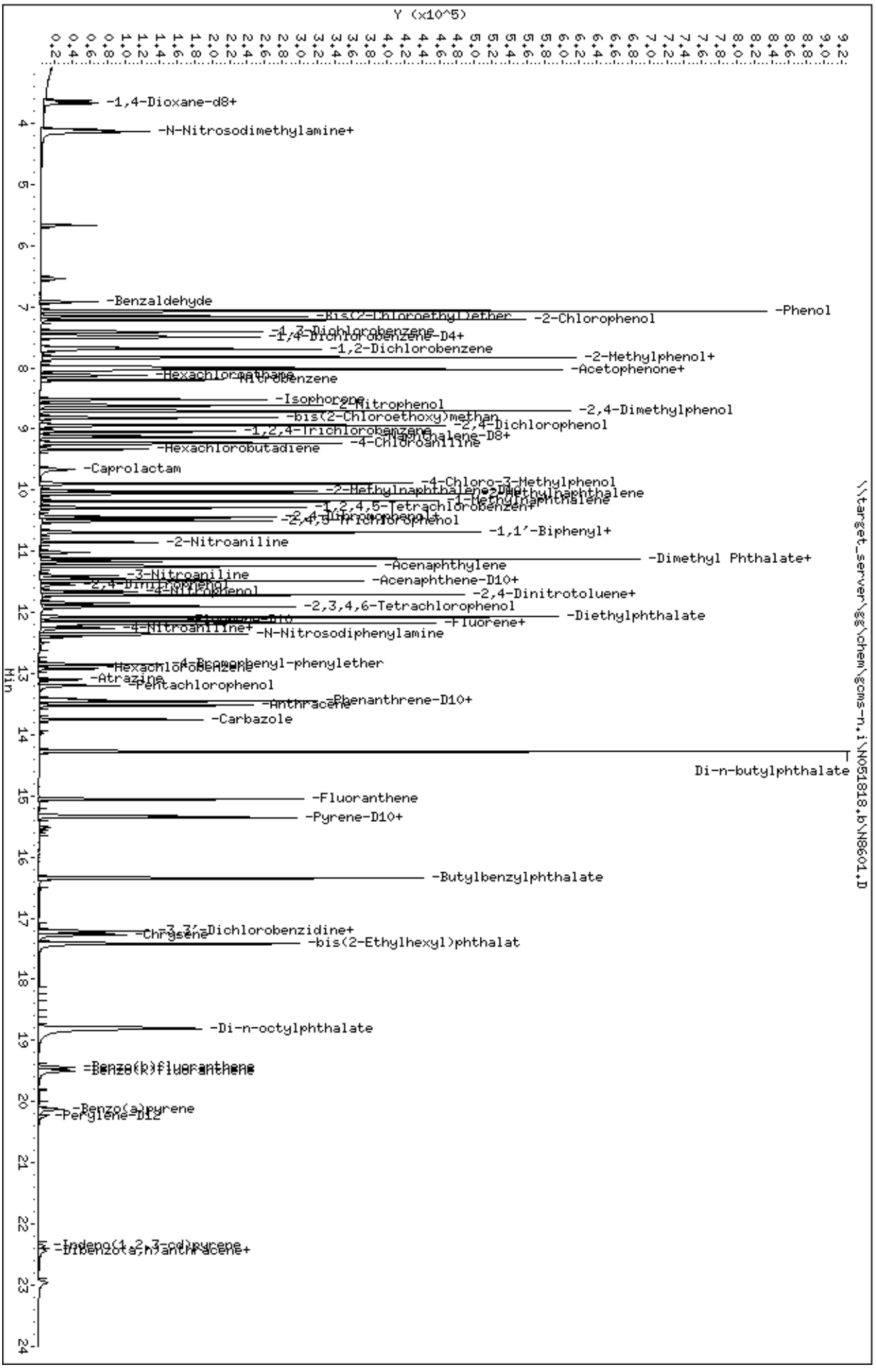
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	75 Benzo(a)anthracene	228	17.208	17.218	(0.999)	99318	2.00000	1.92	
*	76 Chrysene-D12	240	17.227	17.236	(1.000)	29010	0.80000	(a)	
	77 Chrysene	228	17.274	17.283	(1.003)	104722	2.00000	1.89	
	78 bis(2-Ethylhexyl)phthalate	149	17.415	17.424	(1.011)	382133	4.50000	4.96	
	79 Di-n-octylphthalate	149	18.802	18.813	(1.091)	519267	4.50000	5.17	
	80 Benzo(b)fluoranthene	252	19.438	19.449	(0.960)	60643	2.00000	1.85	
	81 Benzo(k)fluoranthene	252	19.494	19.517	(0.963)	77617	2.00000	1.82(H)	
	82 Benzo(a)pyrene	252	20.119	20.130	(0.994)	52620	2.00000	1.94	
*	83 Perylene-D12	264	20.244	20.244	(1.000)	17279	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	22.356	22.379	(1.298)	19052	2.00000	2.23(M)	M3
	85 Dibenzo(a,h)anthracene	278	22.436	22.447	(1.108)	21591	2.00000	2.03	
	86 Benzo(g,h,i)perylene	276	22.958	22.981	(1.134)	42168	2.00000	2.17	
M	87 Total PAHs	100				360214	36.0000	10.1	
M	88 Total Low PAHs	100				1374678	14.0000	14.1	
M	89 Total High PAHs	100				667488	12.0000	11.8	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

WAS

1:49 pm, May 23, 2018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Date : 18-MAY-2018 23:53
Client ID:
Sample Info: WG228639-9,SL3841
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N051818,b\N8601,D
Y (x10^5)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine+
-Benzaldehyde
-Phenol
-Bis(2-Chloroethyl)ether
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-Hexachloroethane
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-1,2,4-Trichlorobenzene
-2,4-Dichlorophenol
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene-D10+
-2-Methylnaphthalene
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4,6-Trichlorophenol
-2,4,5-Trichlorophenol
-1,1'-Biphenyl+
-2-Nitroaniline
-Dimethyl Phthalate+
-Acenaphthylene
-3-Nitroaniline
-Acenaphthene-D10+
-2,4-Dinitrophenol
-4-Nitrophenol
-2,4-Dinitrotoluene+
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-Fluorene+
-4-Nitroaniline+
-N-Nitrosodiphenylamine
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-d12
-Indeno(1,2,3-cd)pyrene
-Dibenzo(a,h)anthracene+

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8601.D
Injection Date: 18-MAY-2018 23:53
Instrument: gcms-n.i
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

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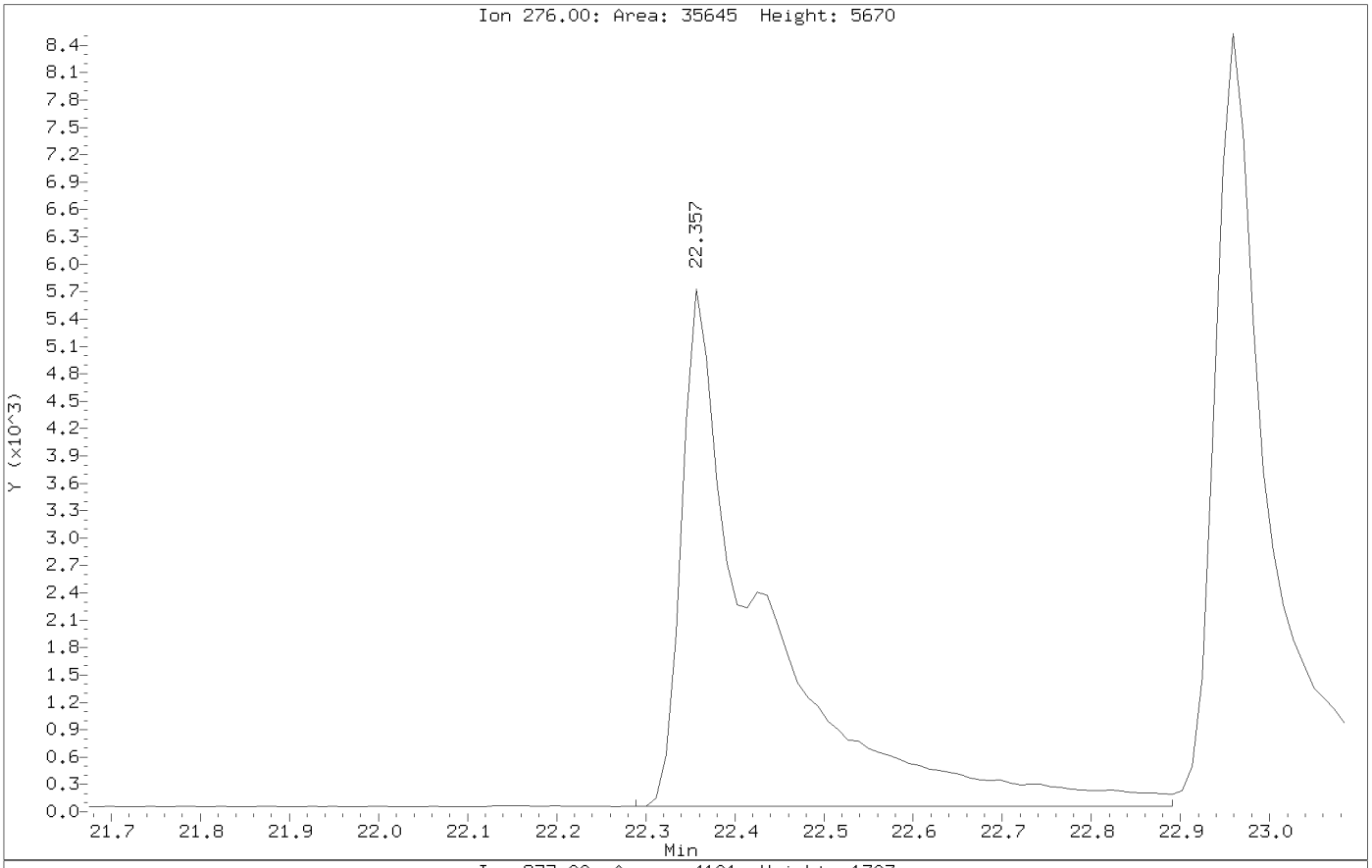

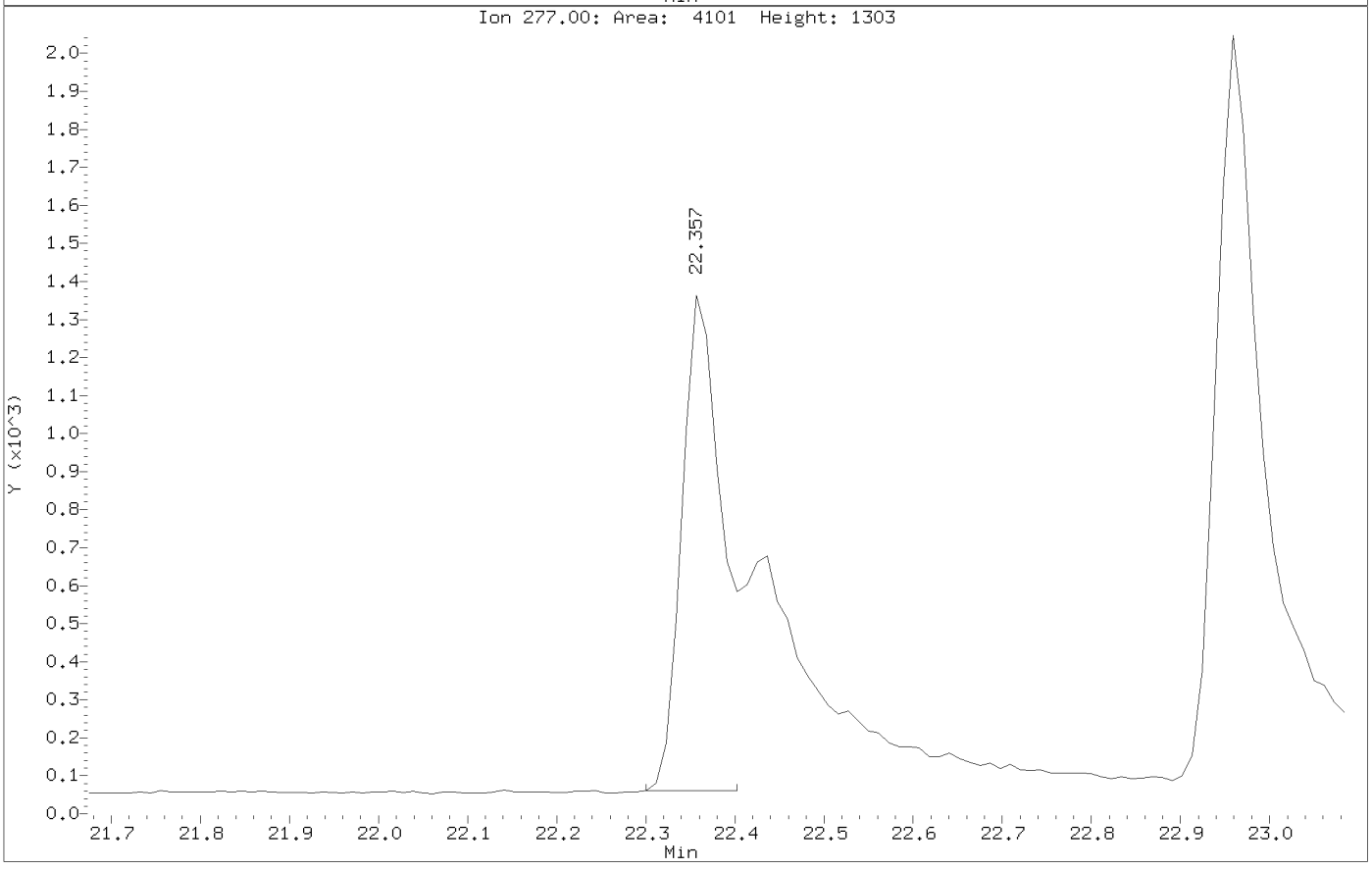

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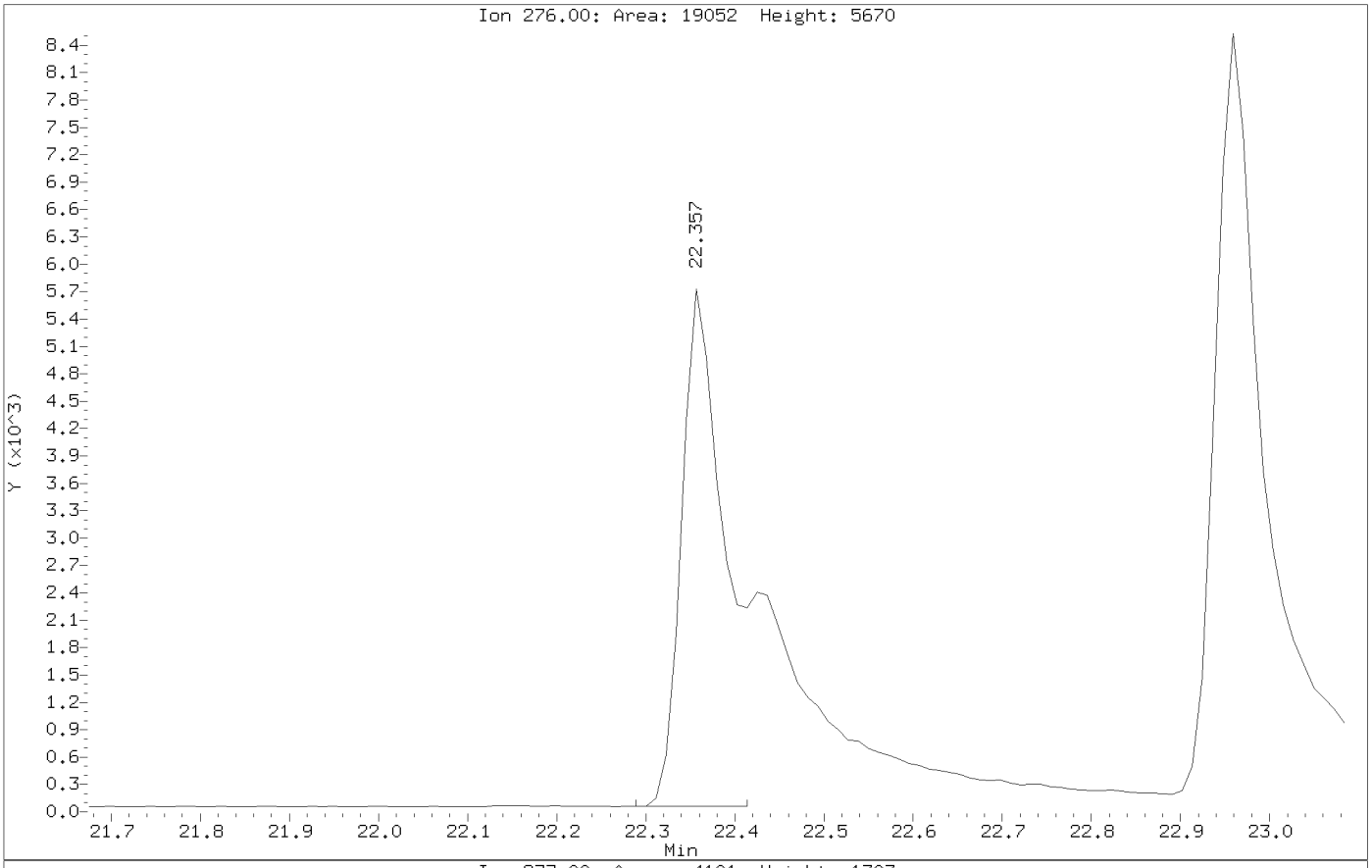
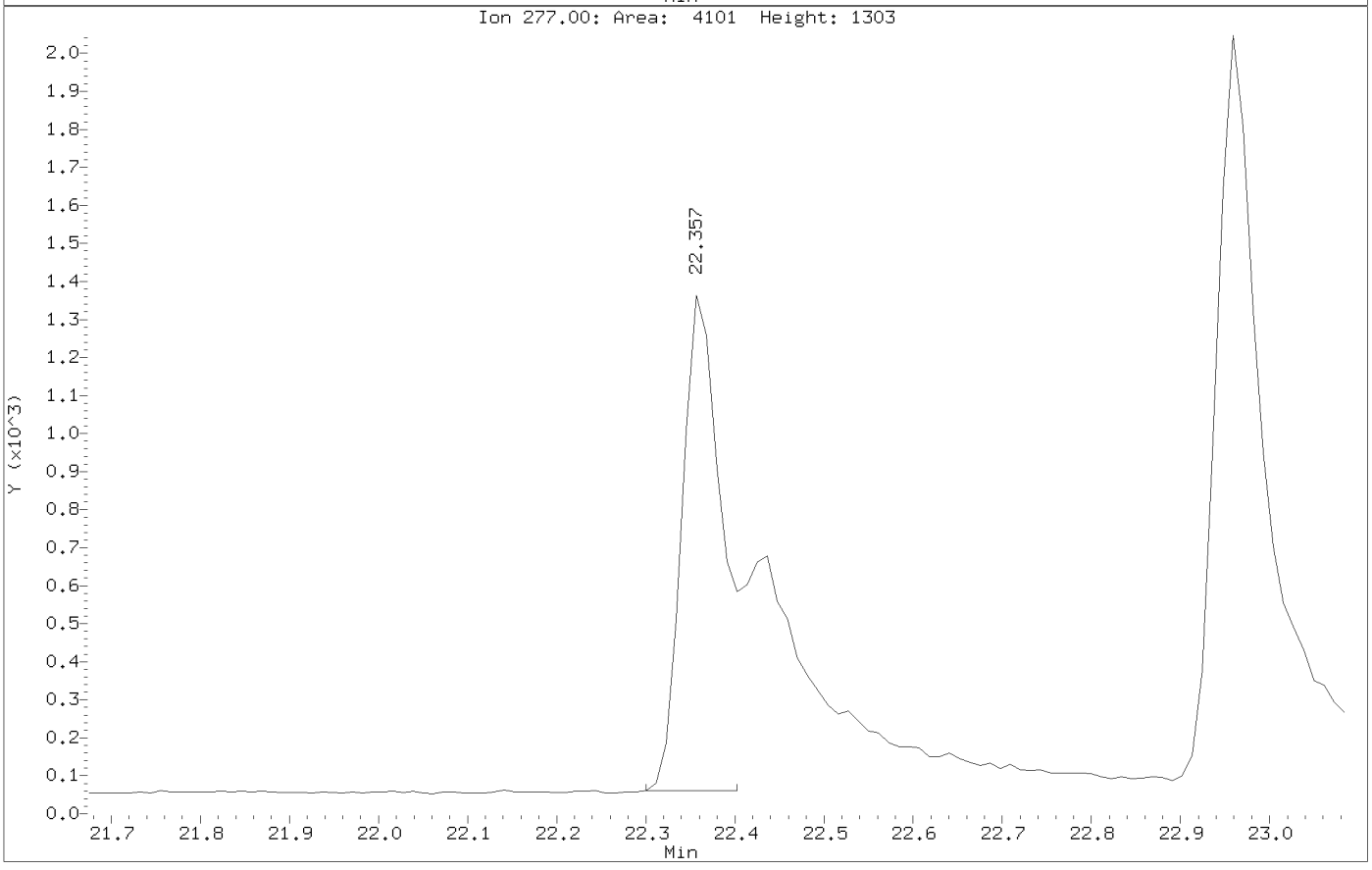
Injection Date: 18-MAY-2018 23:53
Instrument: gcms-n.i
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

AFTER MANUAL INTEGRATION





Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG228771-2
Analytical Date: 05/21/18 11:07
Lab File ID : N8611.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 05/18/18 12:47 05/18/18 15:24
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
27 Naphthalene	1.00844	0.96376	0.96376	0.010	-4.43001	20.00000	Averaged
33 2-Methylnaphthalene	0.62570	0.60594	0.60594	0.010	-3.15777	20.00000	Averaged
45 Acenaphthylene	2.13052	1.89583	1.89583	0.010	-11.01577	20.00000	Averaged
48 Acenaphthene	1.37722	1.25030	1.25030	0.010	-9.21594	20.01000	Averaged
56 Fluorene	1.42688	1.31379	1.31379	0.010	-7.92536	20.00000	Averaged
66 Phenanthrene	1.19080	1.07698	1.07698	0.010	-9.55850	20.00000	Averaged
67 Anthracene	1.13347	1.03381	1.03381	0.010	-8.79303	20.00000	Averaged
70 Fluoranthene	1.13994	1.04233	1.04233	0.010	-8.56245	20.01000	Averaged
72 Pyrene	2.68077	2.24557	2.24557	0.010	-16.23419	20.00000	Averaged
75 Benzo(a)anthracene	1.42234	1.27051	1.27051	0.010	-10.67489	20.00000	Averaged
77 Chrysene	1.52584	1.29711	1.29711	0.010	-14.99012	20.00000	Averaged
80 Benzo(b)fluoranthene	1.51956	1.23084	1.23084	0.010	-19.00004	20.00000	Averaged
81 Benzo(k)fluoranthene	2.00000	1.62740	1.62610	0.010	-18.63004	20.00000	Linear
82 Benzo(a)pyrene	1.25413	1.04636	1.04636	0.010	-16.56677	20.01000	Averaged
84 Indeno(1,2,3-cd)pyrene	2.00000	2.05947	0.24142	0.010	2.97374	20.00000	Quadratic
85 Dibenzo(a,h)anthracene	2.00000	1.79987	0.43786	0.010	-10.00638	20.00000	Quadratic
86 Benzo(g,h,i)perylene	0.89957	0.74142	0.74142	0.010	-17.58049	20.00000	Averaged
32 2-Methylnaphthalene-D10	0.49326	0.49141	0.49141	0.010	-0.37665	20.00000	Averaged
55 Fluorene-D10	1.04964	0.98622	0.98622	0.010	-6.04238	20.00000	Averaged
71 Pyrene-D10	1.60748	1.42048	1.42048	0.010	-11.63327	20.00000	Averaged

*** = Compound out of QC criteria**

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Data File: \\target_server\gg\chem\gcms-n.i\N052118.b\N8611.D
Report Date: 23-May-2018 13:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052118.b\N8611.D
Lab Smp Id: WG228771-2
Inj Date : 21-MAY-2018 11:07 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228771-2,SL3841
Misc Info : WG228771,WG228771,WG228639-4,SL3841-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N052118.b\NSPSIM94.m
Meth Date : 22-May-2018 07:36 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 15:24 Cal File: N8585.D
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: KATHADIN-50E985

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

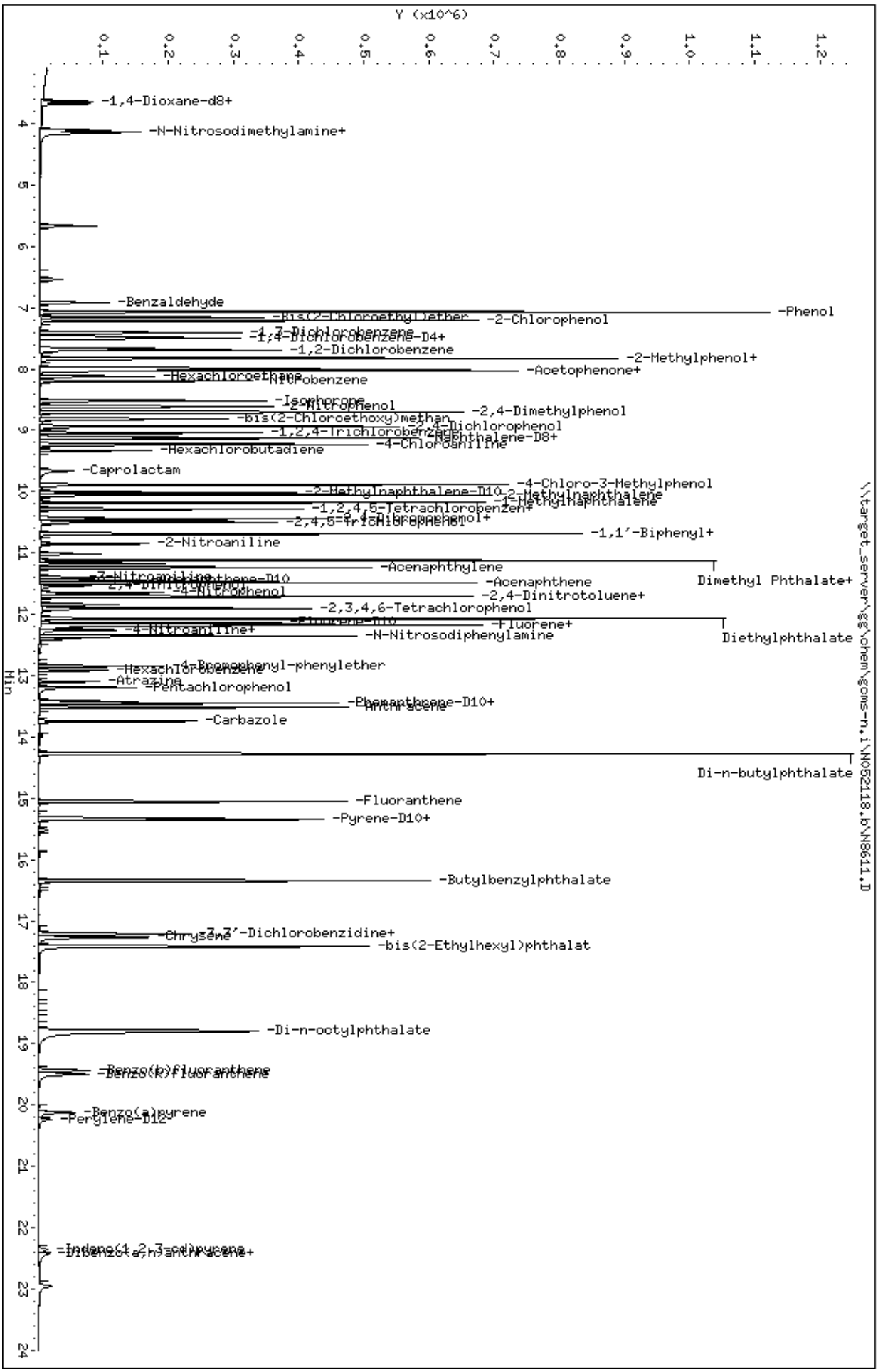
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.480	(1.000)	48948	0.80000	(a)	
*	26 Naphthalene-D8	136	9.100	9.111	(1.000)	159326	0.80000	(a)	
	27 Naphthalene	128	9.130	9.131	(1.003)	383881	2.00000	1.91	
$	32 2-Methylnaphthalene-D10	152	10.014	10.014	(1.100)	195734	2.00000	1.99	
	33 2-Methylnaphthalene	142	10.053	10.053	(1.105)	241355	2.00000	1.94	
	45 Acenaphthylene	152	11.237	11.248	(0.983)	347131	2.00000	1.78	
*	47 Acenaphthene-D10	164	11.433	11.444	(1.000)	73241	0.80000	(a)	
	48 Acenaphthene	153	11.476	11.488	(1.004)	228933	2.00000	1.82	
$	55 Fluorene-D10	174	12.130	12.141	(1.061)	180579	2.00000	1.88	
	56 Fluorene	166	12.174	12.185	(1.065)	240559	2.00000	1.84	
*	65 Phenanthrene-D10	188	13.421	13.432	(1.000)	120646	0.80000	(a)	
	66 Phenanthrene	178	13.453	13.464	(1.002)	324832	2.00000	1.81	
	67 Anthracene	178	13.517	13.528	(1.007)	311812	2.00000	1.82	
	70 Fluoranthene	202	15.050	15.060	(1.121)	314383	2.00000	1.83	
$	71 Pyrene-D10	212	15.323	15.332	(0.889)	204659	2.00000	1.77	
	72 Pyrene	202	15.341	15.360	(0.891)	323536	2.00000	1.68	
	75 Benzo(a)anthracene	228	17.208	17.218	(0.999)	183052	2.00000	1.79	
*	76 Chrysene-D12	240	17.227	17.236	(1.000)	57631	0.80000	(a)	
	77 Chrysene	228	17.274	17.283	(1.003)	186885	2.00000	1.70	
	80 Benzo(b)fluoranthene	252	19.426	19.450	(0.960)	110822	2.00000	1.62	

Data File: \\target_server\gg\chem\gcms-n.i\N052118.b\N8611.D
Report Date: 23-May-2018 13:32

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
81	Benzo(k)fluoranthene	252	19.495	19.518	(0.964)	146410	2.00000	1.63(H)	
82	Benzo(a)pyrene	252	20.119	20.131	(0.994)	94212	2.00000	1.67	
* 83	Perylene-D12	264	20.233	20.245	(1.000)	36015	0.80000	(a)	
84	Indeno(1,2,3-cd)pyrene	276	22.356	22.380	(1.298)	34783	2.00000	2.06	
85	Dibenzo(a,h)anthracene	278	22.436	22.448	(1.109)	39424	2.00000	1.80	
86	Benzo(g,h,i)perylene	276	22.947	22.981	(1.134)	66756	2.00000	1.65	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
H - Operator selected an alternate compound hit.


Data File: \\target_server\gg\chem\gcms-n,i\N052118,b\N8611,D
Date : 21-MAY-2018 11:07
Client ID:
Sample Info: WG228771-2,SL3841
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N052118,b\N8611,D
Y (x10^6)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine+
-Benzaldehyde
-Phenol
-Bis(2-Chloroethyl)ether
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-Hexachloroethane
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene-D10
-2-Methylnaphthalene
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4,6-Tribromophenol+
-2,4,5-Trichlorophenol
-1,1'-Biphenyl+
-2-Nitroaniline
-Acenaphthylene
-2-Nitroaniline
-Acenaphthene-D10
-Acenaphthene
Dimethyl Phthalate+
2,6-Dinitrotoluene
-4-Nitrophenol
-2,4-Dinitrotoluene+
-2,3,4,6-Tetrachlorophenol
-Fluorene-D10
-Fluorene+
-4-Nitroaniline+
-N-Nitrosodiphenylamine
Diethylphthalate
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Chrysene
-3,3'-Dichlorobenzidine+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
Dibenz(a,h)anthracene+

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG228771-3
Analytical Date: 05/21/18 22:44
Lab File ID : N8633.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 05/18/18 12:47 05/18/18 15:24
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
27 Naphthalene	1.00844	0.94580	0.94580	0.010	-6.21151	20.00000	Averaged	
33 2-Methylnaphthalene	0.62570	0.60341	0.60341	0.010	-3.56244	20.00000	Averaged	
45 Acenaphthylene	2.13052	1.97137	1.97137	0.010	-7.47031	20.00000	Averaged	
48 Acenaphthene	1.37722	1.26027	1.26027	0.010	-8.49189	20.01000	Averaged	
56 Fluorene	1.42688	1.37271	1.37271	0.010	-3.79634	20.00000	Averaged	
66 Phenanthrene	1.19080	1.05804	1.05804	0.010	-11.14894	20.00000	Averaged	
67 Anthracene	1.13347	1.10902	1.10902	0.010	-2.15760	20.00000	Averaged	
70 Fluoranthene	1.13994	1.13847	1.13847	0.010	-0.12848	20.01000	Averaged	
72 Pyrene	2.68077	2.26365	2.26365	0.010	-15.55977	20.00000	Averaged	
75 Benzo(a)anthracene	1.42234	1.24181	1.24181	0.010	-12.69276	20.00000	Averaged	
77 Chrysene	1.52584	1.31565	1.31565	0.010	-13.77557	20.00000	Averaged	
80 Benzo(b)fluoranthene	1.51956	1.18989	1.18989	0.010	-21.69518	20.00000	Averaged	*
81 Benzo(k)fluoranthene	2.00000	1.65980	1.65548	0.010	-17.01017	20.00000	Linear	
82 Benzo(a)pyrene	1.25413	1.17353	1.17353	0.010	-6.42724	20.01000	Averaged	
84 Indeno(1,2,3-cd)pyrene	2.00000	3.04421	0.36822	0.010	52.21075	20.00000	Quadratic	*
85 Dibenzo(a,h)anthracene	2.00000	2.74676	0.69611	0.010	37.33779	20.00000	Quadratic	*
86 Benzo(g,h,i)perylene	0.89957	0.88461	0.88461	0.010	-1.66381	20.00000	Averaged	
32 2-Methylnaphthalene-D10	0.49326	0.48828	0.48828	0.010	-1.01035	20.00000	Averaged	
55 Fluorene-D10	1.04964	1.01965	1.01965	0.010	-2.85717	20.00000	Averaged	
71 Pyrene-D10	1.60748	1.37888	1.37888	0.010	-14.22087	20.00000	Averaged	

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
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Data File: \\target_server\gg\chem\gcms-n.i\N052118.b\N8633.D
Report Date: 23-May-2018 13:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052118.b\N8633.D
Lab Smp Id: WG228771-3
Inj Date : 21-MAY-2018 22:44 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228771-3,SL3841
Misc Info : WG228771,WG228771,WG228639-4,SL3841-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N052118.b\NSPSIM94.m
Meth Date : 22-May-2018 07:36 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 15:24 Cal File: N8585.D
Als bottle: 24 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.480	(1.000)	47808	0.80000	(a)	
*	26 Naphthalene-D8	136	9.100	9.111	(1.000)	163087	0.80000	(a)	
	27 Naphthalene	128	9.130	9.131	(1.003)	385618	2.00000	1.88	
$	32 2-Methylnaphthalene-D10	152	10.013	10.014	(1.100)	199080	2.00000	1.98	
	33 2-Methylnaphthalene	142	10.053	10.053	(1.105)	246020	2.00000	1.93	
	45 Acenaphthylene	152	11.247	11.248	(0.984)	363648	2.00000	1.85	
*	47 Acenaphthene-D10	164	11.433	11.444	(1.000)	73786	0.80000	(a)	
	48 Acenaphthene	153	11.476	11.488	(1.004)	232476	2.00000	1.83	
$	55 Fluorene-D10	174	12.130	12.141	(1.061)	188090	2.00000	1.94	
	56 Fluorene	166	12.173	12.185	(1.065)	253217	2.00000	1.92	
*	65 Phenanthrene-D10	188	13.421	13.432	(1.000)	130924	0.80000	(a)	
	66 Phenanthrene	178	13.453	13.464	(1.002)	346306	2.00000	1.78	
	67 Anthracene	178	13.517	13.528	(1.007)	362993	2.00000	1.96	
	70 Fluoranthene	202	15.050	15.060	(1.121)	372634	2.00000	2.00	
$	71 Pyrene-D10	212	15.322	15.332	(0.889)	230894	2.00000	1.72	
	72 Pyrene	202	15.351	15.360	(0.891)	379048	2.00000	1.69	
	75 Benzo(a)anthracene	228	17.208	17.218	(0.999)	207941	2.00000	1.75	
*	76 Chrysene-D12	240	17.227	17.236	(1.000)	66980	0.80000	(a)	
	77 Chrysene	228	17.274	17.283	(1.003)	220305	2.00000	1.72	
	80 Benzo(b)fluoranthene	252	19.438	19.450	(0.960)	121089	2.00000	1.57	

Data File: \\target_server\gg\chem\gcms-n.i\N052118.b\N8633.D
Report Date: 23-May-2018 13:32

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
81	Benzo(k)fluoranthene	252	19.494	19.518	(0.963)	168470	2.00000	1.66(H)	
82	Benzo(a)pyrene	252	20.130	20.131	(0.994)	119424	2.00000	1.87	
* 83	Perylene-D12	264	20.244	20.245	(1.000)	40706	0.80000	(a)	
84	Indeno(1,2,3-cd)pyrene	276	22.368	22.380	(1.298)	61659	2.00000	3.04(M)	M3
85	Dibenzo(a,h)anthracene	278	22.447	22.448	(1.109)	70840	2.00000	2.75	
86	Benzo(g,h,i)perylene	276	22.958	22.981	(1.134)	90022	2.00000	1.97	

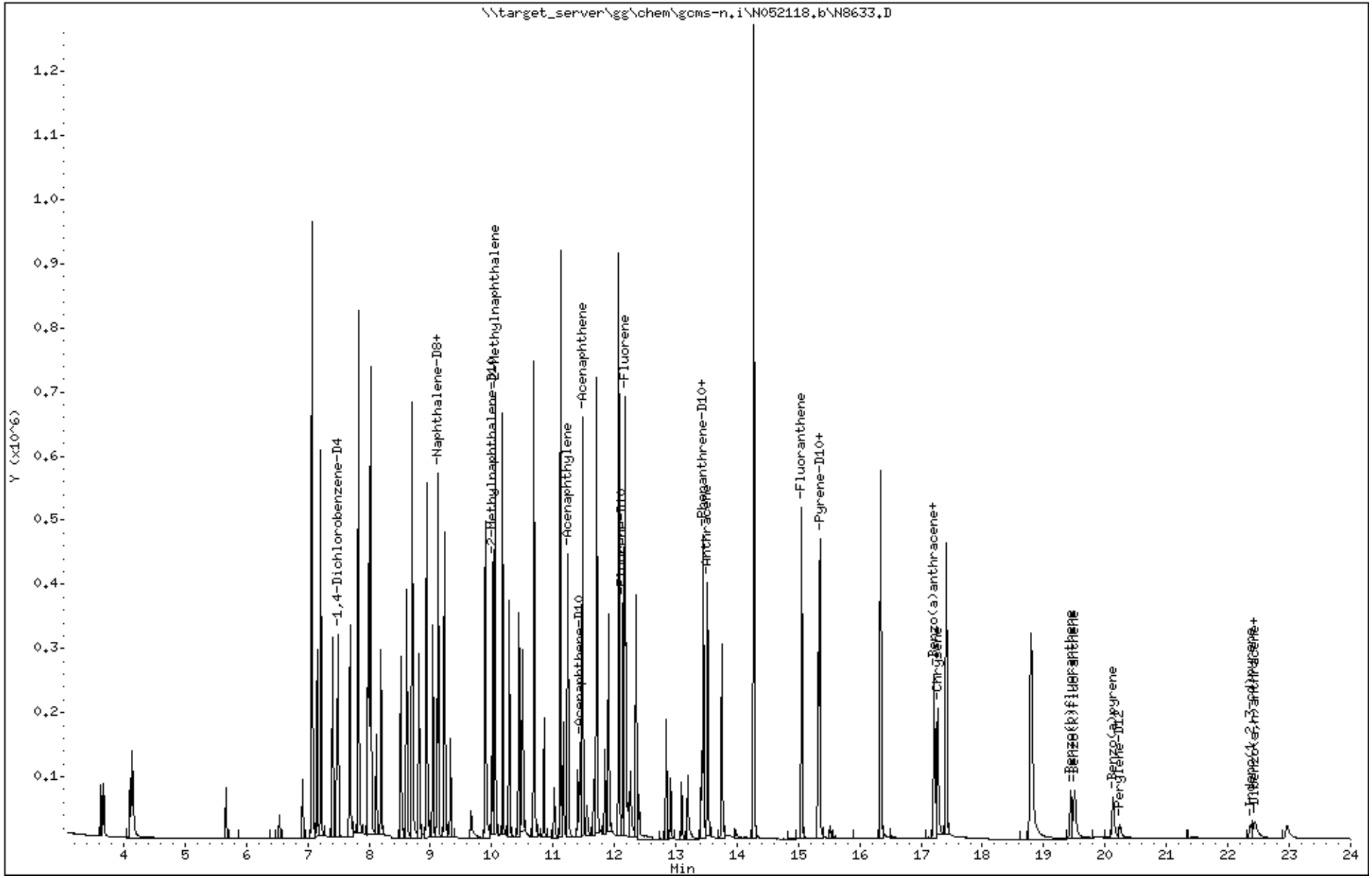
QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

WAS

1:52 pm, May 23, 2018

Data File: \\target_server\gg\chem\gcms-n.i\N052118.b\N8633.D
Date : 21-MAY-2018 22:44
Client ID:
Instrument: gcms-n.i
Sample Info: WG228771-3,SL3841
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000106

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG228771-4
Analytical Date: 05/21/18 23:16
Lab File ID : N8634.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 05/18/18 12:47 05/18/18 15:24
Column ID:

	Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
27	Naphthalene	1.00844	0.96703	0.96703	0.010	-4.10607	20.00000	Averaged	
33	2-Methylnaphthalene	0.62570	0.61416	0.61416	0.010	-1.84441	20.00000	Averaged	
45	Acenaphthylene	2.13052	1.93537	1.93537	0.010	-9.16006	20.00000	Averaged	
48	Acenaphthene	1.37722	1.23731	1.23731	0.010	-10.15904	20.01000	Averaged	
56	Fluorene	1.42688	1.35776	1.35776	0.010	-4.84402	20.00000	Averaged	
66	Phenanthrene	1.19080	1.04101	1.04101	0.010	-12.57901	20.00000	Averaged	
67	Anthracene	1.13347	1.06764	1.06764	0.010	-5.80837	20.00000	Averaged	
70	Fluoranthene	1.13994	1.09369	1.09369	0.010	-4.05698	20.01000	Averaged	
72	Pyrene	2.68077	2.50534	2.50534	0.010	-6.54395	20.00000	Averaged	
75	Benzo(a)anthracene	1.42234	1.25379	1.25379	0.010	-11.85039	20.00000	Averaged	
77	Chrysene	1.52584	1.34822	1.34822	0.010	-11.64060	20.00000	Averaged	
80	Benzo(b)fluoranthene	1.51956	1.16273	1.16273	0.010	-23.48253	20.00000	Averaged	*
81	Benzo(k)fluoranthene	2.00000	1.78051	1.76495	0.010	-10.97441	20.00000	Linear	
82	Benzo(a)pyrene	1.25413	1.17105	1.17105	0.010	-6.62483	20.01000	Averaged	
84	Indeno(1,2,3-cd)pyrene	2.00000	2.33024	0.27591	0.010	16.51205	20.00000	Quadratic	
85	Dibenzo(a,h)anthracene	2.00000	2.66785	0.67437	0.010	33.39225	20.00000	Quadratic	*
86	Benzo(g,h,i)perylene	0.89957	0.88585	0.88585	0.010	-1.52564	20.00000	Averaged	
32	2-Methylnaphthalene-D10	0.49326	0.49492	0.49492	0.010	0.33570	20.00000	Averaged	
55	Fluorene-D10	1.04964	1.01103	1.01103	0.010	-3.67848	20.00000	Averaged	
71	Pyrene-D10	1.60748	1.54553	1.54553	0.010	-3.85382	20.00000	Averaged	

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
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Data File: \\target_server\gg\chem\gcms-n.i\N052118.b\N8634.D
Report Date: 23-May-2018 13:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052118.b\N8634.D
Lab Smp Id: WG228771-4
Inj Date : 21-MAY-2018 23:16 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228771-4,SL3841
Misc Info : WG228771,WG228771,WG228639-4,SL3841-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N052118.b\NSPSIM94.m
Meth Date : 22-May-2018 07:36 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 15:24 Cal File: N8585.D
Als bottle: 24 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.480	(1.000)	47792	0.80000	(a)	
*	26 Naphthalene-D8	136	9.100	9.111	(1.000)	169901	0.80000	(a)	
	27 Naphthalene	128	9.130	9.131	(1.003)	410748	2.00000	1.92	
$	32 2-Methylnaphthalene-D10	152	10.013	10.014	(1.100)	210218	2.00000	2.01	
	33 2-Methylnaphthalene	142	10.053	10.053	(1.105)	260865	2.00000	1.96	
	45 Acenaphthylene	152	11.236	11.248	(0.983)	396087	2.00000	1.82	
*	47 Acenaphthene-D10	164	11.433	11.444	(1.000)	81863	0.80000	(a)	
	48 Acenaphthene	153	11.476	11.488	(1.004)	253225	2.00000	1.80	
$	55 Fluorene-D10	174	12.130	12.141	(1.061)	206915	2.00000	1.93	
	56 Fluorene	166	12.174	12.185	(1.065)	277876	2.00000	1.90	
*	65 Phenanthrene-D10	188	13.421	13.432	(1.000)	146822	0.80000	(a)	
	66 Phenanthrene	178	13.453	13.464	(1.002)	382107	2.00000	1.75	
	67 Anthracene	178	13.517	13.528	(1.007)	391882	2.00000	1.88	
	70 Fluoranthene	202	15.050	15.060	(1.121)	401445	2.00000	1.92	
$	71 Pyrene-D10	212	15.322	15.332	(0.889)	253274	2.00000	1.92	
	72 Pyrene	202	15.351	15.360	(0.891)	410563	2.00000	1.87	
	75 Benzo(a)anthracene	228	17.208	17.218	(0.999)	205465	2.00000	1.76	
*	76 Chrysene-D12	240	17.227	17.236	(1.000)	65550	0.80000	(a)	
	77 Chrysene	228	17.274	17.283	(1.003)	220940	2.00000	1.77	
	80 Benzo(b)fluoranthene	252	19.438	19.450	(0.960)	105506	2.00000	1.53	

Data File: \\target_server\gg\chem\gcms-n.i\N052118.b\N8634.D
Report Date: 23-May-2018 13:32

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
81	Benzo(k)fluoranthene	252	19.506	19.518	(0.964)	160152	2.00000	1.78(H)	
82	Benzo(a)pyrene	252	20.130	20.131	(0.994)	106261	2.00000	1.87	
* 83	Perylene-D12	264	20.244	20.245	(1.000)	36296	0.80000	(a)	
84	Indeno(1,2,3-cd)pyrene	276	22.368	22.380	(1.298)	45214	2.00000	2.33(M)	M3
85	Dibenzo(a,h)anthracene	278	22.447	22.448	(1.109)	61192	2.00000	2.67	
86	Benzo(g,h,i)perylene	276	22.970	22.981	(1.135)	80382	2.00000	1.97	

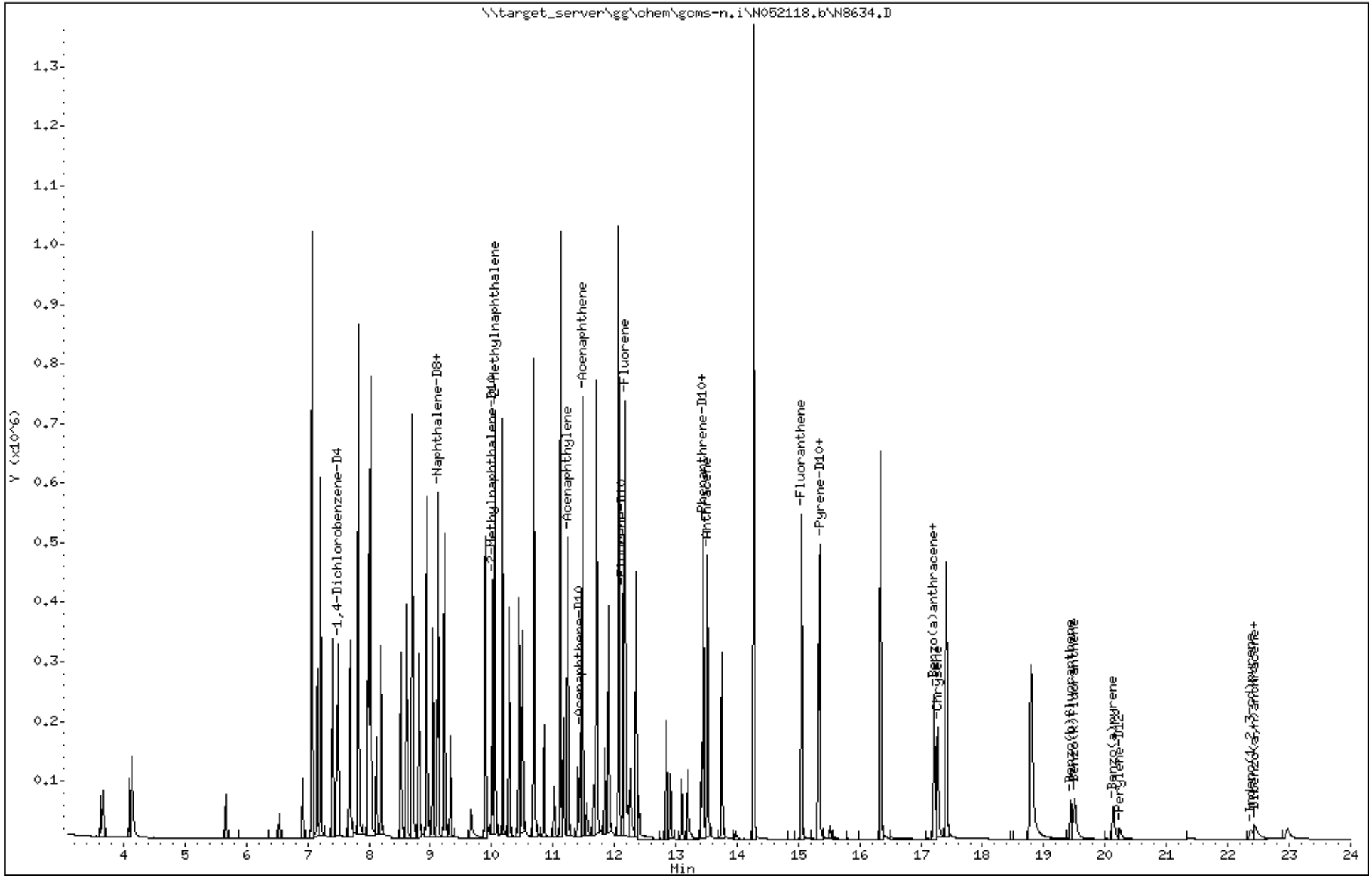
QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

WAS

1:52 pm, May 23, 2018

Data File: \\target_server\gg\chem\gcms-n.i\N052118.b\N8634.D
Date : 21-MAY-2018 23:16
Client ID:
Instrument: gcms-n.i
Sample Info: WG228771-4,SL3841
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000110

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG228771-5
Analytical Date: 05/21/18 23:49
Lab File ID : N8635.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 05/18/18 12:47 05/18/18 15:24
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
27 Naphthalene	1.00844	0.95704	0.95704	0.010	-5.09651	20.00000	Averaged	
33 2-Methylnaphthalene	0.62570	0.59256	0.59256	0.010	-5.29574	20.00000	Averaged	
45 Acenaphthylene	2.13052	1.96872	1.96872	0.010	-7.59446	20.00000	Averaged	
48 Acenaphthene	1.37722	1.25496	1.25496	0.010	-8.87729	20.01000	Averaged	
56 Fluorene	1.42688	1.34287	1.34287	0.010	-5.88760	20.00000	Averaged	
66 Phenanthrene	1.19080	1.03523	1.03523	0.010	-13.06441	20.00000	Averaged	
67 Anthracene	1.13347	1.07631	1.07631	0.010	-5.04291	20.00000	Averaged	
70 Fluoranthene	1.13994	1.07617	1.07617	0.010	-5.59414	20.01000	Averaged	
72 Pyrene	2.68077	2.27104	2.27104	0.010	-15.28413	20.00000	Averaged	
75 Benzo(a)anthracene	1.42234	1.19346	1.19346	0.010	-16.09204	20.00000	Averaged	
77 Chrysene	1.52584	1.32358	1.32358	0.010	-13.25570	20.00000	Averaged	
80 Benzo(b)fluoranthene	1.51956	1.13563	1.13563	0.010	-25.26609	20.00000	Averaged	*
81 Benzo(k)fluoranthene	2.00000	1.77789	1.76257	0.010	-11.10565	20.00000	Linear	
82 Benzo(a)pyrene	1.25413	1.19201	1.19201	0.010	-4.95360	20.01000	Averaged	
84 Indeno(1,2,3-cd)pyrene	2.00000	2.53391	0.30203	0.010	26.69562	20.00000	Quadratic	*
85 Dibenzo(a,h)anthracene	2.00000	2.62906	0.66369	0.010	31.45298	20.00000	Quadratic	*
86 Benzo(g,h,i)perylene	0.89957	0.94304	0.94304	0.010	4.83172	20.00000	Averaged	
32 2-Methylnaphthalene-D10	0.49326	0.48129	0.48129	0.010	-2.42742	20.00000	Averaged	
55 Fluorene-D10	1.04964	1.00189	1.00189	0.010	-4.54973	20.00000	Averaged	
71 Pyrene-D10	1.60748	1.39225	1.39225	0.010	-13.38948	20.00000	Averaged	

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-n.i\N052118.b\N8635.D
Report Date: 23-May-2018 13:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052118.b\N8635.D
Lab Smp Id: WG228771-5
Inj Date : 21-MAY-2018 23:49 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228771-5,SL3841
Misc Info : WG228771,WG228771,WG228639-4,SL3841-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N052118.b\NSPSIM94.m
Meth Date : 22-May-2018 07:36 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 15:24 Cal File: N8585.D
Als bottle: 24 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.480	(1.000)	46171	0.80000	(a)	
*	26 Naphthalene-D8	136	9.100	9.111	(1.000)	154869	0.80000	(a)	
	27 Naphthalene	128	9.130	9.131	(1.003)	370540	2.00000	1.90	
$	32 2-Methylnaphthalene-D10	152	10.013	10.014	(1.100)	186342	2.00000	1.95	
	33 2-Methylnaphthalene	142	10.053	10.053	(1.105)	229424	2.00000	1.89	
	45 Acenaphthylene	152	11.236	11.248	(0.983)	337232	2.00000	1.85	
*	47 Acenaphthene-D10	164	11.432	11.444	(1.000)	68518	0.80000	(a)	
	48 Acenaphthene	153	11.476	11.488	(1.004)	214969	2.00000	1.82	
$	55 Fluorene-D10	174	12.130	12.141	(1.061)	171618	2.00000	1.91	
	56 Fluorene	166	12.173	12.185	(1.065)	230027	2.00000	1.88	
*	65 Phenanthrene-D10	188	13.421	13.432	(1.000)	118090	0.80000	(a)	
	66 Phenanthrene	178	13.453	13.464	(1.002)	305625	2.00000	1.74	
	67 Anthracene	178	13.517	13.528	(1.007)	317755	2.00000	1.90	
	70 Fluoranthene	202	15.050	15.060	(1.121)	317712	2.00000	1.89	
$	71 Pyrene-D10	212	15.322	15.332	(0.889)	200964	2.00000	1.73	
	72 Pyrene	202	15.350	15.360	(0.891)	327813	2.00000	1.69	
	75 Benzo(a)anthracene	228	17.208	17.218	(0.999)	172270	2.00000	1.68	
*	76 Chrysene-D12	240	17.227	17.236	(1.000)	57738	0.80000	(a)	
	77 Chrysene	228	17.274	17.283	(1.003)	191052	2.00000	1.73	
	80 Benzo(b)fluoranthene	252	19.438	19.450	(0.960)	100043	2.00000	1.49	

Data File: \\target_server\gg\chem\gcms-n.i\N052118.b\N8635.D
Report Date: 23-May-2018 13:32

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
81	Benzo(k)fluoranthene	252	19.506	19.518	(0.964)	155274	2.00000	1.78(H)	
82	Benzo(a)pyrene	252	20.130	20.131	(0.994)	105010	2.00000	1.90	
* 83	Perylene-D12	264	20.244	20.245	(1.000)	35238	0.80000	(a)	
84	Indeno(1,2,3-cd)pyrene	276	22.379	22.380	(1.299)	43597	2.00000	2.53(M)	M3
85	Dibenzo(a,h)anthracene	278	22.458	22.448	(1.109)	58468	2.00000	2.63	
86	Benzo(g,h,i)perylene	276	22.969	22.981	(1.135)	83077	2.00000	2.10	

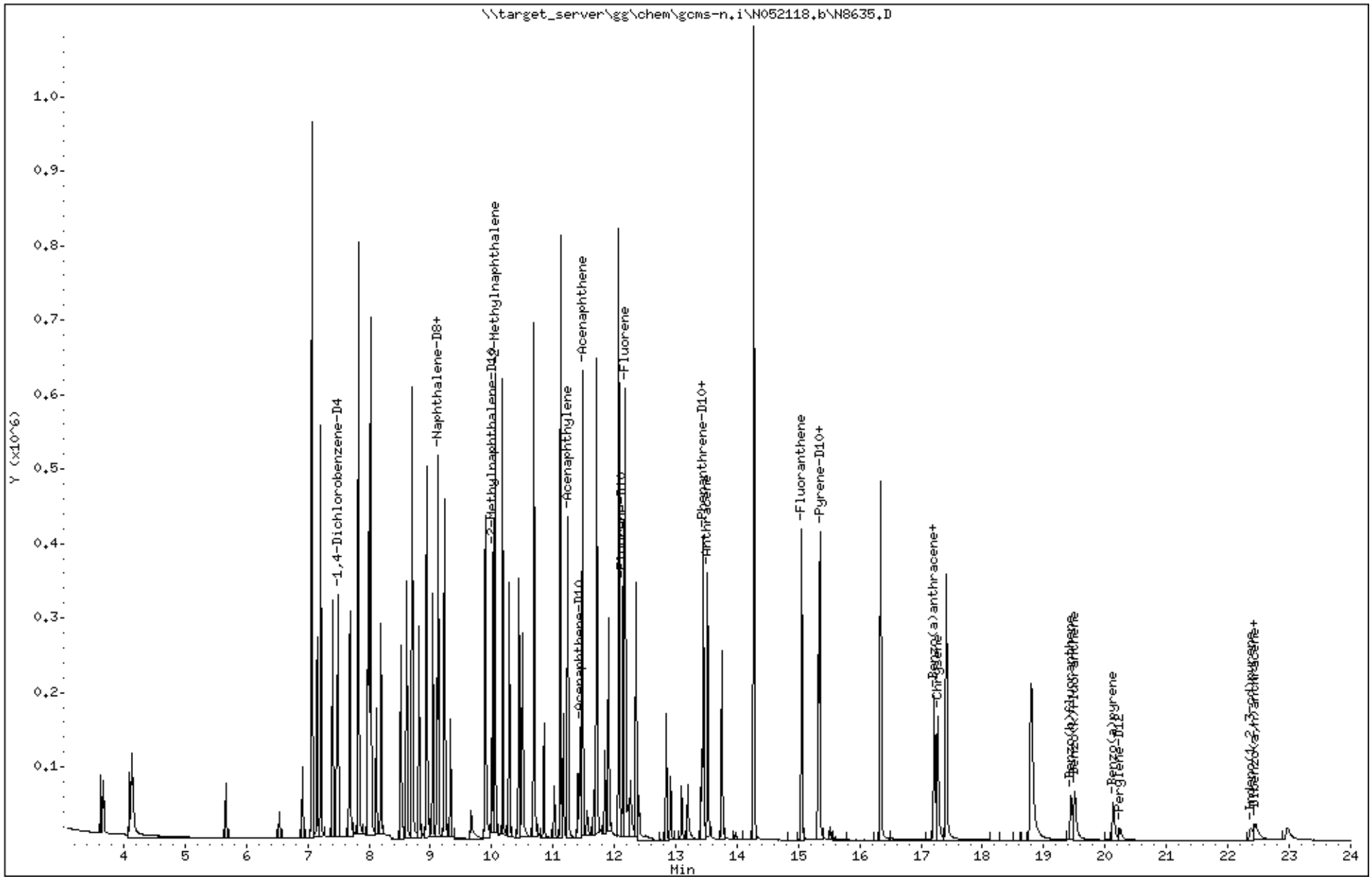
QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

WKS

1:52 pm, May 23, 2018

Data File: \\target_server\gg\chem\gcms-n.i\N052118.b\N8635.D
Date : 21-MAY-2018 23:49
Client ID:
Instrument: gcms-n.i
Sample Info: WG228771-5,SL3841
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000114

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\ND519.D

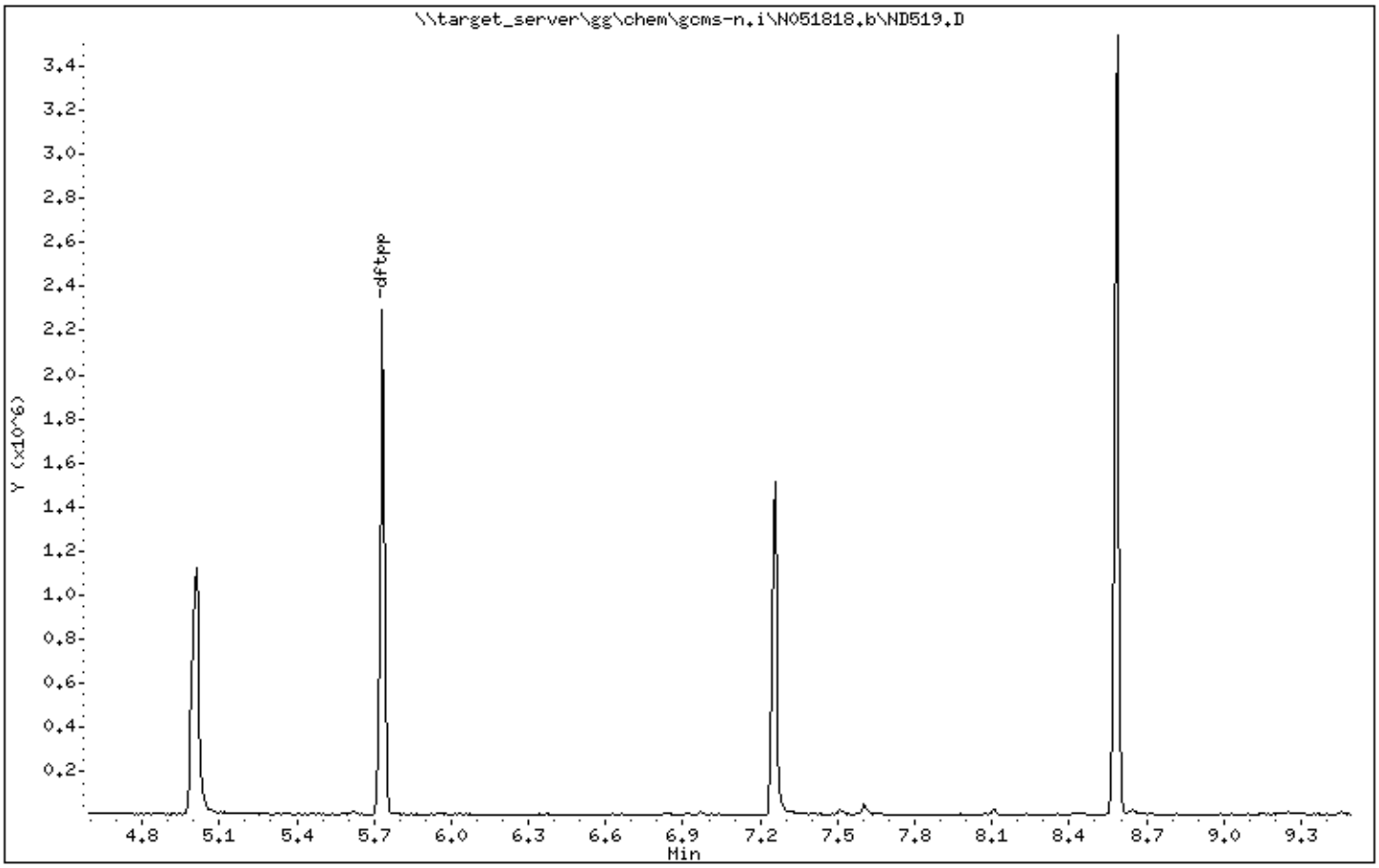
Date : 18-MAY-2018 12:30

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228639-1,SL3841

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25



Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\ND519.D

Date : 18-MAY-2018 12:30

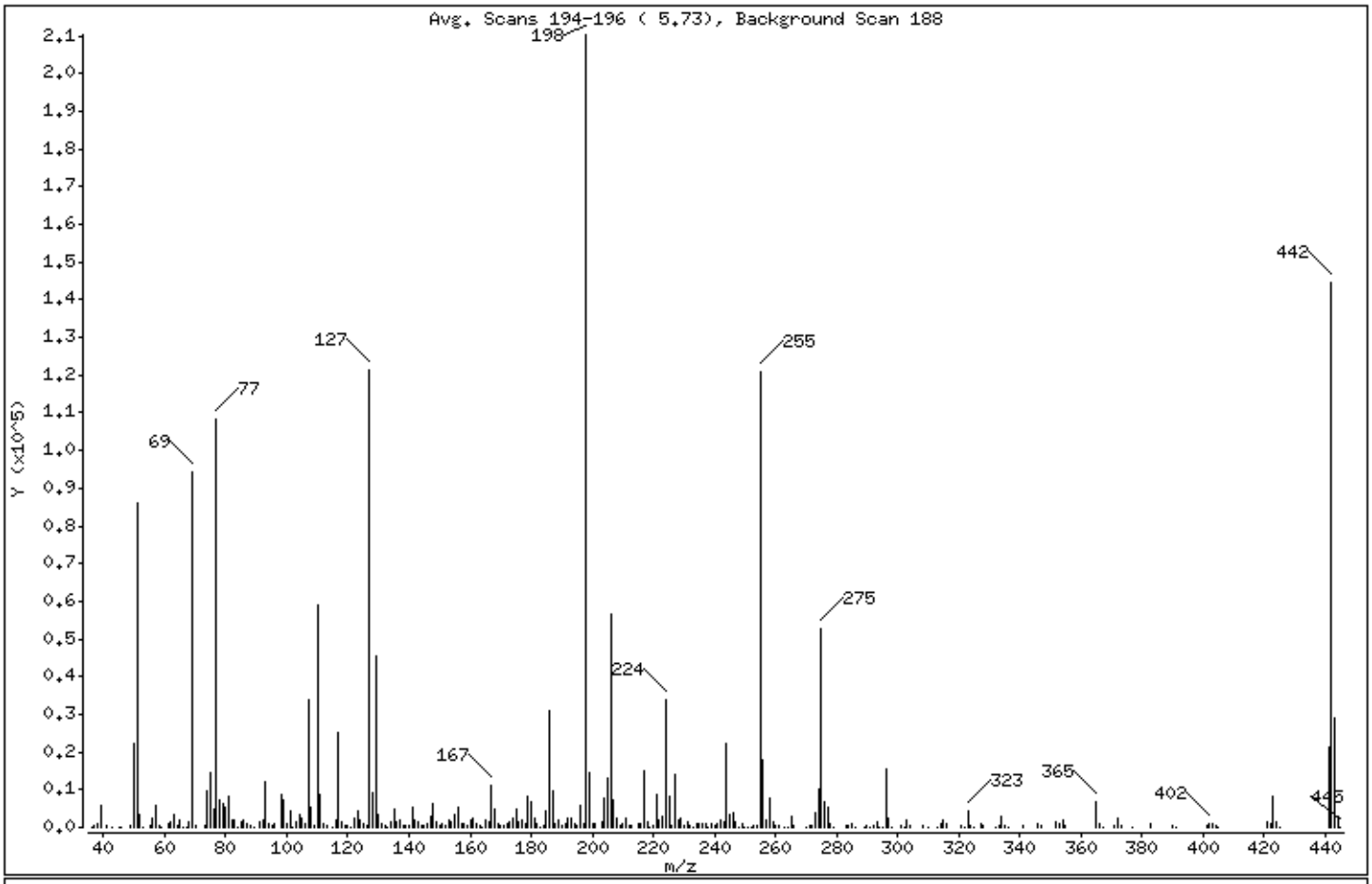
Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228639-1,SL3841

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	40.91
68	Less than 2.00% of mass 69	0.69 (1.53)
69	Less than 100.00% of mass 198	44.84
70	Less than 2.00% of mass 69	0.28 (0.63)
127	40.00 - 60.00% of mass 198	57.75
197	Less than 1.00% of mass 198	0.53
199	5.00 - 9.00% of mass 198	6.99
275	10.00 - 30.00% of mass 198	25.01
365	1.00 - 100.00% of mass 198	3.12
441	0.01 - 100.00% of mass 443	10.20 (74.10)
442	40.00 - 100.00% of mass 198	68.84
443	17.00 - 23.00% of mass 442	13.76 (19.99)

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\ND519.D

Date : 18-MAY-2018 12:30

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228639-1,SL3841

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND519.D
Spectrum: Avg. Scans 194-196 (5.73), Background Scan 188
Location of Maximum: 198.00
Number of points: 294

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	156	122.00	2372	196.00	5738	276.00	6817
37.00	315	123.00	4351	197.00	1106	277.00	5156
38.00	957	124.00	1969	198.00	210304	278.00	979
39.00	5761	125.00	1195	199.00	14706	279.00	59
41.00	397	126.00	251	200.00	1022	283.00	715
43.00	61	127.00	121448	201.00	1176	284.00	393
45.00	75	128.00	9083	203.00	1683	285.00	1041
46.00	93	129.00	45592	204.00	7814	286.00	59
49.00	372	130.00	3463	205.00	13201	289.00	148
50.00	22320	131.00	828	206.00	56336	290.00	269
51.00	86040	132.00	594	207.00	7164	291.00	51
52.00	3333	133.00	133	208.00	2356	292.00	243
53.00	183	134.00	1568	209.00	668	293.00	1249
55.00	627	135.00	4723	210.00	842	294.00	194
56.00	2470	136.00	1240	211.00	2567	295.00	72
57.00	5819	137.00	2104	212.00	387	296.00	15332
58.00	491	138.00	412	213.00	378	297.00	2489
59.00	103	139.00	271	215.00	757	298.00	171
61.00	1059	140.00	557	216.00	813	301.00	391
62.00	1672	141.00	5289	217.00	15193	302.00	143
63.00	3528	142.00	1953	218.00	1541	303.00	1989
64.00	665	143.00	1369	219.00	219	304.00	666
65.00	1851	144.00	614	220.00	394	308.00	291
66.00	51	145.00	378	221.00	8923	310.00	218
67.00	56	146.00	999	222.00	2042	313.00	174
68.00	1442	147.00	2929	223.00	2733	314.00	959
69.00	94304	148.00	6331	224.00	33920	315.00	1808
70.00	593	149.00	1586	225.00	8356	316.00	876
73.00	707	150.00	445	226.00	530	321.00	633
74.00	9788	151.00	929	227.00	14212	322.00	142
75.00	14446	152.00	364	228.00	2080	323.00	4386
76.00	4847	153.00	1751	229.00	2338	324.00	715
77.00	108288	154.00	1405	230.00	516	325.00	160
78.00	7160	155.00	3518	231.00	1245	327.00	1095
79.00	6102	156.00	5131	232.00	330	328.00	560

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\ND519.D

Date : 18-MAY-2018 12:30

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228639-1,SL3841

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND519.D
Spectrum: Avg. Scans 194-196 (5.73), Background Scan 188
Location of Maximum: 198.00
Number of points: 294

m/z	Y	m/z	Y	m/z	Y	m/z	Y
80.00	5497	157.00	733	233.00	155	332.00	218
81.00	8431	158.00	1152	234.00	880	333.00	547
82.00	2083	159.00	651	235.00	888	334.00	2898
83.00	1766	160.00	1914	236.00	791	335.00	704
84.00	159	161.00	2304	237.00	1040	336.00	69
85.00	1397	162.00	759	238.00	50	341.00	722
86.00	2046	163.00	354	239.00	814	346.00	969
87.00	1191	164.00	138	240.00	546	347.00	276
88.00	612	165.00	1955	241.00	758	352.00	1379
89.00	224	166.00	1584	242.00	1865	353.00	1082
91.00	1657	167.00	10956	243.00	1422	354.00	1725
92.00	1840	168.00	4836	244.00	22040	355.00	410
93.00	12083	169.00	810	245.00	3255	365.00	6566
94.00	899	170.00	447	246.00	4096	366.00	868
95.00	269	171.00	537	247.00	1229	367.00	80
96.00	766	172.00	860	248.00	144	371.00	372
98.00	8670	173.00	1510	249.00	971	372.00	2474
99.00	7209	174.00	2503	250.00	161	373.00	525
100.00	752	175.00	4766	251.00	139	377.00	75
101.00	4544	176.00	1249	252.00	178	383.00	798
102.00	203	177.00	2053	253.00	515	390.00	438
103.00	1268	178.00	755	254.00	257	391.00	218
104.00	3401	179.00	8268	255.00	120744	401.00	303
105.00	2550	180.00	6814	256.00	18128	402.00	1109
106.00	836	181.00	2455	257.00	1959	403.00	1085
107.00	33992	182.00	759	258.00	7655	404.00	387
108.00	5083	183.00	186	259.00	1361	405.00	53
109.00	633	184.00	696	260.00	313	421.00	1314
110.00	58768	185.00	4289	261.00	424	422.00	1091
111.00	8490	186.00	31176	263.00	53	423.00	8090
112.00	861	187.00	9803	264.00	161	424.00	1227
113.00	361	188.00	1022	265.00	2929	425.00	224
115.00	50	189.00	2136	266.00	486	441.00	21448
116.00	1930	190.00	385	270.00	58	442.00	144768
117.00	25336	191.00	1146	271.00	381	443.00	28944

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\ND519.D

Date : 18-MAY-2018 12:30

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228639-1,SL3841

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND519.D
Spectrum: Avg. Scans 194-196 (5.73), Background Scan 188
Location of Maximum: 198.00
Number of points: 294

m/z	Y	m/z	Y	m/z	Y	m/z	Y
118.00	1665	192.00	2405	272.00	481	444.00	2689
119.00	445	193.00	2512	273.00	4007	445.00	65
120.00	455	194.00	875	274.00	10206		
121.00	158	195.00	416	275.00	52600		

Data File: \\target_server\gg\chem\gcms-n.i\N052118.b\ND520.D

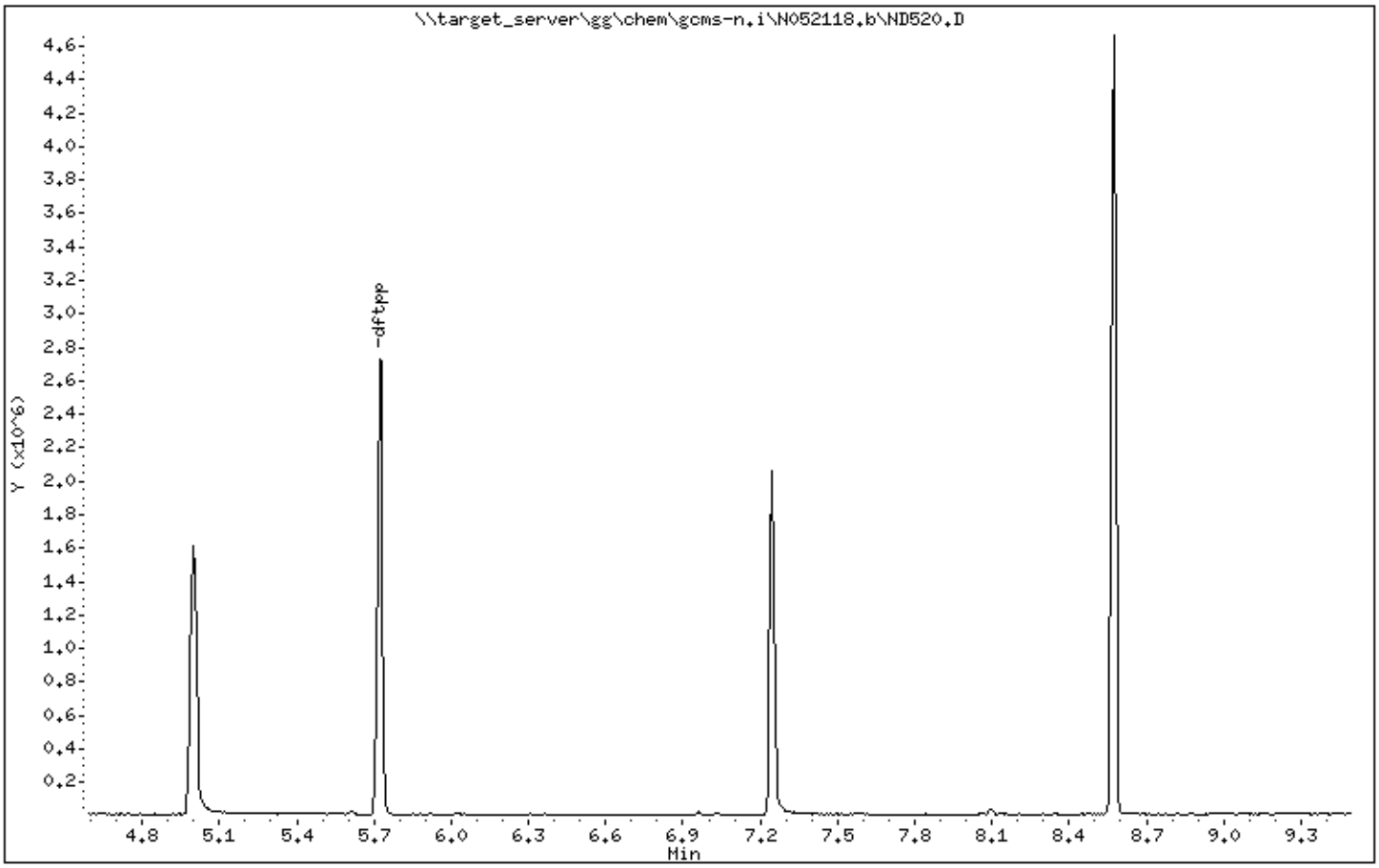
Date : 21-MAY-2018 10:50

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228771-1,SL3841

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25



Data File: \\target_server\gg\chem\gcms-n.i\N052118.b\ND520.D

Date : 21-MAY-2018 10:50

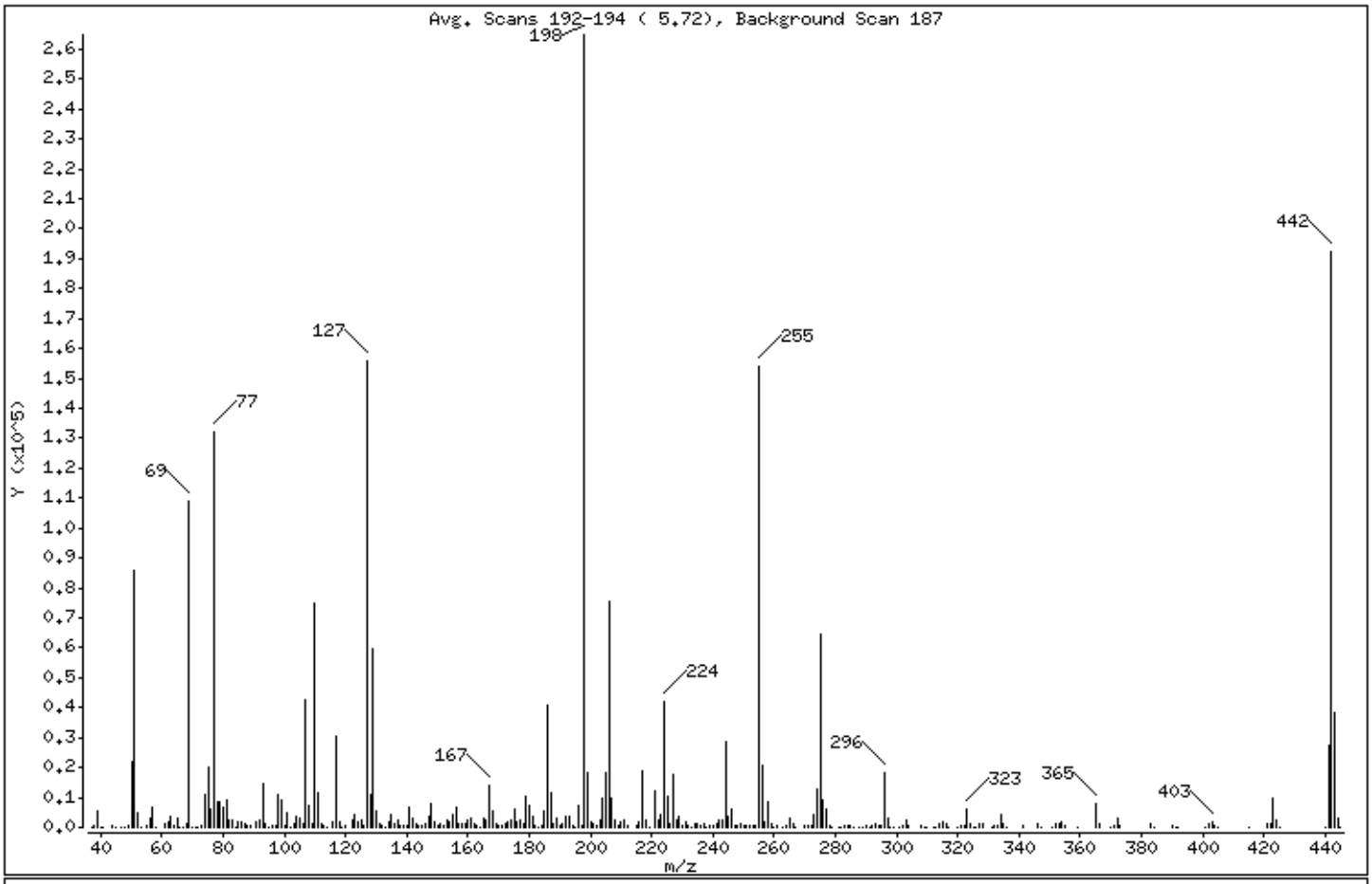
Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228771-1,SL3841

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	32.42
68	Less than 2.00% of mass 69	0.40 (0.98)
69	Less than 100.00% of mass 198	41.22
70	Less than 2.00% of mass 69	0.04 (0.09)
127	40.00 - 60.00% of mass 198	58.75
197	Less than 1.00% of mass 198	0.27
199	5.00 - 9.00% of mass 198	6.95
275	10.00 - 30.00% of mass 198	24.36
365	1.00 - 100.00% of mass 198	3.09
441	0.01 - 100.00% of mass 443	10.40 (72.36)
442	40.00 - 100.00% of mass 198	72.55
443	17.00 - 23.00% of mass 442	14.37 (19.81)

Data File: \\target_server\gg\chem\gcms-n.i\N052118.b\ND520.D

Date : 21-MAY-2018 10:50

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228771-1,SL3841

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND520.D
Spectrum: Avg. Scans 192-194 (5.72), Background Scan 187
Location of Maximum: 198.00
Number of points: 311

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	18	124.00	1636	202.00	466	288.00	81
38.00	877	125.00	2161	203.00	2276	289.00	199
39.00	5513	126.00	601	204.00	9624	290.00	336
40.00	155	127.00	155584	205.00	18368	291.00	81
41.00	237	128.00	10772	206.00	75568	292.00	354
44.00	481	129.00	59872	207.00	9775	293.00	1163
45.00	234	130.00	5330	208.00	2398	294.00	341
47.00	55	131.00	965	209.00	713	295.00	342
48.00	180	132.00	529	210.00	2028	296.00	18536
49.00	492	133.00	176	211.00	2725	297.00	2964
50.00	21648	134.00	1701	212.00	411	298.00	117
51.00	85848	135.00	4384	215.00	754	299.00	52
52.00	4675	136.00	1474	216.00	1668	301.00	138
53.00	63	137.00	2414	217.00	19024	302.00	523
55.00	503	138.00	448	218.00	2520	303.00	2173
56.00	2991	139.00	397	219.00	187	304.00	846
57.00	6980	140.00	507	221.00	12268	308.00	316
58.00	191	141.00	6835	222.00	2452	309.00	66
61.00	1391	142.00	2827	223.00	3991	310.00	91
62.00	1658	143.00	1449	224.00	41976	312.00	57
63.00	3496	144.00	523	225.00	10255	313.00	63
64.00	621	145.00	558	226.00	945	314.00	1078
65.00	2885	146.00	1448	227.00	17400	315.00	1535
66.00	61	147.00	3807	228.00	2568	316.00	1282
67.00	194	148.00	7684	229.00	3413	317.00	262
68.00	1072	149.00	1524	230.00	477	320.00	51
69.00	109176	150.00	630	231.00	1868	321.00	539
70.00	93	151.00	1348	232.00	311	322.00	489
71.00	61	152.00	411	233.00	198	323.00	6113
72.00	196	153.00	2615	234.00	916	324.00	1023
73.00	643	154.00	1834	235.00	1196	325.00	61
74.00	10788	155.00	4304	236.00	680	326.00	128
75.00	19920	156.00	6975	237.00	1185	327.00	1172
76.00	6259	157.00	1342	238.00	62	328.00	920
77.00	132352	158.00	1296	239.00	658	331.00	77

Data File: \\target_server\gg\chem\gcms-n.i\N052118.b\ND520.D

Date : 21-MAY-2018 10:50

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228771-1,SL3841

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND520.D
Spectrum: Avg. Scans 192-194 (5.72), Background Scan 187
Location of Maximum: 198.00
Number of points: 311

m/z	Y	m/z	Y	m/z	Y	m/z	Y
78.00	8826	159.00	1163	240.00	449	332.00	696
79.00	8537	160.00	2424	241.00	1083	333.00	704
80.00	6588	161.00	3059	242.00	2456	334.00	4015
81.00	9230	162.00	988	243.00	2421	335.00	1015
82.00	2419	163.00	373	244.00	28312	336.00	56
83.00	2315	164.00	197	245.00	3567	341.00	907
84.00	291	165.00	2794	246.00	5790	346.00	930
85.00	1750	166.00	2134	247.00	850	347.00	270
86.00	1857	167.00	14125	248.00	493	351.00	84
87.00	1407	168.00	5376	249.00	1415	352.00	1457
88.00	305	169.00	1218	250.00	352	353.00	1110
89.00	371	170.00	541	251.00	568	354.00	2116
91.00	2106	171.00	669	252.00	443	355.00	357
92.00	2555	172.00	1375	253.00	680	359.00	75
93.00	14330	173.00	1762	254.00	794	365.00	8181
94.00	1333	174.00	2578	255.00	154112	366.00	1287
95.00	93	175.00	5821	256.00	20600	370.00	54
96.00	904	176.00	1586	257.00	1684	371.00	656
97.00	356	177.00	2499	258.00	8781	372.00	2957
98.00	10754	178.00	1230	259.00	1320	373.00	699
99.00	8935	179.00	10323	260.00	123	383.00	920
100.00	669	180.00	7254	261.00	360	384.00	161
101.00	5111	181.00	3356	263.00	71	390.00	346
102.00	131	182.00	565	264.00	397	391.00	296
103.00	1474	183.00	279	265.00	3275	392.00	280
104.00	3897	184.00	896	266.00	994	401.00	187
105.00	3094	185.00	5701	267.00	70	402.00	1282
106.00	925	186.00	40696	270.00	350	403.00	1637
107.00	42560	187.00	11787	271.00	356	404.00	560
108.00	7474	188.00	1318	272.00	570	405.00	75
109.00	1132	189.00	2990	273.00	4048	415.00	108
110.00	75184	190.00	589	274.00	12482	421.00	1225
111.00	11437	191.00	1065	275.00	64512	422.00	1215
112.00	1455	192.00	3353	276.00	8863	423.00	9721
113.00	333	193.00	3418	277.00	5941	424.00	2462

Data File: \\target_server\gg\chem\gcms-n.i\N052118.b\ND520.D

Date : 21-MAY-2018 10:50

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228771-1,SL3841

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND520.D
Spectrum: Avg. Scans 192-194 (5.72), Background Scan 187
Location of Maximum: 198.00
Number of points: 311

m/z	Y	m/z	Y	m/z	Y	m/z	Y
114.00	72	194.00	808	278.00	755	425.00	118
116.00	2016	195.00	244	279.00	269	440.00	55
117.00	30472	196.00	7040	281.00	116	441.00	27544
118.00	2107	197.00	728	282.00	162	442.00	192128
119.00	229	198.00	264832	283.00	574	443.00	38064
120.00	630	199.00	18400	284.00	433	444.00	3160
122.00	2288	200.00	1565	285.00	893	445.00	281
123.00	4465	201.00	1437	286.00	169		

Raw QC Data Section

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227847-1RA3
Client ID: Method Blank Sample
Project:
SDG: SL3841
Lab File ID: N8613.D

Sample Date:
Received Date:
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 21-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.061	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.046	0.10
Chrysene	U	0.10	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene-D10		69.1	%					
Fluorene-D10		66.2	%					
Pyrene-D10		79.4	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Data File: \\target_server\gg\chem\gcms-n.i\N052118.b\N8613.D
Report Date: 23-May-2018 13:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052118.b\N8613.D
Lab Smp Id: WG227847-1RA3 Client Smp ID: WG227847-Blank
Inj Date : 21-MAY-2018 12:10 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG227847-1RA3,SL3841
Misc Info : WG228771,WG227847,WG227639-4,SL3841-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N052118.b\NSPSIM94.m
Meth Date : 22-May-2018 07:36 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 15:24 Cal File: N8585.D
Als bottle: 4 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

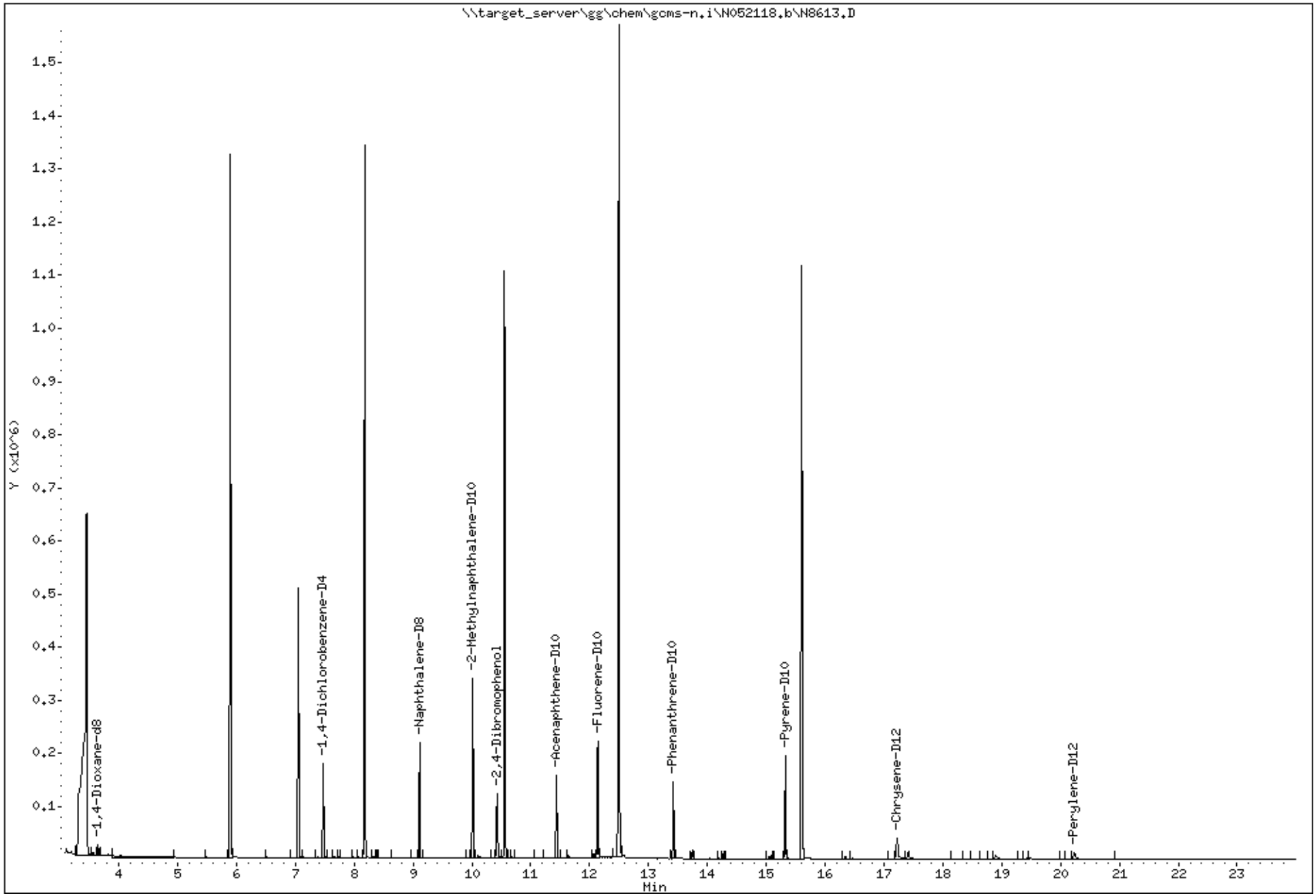
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.479	7.480	(1.000)	49918	0.80000	(aQ)	
*	26 Naphthalene-D8	136	9.110	9.111	(1.000)	159137	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	10.013	10.014	(1.099)	135536	1.38132	1.38	
*	47 Acenaphthene-D10	164	11.443	11.444	(1.000)	70613	0.80000	(a)	
$	55 Fluorene-D10	174	12.141	12.141	(1.061)	122643	1.32375	1.32	
*	65 Phenanthrene-D10	188	13.421	13.432	(1.000)	117351	0.80000	(a)	
$	71 Pyrene-D10	212	15.322	15.332	(0.889)	145326	1.58705	1.59	
*	76 Chrysene-D12	240	17.227	17.236	(1.000)	45572	0.80000	(a)	
*	83 Perylene-D12	264	20.233	20.245	(1.000)	24574	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N052118.b\N8613.D
Date : 21-MAY-2018 12:10
Client ID: WG227847-Blank
Instrument: gcms-n.i
Sample Info: WG227847-1RA3,SL3841



Katahdin Analytical Services 2000128

Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227847-2RA
Client ID: LCS
Project:
SDG: SL3841
LCS File ID: N8588.D

Sample Date:
Received Date:
Extract Date: 08-MAY-18
Extracted By: JMS
Extraction Method: SW846 3510C
Lab Prep Batch: WG227847

Analysis Date: 18-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Naphthalene	76.0	2.00	1.52	ug/L	43-120
2-Methylnaphthalene	76.0	2.00	1.52	ug/L	39-120
Acenaphthylene	72.0	2.00	1.44	ug/L	35-121
Acenaphthene	74.5	2.00	1.49	ug/L	48-120
Fluorene	74.0	2.00	1.48	ug/L	50-120
Phenanthrene	74.0	2.00	1.48	ug/L	53-120
Anthracene	74.5	2.00	1.49	ug/L	53-120
Fluoranthene	82.0	2.00	1.64	ug/L	58-120
Pyrene	76.5	2.00	1.53	ug/L	53-121
Benzo(a)anthracene	82.0	2.00	1.64	ug/L	59-120
Chrysene	84.0	2.00	1.68	ug/L	57-120
Benzo(b)Fluoranthene	75.5	2.00	1.51	ug/L	53-126
Benzo(k)fluoranthene	83.0	2.00	1.66	ug/L	54-125
Benzo(a)pyrene	79.0	2.00	1.58	ug/L	53-120
Indeno(1,2,3-cd)pyrene	76.5	2.00	1.53	ug/L	48-130
Dibenzo(a,h)anthracene	76.5	2.00	1.53	ug/L	44-131
Benzo(g,h,i)perylene	77.0	2.00	1.54	ug/L	44-128
2-Methylnaphthalene-D10	74.2				43-120
Fluorene-D10	69.8				29-120
Pyrene-D10	71.1				53-166

600 Technology Way
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Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8588.D
Report Date: 23-May-2018 13:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N051818.b\N8588.D
Lab Smp Id: WG227847-2RA Client Smp ID: WG227847-LCS
Inj Date : 18-MAY-2018 16:58 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG227847-2RA,SL3841
Misc Info : WG228639,WG227847,WG227639-4,SL3841-2
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N051818.b\NSPSIM94.m
Meth Date : 21-May-2018 08:44 cgomez Quant Type: ISTD
Cal Date : 18-MAY-2018 15:24 Cal File: N8585.D
Als bottle: 10 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.663	3.642	(0.490)	10355	0.52564	0.526(aR)	
	2 1,4-Dioxane	88	3.705	3.684	(0.495)	12877	0.60430	0.604(aQ)	
	3 N-Nitrosodimethylamine	74	4.125	4.104	(0.552)	19865	0.68222	0.682	
	5 Benzaldehyde	77	6.926	6.916	(0.926)	34352	2.75754	2.76	
	6 Phenol	94	7.077	7.077	(0.946)	51511	0.85033	0.850(aQ)	
	7 Bis(2-Chloroethyl)ether	93	7.157	7.157	(0.957)	77228	1.54521	1.54	
	8 2-Chlorophenol	128	7.218	7.218	(0.965)	140097	2.73006	2.73	
	9 1,3-Dichlorobenzene	146	7.409	7.409	(0.991)	83628	1.47898	1.48	
*	10 1,4-Dichlorobenzene-D4	152	7.479	7.479	(1.000)	32745	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	7.500	7.499	(1.003)	86015	1.50259	1.50	
	12 1,2-Dichlorobenzene	146	7.691	7.691	(1.028)	81179	1.50665	1.51	
	13 2-Methylphenol	108	7.822	7.832	(1.046)	92000	2.15537	2.16	
	14 2,2'-Oxybis(1-chloropropane)	45	7.842	7.842	(1.048)	60123	1.11047	1.11(Q)	
	15 Acetophenone	105	7.993	7.993	(0.877)	106138	1.47923	1.48	
	16 N-Nitroso-di-n-propylamine	70	8.013	8.013	(1.071)	49106	1.42498	1.42	
	17 3&4-Methylphenol	108	8.023	8.033	(1.073)	82952	1.86477	1.86	
	18 Hexachloroethane	117	8.124	8.113	(1.086)	31694	1.45522	1.46	
	19 Nitrobenzene	77	8.194	8.194	(0.899)	83747	1.67535	1.68	
	20 Isophorone	82	8.516	8.516	(0.935)	133264	1.46595	1.46	
	21 2-Nitrophenol	139	8.617	8.617	(0.946)	68539	2.94194	2.94	

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8588.D
Report Date: 23-May-2018 13:37

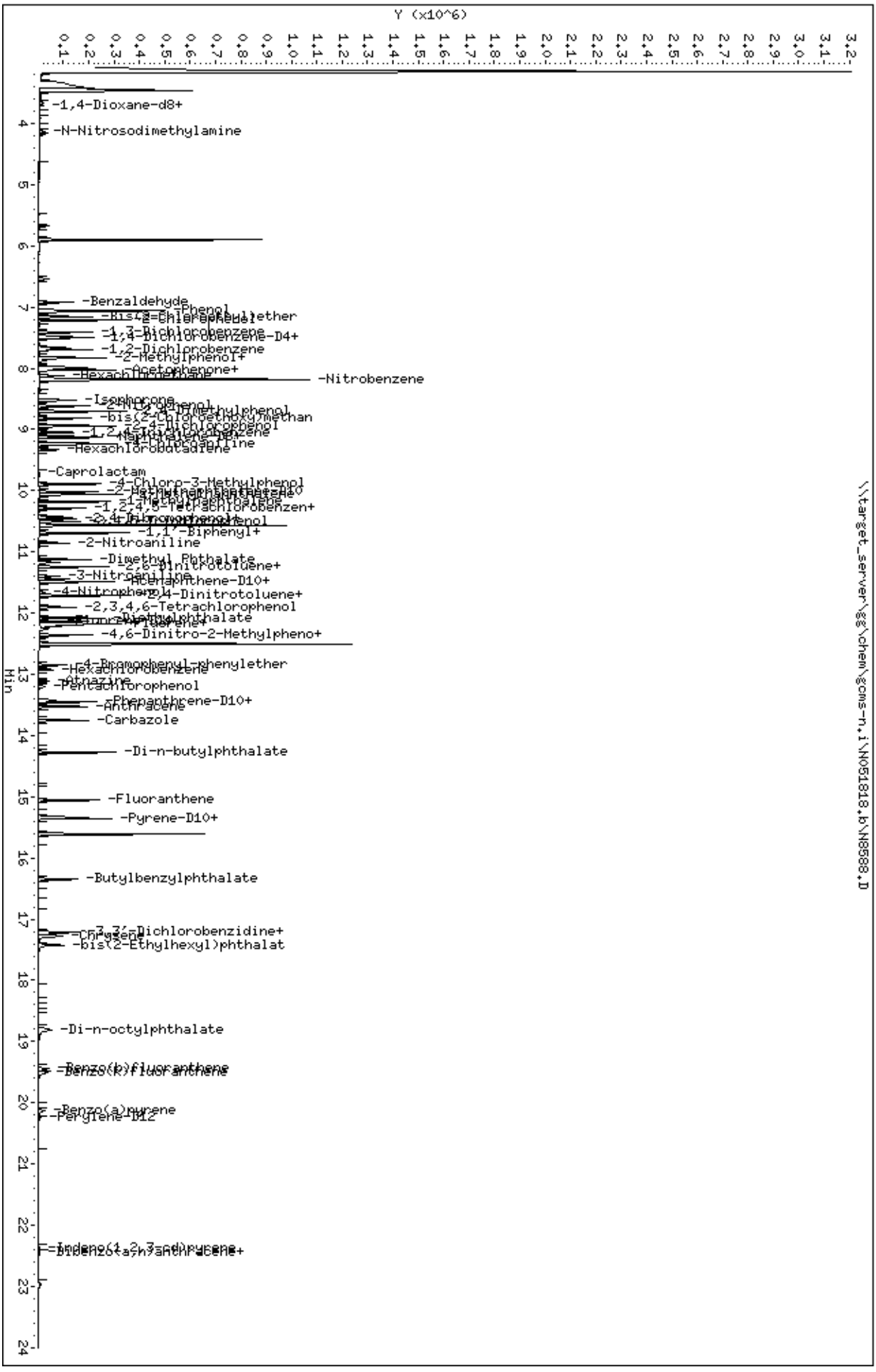
							CONCENTRATIONS		
		QUANT SIG					ON-COLUMN	FINAL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/ml)	(ug/L)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.707	8.707	(0.956)	120488	2.44539	2.44	
	23 bis(2-Chloroethoxy)methane	93	8.818	8.818	(0.968)	87975	1.53173	1.53	
	24 2,4-Dichlorophenol	162	8.939	8.939	(0.981)	107402	2.91613	2.92	
	25 1,2,4-Trichlorobenzene	180	9.050	9.050	(0.993)	58550	1.48637	1.49	
*	26 Naphthalene-D8	136	9.110	9.110	(1.000)	101415	0.80000	(a)	
	27 Naphthalene	128	9.130	9.130	(1.002)	194115	1.51844	1.52	
	28 4-Chloroaniline	127	9.231	9.221	(1.013)	69619	1.48959	1.49	
	29 Hexachlorobutadiene	225	9.332	9.331	(1.024)	36778	1.53094	1.53	
	30 Caprolactam	113	9.708	9.689	(1.066)	2672	0.23880	0.239(Q)	
	31 4-Chloro-3-Methylphenol	107	9.886	9.895	(1.085)	106320	2.69451	2.69	
$	32 2-Methylnaphthalene-D10	152	10.014	10.014	(1.099)	92792	1.48395	1.48	
	33 2-Methylnaphthalene	142	10.053	10.053	(1.103)	121004	1.52554	1.52	
	34 1-Methylnaphthalene	142	10.181	10.181	(1.118)	113169	1.46210	1.46	
	35 1,2,4,5-Tetrachlorobenzene	216	10.289	10.289	(0.899)	54626	1.42399	1.42	
	36 Hexachlorocyclopentadiene	237	10.299	10.299	(0.900)	17174	1.01493	1.01	
$	37 2,4-Dibromophenol	252	10.427	10.427	(0.911)	55681	2.77613	2.78	
	38 2,4,6-Trichlorophenol	196	10.456	10.456	(0.914)	65063	2.72473	2.72	
	39 2,4,5-Trichlorophenol	196	10.496	10.496	(0.917)	72195	2.89276	2.89	
	40 1,1'-Biphenyl	154	10.683	10.693	(0.934)	149930	1.46793	1.47	
	41 2-Chloronaphthalene	164	10.703	10.703	(0.935)	38500	1.46053	1.46	
	42 2-Nitroaniline	65	10.850	10.850	(0.948)	36826	1.55992	1.56	
	43 Dimethyl Phthalate	163	11.117	11.127	(0.971)	144179	1.54744	1.55	
	44 2,6-Dinitrotoluene	165	11.182	11.182	(0.977)	29096	1.40594	1.40	
	45 Acenaphthylene	152	11.247	11.247	(0.983)	171542	1.44275	1.44	
	46 3-Nitroaniline	138	11.400	11.411	(0.996)	23528	1.68933	1.69	
*	47 Acenaphthene-D10	164	11.444	11.443	(1.000)	44646	0.80000	(a)	
	48 Acenaphthene	153	11.487	11.487	(1.004)	114738	1.49283	1.49	
	50 4-Nitrophenol	109	11.661	11.661	(1.019)	7337	0.90572	0.906(a)	
	51 2,4-Dinitrotoluene	165	11.716	11.727	(1.024)	36674	1.44283	1.44	
	52 Dibenzofuran	168	11.716	11.727	(1.024)	164110	1.54755	1.55	
	53 2,3,4,6-Tetrachlorophenol	232	11.901	11.912	(1.040)	44107	2.30319	2.30	
	54 Diethylphthalate	149	12.076	12.075	(1.055)	167357	1.62017	1.62	
$	55 Fluorene-D10	174	12.141	12.141	(1.061)	81812	1.39664	1.40	
	56 Fluorene	166	12.174	12.184	(1.064)	117504	1.47561	1.48	
	57 4-Chlorophenyl-phenylether	204	12.195	12.195	(1.066)	65687	1.49463	1.49	
	58 4-Nitroaniline	138	12.217	12.228	(1.068)	24316	2.50020	2.50(Q)	
	59 4,6-Dinitro-2-Methylphenol	198	12.272	12.272	(0.914)	19926	2.13819	2.14	
	60 N-Nitrosodiphenylamine	169	12.359	12.359	(0.921)	82782	1.23465	1.23	
	61 4-Bromophenyl-phenylether	248	12.844	12.844	(0.957)	35121	1.52454	1.52	
	62 Hexachlorobenzene	284	12.930	12.930	(0.963)	30371	1.42269	1.42	
	63 Atrazine	200	13.101	13.101	(0.976)	21892	1.34503	1.34	
	64 Pentachlorophenol	266	13.207	13.197	(0.984)	15789	2.02179	2.02	
*	65 Phenanthrene-D10	188	13.421	13.431	(1.000)	72941	0.80000	(a)	
	66 Phenanthrene	178	13.453	13.464	(1.002)	160256	1.47603	1.48	
	67 Anthracene	178	13.528	13.528	(1.008)	153966	1.48981	1.49	
	68 Carbazole	167	13.752	13.752	(1.025)	141417	1.78744	1.79	
	69 Di-n-butylphthalate	149	14.275	14.286	(1.064)	277277	1.65818	1.66	
	70 Fluoranthene	202	15.050	15.060	(1.121)	170923	1.64451	1.64	
$	71 Pyrene-D10	212	15.332	15.332	(0.890)	99132	1.42164	1.42	
	72 Pyrene	202	15.351	15.360	(0.891)	177747	1.52850	1.53	
	73 Butylbenzylphthalate	149	16.345	16.355	(0.949)	108992	1.54274	1.54	
	74 3,3'-Dichlorobenzidine	252	17.208	17.218	(0.999)	56529	5.16902	5.17	
	75 Benzo(a)anthracene	228	17.208	17.218	(0.999)	101381	1.64314	1.64	
*	76 Chrysene-D12	240	17.227	17.236	(1.000)	34703	0.80000	(a)	

Data File: \\target_server\gg\chem\gcms-n.i\N051818.b\N8588.D
Report Date: 23-May-2018 13:37

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
	77	Chrysene	228	17.274	17.283	(1.003)	111550	1.68532	1.68	
	78	bis(2-Ethylhexyl)phthalate	149	17.424	17.424	(1.011)	148092	1.60697	1.61	
	79	Di-n-octylphthalate	149	18.802	18.813	(1.091)	172877	1.43800	1.44	
	80	Benzo(b)fluoranthene	252	19.438	19.449	(0.960)	56740	1.50891	1.51	
	81	Benzo(k)fluoranthene	252	19.506	19.517	(0.964)	81845	1.65782	1.66(H)	
	82	Benzo(a)pyrene	252	20.130	20.130	(0.994)	49027	1.57973	1.58	
*	83	Perylene-D12	264	20.244	20.244	(1.000)	19797	0.80000	(a)	
	84	Indeno(1,2,3-cd)pyrene	276	22.368	22.379	(1.298)	15166	1.53026	1.53	
	85	Dibenzo(a,h)anthracene	278	22.436	22.447	(1.108)	18051	1.52781	1.53	
	86	Benzo(g,h,i)perylene	276	22.958	22.981	(1.134)	34195	1.53609	1.54	
M	87	Total PAHs	100				301115	7.69517	7.70	
M	88	Total Low PAHs	100				1033125	10.4210	10.4	
M	89	Total High PAHs	100				628679	9.60902	9.61	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
H - Operator selected an alternate compound hit.


Data File: \\target_server\gg\chem\gcms-n,i\N051818,b\N8588,D
Date : 18-MAY-2018 16:58
Client ID: WG227847-LCS
Sample Info: WG227847-2RA,SL3841
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N051818,b\N8588,D
Y (x10^6)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine
-Benzaldehyde
-Phenol
-Bis(2-Chloroethyl)ether
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-Hexachloroethane
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene-D10
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4,6-Trichlorophenol
-1,1'-Biphenyl+
-2-Nitroaniline
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline
-Acenaphthene-D10+
-4-Nitrophenol
-2,4-Dinitrotoluene+
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-Fluorene+
-4,6-Dinitro-2-Methylpheno+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenz(a,h)anthracene+

Logbooks and Supporting Documents

SIM
SEP

KATAHDIN ANALYTICAL SERVICES, LLC.
ORGANIC EXTRACTIONS LOG - AQUEOUS SEMI-VOLATILES

Extraction Method: (check one)	SW846 3510 (SEP) ✓	SW846 3520 (CLLE)	SW846 3535 (SPE)
Analytical Method:(check one)	SW846 8270 JMS	SW846 8270 SIM ✓	EPA 625 (mark meniscus w/ marker to determine IV)
Surrogate ID: SV2849	Surrogate ID:	Spike ID: SV2846	Spike ID:
Methylene Chloride Lot #: DT742	pH Paper Lot # HC727135	KI Starch Paper ID: 022017	Note samples requiring TRC neutralization in comments section.
pH (1st Extraction) 2	H_2SO_4 Lot # 177543	pH (2nd Extraction) 11	NaOH Lot # 190393
$NaSO_4$ Lot # 2796B001	Filter Paper Lot #: 2498104 7	Boiling Stones ID: 3-27-2014	Vial Lot #: 393237
Nitrogen Bath Temperature: 36°C			
Prep Start Time: 10:10	Prep End Time: 11:50	CLLE Start Time: —	CLLE End Date & Time: —

Date Extracted	Ext. Init.	Sample ID	Initial Vol. mL	Surr. Vol.	Spike Vol.	Fraction SV	Fraction SIM	Final Vol. mL	Date Conc.	Tray Location SV 304	Initials	Comments
5-8-18	JMS	WG227847-1	1000	1mL	NR		✓	1mL	5-8-18	B3	WAS	RV72577
↓	↓	-2	↓	↓	1mL	↓	↓	↓	↓	4	↓	
		-3	1010		↓					5		MS SL3839-3 B
		-4	1000							6		MSD V C
												WAS 5-8-18

EX-007 – Revision 5 – 11/08/2017

QAEX342

Date Extracted	Ext. Init.	Sample ID	Initial Vol. mL	Surr. Vol.	Spike Vol.	Fraction SV	Fraction SIM	Final Vol. mL	Date Conc.	Tray Location SV 304	Initials	Comments
5-8-18	JMS	SL3839-1 A	1020	1mL	NR		✓	1mL	5-8-18	B7	WAS	
↓	↓	-2		↓	↓	↓	↓	↓	↓		↓	JMS
		-3 A	1010							8		MS 10
		-4 A	1000							9		
		SL3841-2 G	1000							10		
		-4 G	1030							C1		
		-6 G	1050							2		
		-8 G	1060							3		
		-10 H	1000							4		
		-12 H	1030							5		
		-14 G	930							6		
		-16 F	1020							7		
		-18 G	990							8		
		-20 F	940							9		
↓	↓	SL3870-1 H	1060	↓	↓	↓	↓	↓	↓	10	↓	
												WAS 5-8-18

Reviewed By_____ Date_____

KATAHDIN ANALYTICAL SERVICES
GC/MS SVOA INJ LOG INSTRUMENT: 5975B - N

DATE OF DFTPP INJECTION: 051818

JOB	SAMPLE	DATAFILE	DF	VIAL #	METHOD	UL INJ	CHEMIST	COMMENTS
WG228639-1	50ng DFTPP	ND519	1	1	DFTPP SIM	Z.P	JLK	OK
-4	SSTD 2.0 N0518	N8580		2	NSP SIM94			✓
-2	0.2	81		3				✓
-3	0.5	82		4				✓
-5	7.0	83		5				✓
-6	10.	84		6				✓
-7	15.	85		7				✓
-8	IND	86		8				OK
	WG227847-1 RA2	87		9				1556
	-2 RA	88		10				OK
	SL3841-2 RA2	89		11				OK
	-4 RA	90		12				OK
	-6 RA	91		13				OK
	-8 RA	92		14				OK
	-10 RA2	93		15				OK
	-12 RA	94		16				OK
	-14 RA	95		17				OK
	-16 RA	96		18				OK
	-18 RA	97		19				OK
	-20 RA	98		20				OK
	SL3995-1 RA	99		21				553
	-2 RA	N8650		22				OK
-9	SSTD 2.0 N0518	01		23				OK
-10		02						—
-11		03						—
	SL3995-8 to 13	04-10		24-30				Screen

STANDARD	CODE
DFTPP	53064
CAL. STD.	53067 53100
ICV. STD.	53101
IS MIX	53092

REVIEWED AND APPROVED BY: _____
DATE: _____

KATAHDIN ANALYTICAL SERVICES

GC/MS SVOA INJ LOG INSTRUMENT: 5975B - N

DATE OF DFTPP INJECTION: 05/21/18

JOB	SAMPLE	DATAFILE	DF	VIAL #	METHOD	UL INJ	CHEMIST	COMMENTS
WG228771-1	50ng DFTPP	N0520	1	1	DFTPPSIM	2.0	JLG	OK
-2	SSTD2.0N0521	N8611		2	NSPSIM94			OK
	Hellx	12		3				-
	WG227847-1RA	13		4				OK
	WG228429-1RA	14		5				OK
	↓ -2RA	15		6				OK
	SL3869-32RE	16		7				OK
	-60RA	17		8				OK
	-55RA	18		9				OK
	SL4072-17	19		10				OK
	-21	20		11				OK
	-27	21		12				OK SPIKED?
	SL3995-8	22		13				SSI↓
	-9	23		14				OK
	-10	24		15				SSI↓
	-11	25		16				OK
	-12	26		17				SSI↓
	-13	27		18				SSI↓
	-14	28	↓	19				SSI↓
	SL4072-22DL	29	5	20				OK DL1:7
	-23DL	30		21				OK DL1:10
	-24DL	31		22				OK DL1:10
	-25DL	32	↓	23				OK DL1:10
-3	SSTD2.0N0521	33	1	24				OK USE
-4		34						OK
-5	↓	35	↓	↓	↓	↓	↓	OK ↓

STANDARD	CODE
DFTPP	53064
CAL. STD.	53067 53100
ICV. STD.	-
IS MIX	53052

REVIEWED AND APPROVED BY: _____

DATE: _____

EXPLOSIVES DATA

QC Summary Section

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** AQ
Lab Code: KAS **SDG:** SL3841

Client Sample ID	Lab Sample ID	Col. ID	DNB	#
CHAAP-19C-LGIA-DPT16	SL3841-10	B	94.6	
CHAAP-19C-LGIA-DPT11	SL3841-12	B	94.5	
CHAAP-19C-UGIA-DPT15	SL3841-14	B	92.6	
CHAAP-19C-LGIA-DPT12	SL3841-16	B	93.0	
CHAAP-19C-UGIA-DPT11	SL3841-18	B	94.0	
CHAAP-19C-UGIA-DPT19	SL3841-2	B	94.4	
CHAAP-EB-050318	SL3841-20	B	94.0	
CHAAP-19C-LGIA-DPT20	SL3841-4	B	92.6	
CHAAP-19C-LGIA-DPT24	SL3841-6	B	92.8	
CHAAP-19C-UGIA-DPT23	SL3841-8	B	93.5	
Method Blank Sample	WG227925-1	B	90.7	
Laboratory Control S	WG227925-2	B	94.5	

		QC Limits
DNB	1,2-DINITROBENZENE	83-120

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Katahdin
ANALYTICAL SERVICES

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLE10282.D
Instrument ID : HPLC02
Matrix : AQ

SDG : SL3841
Lab Sample ID : WG227925-1
Date Extracted : 09-MAY-18
Date Analyzed : 10-MAY-18
Time Analyzed : 08:08

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG227925-2	HLE10283.	05/10/18	08:39
CHAAP-19C-UGIA-DPT19	SL3841-2	HLE10293.	05/10/18	13:49
CHAAP-19C-LGIA-DPT20	SL3841-4	HLE10294.	05/10/18	14:20
CHAAP-19C-LGIA-DPT24	SL3841-6	HLE10295.	05/10/18	14:51
CHAAP-19C-UGIA-DPT23	SL3841-8	HLE10296.	05/10/18	15:22
CHAAP-19C-LGIA-DPT16	SL3841-10	HLE10297.	05/10/18	15:53
CHAAP-19C-LGIA-DPT116	SL3841-12	HLE10298.	05/10/18	16:24
CHAAP-19C-UGIA-DPT15	SL3841-14	HLE10299.	05/10/18	16:55
CHAAP-19C-LGIA-DPT12	SL3841-16	HLE10300.	05/10/18	17:26
CHAAP-19C-UGIA-DPT11	SL3841-18	HLE10301.	05/10/18	17:57
CHAAP-EB-050318	SL3841-20	HLE10302.	05/10/18	18:28

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Katahdin
ANALYTICAL SERVICES

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLE10556.D
Instrument ID : HPLC02
Matrix : AQ

SDG : SL3841
Lab Sample ID : WG227925-1C
Date Extracted : 09-MAY-18
Date Analyzed : 17-MAY-18
Time Analyzed : 21:27

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
CHAAP-19C-UGIA-DPT15	SL3841-14C	HLE10557.	05/17/18	22:16

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
SDG : SL3841
Project : Cornhusker Army Ammunition Plant
Column ID : B
Instrument ID : HPLC02

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	DNB	
Initial Calibration	WG225143-7	03/20/18	14:54	8.575	
Initial Calibration	WG225143-6	03/20/18	15:26	8.57	
Initial Calibration	WG225143-5	03/20/18	15:58	8.57	
Initial Calibration	WG225143-4	03/20/18	16:30	8.57	
Initial Calibration	WG225143-3	03/20/18	17:01	8.57	
Initial Calibration	WG225143-2	03/20/18	17:33	8.574	
Initial Calibration	WG225143-1	03/20/18	18:05	8.587	
Independent Source	WG225143-8	03/20/18	18:37		
Continuing Calibrati	WG227995-1	05/10/18	06:58	8.54	
Method Blank Sample	WG227925-1	05/10/18	08:08	8.554	
Laboratory Control S	WG227925-2	05/10/18	08:39	8.547	
Continuing Calibrati	WG227995-2	05/10/18	13:18	8.546	
CHAAP-19C-UGIA-DPT19	SL3841-2	05/10/18	13:49	8.55	
CHAAP-19C-LGIA-DPT20	SL3841-4	05/10/18	14:20	8.552	
CHAAP-19C-LGIA-DPT24	SL3841-6	05/10/18	14:51	8.559	
CHAAP-19C-UGIA-DPT23	SL3841-8	05/10/18	15:22	8.544	
CHAAP-19C-LGIA-DPT16	SL3841-10	05/10/18	15:53	8.537	
CHAAP-19C-LGIA-DPT11	SL3841-12	05/10/18	16:24	8.545	
CHAAP-19C-UGIA-DPT15	SL3841-14	05/10/18	16:55	8.548	
CHAAP-19C-LGIA-DPT12	SL3841-16	05/10/18	17:26	8.546	
CHAAP-19C-UGIA-DPT11	SL3841-18	05/10/18	17:57	8.546	
CHAAP-EB-050318	SL3841-20	05/10/18	18:28	8.538	
Continuing Calibrati	WG227995-3	05/10/18	18:59	8.532	

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http://katahdinlab.com
sales@katahdinlab.com

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
SDG : SL3841
Project : Cornhusker Army Ammunition Plant
Column ID : B
Instrument ID : HPLC02

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	DNB	
Initial Calibration	WG210620-15	08/01/17	09:37	13.49	
Initial Calibration	WG210620-14	08/01/17	10:27	13.48	
Initial Calibration	WG210620-13	08/01/17	11:16	13.48	
Initial Calibration	WG210620-12	08/01/17	12:05	13.47	
Initial Calibration	WG210620-11	08/01/17	12:54	13.47	
Initial Calibration	WG210620-10	08/01/17	13:44	13.47	
Initial Calibration	WG210620-9	08/01/17	14:33	13.46	
Independent Source	WG210620-16	08/01/17	17:01		
Continuing Calibrati	WG227995-20	05/17/18	15:43	13.37	
Method Blank Sample	WG227925-1C	05/17/18	21:27	13.4	
CHAAP-19C-UGIA-DPT15	SL3841-14C	05/17/18	22:16	13.39	
Continuing Calibrati	WG227995-21	05/18/18	00:43	13.39	

600 Technology Way
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Sample Data Section

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-2
Client ID: CHAAP-19C-UGIA-DPT19
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: HLE10293.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		94.4	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10293.D
Report Date: 23-May-2018 09:56

Katahdin Analytical Services

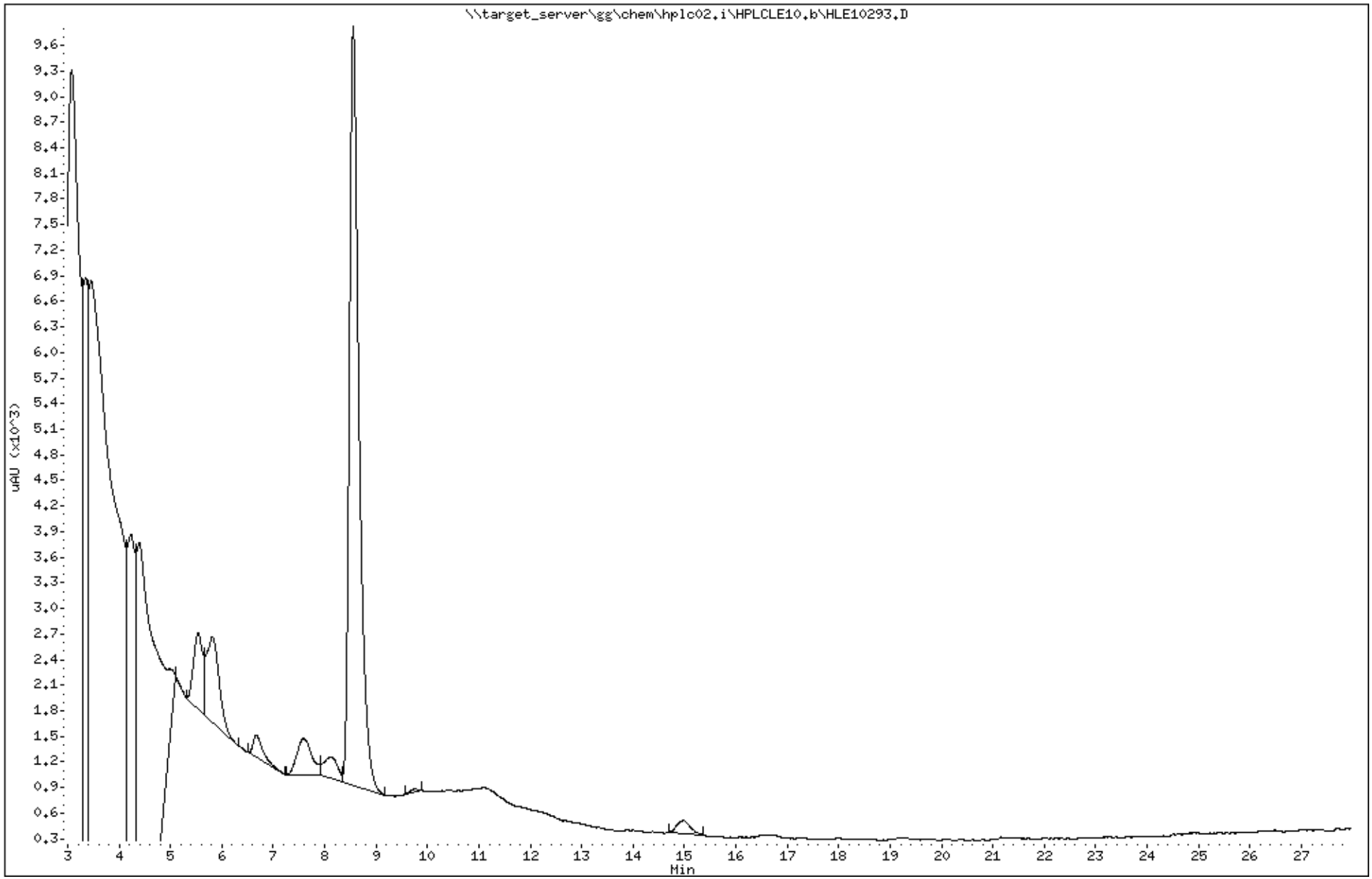
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10293.D
Lab Smp Id: SL3841-2 Client Smp ID: HAAP-19C-UGIA-DPT19
Inj Date : 10-MAY-2018 13:49
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3841-2
Misc Info : WG227995,WG227925,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 12
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10293.D
Date : 10-MAY-2018 13:49
Client ID: HAAP-19C-UGIA-DPT19
Instrument: hplc02.i
Sample Info: SL3841-2
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000013

Data File: HLE10293.D
Report Date: 23-May-2018 09:59

Katahdin Analytical Services

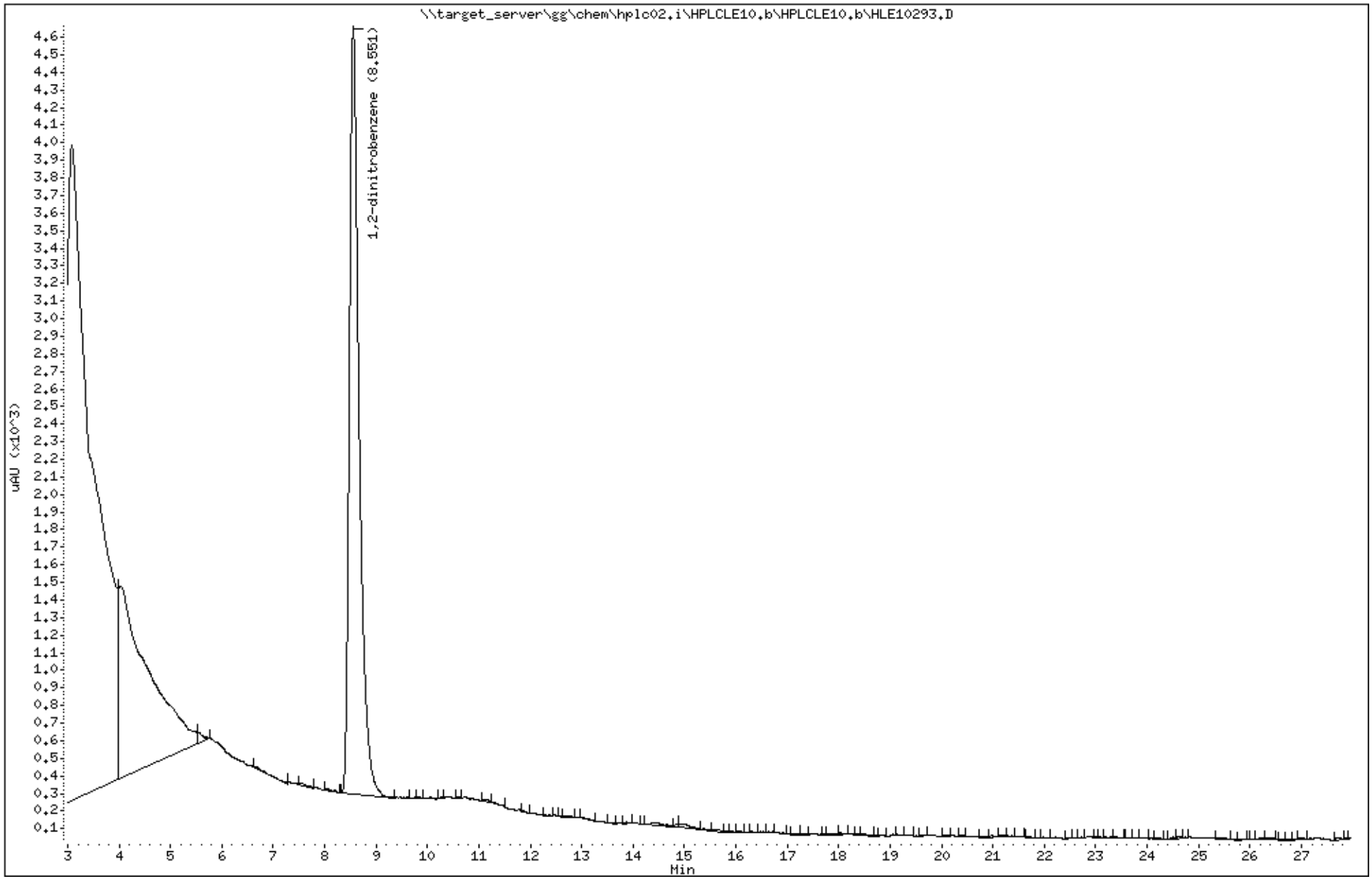
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10293.D
Lab Smp Id: SL3841-2 Client Smp ID: HAAP-19C-UGIA-DPT19
Inj Date : 10-MAY-2018 13:49
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3841-2
Misc Info : WG227995,WG227925,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 12
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.550	8.540	0.010	4368	0.94394	9.44	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10293.D
Date : 10-MAY-2018 13:49
Client ID: HAAP-19C-UGIA-DPT19 Instrument: hplc02.i
Sample Info: SL3841-2
Purge Volume: 0.5 Operator: AAB
Column phase: Acclaim Exp E1 Column diameter: 4.60



Katahdin Analytical Services 3000015

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-4
Client ID: CHAAP-19C-LGIA-DPT20
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: HLE10294.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		92.6	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10294.D
Report Date: 23-May-2018 09:56

Katahdin Analytical Services

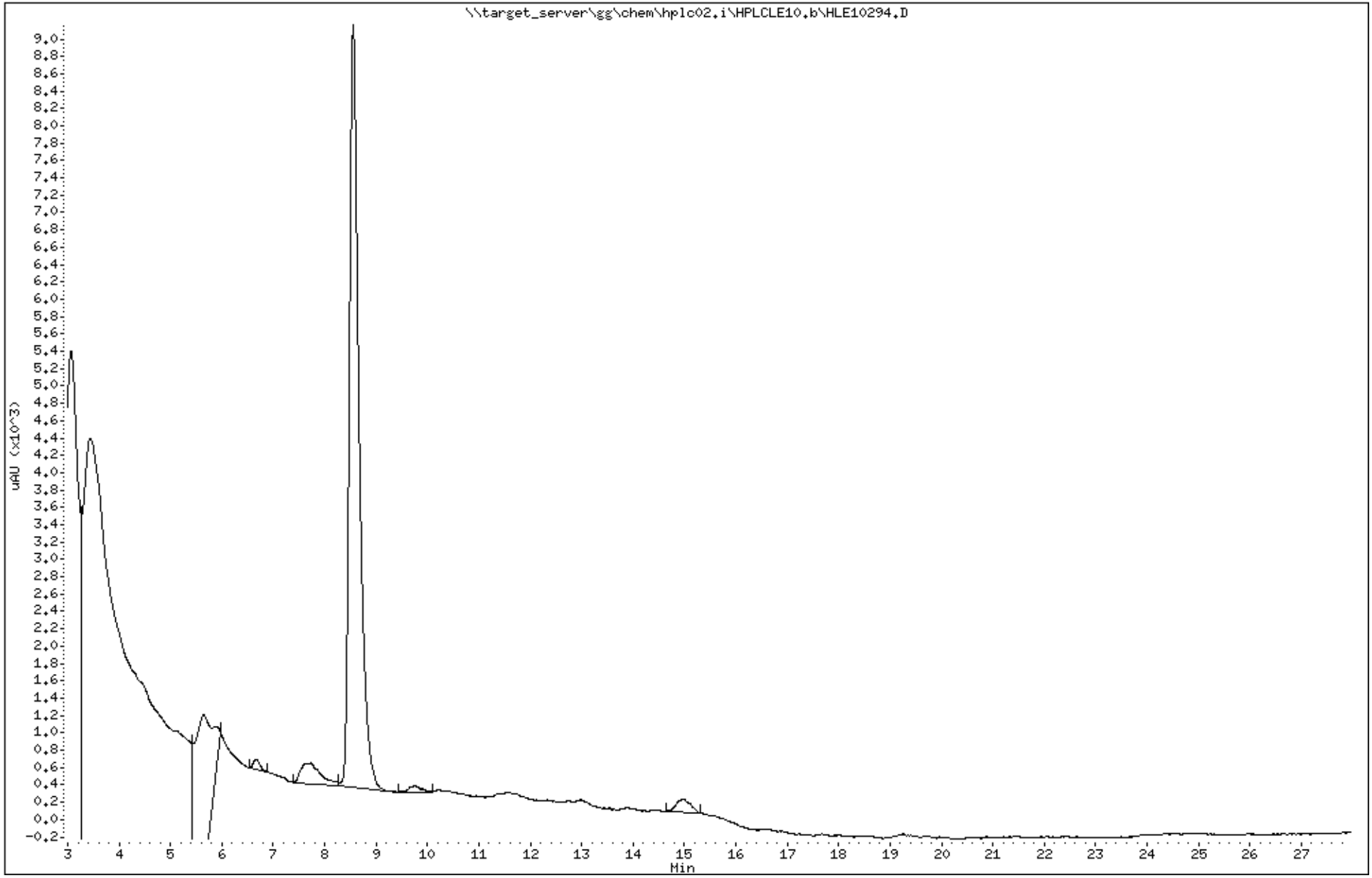
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10294.D
Lab Smp Id: SL3841-4 Client Smp ID: HAAP-19C-LGIA-DPT20
Inj Date : 10-MAY-2018 14:20
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3841-4
Misc Info : WG227995,WG227925,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 13
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10294.D
Date : 10-MAY-2018 14:20
Client ID: HAAP-19C-LGIA-DPT20
Instrument: hplc02.i
Sample Info: SL3841-4
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000018

Data File: HLE10294.D
Report Date: 23-May-2018 09:59

Katahdin Analytical Services

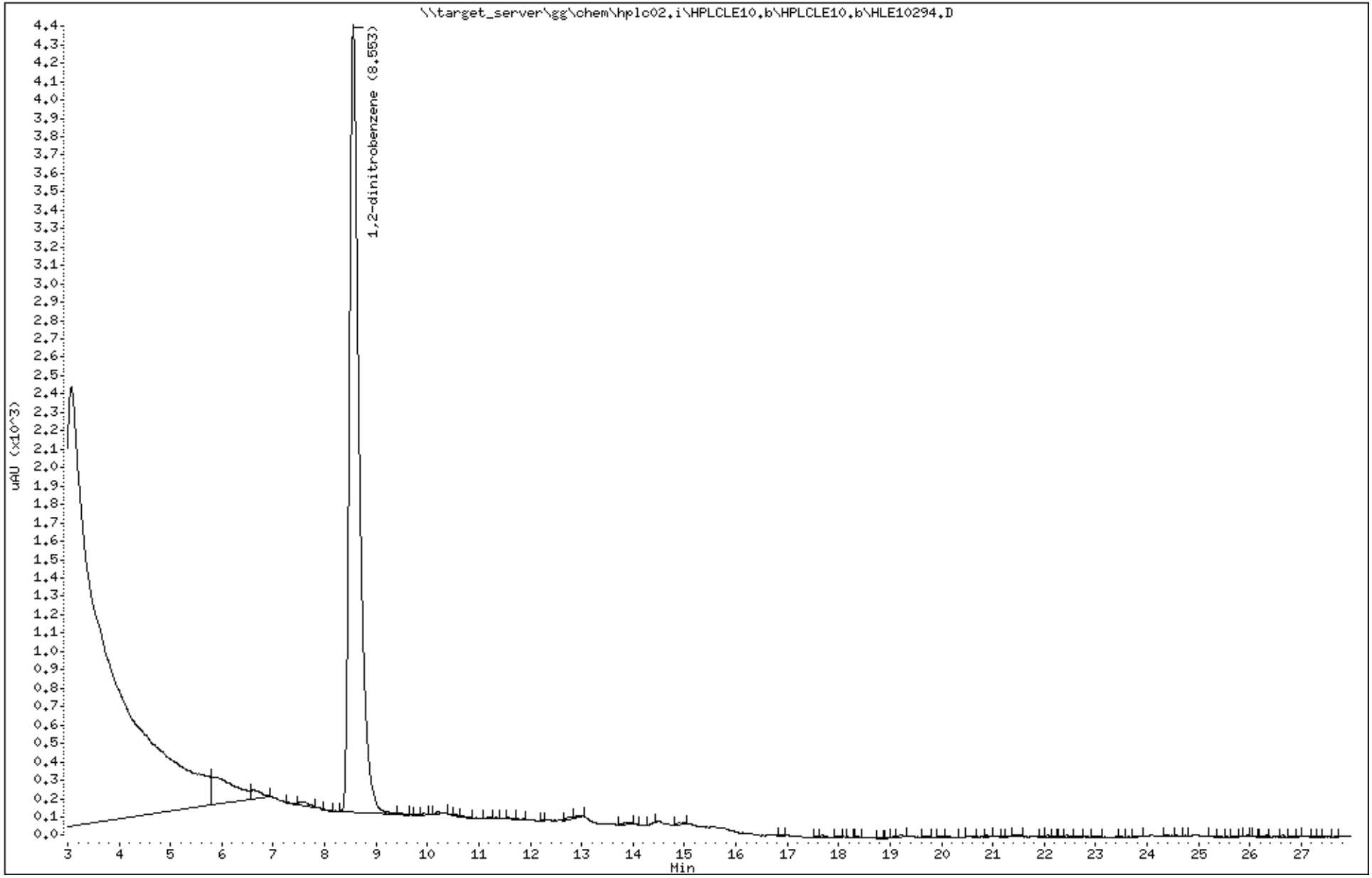
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10294.D
Lab Smp Id: SL3841-4 Client Smp ID: HAAP-19C-LGIA-DPT20
Inj Date : 10-MAY-2018 14:20
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3841-4
Misc Info : WG227995,WG227925,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 13
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.552	8.540	0.012	4283	0.92557	9.26	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10294.D
Date : 10-MAY-2018 14:20
Client ID: HAAP-19C-LGIA-DPT20 Instrument: hplc02.i
Sample Info: SL3841-4
Purge Volume: 0.5 Operator: AAB
Column phase: Acclaim Exp E1 Column diameter: 4.60



Katahdin Analytical Services 3000020

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-6
Client ID: CHAAP-19C-LGIA-DPT24
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: HLE10295.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		92.8	%					

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P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10295.D
Report Date: 23-May-2018 09:56

Katahdin Analytical Services

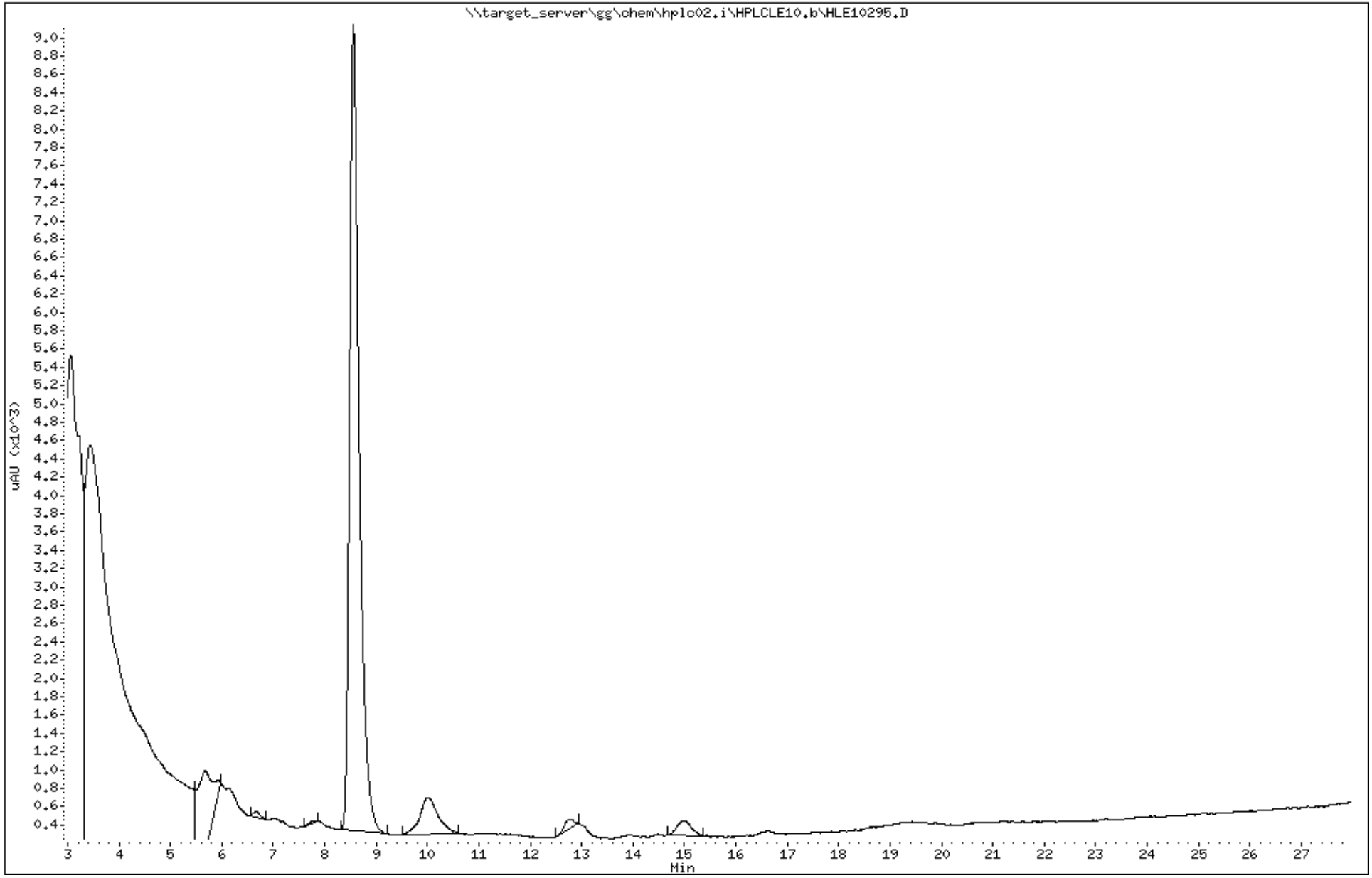
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10295.D
Lab Smp Id: SL3841-6 Client Smp ID: HAAP-19C-LGIA-DPT24
Inj Date : 10-MAY-2018 14:51
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3841-6
Misc Info : WG227995,WG227925,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 14
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10295.D
Date : 10-MAY-2018 14:51
Client ID: HAAP-19C-LGIA-DPT24
Instrument: hplc02.i
Sample Info: SL3841-6
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000023

Data File: HLE10295.D
Report Date: 23-May-2018 09:59

Katahdin Analytical Services

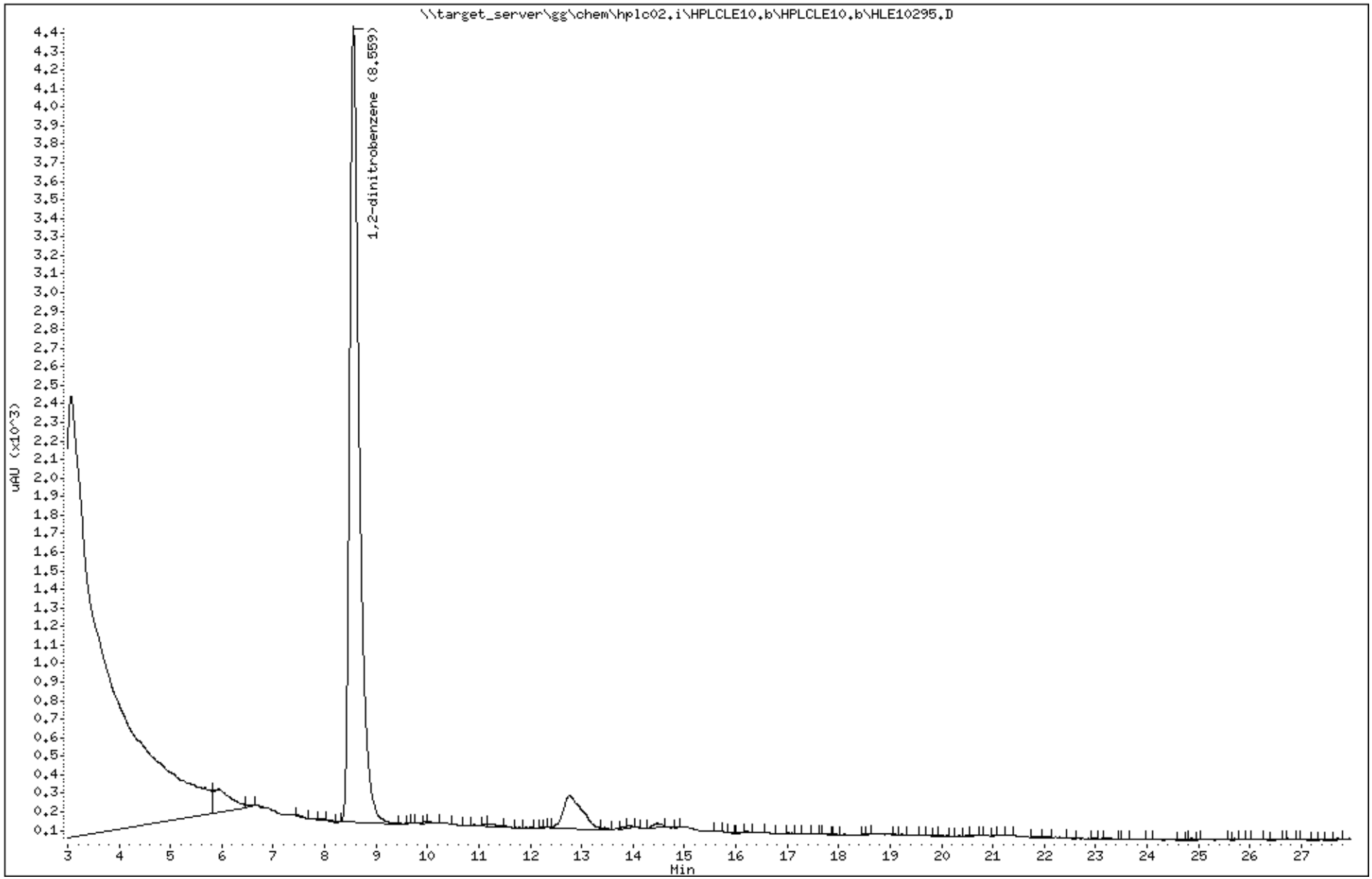
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10295.D
Lab Smp Id: SL3841-6 Client Smp ID: HAAP-19C-LGIA-DPT24
Inj Date : 10-MAY-2018 14:51
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3841-6
Misc Info : WG227995,WG227925,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 14
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.559	8.540	0.019	4294	0.92795	9.28	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10295.D
Date : 10-MAY-2018 14:51
Client ID: HAAP-19C-LGIA-DPT24
Instrument: hplc02.i
Sample Info: SL3841-6
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000025

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-8
Client ID: CHAAP-19C-UGIA-DPT23
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: HLE10296.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		93.5	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10296.D
Report Date: 23-May-2018 09:56

Katahdin Analytical Services

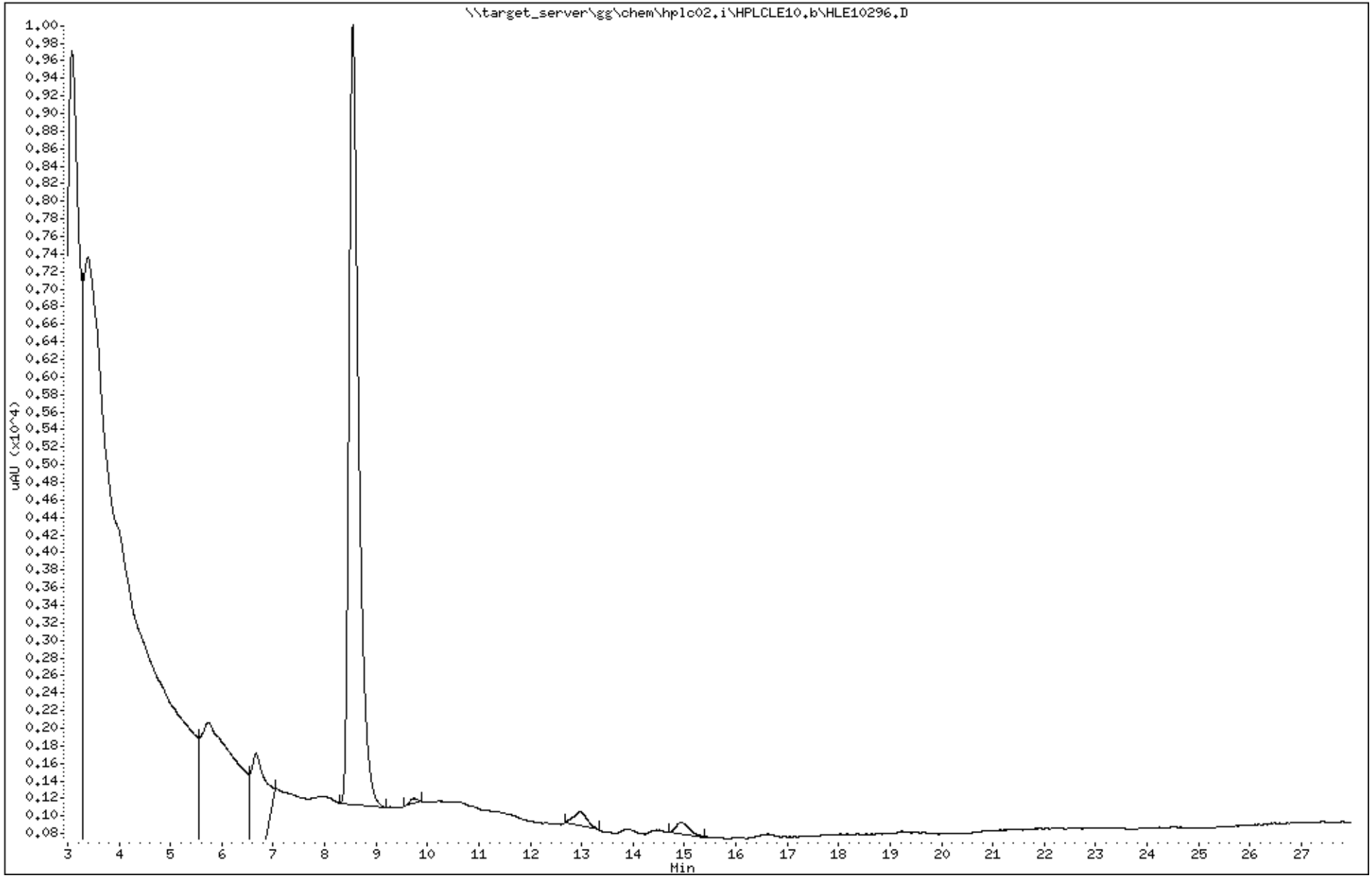
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10296.D
Lab Smp Id: SL3841-8 Client Smp ID: HAAP-19C-UGIA-DPT23
Inj Date : 10-MAY-2018 15:22
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3841-8
Misc Info : WG227995,WG227925,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10296.D
Date : 10-MAY-2018 15:22
Client ID: HAAP-19C-UGIA-DPT23
Instrument: hplc02.i
Sample Info: SL3841-8
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000028

Data File: HLE10296.D
Report Date: 23-May-2018 09:59

Katahdin Analytical Services

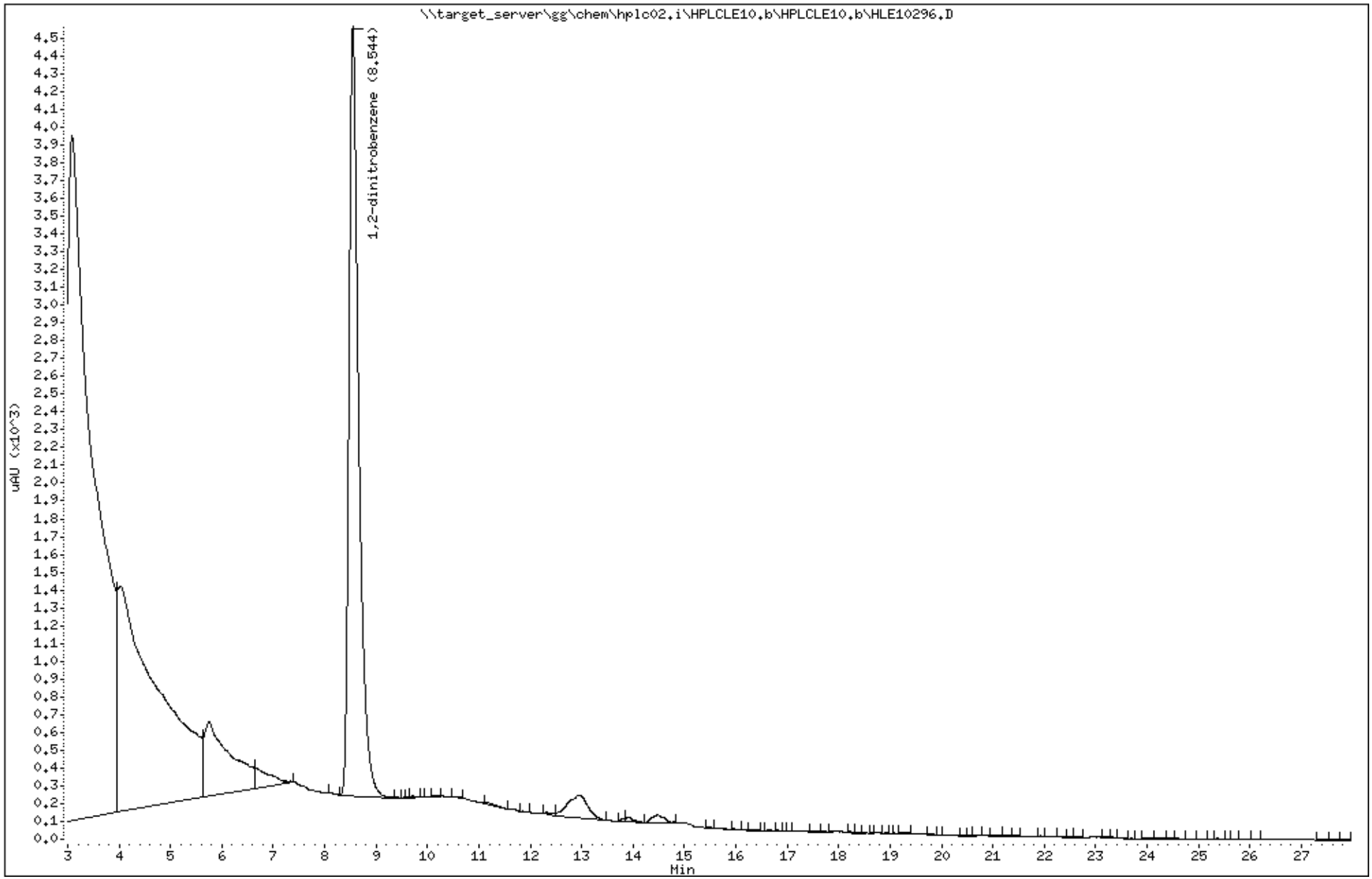
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10296.D
Lab Smp Id: SL3841-8 Client Smp ID: HAAP-19C-UGIA-DPT23
Inj Date : 10-MAY-2018 15:22
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3841-8
Misc Info : WG227995,WG227925,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.544	8.540	0.004	4327	0.93508	9.35	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10296.D
Date : 10-MAY-2018 15:22
Client ID: HAAP-19C-UGIA-DPT23
Instrument: hplc02.i
Sample Info: SL3841-8
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000030

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-10
Client ID: CHAAP-19C-LGIA-DPT16
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: HLE10297.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		94.6	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10297.D
Report Date: 23-May-2018 09:56

Katahdin Analytical Services

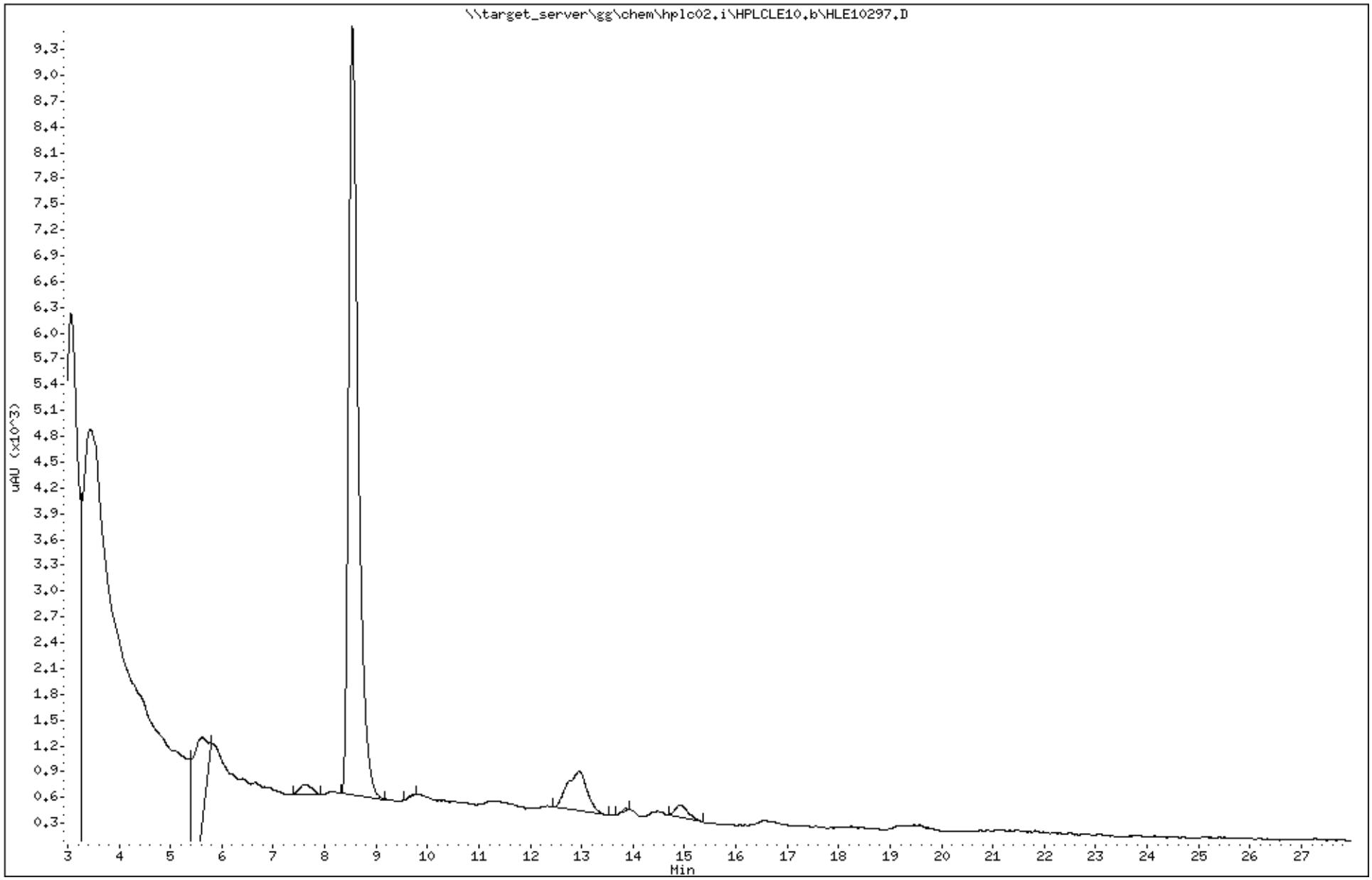
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10297.D
Lab Smp Id: SL3841-10 Client Smp ID: HAAP-19C-LGIA-DPT16
Inj Date : 10-MAY-2018 15:53
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3841-10
Misc Info : WG227995,WG227925,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 16
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10297.D
Date : 10-MAY-2018 15:53
Client ID: HAAP-19C-LGIA-DPT16
Instrument: hplc02.i
Sample Info: SL3841-10
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000033

Data File: HLE10297.D
Report Date: 23-May-2018 09:59

Katahdin Analytical Services

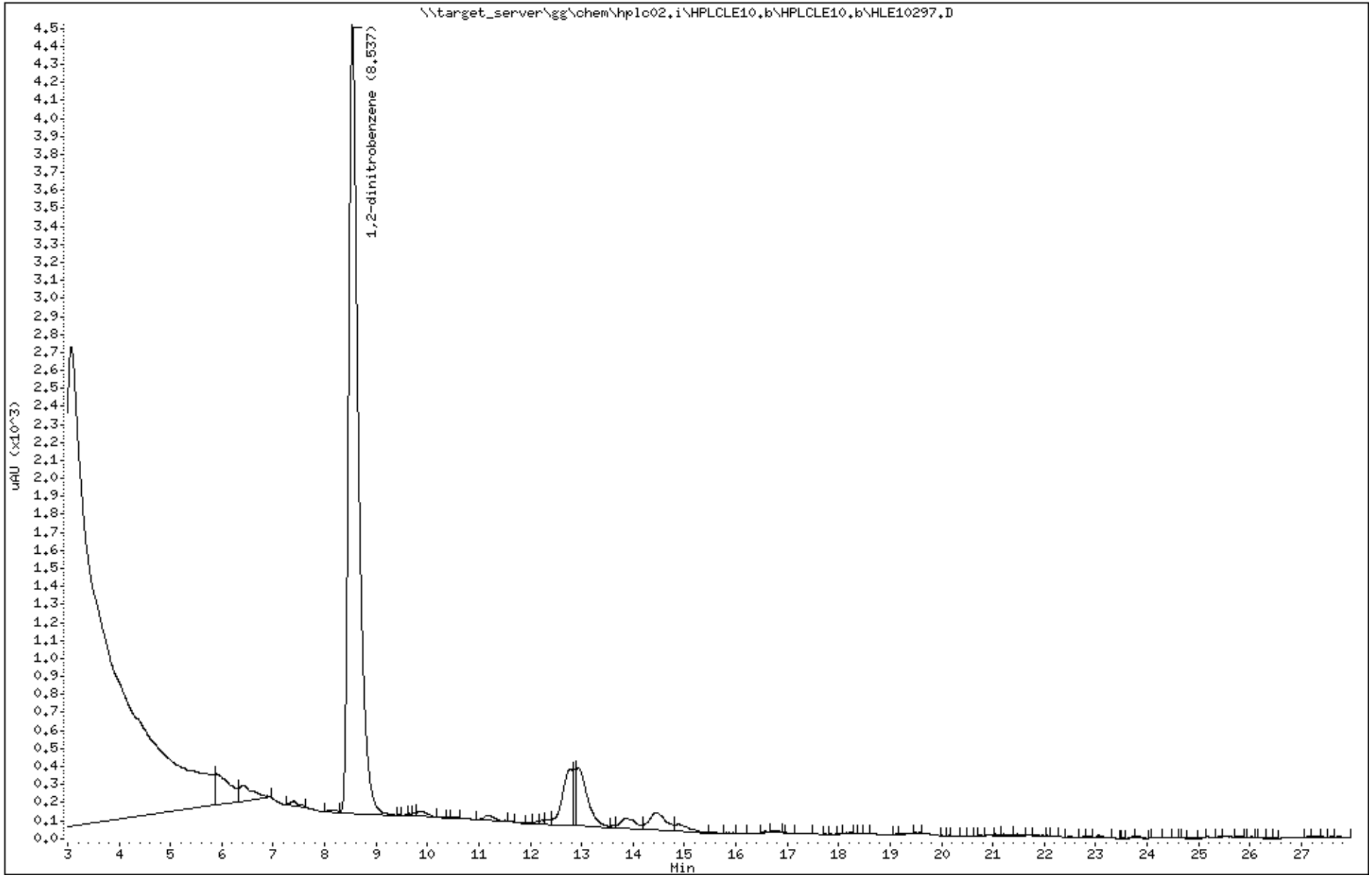
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10297.D
Lab Smp Id: SL3841-10 Client Smp ID: HAAP-19C-LGIA-DPT16
Inj Date : 10-MAY-2018 15:53
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3841-10
Misc Info : WG227995,WG227925,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 16
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.537	8.540	-0.003	4379	0.94631	9.46	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10297.D
Date : 10-MAY-2018 15:53
Client ID: HAAP-19C-LGIA-DPT16
Instrument: hplc02.i
Sample Info: SL3841-10
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000035

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-12
Client ID: CHAAP-19C-LGIA-DPT116
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: HLE10298.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		94.5	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10298.D
Report Date: 23-May-2018 09:56

Katahdin Analytical Services

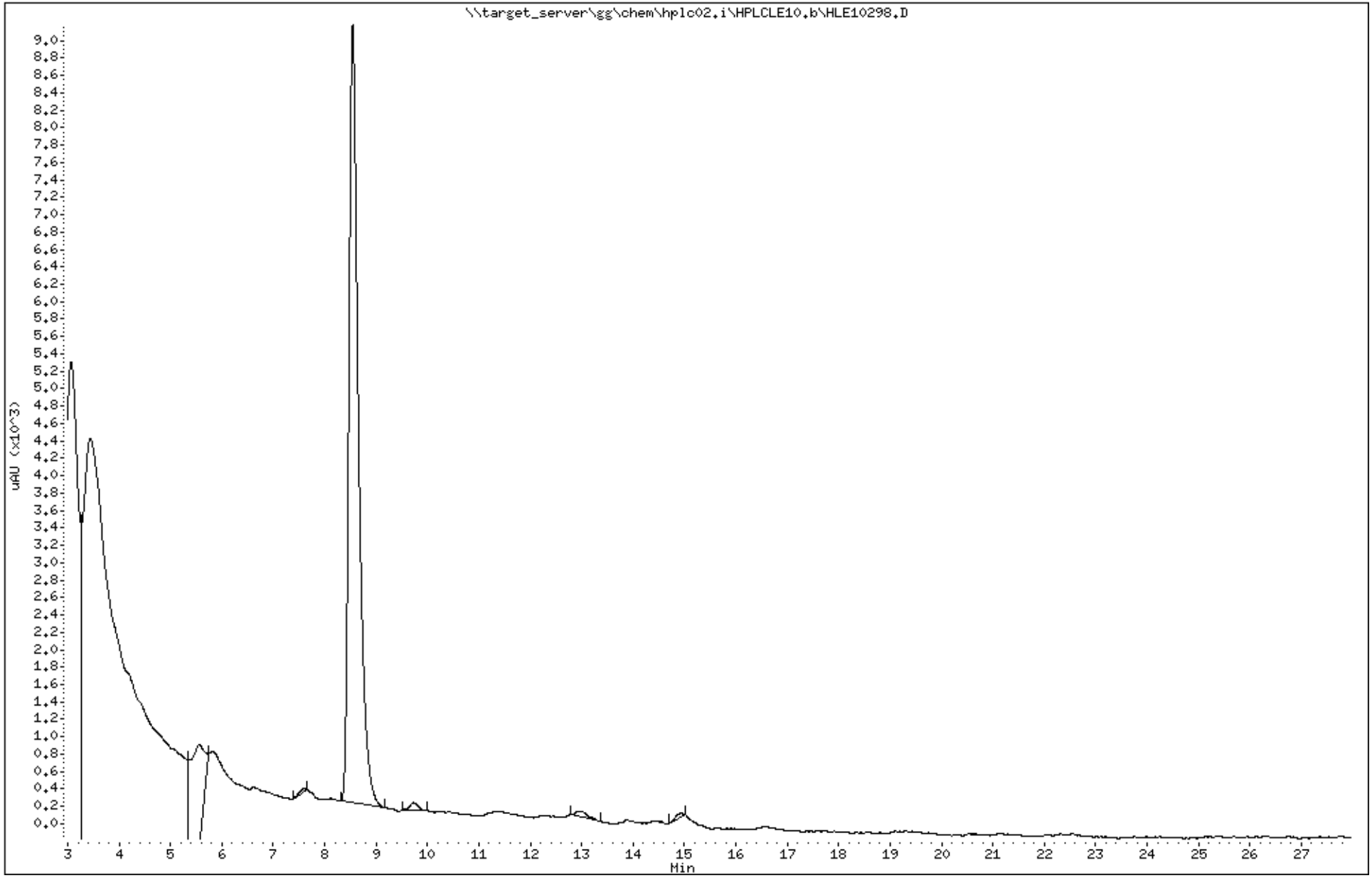
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10298.D
Lab Smp Id: SL3841-12 Client Smp ID: HAAP-19C-LGIA-DPT11
Inj Date : 10-MAY-2018 16:24
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3841-12
Misc Info : WG227995,WG227925,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 17
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10298.D
Date : 10-MAY-2018 16:24
Client ID: HAAP-19C-LGIA-DPT11
Instrument: hplc02.i
Sample Info: SL3841-12
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000038

Data File: HLE10298.D
Report Date: 23-May-2018 09:59

Katahdin Analytical Services

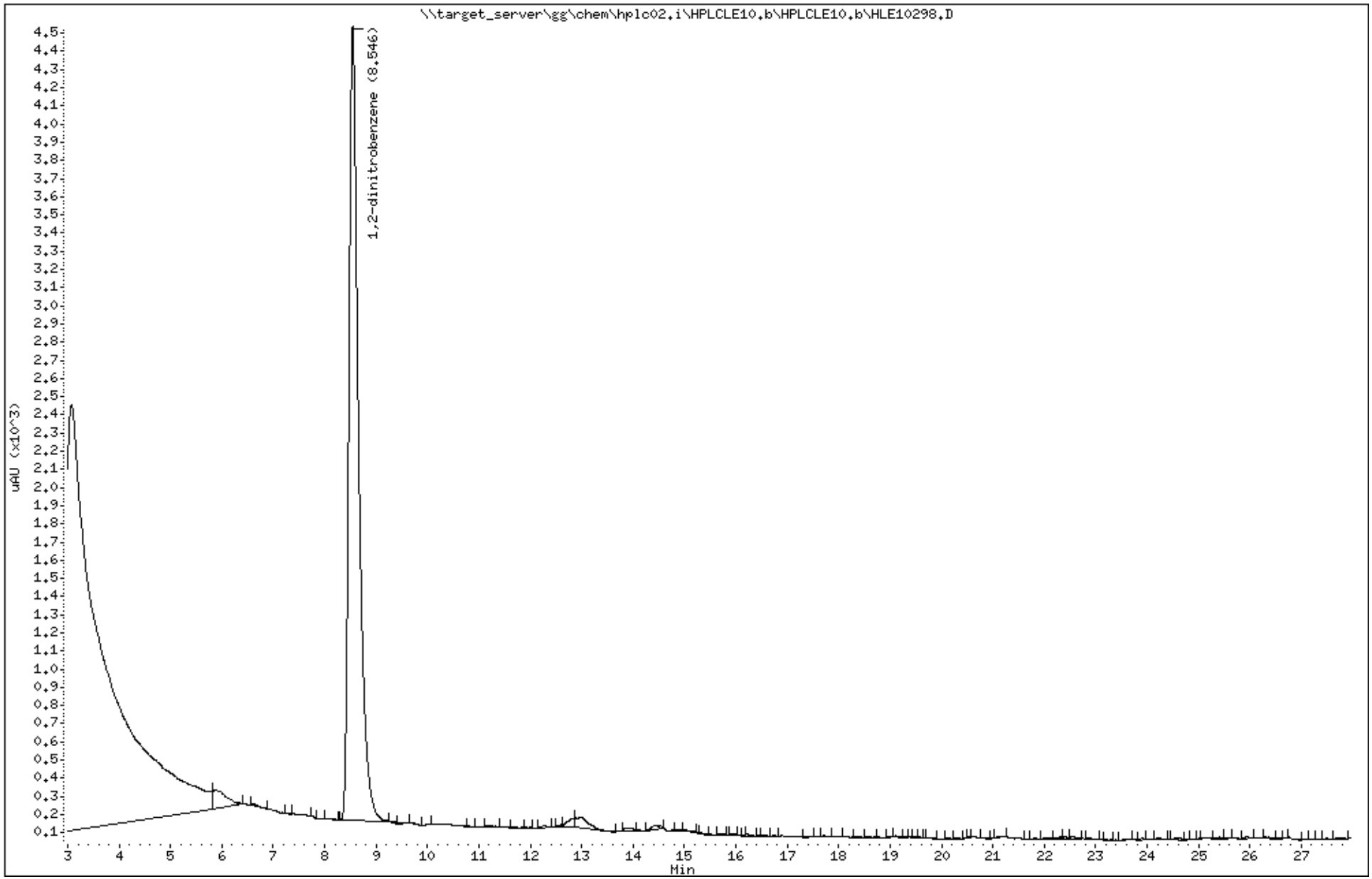
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10298.D
Lab Smp Id: SL3841-12 Client Smp ID: HAAP-19C-LGIA-DPT11
Inj Date : 10-MAY-2018 16:24
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3841-12
Misc Info : WG227995,WG227925,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 17
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.545	8.540	0.005	4373	0.94502	9.45	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10298.D
Date : 10-MAY-2018 16:24
Client ID: HAAP-19C-LGIA-DPT11
Instrument: hplc02.i
Sample Info: SL3841-12
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000040

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-14
Client ID: CHAAP-19C-UGIA-DPT15
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: HLE10299.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		92.6	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10299.D
Report Date: 23-May-2018 09:56

Katahdin Analytical Services

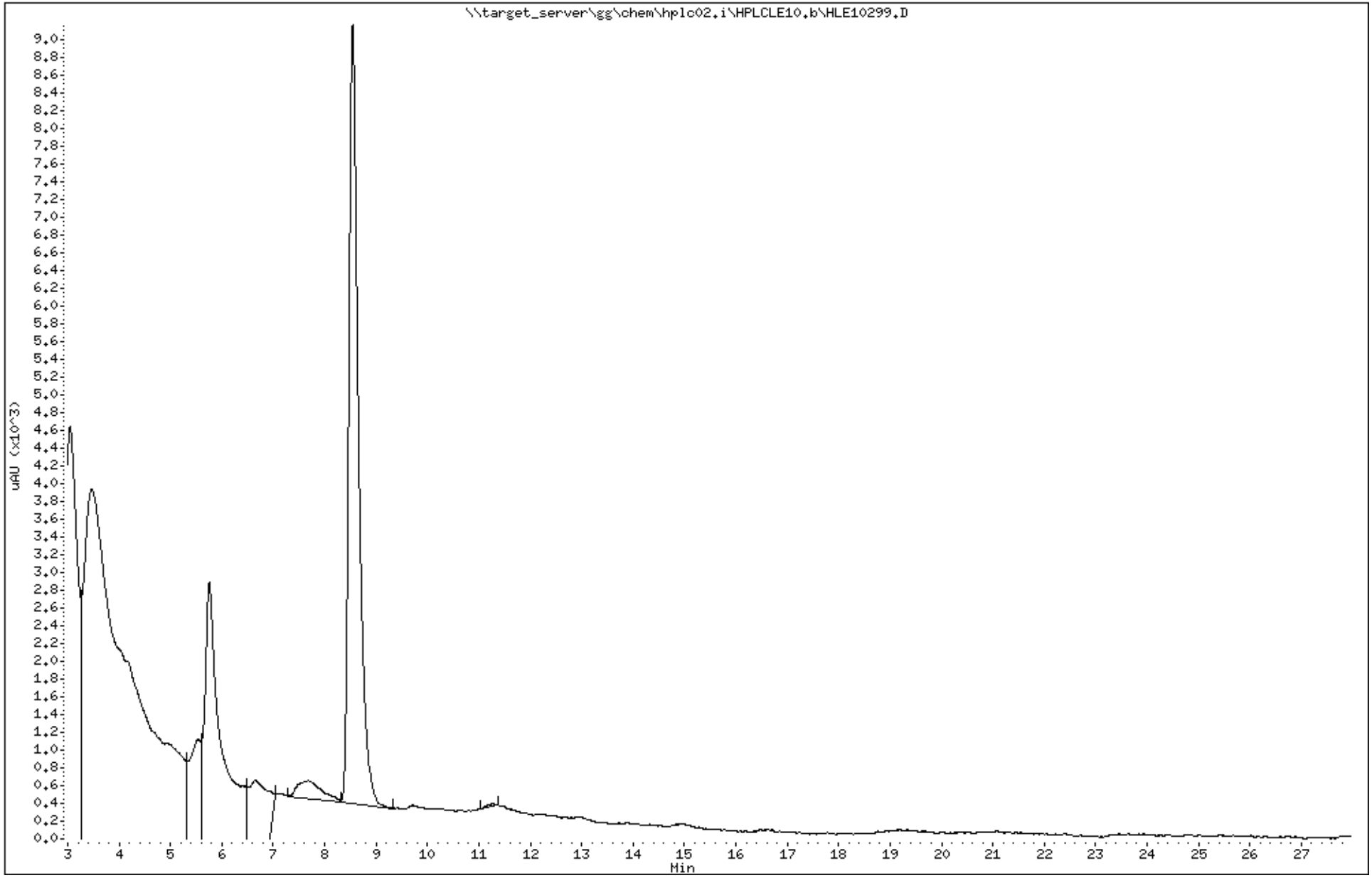
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10299.D
Lab Smp Id: SL3841-14 Client Smp ID: HAAP-19C-UGIA-DPT15
Inj Date : 10-MAY-2018 16:55
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3841-14
Misc Info : WG227995,WG227925,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 18
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10299.D
Date : 10-MAY-2018 16:55
Client ID: HAAP-19C-UGIA-DPT15
Instrument: hplc02.i
Sample Info: SL3841-14
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000043

Data File: HLE10299.D
Report Date: 23-May-2018 10:00

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10299.D
Lab Smp Id: SL3841-14 Client Smp ID: HAAP-19C-UGIA-DPT15
Inj Date : 10-MAY-2018 16:55
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3841-14
Misc Info : WG227995,WG227925,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 18
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

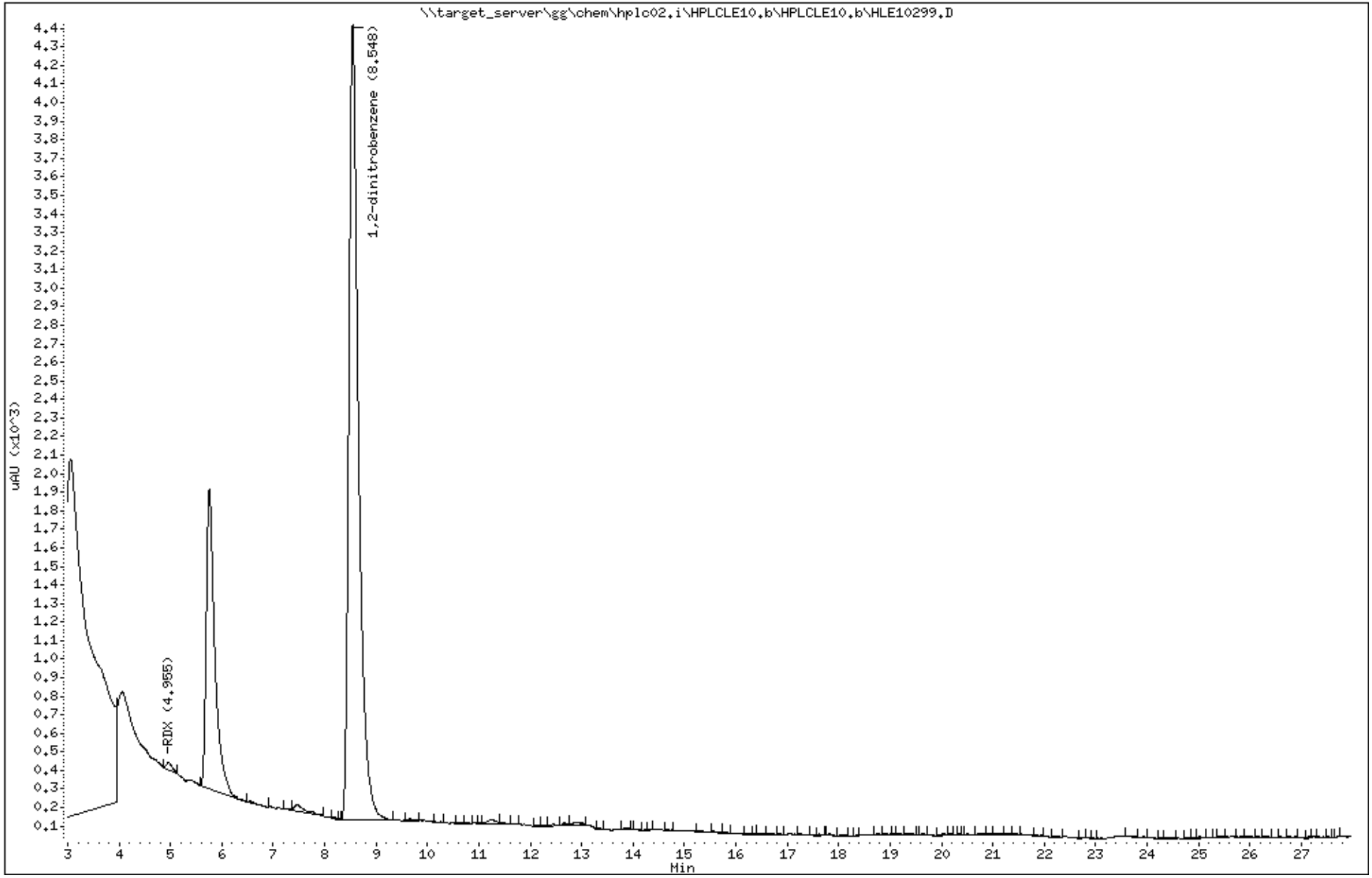
						CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE	
	Compounds	RT	EXP RT	DLT RT	RESPONSE				
	~~4 RDX~~	~~4.954~~	~~4.974~~	~~-0.020~~	~~37~~	~~0.01254~~	~~0.125(aM)~~	~~M2~~	NC
$	2 1,2-dinitrobenzene	8.548	8.540	0.008	4284	0.92578	9.26		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

AAB
10:29 am, May 23, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10299.D
Date : 10-MAY-2018 16:55
Client ID: HAAP-19C-UGIA-DPT15
Instrument: hplc02.i
Sample Info: SL3841-14
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000045

Data File: HLE10557.D
Report Date: 23-May-2018 10:04

Katahdin Analytical Services

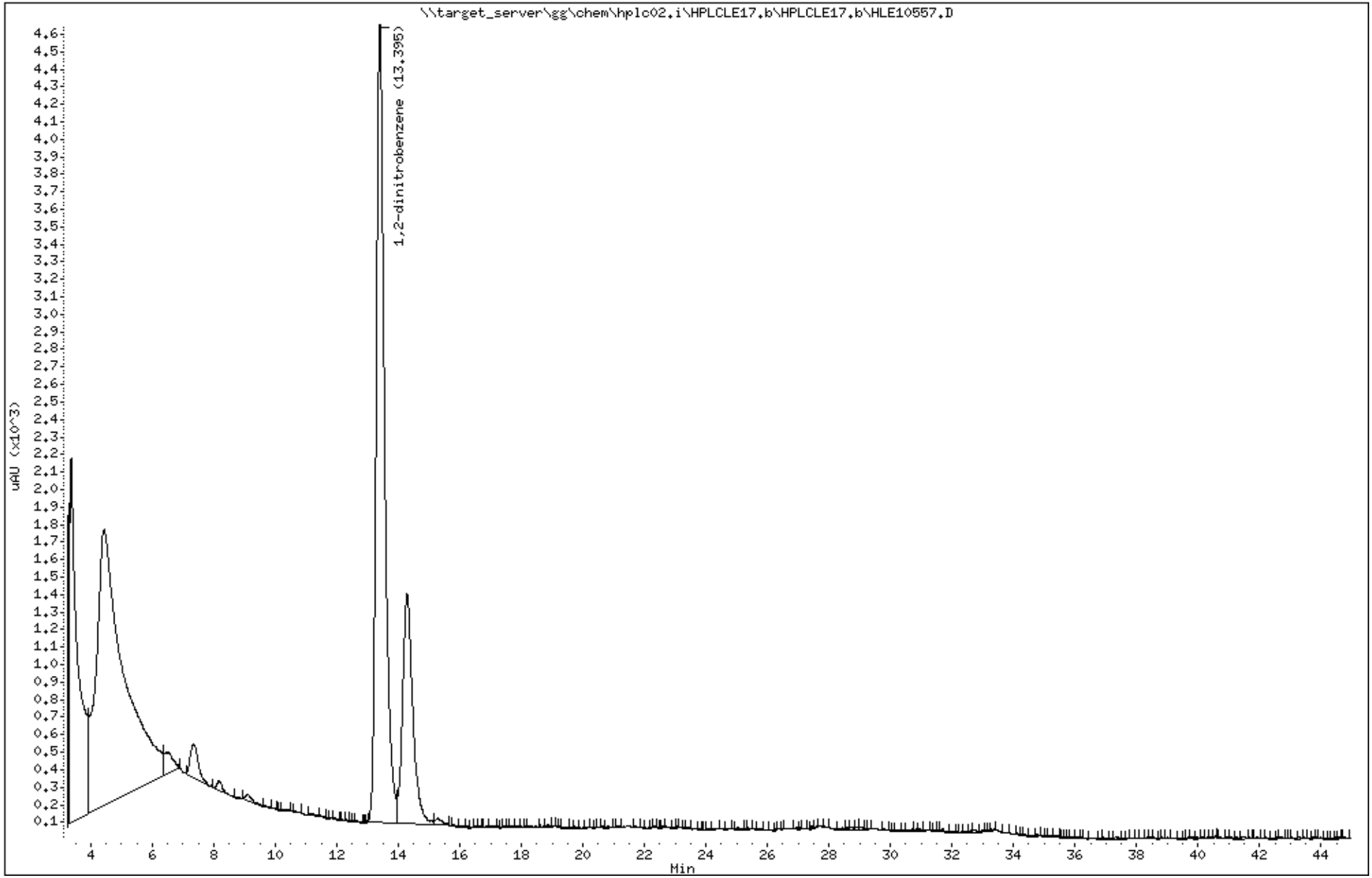
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE17.b\HPLCLE17.b\HLE10557.D
Lab Smp Id: SL3841-14C Client Smp ID: HAAP-19C-UGIA-DPT15
Inj Date : 17-MAY-2018 22:16
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3841-14C
Misc Info : WG227995,WG227925,WG210620-13
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE17.b\E2016A.m\E2016A.m
Meth Date : 22-May-2018 06:50 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 76
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	13.394	13.373	0.021	4554	0.85919	8.59	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE17.b\HPLCLE17.b\HLE10557.D
Date : 17-MAY-2018 22:16
Client ID: HAAP-19C-UGIA-DPT15
Instrument: hplc02.i
Sample Info: SL3841-14C
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000047

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-16
Client ID: CHAAP-19C-LGIA-DPT12
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: HLE10300.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		93.0	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10300.D
Report Date: 23-May-2018 09:56

Katahdin Analytical Services

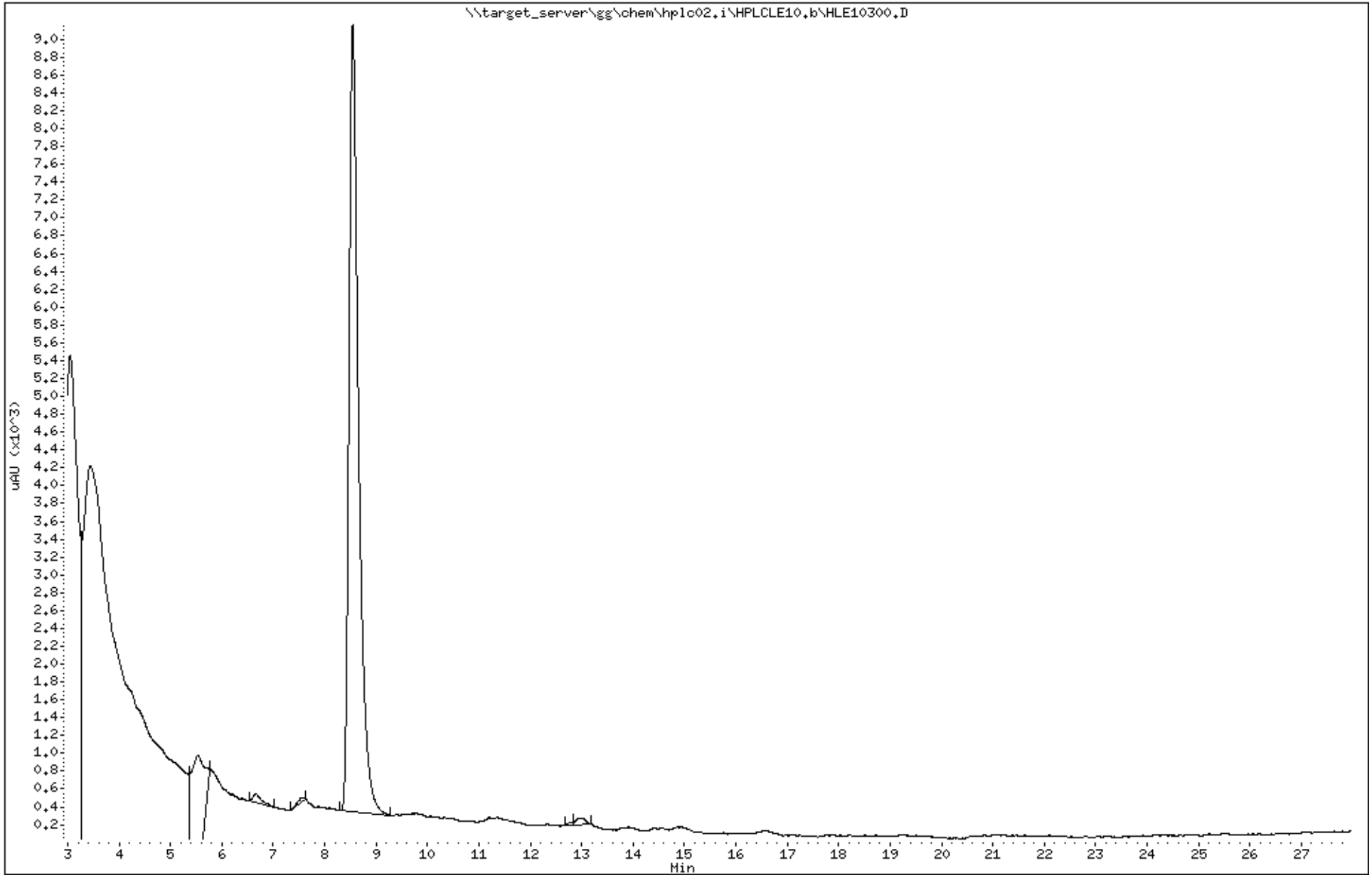
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10300.D
Lab Smp Id: SL3841-16 Client Smp ID: HAAP-19C-LGIA-DPT12
Inj Date : 10-MAY-2018 17:26
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3841-16
Misc Info : WG227995,WG227925,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 19
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10300.D
Date : 10-MAY-2018 17:26
Client ID: HAAP-19C-LGIA-DPT12
Instrument: hplc02.i
Sample Info: SL3841-16
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000050

Data File: HLE10300.D
Report Date: 23-May-2018 10:00

Katahdin Analytical Services

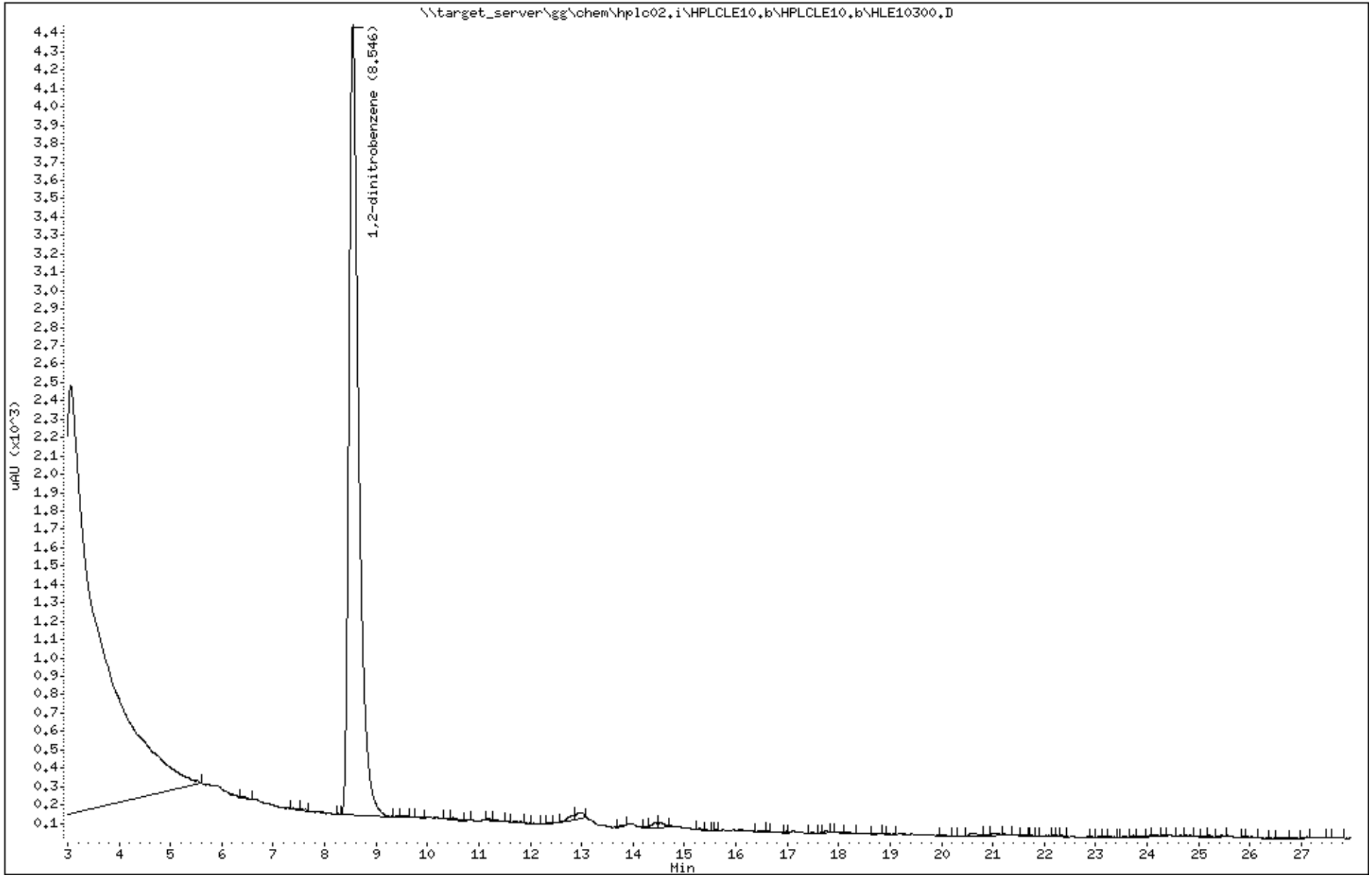
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10300.D
Lab Smp Id: SL3841-16 Client Smp ID: HAAP-19C-LGIA-DPT12
Inj Date : 10-MAY-2018 17:26
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3841-16
Misc Info : WG227995,WG227925,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 19
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.546	8.540	0.006	4304	0.93011	9.30	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10300.D
Date : 10-MAY-2018 17:26
Client ID: HAAP-19C-LGIA-DPT12
Instrument: hplc02.i
Sample Info: SL3841-16
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000052

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-18
Client ID: CHAAP-19C-UGIA-DPT11
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: HLE10301.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		94.0	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10301.D
Report Date: 23-May-2018 09:56

Katahdin Analytical Services

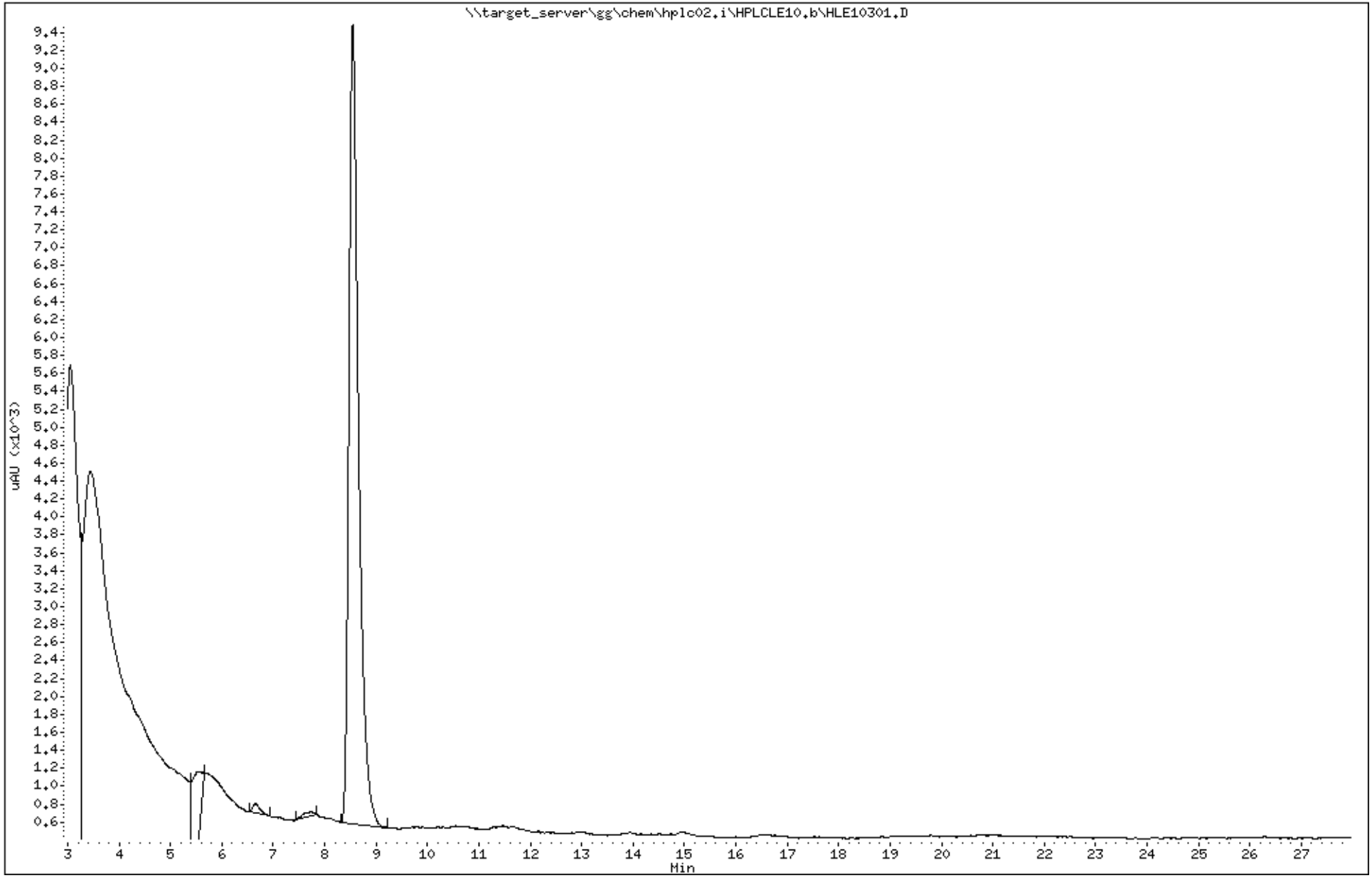
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10301.D
Lab Smp Id: SL3841-18 Client Smp ID: HAAP-19C-UGIA-DPT11
Inj Date : 10-MAY-2018 17:57
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3841-18
Misc Info : WG227995,WG227925,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 20
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10301.D
Date : 10-MAY-2018 17:57
Client ID: HAAP-19C-UGIA-DPT11
Instrument: hplc02.i
Sample Info: SL3841-18
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000055

Data File: HLE10301.D
Report Date: 23-May-2018 10:00

Katahdin Analytical Services

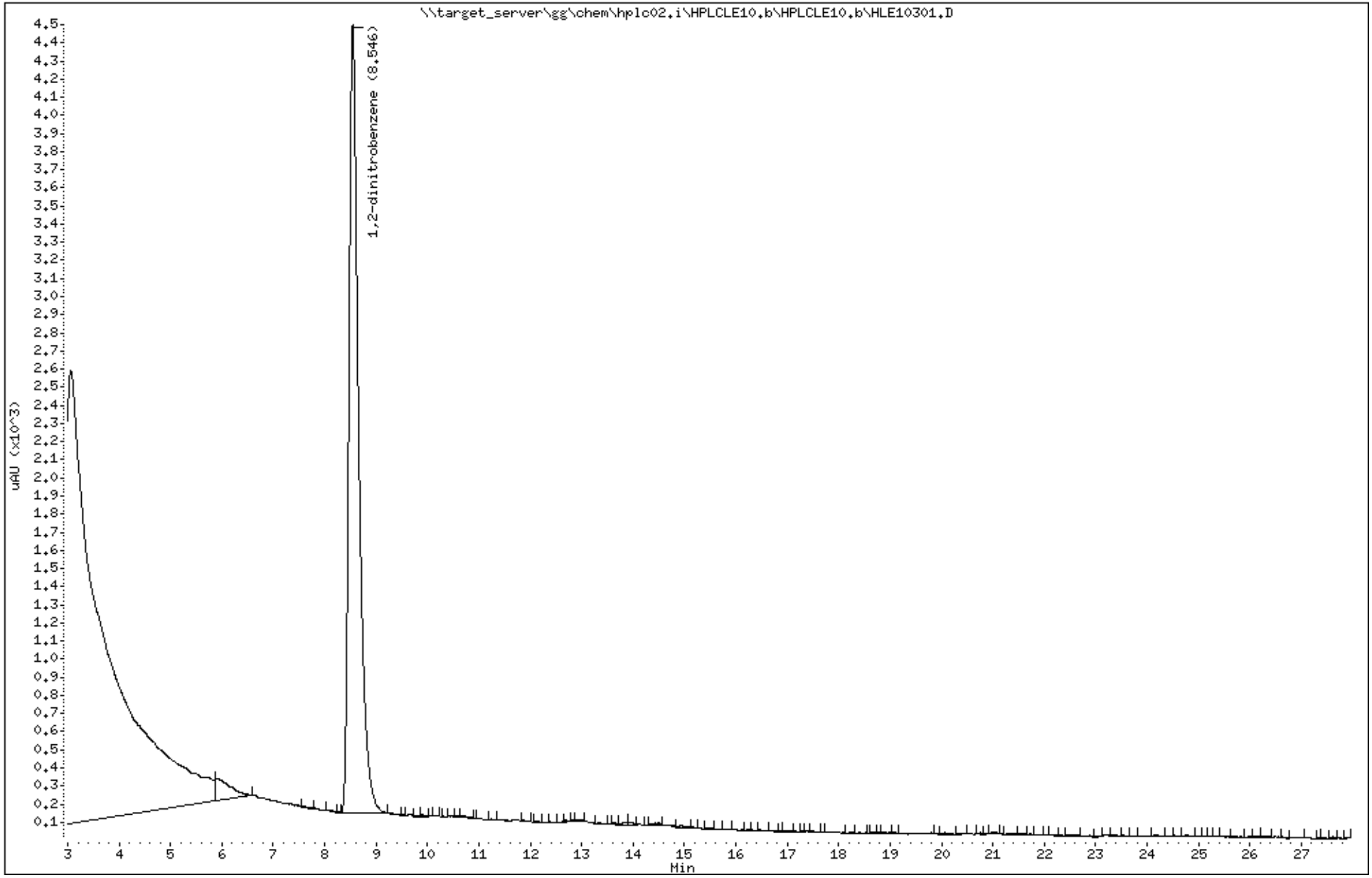
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10301.D
Lab Smp Id: SL3841-18 Client Smp ID: HAAP-19C-UGIA-DPT11
Inj Date : 10-MAY-2018 17:57
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3841-18
Misc Info : WG227995,WG227925,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 20
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.546	8.540	0.006	4348	0.93961	9.40	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10301.D
Date : 10-MAY-2018 17:57
Client ID: HAAP-19C-UGIA-DPT11
Instrument: hplc02.i
Sample Info: SL3841-18
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000057

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3841-20
Client ID: CHAAP-EB-050318
Project: Cornhusker Army Ammunition Plant
SDG: SL3841
Lab File ID: HLE10302.D

Sample Date: 03-MAY-18
Received Date: 04-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		94.0	%					

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Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10302.D
Report Date: 23-May-2018 09:56

Katahdin Analytical Services

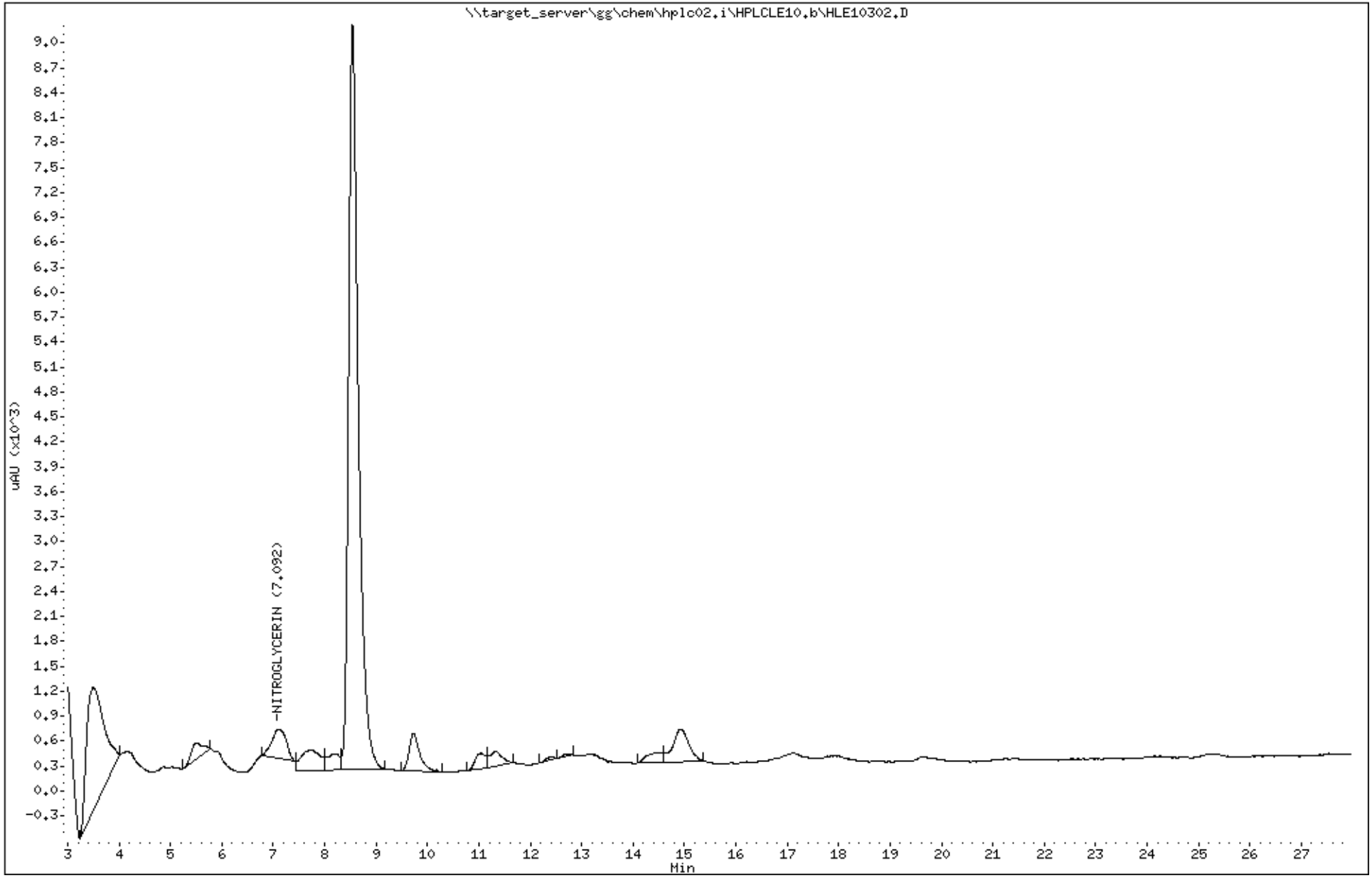
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10302.D
Lab Smp Id: SL3841-20 Client Smp ID: CHAAP-EB-050318
Inj Date : 10-MAY-2018 18:28
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3841-20
Misc Info : WG227995,WG227925,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 21
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10302.D
Date : 10-MAY-2018 18:28
Client ID: CHAAP-EB-050318
Instrument: hplc02.i
Sample Info: SL3841-20
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000060

Data File: HLE10302.D
Report Date: 23-May-2018 10:00

Katahdin Analytical Services

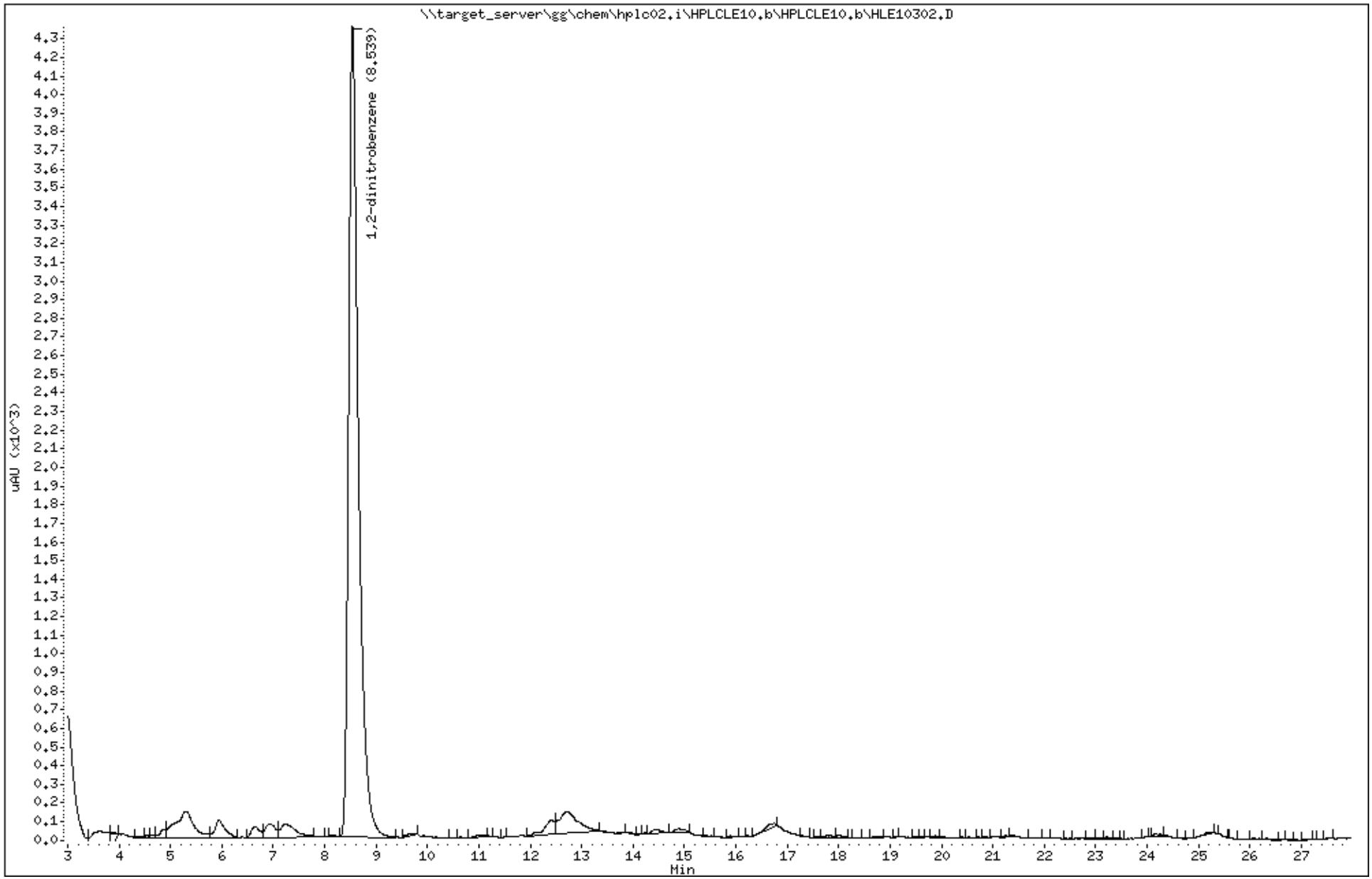
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10302.D
Lab Smp Id: SL3841-20 Client Smp ID: CHAAP-EB-050318
Inj Date : 10-MAY-2018 18:28
Operator : AAB Inst ID: hplc02.i
Smp Info : SL3841-20
Misc Info : WG227995,WG227925,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 21
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.538	8.540	-0.002	4351	0.94026	9.40	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10302.D
Date : 10-MAY-2018 18:28
Client ID: CHAAP-EB-050318
Instrument: hplc02.i
Sample Info: SL3841-20
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000062

Standards Data Section

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3841
Project : Cornhusker Army Ammunition Plant
Instrument ID: HPLC02
Lab File IDs : HKH10014.I HKH10013.I HKH10012.I HKH10011.I HKH10010.I HKH10009.I HKH10008.I
Calibration Date(s): 01-AUG-17 09:37 01-AUG-17 14:33

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7		Crv				Max	
	0.025000(	0.050000(	0.100000(	0.250000(	0.500000(	1.0000	2.0000		New	b	m1	%RSD	%RSD	
HMX	143	204	424	1108	2190	4103	8448		LNR	-0.00406	4200	0.99963	0.99000	O
RDX	92.00000	202	389	1038	2084	3920	8183		LNR	0.00215	4071	0.99952	0.99000	O
1,3,5-trinitrobenzene	222	508	1024	2674	5383	10154	20806		LNR	-0.00071	10372	0.99973	0.99000	O
1,3-dinitrobenzene	264	581	1148	2994	6045	11405	23270		LNR	-0.00176	11603	0.99976	0.99000	O
TETRYL	98.00000	244	482	1267	2545	4803	9244		LNR	-0.01222	4644	0.99914	0.99000	O
nitrobenzene	142	331	655	1720	3466	6563	13345		LNR	-0.00158	6659	0.99979	0.99000	O
2,4,6-trinitrotoluene	135	313	627	1624	3260	6187	12320		LNR	-0.00578	6161	0.99976	0.99000	O
4-AM-DNT	63.00000	118	244	663	1299	2450	4682		LNR	-0.01508	2353	0.99890	0.99000	O
2-AM-DNT	65.00000	171	311	854	1698	3193	6303		LNR	-0.00832	3155	0.99955	0.99000	O
2,6-dinitrotoluene	76.00000	172	369	981	1970	3749	7493		LNR	-0.00306	3750	0.99978	0.99000	O
2,4-dinitrotoluene	136	329	692	1809	3639	6925	13785		LNR	-0.00420	6900	0.99976	0.99000	O
2-nitrotoluene	63.00000	115	257	686	1382	2659	5246		LNR	-0.00402	2630	0.99976	0.99000	O
4-nitrotoluene	101	120	227	531	1075	2023	3902		LNR	-0.02177	1947	0.99936	0.99000	O
3-nitrotoluene	72.00000	124	256	701	1390	2617	5111		LNR	-0.01061	2561	0.99942	0.99000	O
1,2-dinitrobenzene	117	263	530	1379	2756	5196	10604		LNR	-0.00227	5286	0.99974	0.99000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Data File: HKH10016.D
Report Date: 02-Aug-2017 10:20

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa00508
Sample Matrix: LIQUID Fraction: Explosives
Lab Smp Id: WG210620-16
Level: LOW Operator: AAB
Data Type: LC DATA SampleType: LCS
SpikeList File: IND.spk Quant Type: ESTD
Sublist File: SW8330A.sub
Method File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\E2016A.m\E2016A.m
Misc Info: WG210620,WG210205,WG210620-13,SK6535-1

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
1 HMX	5.00	5.68	113.67	80-120
4 RDX	5.00	5.76	115.30	80-120
5 1,3,5-trinitrobenz	5.00	5.58	111.71	80-120
6 1,3-dinitrobenzene	5.00	5.59	111.84	80-120
7 nitrobenzene	5.00	5.66	113.30	80-120
9 TETRYL	5.00	6.15	123.00*	80-120
10 2,4,6-trinitrotolu	5.00	5.74	114.80	80-120
11 4-AM-DNT	5.00	6.51	130.27*	80-120
12 2-AM-DNT	5.00	5.70	114.01	80-120
13 2,6-dinitrotoluene	5.00	5.74	114.91	80-120
14 2,4-dinitrotoluene	5.00	5.80	116.03	80-120
15 2-nitrotoluene	5.00	5.84	116.91	80-120
16 4-nitrotoluene	5.00	5.92	118.33	80-120
17 3-nitrotoluene	5.00	6.25	124.99*	80-120
52 3,5-dinitroaniline	5.00	5.53	110.58	80-120

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 2 1,2-dinitrobenzene	10.0	0.000	*	82-150

Data File: HKH10016.D
Report Date: 02-Aug-2017 10:20

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10016.D
Lab Smp Id: WG210620-16
Inj Date : 01-AUG-2017 17:01
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG210620-16,SK6535
Misc Info : WG210620,WG210205,WG210620-13,SK6535-1
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\E2016A.m\E2016A.m
Meth Date : 02-Aug-2017 10:01 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33   Cal File: HKH10014.D
Als bottle: 30   QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

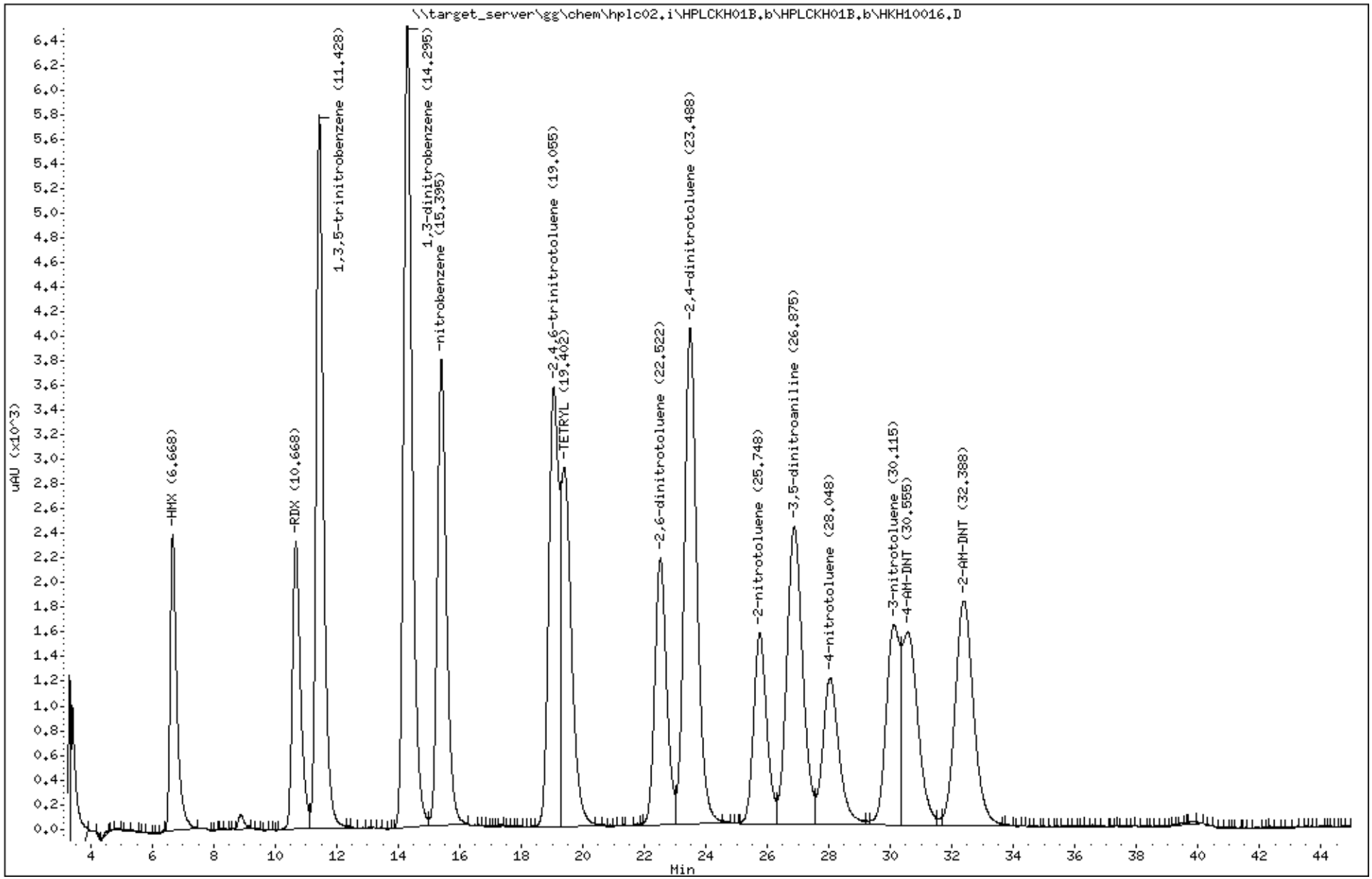
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
1	HMX	6.668	6.678	-0.010	2404	0.56837	5.68	
4	RDX	10.668	10.684	-0.016	2338	0.57648	5.76	
5	1,3,5-trinitrobenzene	11.428	11.431	-0.003	5801	0.55856	5.58	
6	1,3-dinitrobenzene	14.294	14.304	-0.010	6509	0.55919	5.59	
7	nitrobenzene	15.394	15.411	-0.017	3783	0.56650	5.66	
10	2,4,6-trinitrotoluene	19.054	19.064	-0.010	3572	0.57402	5.74	
9	TETRYL	19.401	19.424	-0.023	2913	0.61500	6.15(R)	
13	2,6-dinitrotoluene	22.521	22.538	-0.017	2166	0.57456	5.74	
14	2,4-dinitrotoluene	23.488	23.511	-0.023	4032	0.58013	5.80	
15	2-nitrotoluene	25.748	25.764	-0.016	1548	0.58454	5.84	
52	3,5-dinitroaniline	26.874	26.931	-0.057	2417	0.55288	5.53	
16	4-nitrotoluene	28.048	28.058	-0.010	1194	0.59164	5.92	
17	3-nitrotoluene	30.114	30.111	0.003	1628	0.62497	6.25(R)	
11	4-AM-DNT	30.554	30.651	-0.097	1568	0.65133	6.51(R)	
12	2-AM-DNT	32.388	32.464	-0.076	1825	0.57005	5.70	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10016.D
Date : 01-AUG-2017 17:01
Client ID:
Instrument: hplc02.i
Sample Info: WG210620-16,SK6535
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000067

Data File: HKH10008.D
Report Date: 02-Aug-2017 09:55

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10008.D
Lab Smp Id: WG210620-15
Inj Date : 01-AUG-2017 09:37
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG210620-15
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\E2016A.m\E2016A.m
Meth Date : 02-Aug-2017 09:51 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 09:37   Cal File: HKH10008.D
Als bottle: 1   Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

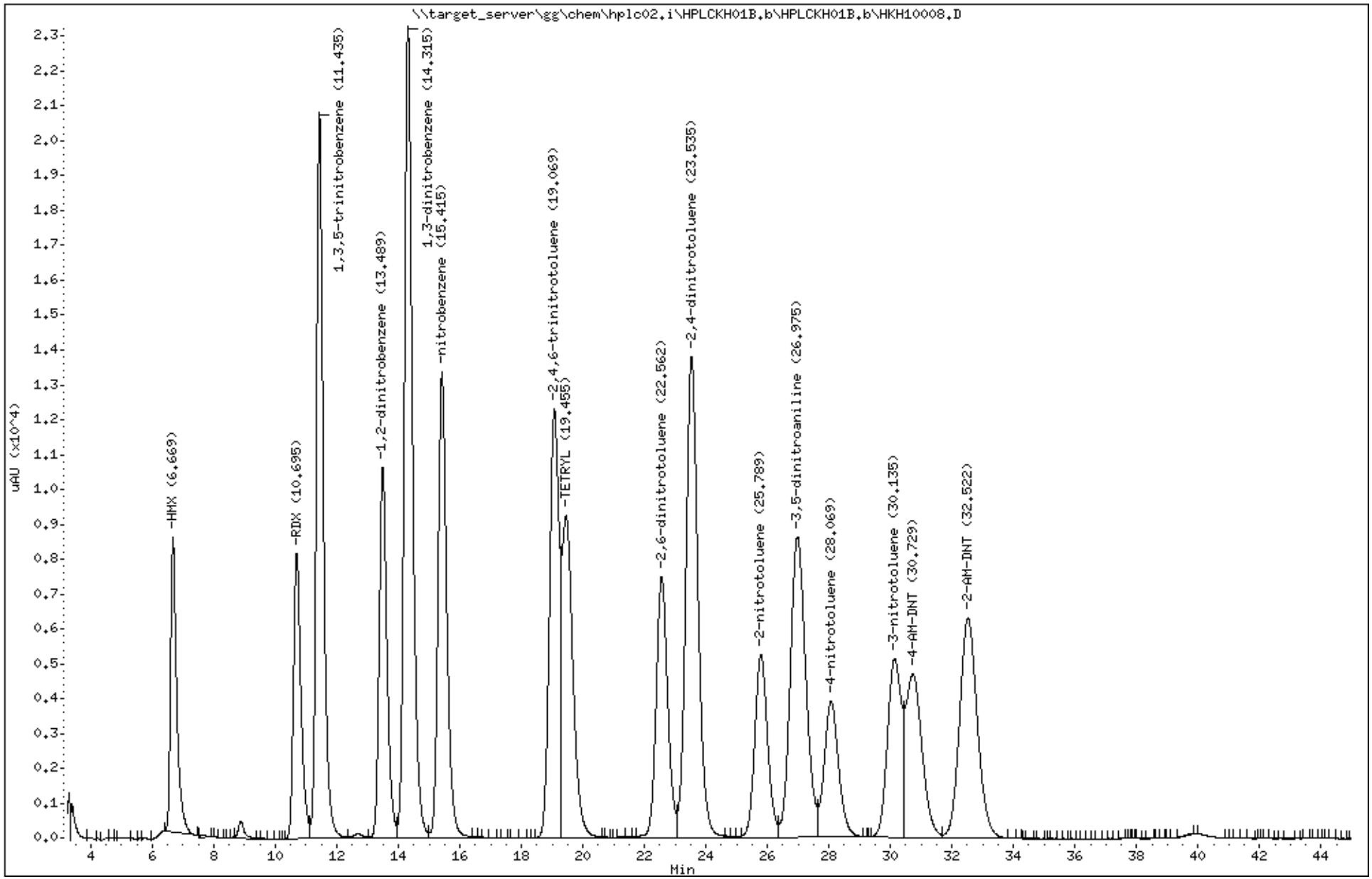
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.668	6.678	-0.010	8448	2.00000	2.01(AM)	M2
4	RDX	10.695	10.684	0.011	8183	2.00000	2.01(A)	
5	1,3,5-trinitrobenzene	11.435	11.431	0.004	20806	2.00000	2.00(A)	
$ 2	1,2-dinitrobenzene	13.488	13.478	0.010	10604	2.00000	2.00(A)	
6	1,3-dinitrobenzene	14.315	14.304	0.011	23270	2.00000	2.00(A)	
7	nitrobenzene	15.415	15.411	0.004	13345	2.00000	2.00(A)	
10	2,4,6-trinitrotoluene	19.068	19.064	0.004	12320	2.00000	1.99	
9	TETRYL	19.455	19.424	0.031	9244	2.00000	1.98	
13	2,6-dinitrotoluene	22.562	22.538	0.024	7493	2.00000	2.00	
14	2,4-dinitrotoluene	23.535	23.511	0.024	13785	2.00000	1.99	
15	2-nitrotoluene	25.788	25.764	0.024	5246	2.00000	1.99	
52	3,5-dinitroaniline	26.975	26.931	0.044	8614	2.00000	1.99	
16	4-nitrotoluene	28.068	28.058	0.010	3902	2.00000	1.98	
17	3-nitrotoluene	30.135	30.111	0.024	5111	2.00000	1.98	
11	4-AM-DNT	30.728	30.651	0.077	4682	2.00000	1.97	
12	2-AM-DNT	32.522	32.464	0.058	6303	2.00000	1.98	

AAB
10:41 am, Aug 02, 2017

QC Flag Legend

A - Target compound detected but, quantitated amount
    exceeded maximum amount.
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10008.D
Date : 01-AUG-2017 09:37
Client ID:
Instrument: hplc02.i
Sample Info: WG210620-15
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000069

Data File: HKH10009.D
Report Date: 02-Aug-2017 09:55

Katahdin Analytical Services

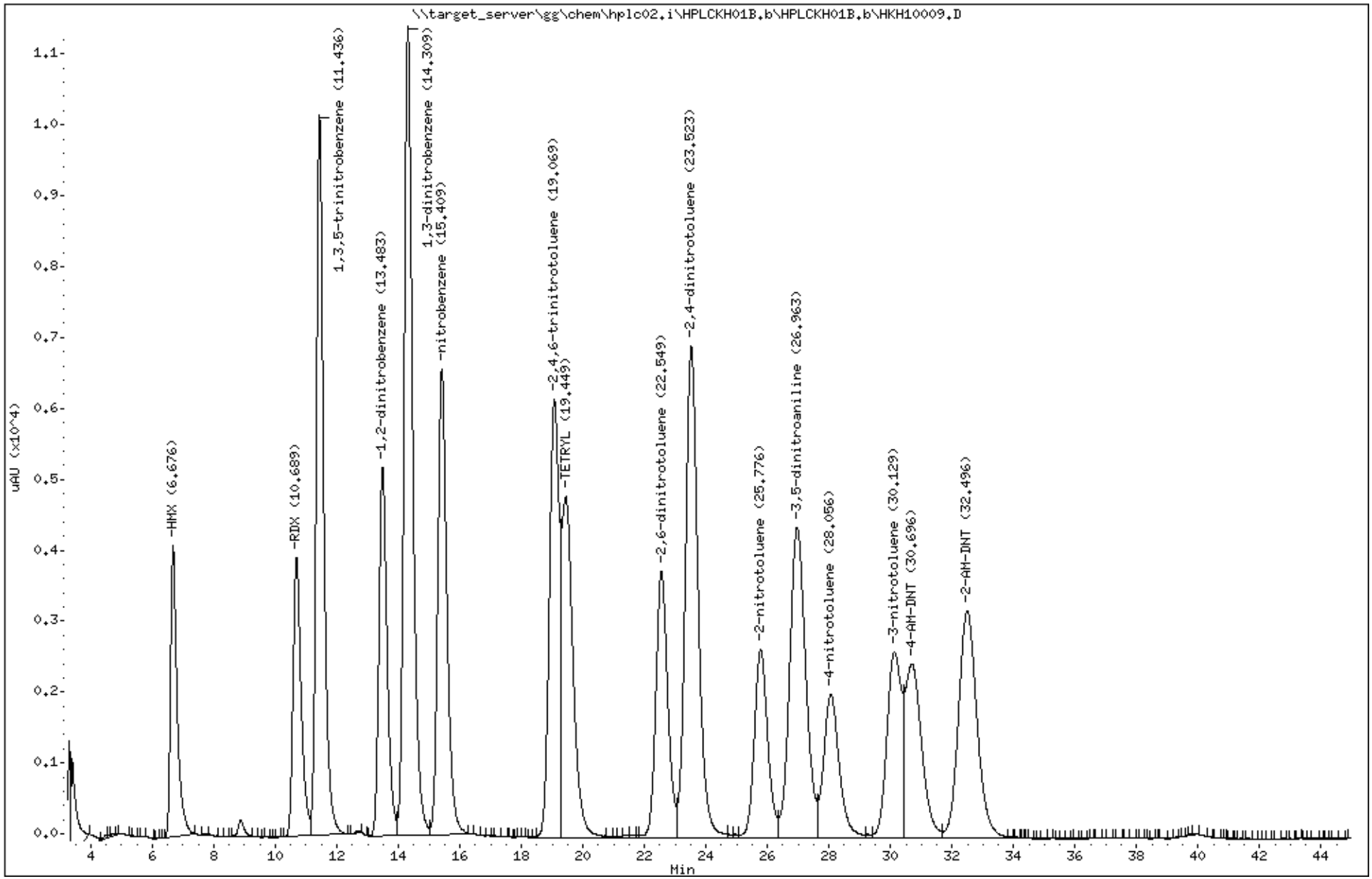
Data file : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10009.D
Lab Smp Id: WG210620-14
Inj Date : 01-AUG-2017 10:27
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG210620-14
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\E2016A.m\E2016A.m
Meth Date : 02-Aug-2017 09:51 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 10:27   Cal File: HKH10009.D
Als bottle: 1   Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.675	6.678	-0.003	4103	1.00000	0.952	
4	RDX	10.689	10.684	0.005	3920	1.00000	0.966	
5	1,3,5-trinitrobenzene	11.435	11.431	0.004	10154	1.00000	0.978	
$ 2	1,2-dinitrobenzene	13.482	13.478	0.004	5196	1.00000	0.980	
6	1,3-dinitrobenzene	14.309	14.304	0.005	11405	1.00000	0.981	
7	nitrobenzene	15.409	15.411	-0.002	6563	1.00000	0.983	
10	2,4,6-trinitrotoluene	19.069	19.064	0.005	6187	1.00000	0.996	
9	TETRYL	19.449	19.424	0.025	4803	1.00000	1.02	
13	2,6-dinitrotoluene	22.549	22.538	0.011	3749	1.00000	0.994	
14	2,4-dinitrotoluene	23.522	23.511	0.011	6925	1.00000	0.997	
15	2-nitrotoluene	25.775	25.764	0.011	2659	1.00000	1.00	
52	3,5-dinitroaniline	26.962	26.931	0.031	4377	1.00000	1.00	
16	4-nitrotoluene	28.055	28.058	-0.003	2023	1.00000	1.02	
17	3-nitrotoluene	30.129	30.111	0.018	2617	1.00000	1.01	
11	4-AM-DNT	30.695	30.651	0.044	2450	1.00000	1.02	
12	2-AM-DNT	32.495	32.464	0.031	3193	1.00000	1.00	

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10009.D
Date : 01-AUG-2017 10:27
Client ID:
Instrument: hplc02.i
Sample Info: WG210620-14
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000071

Data File: HKH10010.D
Report Date: 02-Aug-2017 09:55

Katahdin Analytical Services

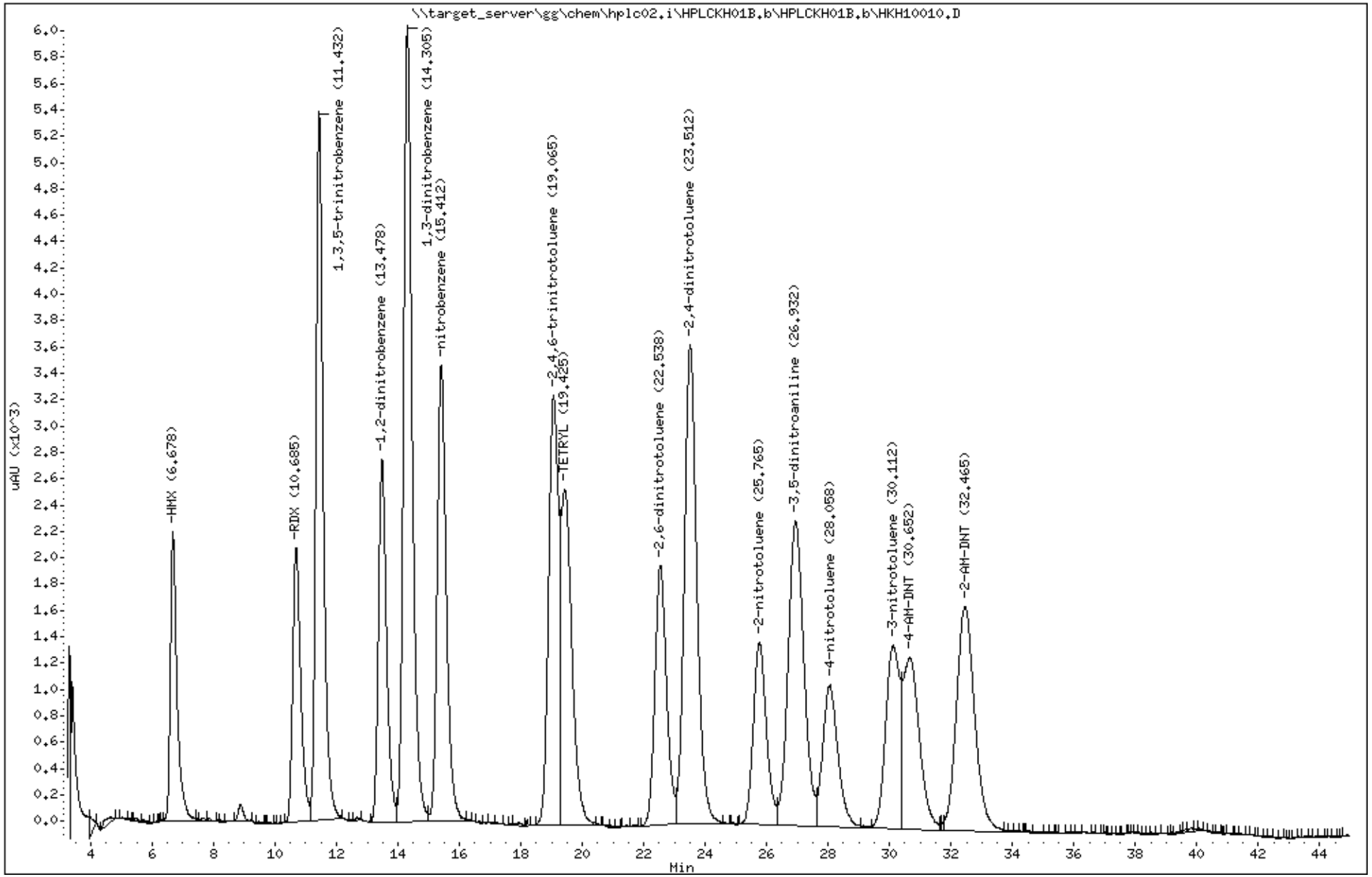
Data file : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10010.D
Lab Smp Id: WG210620-13
Inj Date : 01-AUG-2017 11:16
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG210620-13
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\E2016A.m\E2016A.m
Meth Date : 02-Aug-2017 09:51 abullentin Quant Type: ESTD
Cal Date : 09-FEB-2017 11:28   Cal File: HKB10080.D
Als bottle: 1   Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.678	6.678	0.000	2190	0.50000	0.500	
4	RDX	10.684	10.684	0.000	2084	0.50000	0.500	
5	1,3,5-trinitrobenzene	11.431	11.431	0.000	5383	0.50000	0.500	
$ 2	1,2-dinitrobenzene	13.478	13.478	0.000	2756	0.50000	0.500	
6	1,3-dinitrobenzene	14.304	14.304	0.000	6045	0.50000	0.500	
7	nitrobenzene	15.411	15.411	0.000	3466	0.50000	0.500	
10	2,4,6-trinitrotoluene	19.064	19.064	0.000	3260	0.50000	0.500	
9	TETRYL	19.424	19.424	0.000	2545	0.50000	0.500	
13	2,6-dinitrotoluene	22.538	22.538	0.000	1970	0.50000	0.500	
14	2,4-dinitrotoluene	23.511	23.511	0.000	3639	0.50000	0.500	
15	2-nitrotoluene	25.764	25.764	0.000	1382	0.50000	0.500	
52	3,5-dinitroaniline	26.931	26.931	0.000	2314	0.50000	0.500	
16	4-nitrotoluene	28.058	28.058	0.000	1075	0.50000	0.500	
17	3-nitrotoluene	30.111	30.111	0.000	1390	0.50000	0.500	
11	4-AM-DNT	30.651	30.651	0.000	1299	0.50000	0.500	
12	2-AM-DNT	32.464	32.464	0.000	1698	0.50000	0.500	

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10010.D
Date : 01-AUG-2017 11:16
Client ID:
Instrument: hplc02.i
Sample Info: WG210620-13
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000073

Data File: HKH10011.D
Report Date: 02-Aug-2017 09:55

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10011.D
Lab Smp Id: WG210620-12
Inj Date : 01-AUG-2017 12:05
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG210620-12
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\E2016A.m\E2016A.m
Meth Date : 02-Aug-2017 09:51 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 12:05   Cal File: HKH10011.D
Als bottle: 1   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

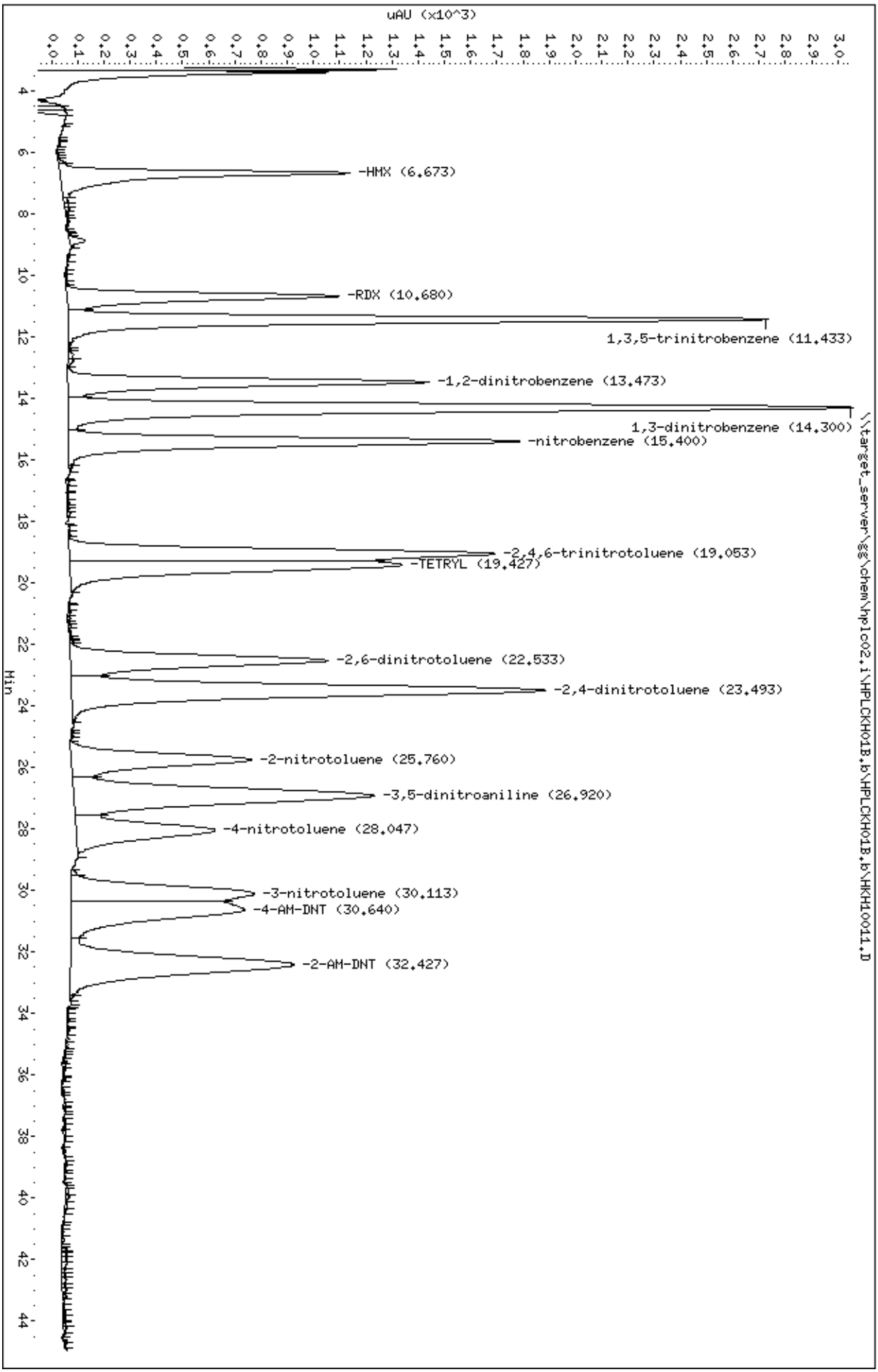
Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.673	6.678	-0.005	1108	0.25000	0.262	
4	RDX	10.679	10.684	-0.005	1038	0.25000	0.257	
5	1,3,5-trinitrobenzene	11.433	11.431	0.002	2674	0.25000	0.254	
$ 2	1,2-dinitrobenzene	13.473	13.478	-0.005	1379	0.25000	0.255	
6	1,3-dinitrobenzene	14.299	14.304	-0.005	2994	0.25000	0.253	
7	nitrobenzene	15.399	15.411	-0.012	1720	0.25000	0.253	
10	2,4,6-trinitrotoluene	19.053	19.064	-0.011	1624	0.25000	0.252	
9	TETRYL	19.426	19.424	0.002	1267	0.25000	0.249(a)	
13	2,6-dinitrotoluene	22.533	22.538	-0.005	981	0.25000	0.252	
14	2,4-dinitrotoluene	23.493	23.511	-0.018	1809	0.25000	0.251	
15	2-nitrotoluene	25.759	25.764	-0.005	686	0.25000	0.249(a)	
52	3,5-dinitroaniline	26.919	26.931	-0.012	1145	0.25000	0.250	
16	4-nitrotoluene	28.046	28.058	-0.012	531	0.25000	0.248(a)	
17	3-nitrotoluene	30.113	30.111	0.002	701	0.25000	0.253	
11	4-AM-DNT	30.639	30.651	-0.012	663	0.25000	0.253	
12	2-AM-DNT	32.426	32.464	-0.038	854	0.25000	0.253	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).


Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10011.D
Date : 01-AUG-2017 12:05
Client ID:
Sample Info: WG210620-12
Purge Volume: 0.5
Column phase: Acclaim Exp E2
Instrument: hplc02.i
Operator: AAB
Column diameter: 4.60
uAU (x10^3)
Min
-HMX (6.673)
-RDX (10.680)
1,3,5-trinitrobenzene (11.433)
-1,2-dinitrobenzene (13.473)
1,3-dinitrobenzene (14.300)
-nitrobenzene (15.400)
-2,4,6-trinitrotoluene (19.053)
-TETRYL (19.427)
-2,6-dinitrotoluene (22.533)
-2,4-dinitrotoluene (23.493)
-2-nitrotoluene (25.760)
-3,5-dinitroaniline (26.920)
-4-nitrotoluene (28.047)
-3-nitrotoluene (30.113)
-4-AM-DNT (30.640)
-2-AM-DNT (32.427)
\\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10011.D

Data File: HKH10012.D
Report Date: 02-Aug-2017 09:55

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10012.D
Lab Smp Id: WG210620-11
Inj Date : 01-AUG-2017 12:54
Operator : AAB Inst ID: hplc02.i
Smp Info : WG210620-11
Misc Info :
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\E2016A.m\E2016A.m
Meth Date : 02-Aug-2017 09:51 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 12:54 Cal File: HKH10012.D
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

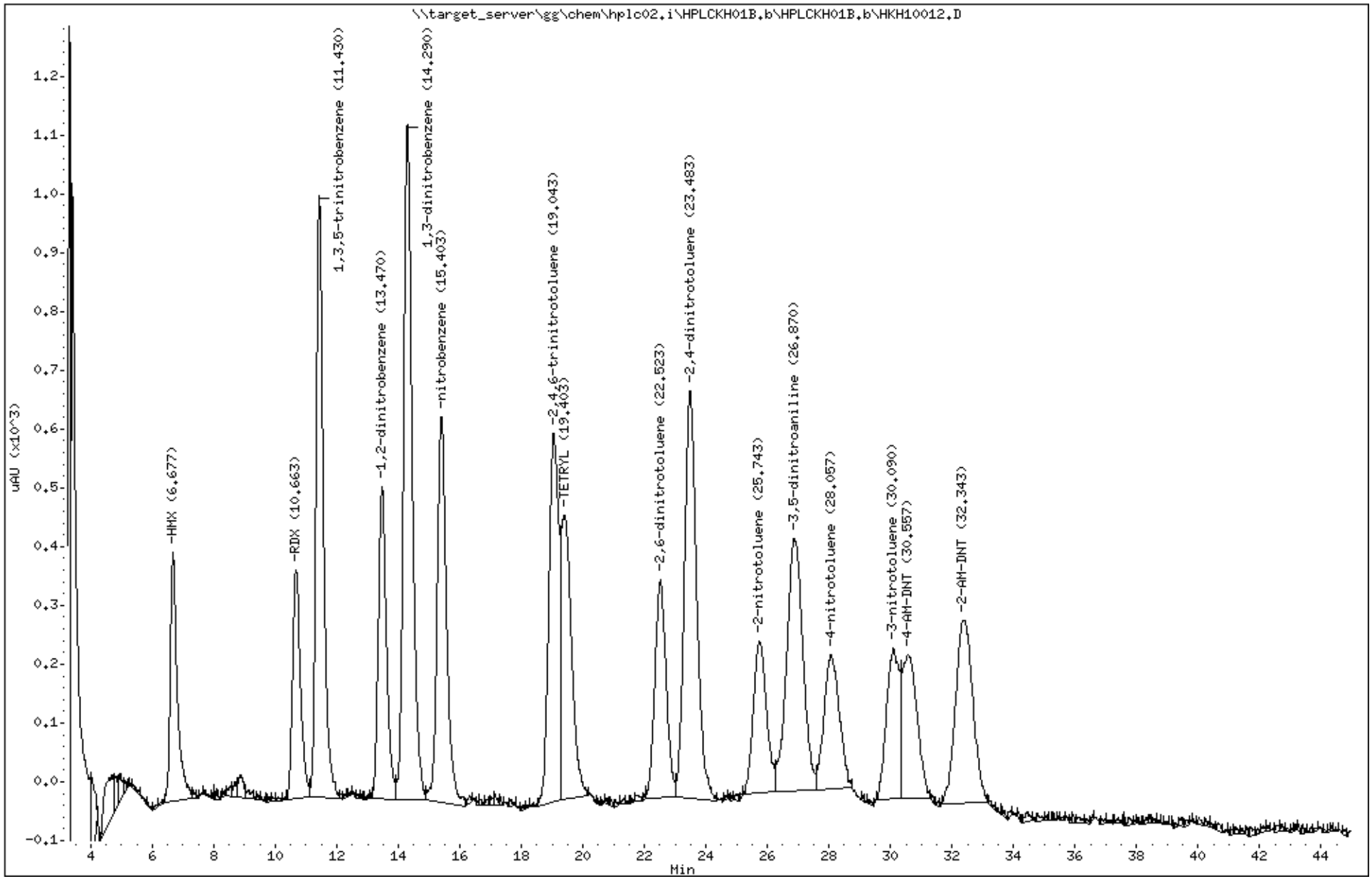
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.676	6.678	-0.002	424	0.10000	0.0860(a)	
4	RDX	10.663	10.684	-0.021	389	0.10000	0.0976(a)	
5	1,3,5-trinitrobenzene	11.430	11.431	-0.001	1024	0.10000	0.0970(a)	
$ 2	1,2-dinitrobenzene	13.470	13.478	-0.008	530	0.10000	0.0968	
6	1,3-dinitrobenzene	14.290	14.304	-0.014	1148	0.10000	0.0963(a)	
7	nitrobenzene	15.403	15.411	-0.008	655	0.10000	0.0956(a)	
10	2,4,6-trinitrotoluene	19.043	19.064	-0.021	627	0.10000	0.0940(a)	
9	TETRYL	19.403	19.424	-0.021	482	0.10000	0.0879(a)	
13	2,6-dinitrotoluene	22.523	22.538	-0.015	369	0.10000	0.0936(a)	
14	2,4-dinitrotoluene	23.483	23.511	-0.028	692	0.10000	0.0940(a)	
15	2-nitrotoluene	25.743	25.764	-0.021	257	0.10000	0.0969(a)	
52	3,5-dinitroaniline	26.870	26.931	-0.061	428	0.10000	0.0906(a)	
16	4-nitrotoluene	28.056	28.058	-0.002	227	0.10000	0.107(a)	
17	3-nitrotoluene	30.090	30.111	-0.021	256	0.10000	0.0912(aM)	M9
11	4-AM-DNT	30.556	30.651	-0.095	244	0.10000	0.0932(aM)	M9
12	2-AM-DNT	32.343	32.464	-0.121	311	0.10000	0.0874(aM)	M9

AAB
10:41 am, Aug 02, 2017

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10012.D
Date : 01-AUG-2017 12:54
Client ID:
Instrument: hplc02.i
Sample Info: WG210620-11
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000077

Data File: HKH10013.D
Report Date: 02-Aug-2017 09:55

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10013.D
Lab Smp Id: WG210620-10
Inj Date : 01-AUG-2017 13:44
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG210620-10
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\E2016A.m\E2016A.m
Meth Date : 02-Aug-2017 09:51 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 13:44   Cal File: HKH10013.D
Als bottle: 1   Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.667	6.678	-0.011	204	0.05000	0.0456(aM)	M2
4	RDX	10.680	10.684	-0.004	202	0.05000	0.0517(a)	
5	1,3,5-trinitrobenzene	11.427	11.431	-0.004	508	0.05000	0.0473(a)	
$ 2	1,2-dinitrobenzene	13.467	13.478	-0.011	263	0.05000	0.0463(a)	
6	1,3-dinitrobenzene	14.287	14.304	-0.017	581	0.05000	0.0474(a)	
7	nitrobenzene	15.407	15.411	-0.004	331	0.05000	0.0469(a)	
10	2,4,6-trinitrotoluene	19.027	19.064	-0.037	313	0.05000	0.0430(a)	
9	TETRYL	19.387	19.424	-0.037	244	0.05000	0.0365(a)	
13	2,6-dinitrotoluene	22.507	22.538	-0.031	172	0.05000	0.0410(a)	
14	2,4-dinitrotoluene	23.473	23.511	-0.038	329	0.05000	0.0413(a)	
15	2-nitrotoluene	25.740	25.764	-0.024	115	0.05000	0.0385(aM)	M9
52	3,5-dinitroaniline	26.840	26.931	-0.091	199	0.05000	0.0375(a)	
16	4-nitrotoluene	28.093	28.058	0.035	120	0.05000	0.0410(aM)	M9
17	3-nitrotoluene	30.047	30.111	-0.064	124	0.05000	0.0361(aM)	M9
11	4-AM-DNT	30.573	30.651	-0.078	118	0.05000	0.0319(aM)	M9
12	2-AM-DNT	32.393	32.464	-0.071	171	0.05000	0.0429(a)	

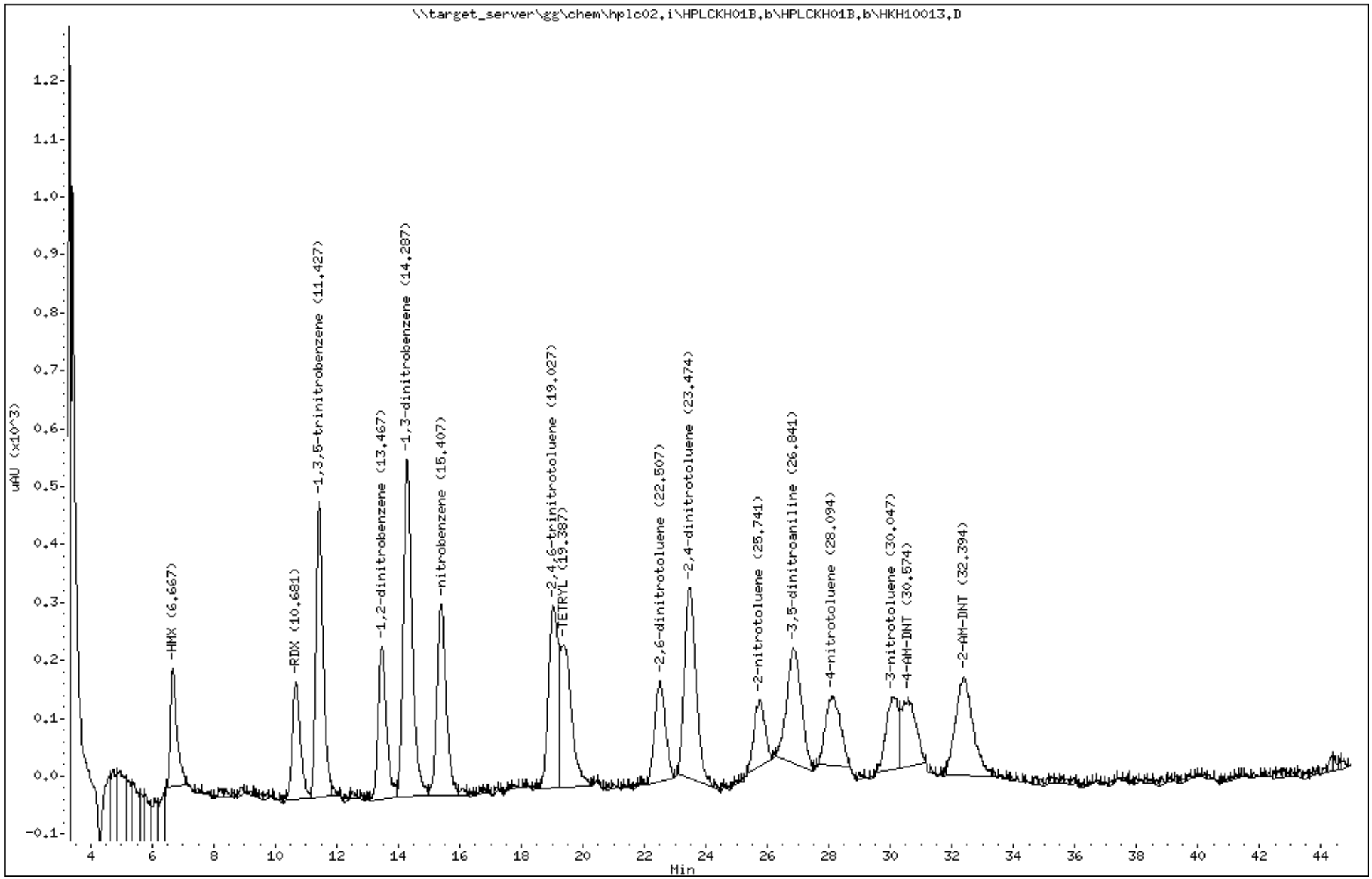


10:41 am, Aug 02, 2017

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10013.D
Date : 01-AUG-2017 13:44
Client ID:
Instrument: hplc02.i
Sample Info: WG210620-10
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000079

Data File: HKH10014.D
Report Date: 02-Aug-2017 09:55

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10014.D
Lab Smp Id: WG210620-9
Inj Date : 01-AUG-2017 14:33
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG210620-9
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\E2016A.m\E2016A.m
Meth Date : 02-Aug-2017 09:51 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33   Cal File: HKH10014.D
Als bottle: 1   Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

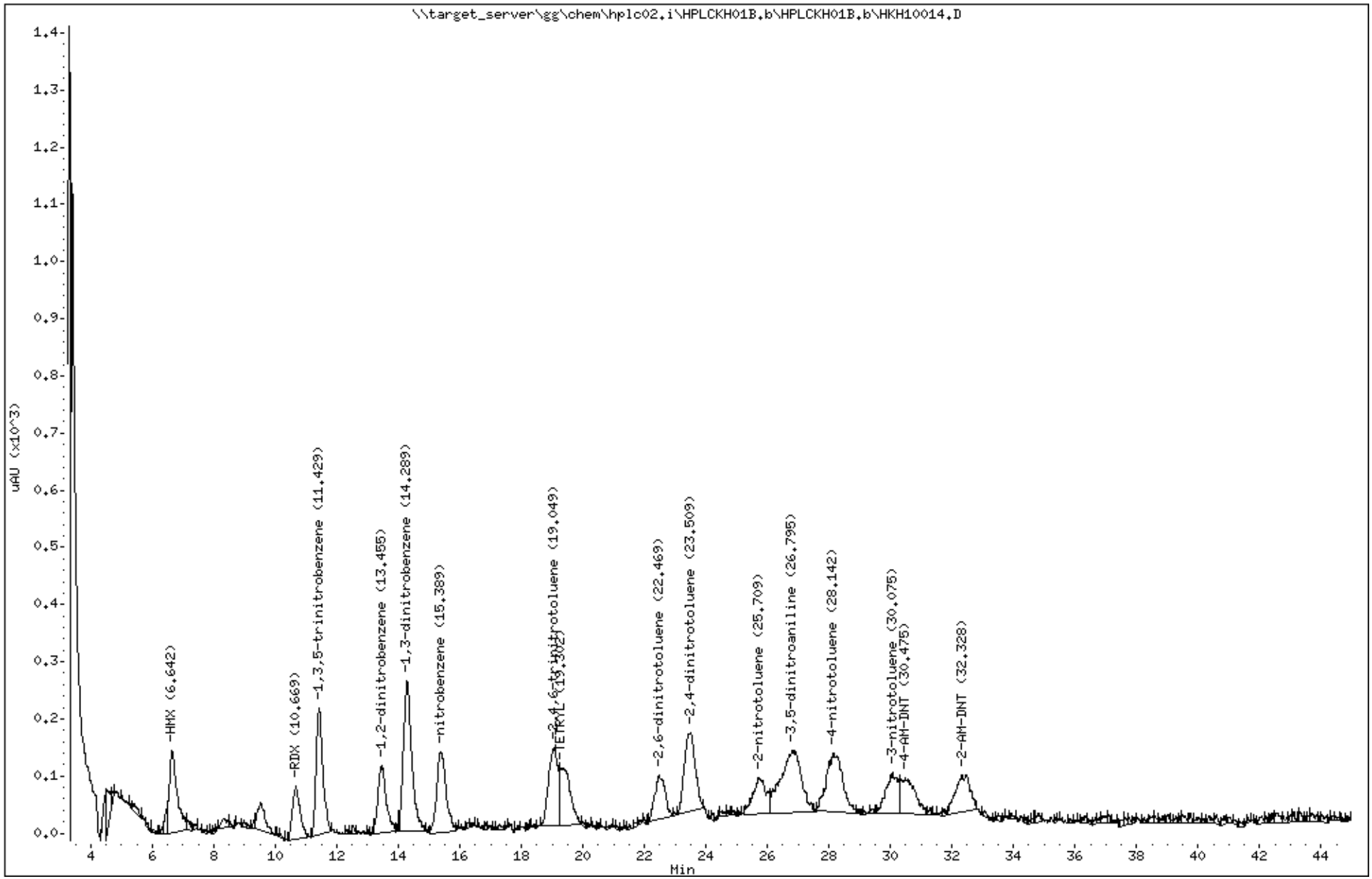
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.641	6.678	-0.037	143	0.02500	0.0300(a)	
4	RDX	10.668	10.684	-0.016	92	0.02500	0.0248(a)	
5	1,3,5-trinitrobenzene	11.428	11.431	-0.003	222	0.02500	0.0207(a)	
$ 2	1,2-dinitrobenzene	13.455	13.478	-0.023	117	0.02500	0.0199(a)	
6	1,3-dinitrobenzene	14.288	14.304	-0.016	264	0.02500	0.0210(a)	
7	nitrobenzene	15.388	15.411	-0.023	142	0.02500	0.0197(a)	
10	2,4,6-trinitrotoluene	19.048	19.064	-0.016	135	0.02500	0.0161(aM)	M9
9	TETRYL	19.301	19.424	-0.123	98	0.02500	0.00888(aM)	M6
13	2,6-dinitrotoluene	22.468	22.538	-0.070	76	0.02500	0.0172(aM)	M9
14	2,4-dinitrotoluene	23.508	23.511	-0.003	136	0.02500	0.0155(aM)	M9
15	2-nitrotoluene	25.708	25.764	-0.056	63	0.02500	0.0199(aM)	M9
52	3,5-dinitroaniline	26.795	26.931	-0.136	109	0.02500	0.0182(aM)	M9
16	4-nitrotoluene	28.141	28.058	0.083	101	0.02500	0.0301(aM)	M9
17	3-nitrotoluene	30.075	30.111	-0.036	72	0.02500	0.0175(aM)	M9
11	4-AM-DNT	30.475	30.651	-0.176	63	0.02500	0.0117(aM)	M6
12	2-AM-DNT	32.328	32.464	-0.136	65	0.02500	0.0123(aM)	M9

AAB
10:41 am, Aug 02, 2017

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10014.D
Date : 01-AUG-2017 14:33
Client ID:
Instrument: hplc02.i
Sample Info: WG210620-9
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000081

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3841
Project : Cornhusker Army Ammunition Plant
Instrument ID: HPLC02
Lab File IDs : HLC10037.D,HLC10036.D,HLC10035.D,HLC10034.D,HLC10033.D,HLC10032.D,HLC10031.D
Calibration Date(s): 20-MAR-18 14:54
20-MAR-18 18:05

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7		Crv				Max	
	0.025000(	0.050000(	0.100000(	0.250000(	0.500000(	1.0000	2.0000		New	b	m1	%RSD	%RSD	
NITROGLYCERIN	5440	5685	5280	5392	5454	5917	5425		AVG		5513	3.90686	20.00000	O
PETN	3020	2970	2465	3064	2834	3010	2768		AVG		2876	7.31282	15.00000	O

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10038.D
Report Date: 26-Mar-2018 14:36

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa00508
Sample Matrix: LIQUID Fraction: Explosives
Lab Smp Id: WG225143-8
Level: LOW Operator: AC
Data Type: LC DATA SampleType: LCS
SpikeList File: IND.spk Quant Type: ESTD
Sublist File: ngpetnedgn.sub
Method File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Misc Info: WG225143,WG225143,WG225143-5,SL2295-1

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
3 Ethylene Glycol Di	20.0	19.5	97.34	30-150
8 NITROGLYCERIN	20.0	18.5	92.69	80-120
18 PETN	20.0	19.6	97.78	80-120

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10038.D
Report Date: 26-Mar-2018 14:36

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10038.D
Lab Smp Id: WG225143-8
Inj Date : 20-MAR-2018 18:37
Operator : AC Inst ID: hplc02.i
Smp Info : WG225143-8,SL2295
Misc Info : WG225143,WG225143,WG225143-5,SL2295-1
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 15 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetnedgn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

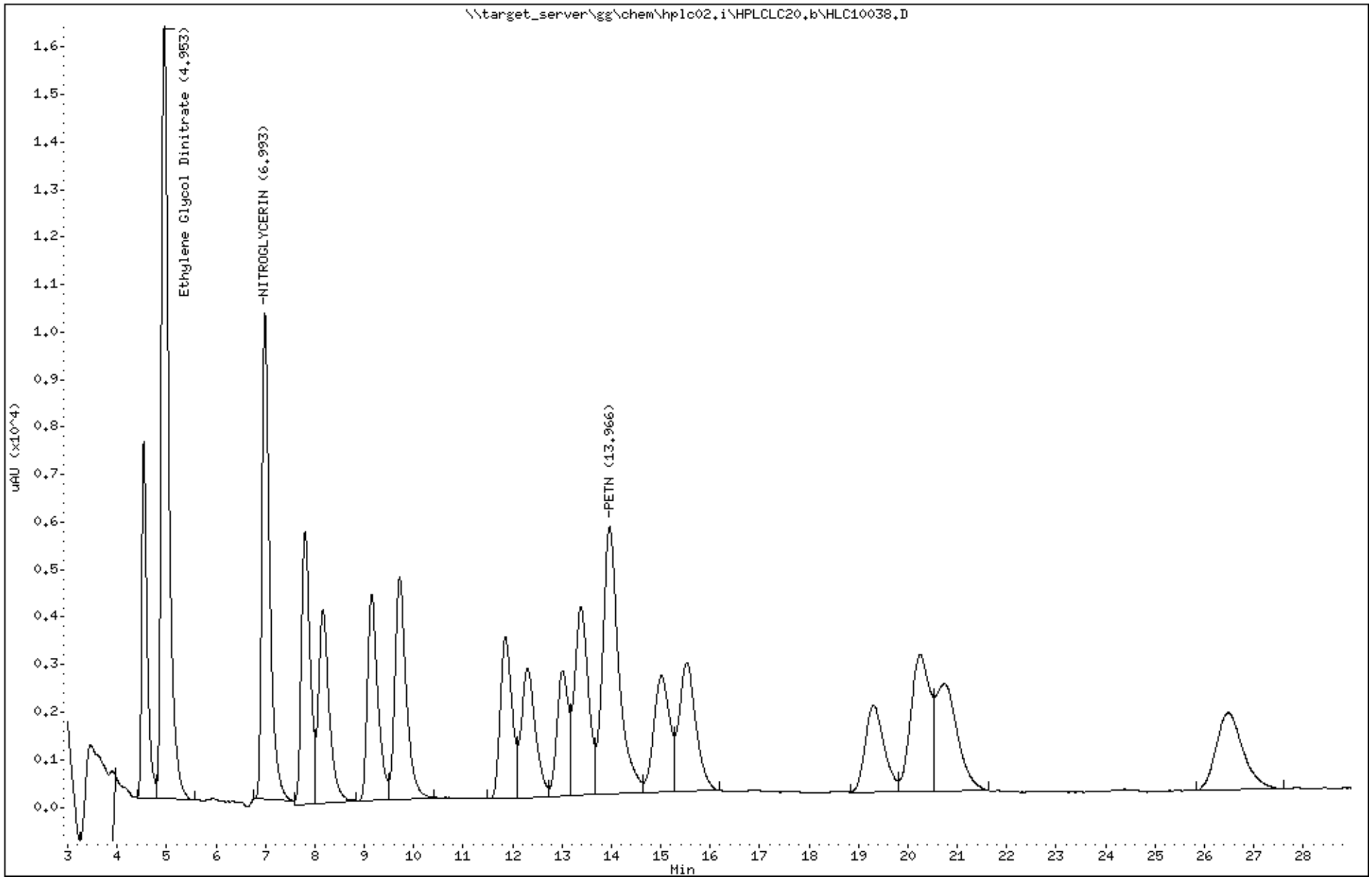
						CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/L)	
Compounds		RT	EXP RT	DLT RT	RESPONSE			
8	NITROGLYCERIN	6.992	6.997	-0.005	10220	1.85373	18.5(M)	M2
18	PETN	13.966	13.963	0.003	5624	1.95560	19.6	
3	Ethylene Glycol Dinitrate	4.952	4.957	-0.005	16261	1.94680	19.5	

QC Flag Legend

M - Compound response manually integrated.

AAB
2:37 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10038.D
Date : 20-MAR-2018 18:37
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-8,SL2295
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000085

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10031.D
Report Date: 26-Mar-2018 13:04

Katahdin Analytical Services

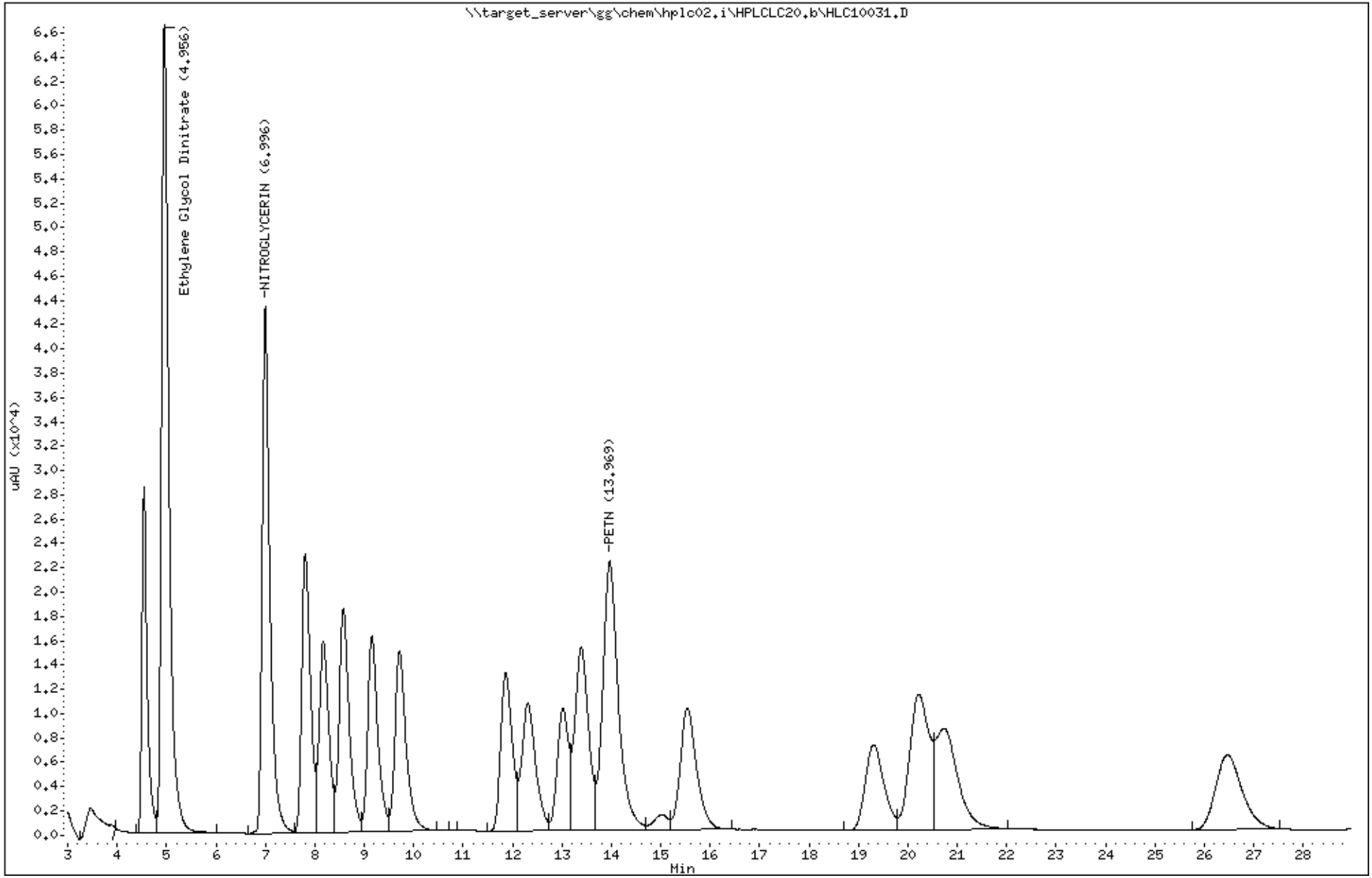
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10031.D
Lab Smp Id: WG225143-7
Inj Date : 20-MAR-2018 14:54
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-7
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 14:54   Cal File: HLC10031.D
Als bottle: 8   Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetnedgn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)
8 NITROGLYCERIN	6.995	6.997	-0.002	43399	8.00000	7.98
18 PETN	13.969	13.963	0.006	22141	8.00000	7.90
3 Ethylene Glycol Dinitrate	4.955	4.957	-0.002	66513	8.00000	8.00

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10031.D
Date : 20-MAR-2018 14:54
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-7
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000087

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10032.D
Report Date: 26-Mar-2018 13:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10032.D
Lab Smp Id: WG225143-6
Inj Date : 20-MAR-2018 15:26
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-6
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 15:26   Cal File: HLC10032.D
Als bottle: 9   Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetnedgn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

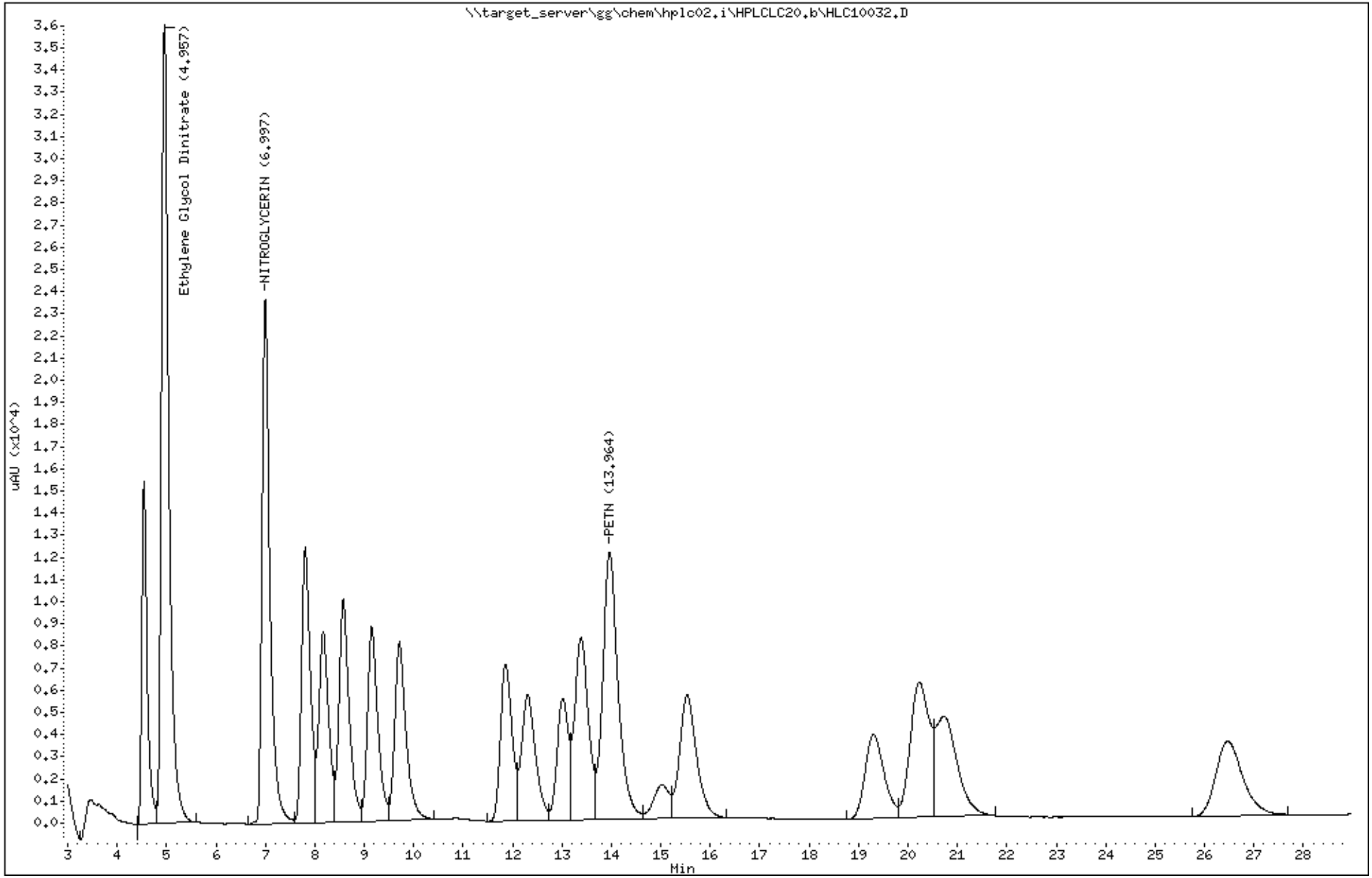
					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8 NITROGLYCERIN	6.997	6.997	0.000	23668	4.00000	4.27	
18 PETN	13.963	13.963	0.000	12041	4.00000	4.43	
3 Ethylene Glycol Dinitrate	4.957	4.957	0.000	36056	4.00000	2.84(M)	M2

QC Flag Legend

M - Compound response manually integrated.

AAB
2:39 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10032.D
Date : 20-MAR-2018 15:26
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-6
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000089

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10033.D
Report Date: 26-Mar-2018 13:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10033.D
Lab Smp Id: WG225143-5
Inj Date : 20-MAR-2018 15:58
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-5
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 15:58   Cal File: HLC10033.D
Als bottle: 10   Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetnedgn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

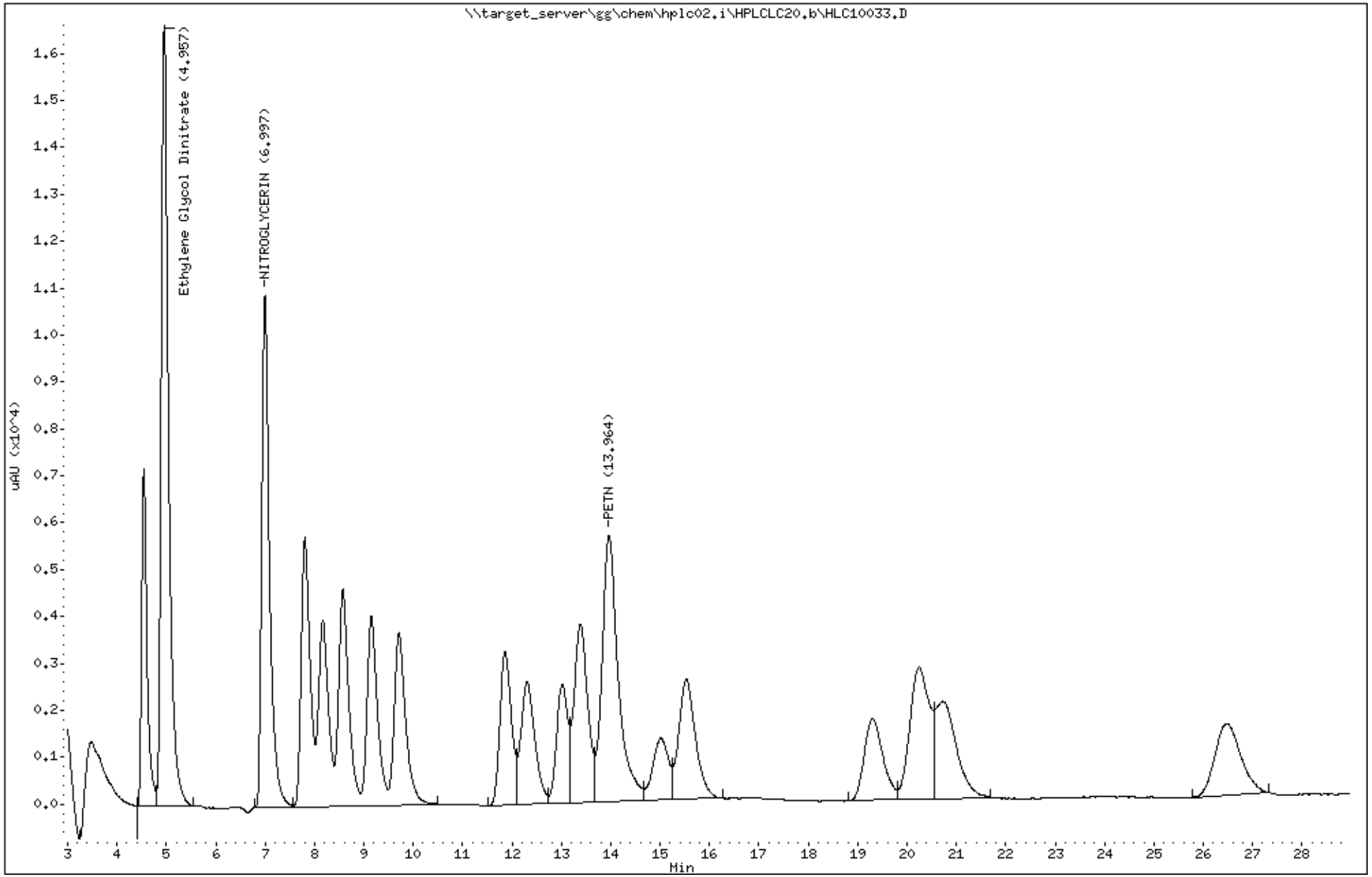
						AMOUNTS		
						CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE		(ug/mL)	(ug/mL)	
8	NITROGLYCERIN	6.997	6.997	0.000	10907	2.00000	2.00(aM)	M2
18	PETN	13.963	13.963	0.000	5668	2.00000	2.00(a)	
3	Ethylene Glycol Dinitrate	4.957	4.957	0.000	16637	2.00000	2.00(aM)	

2:42 pm, Mar 26, 2018

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10033.D
Date : 20-MAR-2018 15:58
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-5
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000091

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10034.D
Report Date: 26-Mar-2018 13:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10034.D
Lab Smp Id: WG225143-4
Inj Date : 20-MAR-2018 16:30
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-4
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 16:30   Cal File: HLC10034.D
Als bottle: 11   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetnedgn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

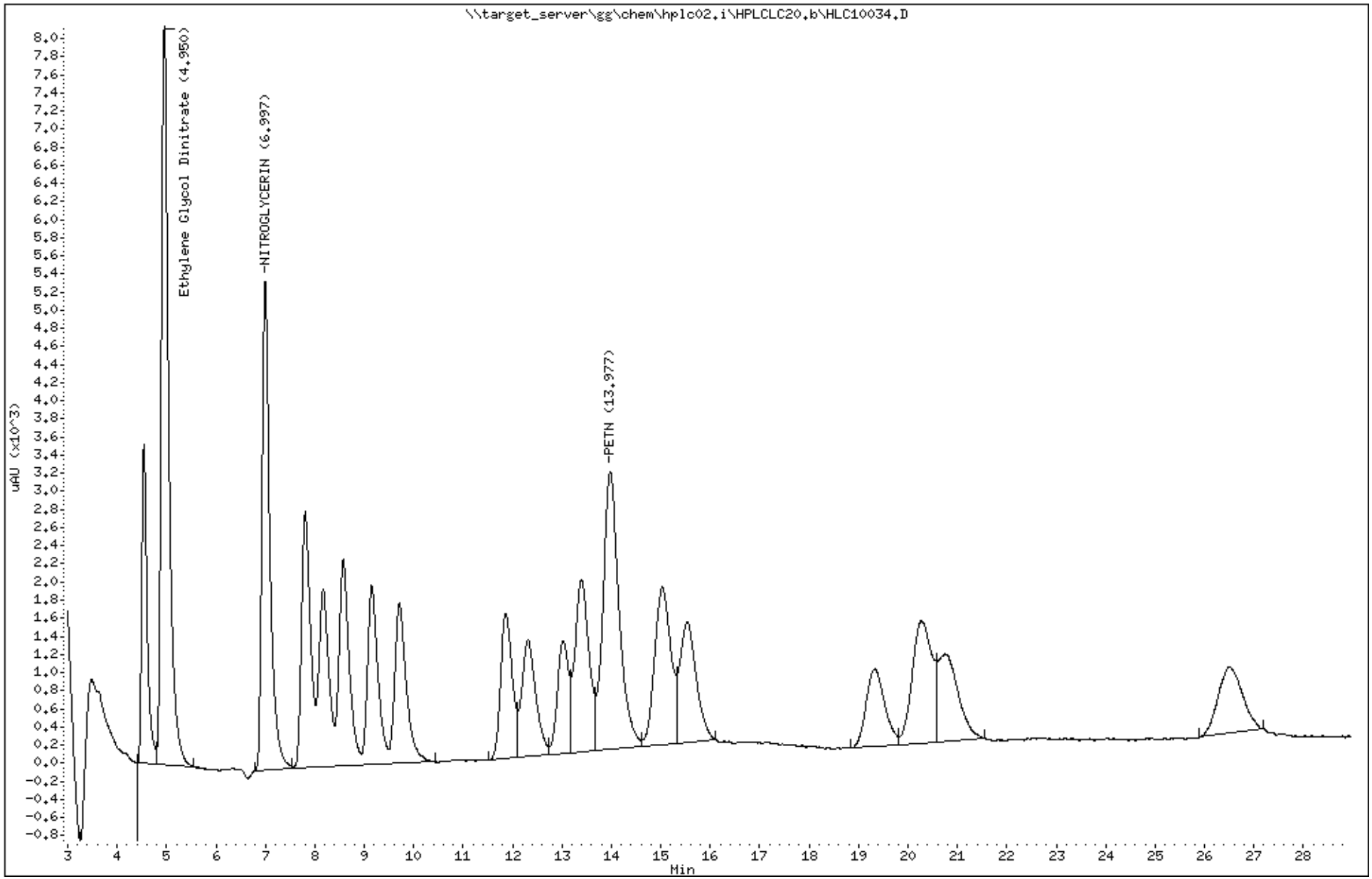
						AMOUNTS		
						CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE		(ug/mL)	(ug/mL)	
8	NITROGLYCERIN	6.997	6.997	0.000	5392	1.00000	0.974(aM)	M2
18	PETN	13.977	13.963	0.014	3064	1.00000	1.13(a)	
3	Ethylene Glycol Dinitrate	4.950	4.957	-0.007	8157	1.00000	0.705(aM)	

2:42 pm, Mar 26, 2018

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10034.D
Date : 20-MAR-2018 16:30
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-4
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000093

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10035.D
Report Date: 26-Mar-2018 13:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10035.D
Lab Smp Id: WG225143-3
Inj Date : 20-MAR-2018 17:01
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-3
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 17:01   Cal File: HLC10035.D
Als bottle: 12   Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetnedgn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

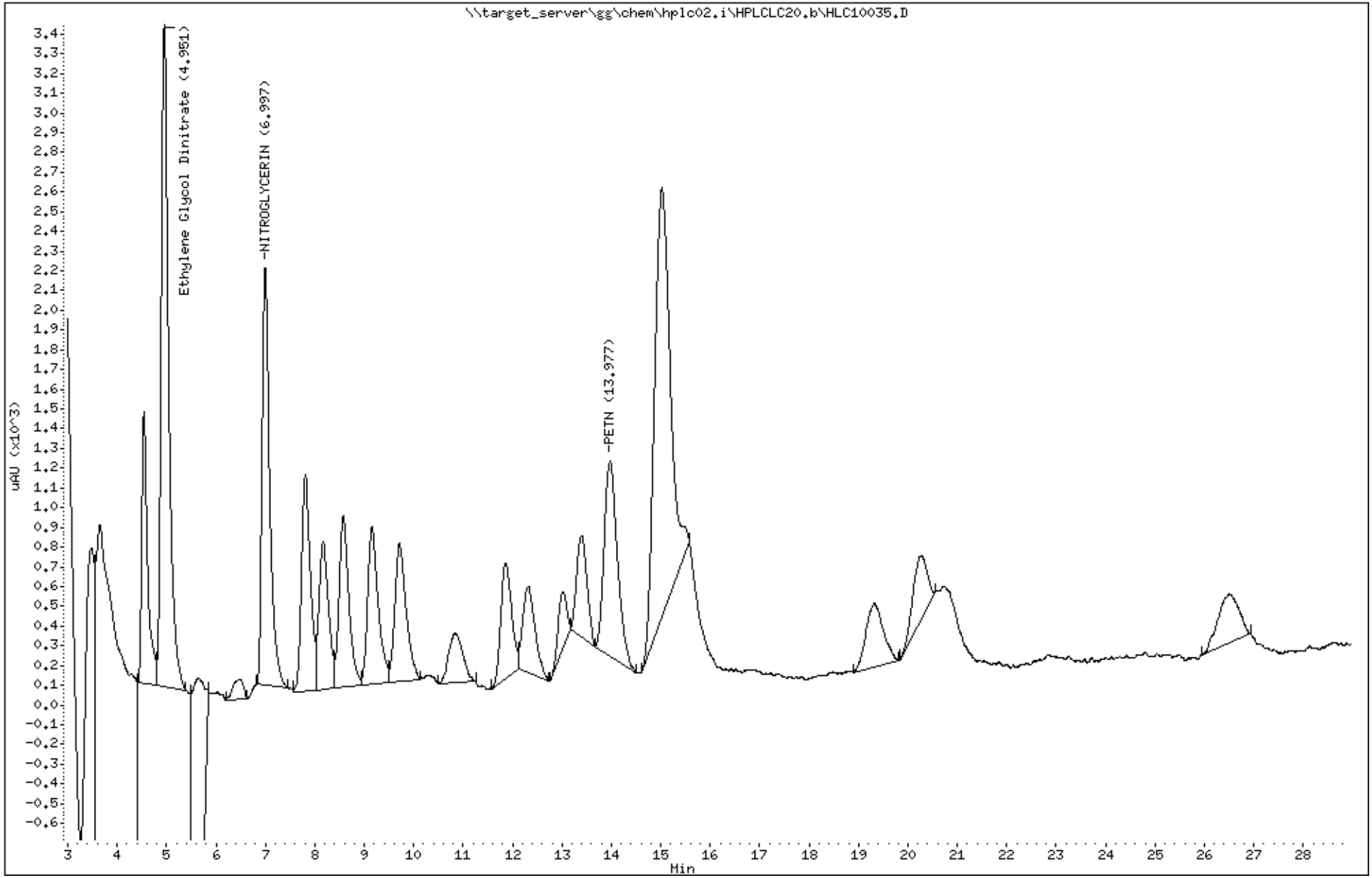
					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8 NITROGLYCERIN	6.997	6.997	0.000	2112	0.40000	0.383(aM)	M2
18 PETN	13.977	13.963	0.014	986	0.40000	0.363(a)	
3 Ethylene Glycol Dinitrate	4.950	4.957	-0.007	3354	0.40000	0.402(aM)	

2:42 pm, Mar 26, 2018

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10035.D
Date : 20-MAR-2018 17:01
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-3
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000095

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10036.D
Report Date: 26-Mar-2018 13:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10036.D
Lab Smp Id: WG225143-2
Inj Date : 20-MAR-2018 17:33
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-2
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 17:33   Cal File: HLC10036.D
Als bottle: 13   Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetnedgn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

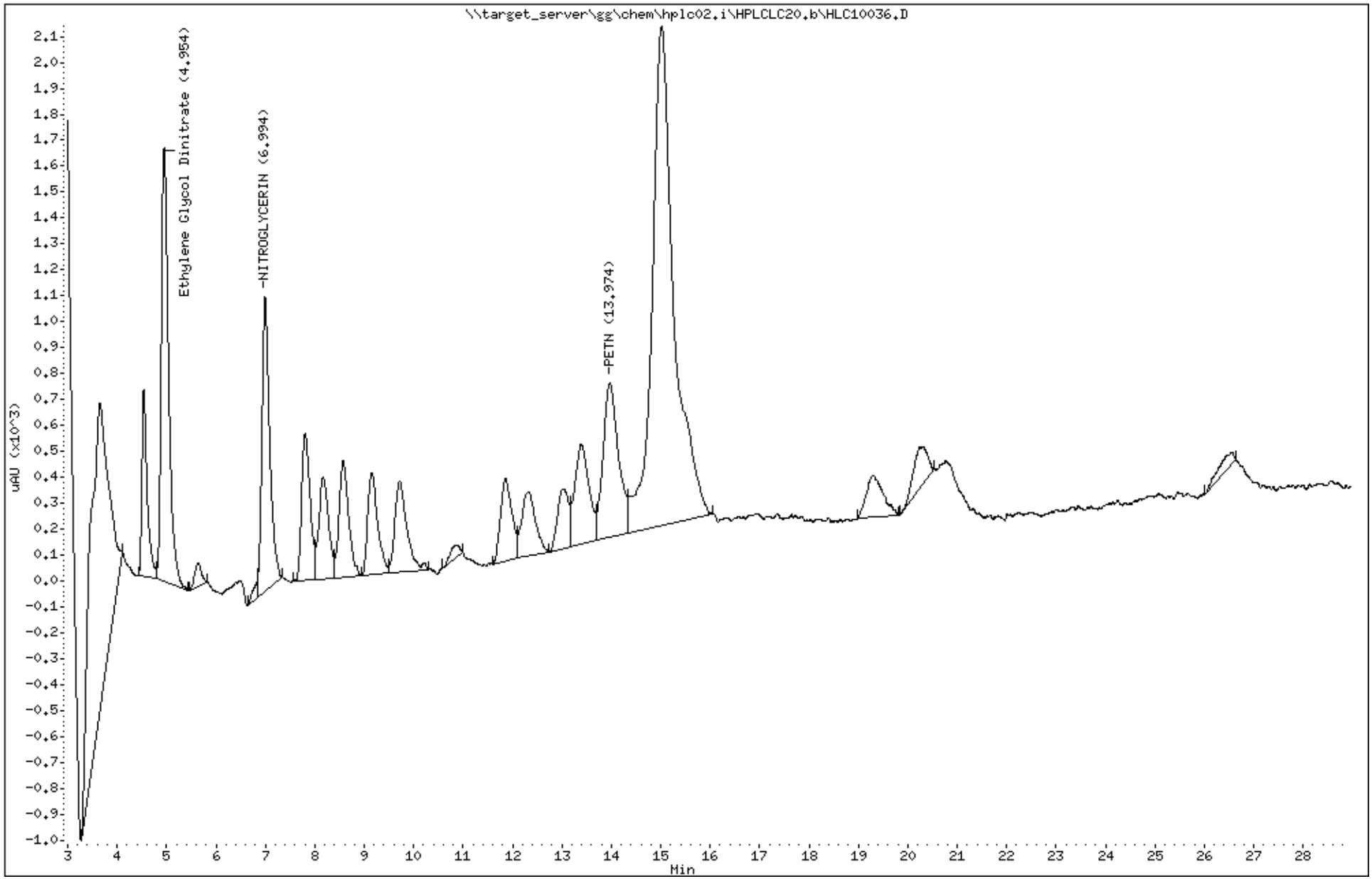
						AMOUNTS		
						CAL-AMT	ON-COL	
	Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8	NITROGLYCERIN	6.994	6.997	-0.003	1137	0.20000	0.206(aM)	M2
18	PETN	13.974	13.963	0.011	594	0.20000	0.218(a)	
3	Ethylene Glycol Dinitrate	4.954	4.957	-0.003	1670	0.20000	0.200(a)	

2:42 pm, Mar 26, 2018

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10036.D
Date : 20-MAR-2018 17:33
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-2
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000097

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10037.D
Report Date: 26-Mar-2018 13:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10037.D
Lab Smp Id: WG225143-1
Inj Date : 20-MAR-2018 18:05
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-1
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 14   Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetnedgn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

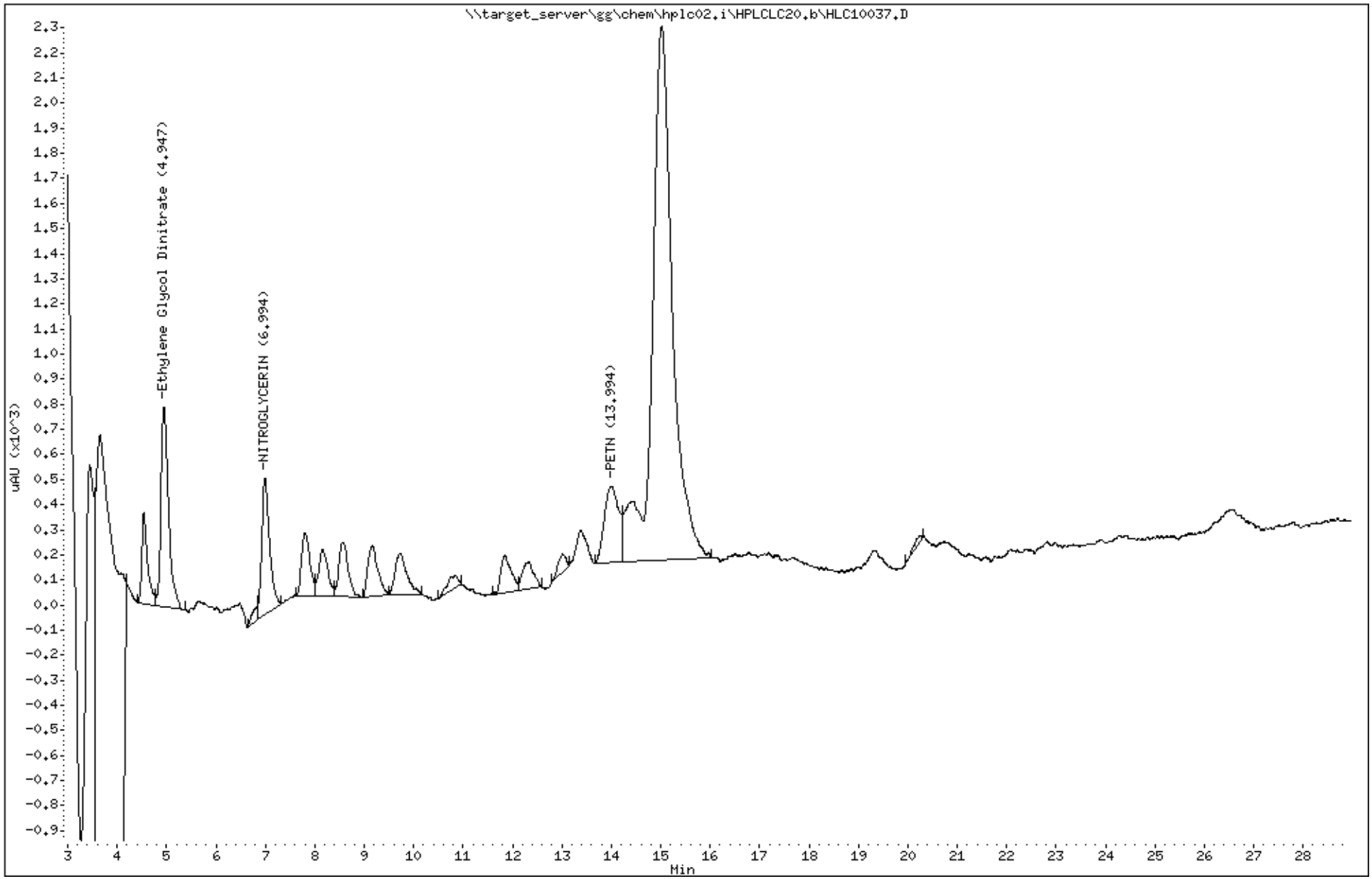
					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8 NITROGLYCERIN	6.993	6.997	-0.004	544	0.10000	0.0987(aM)	M3
18 PETN	13.993	13.963	0.030	302	0.10000	0.105(aM)	
3 Ethylene Glycol Dinitrate	4.947	4.957	-0.010	793	0.10000	0.0949(a)	

2:43 pm, Mar 26, 2018

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10037.D
Date : 20-MAR-2018 18:05
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-1
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000099

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3841
Project : Cornhusker Army Ammunition Plant
Instrument ID: HPLC02
Lab File IDs : HLC10037.D HLC10036.D HLC10035.D HLC10034.D HLC10033.D HLC10032.D HLC10031.D
Calibration Date(s): 20-MAR-18 14:54 20-MAR-18 18:05

	0.025000(Level 1	0.050000(Level 2	0.100000(Level 3	0.250000(Level 4	0.5000000 Level 5	1.0000 Level 6	2.0000 Level 7		New Crv	b	m1	%RSD	Max %RSD	
HMX	5320	5440	5140	5296	5378	5810	5351		AVG		5391	3.83807	20.00000	O
RDX	75.00000	225	466	1287	2694	5888	10895		LNR	0.00587	5552	0.99828	0.99000	O
1,3,5-trinitrobenzene	3240	3680	3770	3628	3744	4074	3686		AVG		3689	6.66990	20.00000	O
1,3-dinitrobenzene	6680	7280	7410	7508	7512	8198	7518		AVG		7444	5.99405	20.00000	O
TETRYL	2240	2660	2530	2424	2550	2797	2541		AVG		2535	6.90733	20.00000	O
nitrobenzene	6760	6820	6610	6736	6892	7418	6831		AVG		6867	3.77157	20.00000	O
2,4,6-trinitrotoluene	2600	2520	2510	2460	2478	2672	2445		AVG		2526	3.24744	20.00000	O
4-AM-DNT	4200	4040	4240	4260	4366	4695	4318		AVG		4303	4.68155	20.00000	O
2-AM-DNT	5360	5700	5640	5720	5838	6280	5787		AVG		5761	4.78978	20.00000	O
2,6-dinitrotoluene	101	175	345	733	1390	3147	5661		LNR	-0.01275	2869	0.99714	0.99000	O
2,4-dinitrotoluene	4280	4700	4560	4552	4620	5008	4610		AVG		4619	4.68458	20.00000	O
2-nitrotoluene	2520	2760	2900	2944	2952	3214	2937		AVG		2890	7.31192	20.00000	O
4-nitrotoluene	2280	1980	2350	2484	2298	2635	2370		AVG		2342	8.60342	20.00000	O
3-nitrotoluene	3360	3180	3390	3404	3136	3585	3225		AVG		3326	4.69272	20.00000	O
1,2-dinitrobenzene	4680	4500	4480	4532	4640	4978	4582		AVG		4627	3.69030	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Data File: HLC10038.D
Report Date: 26-Mar-2018 14:36

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa00508
Sample Matrix: LIQUID Fraction: Explosives
Lab Smp Id: WG225143-8
Level: LOW Operator: AC
Data Type: LC DATA SampleType: LCS
SpikeList File: IND.spk Quant Type: ESTD
Sublist File: SW8330A.sub
Method File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Misc Info: WG225143,WG225143,WG225143-5,SL2295-1

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
1 HMX	5.00	5.25	104.96	80-120
4 RDX	5.00	5.14	102.73	80-120
5 1,3,5-trinitrobenz	5.00	5.21	104.21	80-120
6 1,3-dinitrobenzene	5.00	5.16	103.31	80-120
7 nitrobenzene	5.00	5.09	101.80	80-120
9 TETRYL	5.00	5.52	110.47	80-120
10 2,4,6-trinitrotolu	5.00	5.09	101.89	80-120
11 4-AM-DNT	5.00	5.41	108.21	80-120
12 2-AM-DNT	5.00	5.19	103.77	80-120
13 2,6-dinitrotoluene	5.00	4.91	98.26	80-120
14 2,4-dinitrotoluene	5.00	5.23	104.54	80-120
15 2-nitrotoluene	5.00	5.27	105.48	80-120
16 4-nitrotoluene	5.00	5.12	102.37	80-120
17 3-nitrotoluene	5.00	4.93	98.57	80-120
51 3,5-Dinitroaniline	5.00	4.94	98.91	80-120

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 2 1,2-dinitrobenzene	10.0	0.000	*	83-119

Data File: HLC10038.D
Report Date: 26-Mar-2018 14:36

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10038.D
Lab Smp Id: WG225143-8
Inj Date : 20-MAR-2018 18:37
Operator : AC Inst ID: hplc02.i
Smp Info : WG225143-8,SL2295
Misc Info : WG225143,WG225143,WG225143-5,SL2295-1
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 15 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

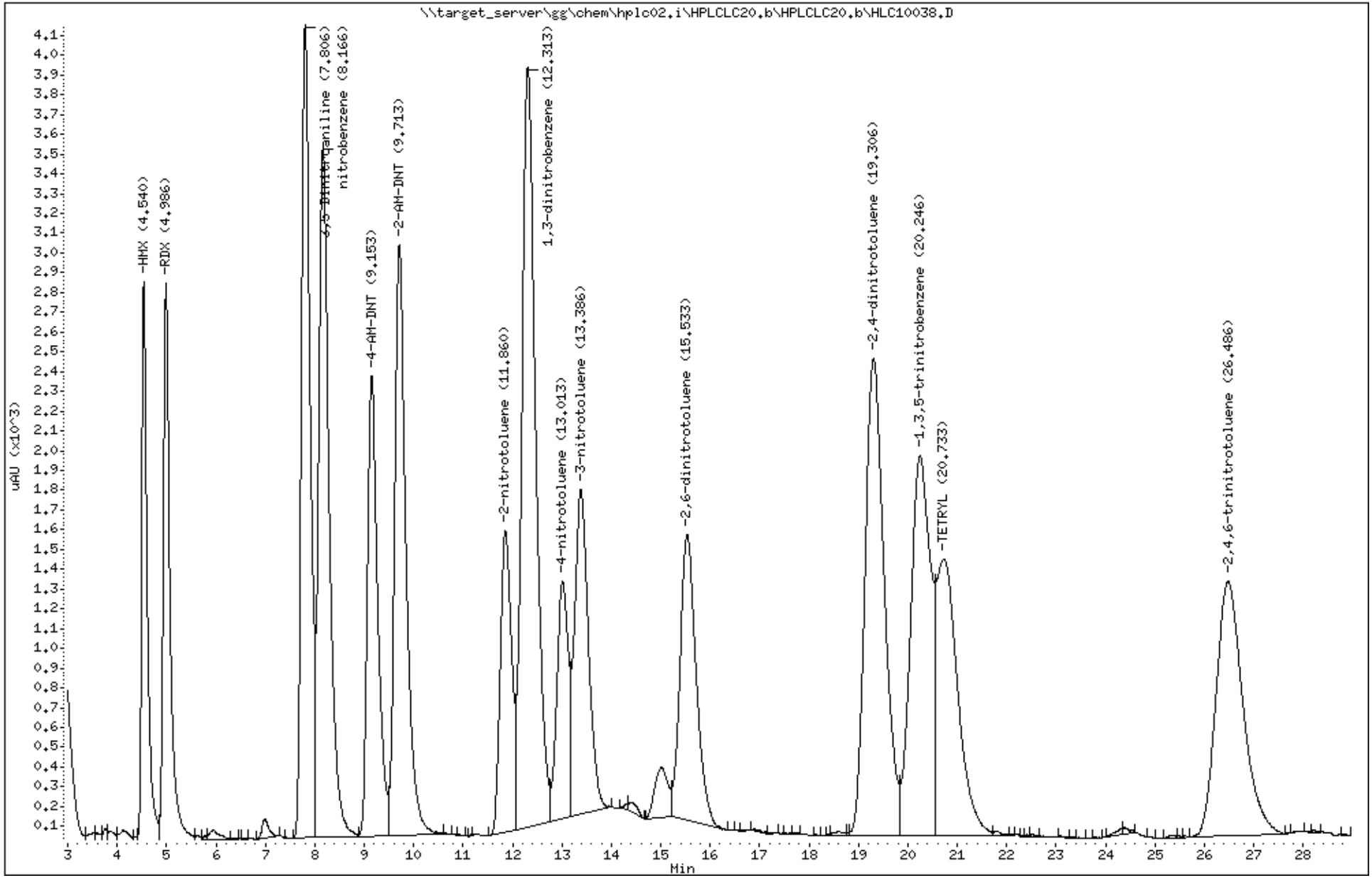
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
1	HMX	4.539	4.542	-0.003	2829	0.52480	5.25(M)	M5
4	RDX	4.986	4.989	-0.003	2819	0.51364	5.14(M)	
51	3,5-Dinitroaniline	7.806	7.809	-0.003	4113	0.49457	4.94	
7	nitrobenzene	8.166	8.175	-0.009	3495	0.50898	5.09	
11	4-AM-DNT	9.152	9.155	-0.003	2328	0.54105	5.41	
12	2-AM-DNT	9.712	9.715	-0.003	2989	0.51886	5.19	
15	2-nitrotoluene	11.859	11.862	-0.003	1524	0.52741	5.27	
6	1,3-dinitrobenzene	12.312	12.315	-0.003	3845	0.51654	5.16	
16	4-nitrotoluene	13.012	13.022	-0.010	1199	0.51186	5.12	
17	3-nitrotoluene	13.386	13.389	-0.003	1639	0.49284	4.93	
13	2,6-dinitrotoluene	15.532	15.542	-0.010	1446	0.49132	4.91	
14	2,4-dinitrotoluene	19.306	19.309	-0.003	2414	0.52268	5.23	
5	1,3,5-trinitrobenzene	20.246	20.222	0.024	1922	0.52103	5.21	
9	TETRYL	20.732	20.722	0.010	1400	0.55236	5.52	
10	2,4,6-trinitrotoluene	26.486	26.469	0.017	1287	0.50943	5.09	

AAB
2:37 pm, Mar 26, 2018

QC Flag Legend

M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10038.D
Date : 20-MAR-2018 18:37
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-8,SL2295
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000103

Data File: HLC10031.D
Report Date: 26-Mar-2018 13:10

Katahdin Analytical Services

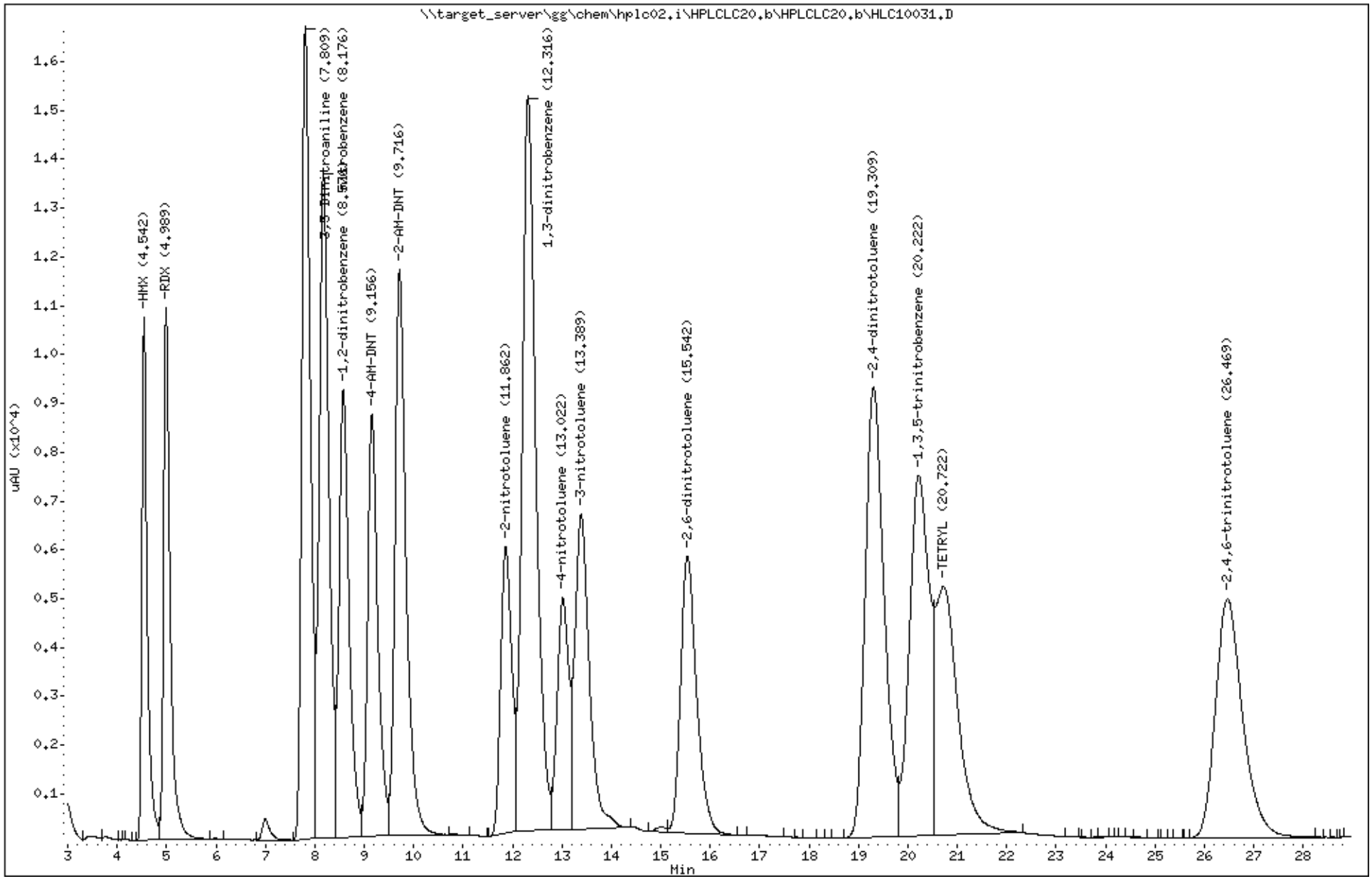
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10031.D
Lab Smp Id: WG225143-7
Inj Date : 20-MAR-2018 14:54
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-7
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 14:54   Cal File: HLC10031.D
Als bottle: 8   Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: T8-D4700

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.542	4.542	0.000	10701	2.00000	2.00	
4	RDX	4.989	4.989	0.000	10895	2.00000	2.00	
51	3,5-Dinitroaniline	7.809	7.809	0.000	16640	2.00000	2.00	
7	nitrobenzene	8.175	8.175	0.000	13661	2.00000	2.00	
$ 2	1,2-dinitrobenzene	8.575	8.575	0.000	9164	2.00000	2.00	
11	4-AM-DNT	9.155	9.155	0.000	8636	2.00000	2.00	
12	2-AM-DNT	9.715	9.715	0.000	11574	2.00000	2.00	
15	2-nitrotoluene	11.862	11.862	0.000	5874	2.00000	2.00	
6	1,3-dinitrobenzene	12.315	12.315	0.000	15036	2.00000	2.00	
16	4-nitrotoluene	13.022	13.022	0.000	4740	2.00000	2.00	
17	3-nitrotoluene	13.389	13.389	0.000	6449	2.00000	2.00	
13	2,6-dinitrotoluene	15.542	15.542	0.000	5661	2.00000	2.00	
14	2,4-dinitrotoluene	19.309	19.309	0.000	9219	2.00000	2.00	
5	1,3,5-trinitrobenzene	20.222	20.222	0.000	7372	2.00000	2.00	
9	TETRYL	20.722	20.722	0.000	5082	2.00000	2.00	
10	2,4,6-trinitrotoluene	26.469	26.469	0.000	4889	2.00000	2.00	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10031.D
Date : 20-MAR-2018 14:54
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-7
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000105

Data File: HLC10032.D
Report Date: 26-Mar-2018 13:10

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10032.D
Lab Smp Id: WG225143-6
Inj Date : 20-MAR-2018 15:26
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-6
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 15:26   Cal File: HLC10032.D
Als bottle: 9   Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: T8-D4700

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

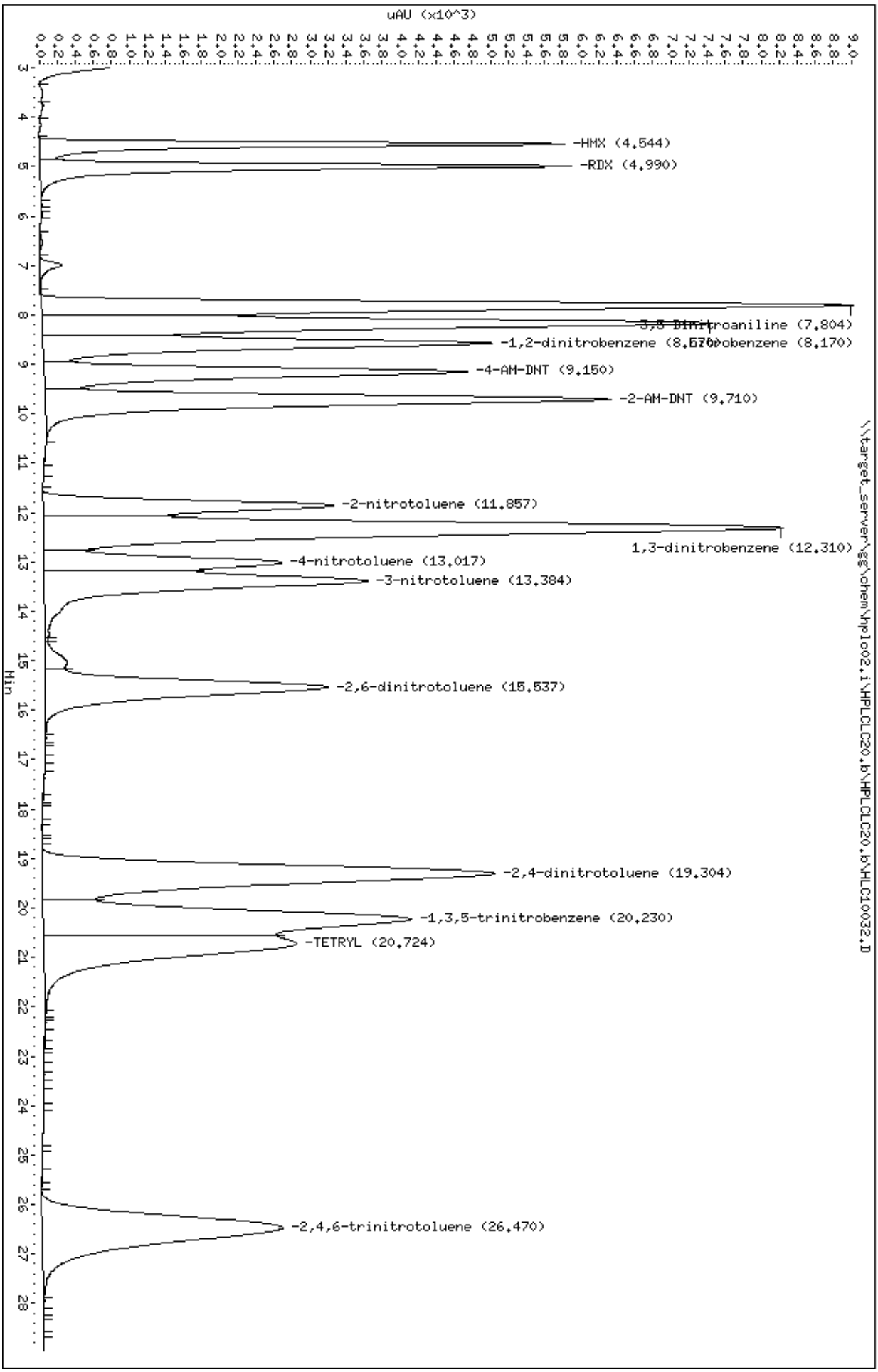
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.543	4.542	0.001	5810	1.00000	1.08(M)	M5
4	RDX	4.990	4.989	0.001	5888	1.00000	1.21(M)	
51	3,5-Dinitroaniline	7.803	7.809	-0.006	8996	1.00000	1.08	
7	nitrobenzene	8.170	8.175	-0.005	7418	1.00000	1.08	
$ 2	1,2-dinitrobenzene	8.570	8.575	-0.005	4978	1.00000	1.08	
11	4-AM-DNT	9.150	9.155	-0.005	4695	1.00000	1.09	
12	2-AM-DNT	9.710	9.715	-0.005	6280	1.00000	1.09	
15	2-nitrotoluene	11.857	11.862	-0.005	3214	1.00000	1.11	
6	1,3-dinitrobenzene	12.310	12.315	-0.005	8198	1.00000	1.11	
16	4-nitrotoluene	13.017	13.022	-0.005	2635	1.00000	1.19	
17	3-nitrotoluene	13.383	13.389	-0.006	3585	1.00000	1.13	
13	2,6-dinitrotoluene	15.537	15.542	-0.005	3147	1.00000	1.06	
14	2,4-dinitrotoluene	19.303	19.309	-0.006	5008	1.00000	1.09	
5	1,3,5-trinitrobenzene	20.230	20.222	0.008	4074	1.00000	1.35	
9	TETRYL	20.723	20.722	0.001	2797	1.00000	1.42	
10	2,4,6-trinitrotoluene	26.470	26.469	0.001	2672	1.00000	1.17	

2:43 pm, Mar 26, 2018

QC Flag Legend

M - Compound response manually integrated.


Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10032.D
Date : 20-MAR-2018 15:26
Client ID:
Sample Info: WG225143-6
Purge Volume: 0.5
Column phase: Acclaim Exp E1
Instrument: hplc02.i
Operator: AC
Column diameter: 4.60
uAU (x10^3)
Min
-HMX (4.544)
-RDX (4.990)
3,5-Dinitroaniline (7.804)
-1,2-dinitrobenzene (8.570)
nitrobenzene (8.170)
-4-AM-DNT (9.150)
-2-AM-DNT (9.710)
-2-nitrotoluene (11.857)
1,3-dinitrobenzene (12.310)
-4-nitrotoluene (13.017)
-3-nitrotoluene (13.384)
-2,6-dinitrotoluene (15.537)
-2,4-dinitrotoluene (19.304)
-1,3,5-trinitrobenzene (20.230)
-TETRYL (20.724)
-2,4,6-trinitrotoluene (26.470)
\\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10032.D

Data File: HLC10033.D
Report Date: 26-Mar-2018 13:10

Katahdin Analytical Services

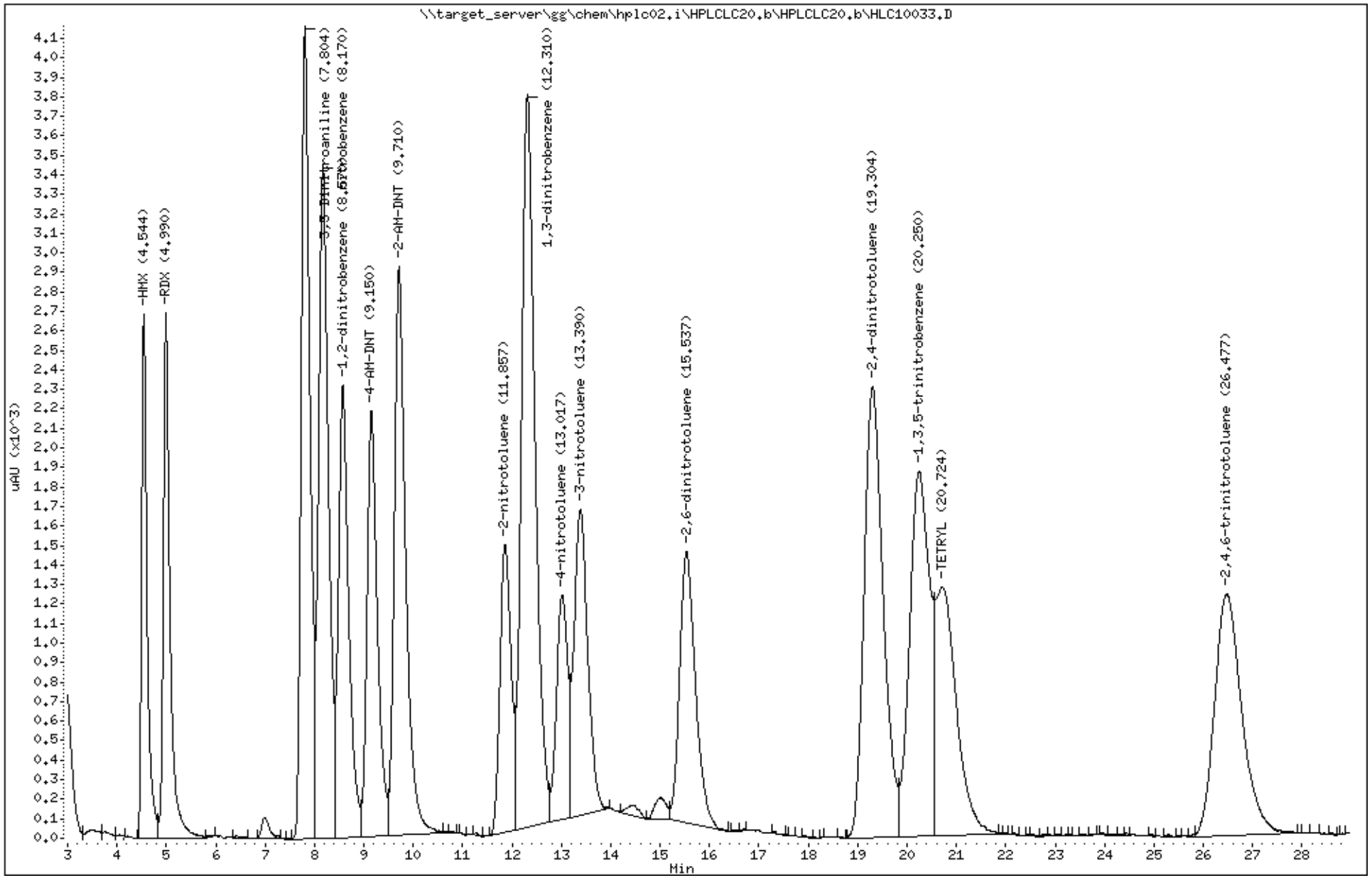
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10033.D
Lab Smp Id: WG225143-5
Inj Date : 20-MAR-2018 15:58
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-5
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 15:58   Cal File: HLC10033.D
Als bottle: 10   Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: T8-D4700

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.543	4.542	0.001	2689	0.50000	0.478	
4	RDX	4.990	4.989	0.001	2694	0.50000	0.477	
51	3,5-Dinitroaniline	7.803	7.809	-0.006	4166	0.50000	0.487	
7	nitrobenzene	8.170	8.175	-0.005	3446	0.50000	0.489	
$ 2	1,2-dinitrobenzene	8.570	8.575	-0.005	2320	0.50000	0.490	
11	4-AM-DNT	9.150	9.155	-0.005	2183	0.50000	0.489	
12	2-AM-DNT	9.710	9.715	-0.005	2919	0.50000	0.489	
15	2-nitrotoluene	11.857	11.862	-0.005	1476	0.50000	0.486	
6	1,3-dinitrobenzene	12.310	12.315	-0.005	3756	0.50000	0.485	
16	4-nitrotoluene	13.017	13.022	-0.005	1149	0.50000	0.472	
17	3-nitrotoluene	13.390	13.389	0.001	1568	0.50000	0.473	
13	2,6-dinitrotoluene	15.537	15.542	-0.005	1390	0.50000	0.476	
14	2,4-dinitrotoluene	19.303	19.309	-0.006	2310	0.50000	0.487	
5	1,3,5-trinitrobenzene	20.250	20.222	0.028	1872	0.50000	0.488	
9	TETRYL	20.723	20.722	0.001	1275	0.50000	0.485	
10	2,4,6-trinitrotoluene	26.477	26.469	0.008	1239	0.50000	0.489	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10033.D
Date : 20-MAR-2018 15:58
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-5
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000109

Data File: HLC10034.D
Report Date: 26-Mar-2018 13:10

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10034.D
Lab Smp Id: WG225143-4
Inj Date : 20-MAR-2018 16:30
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-4
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 16:30   Cal File: HLC10034.D
Als bottle: 11   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: T8-D4700

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

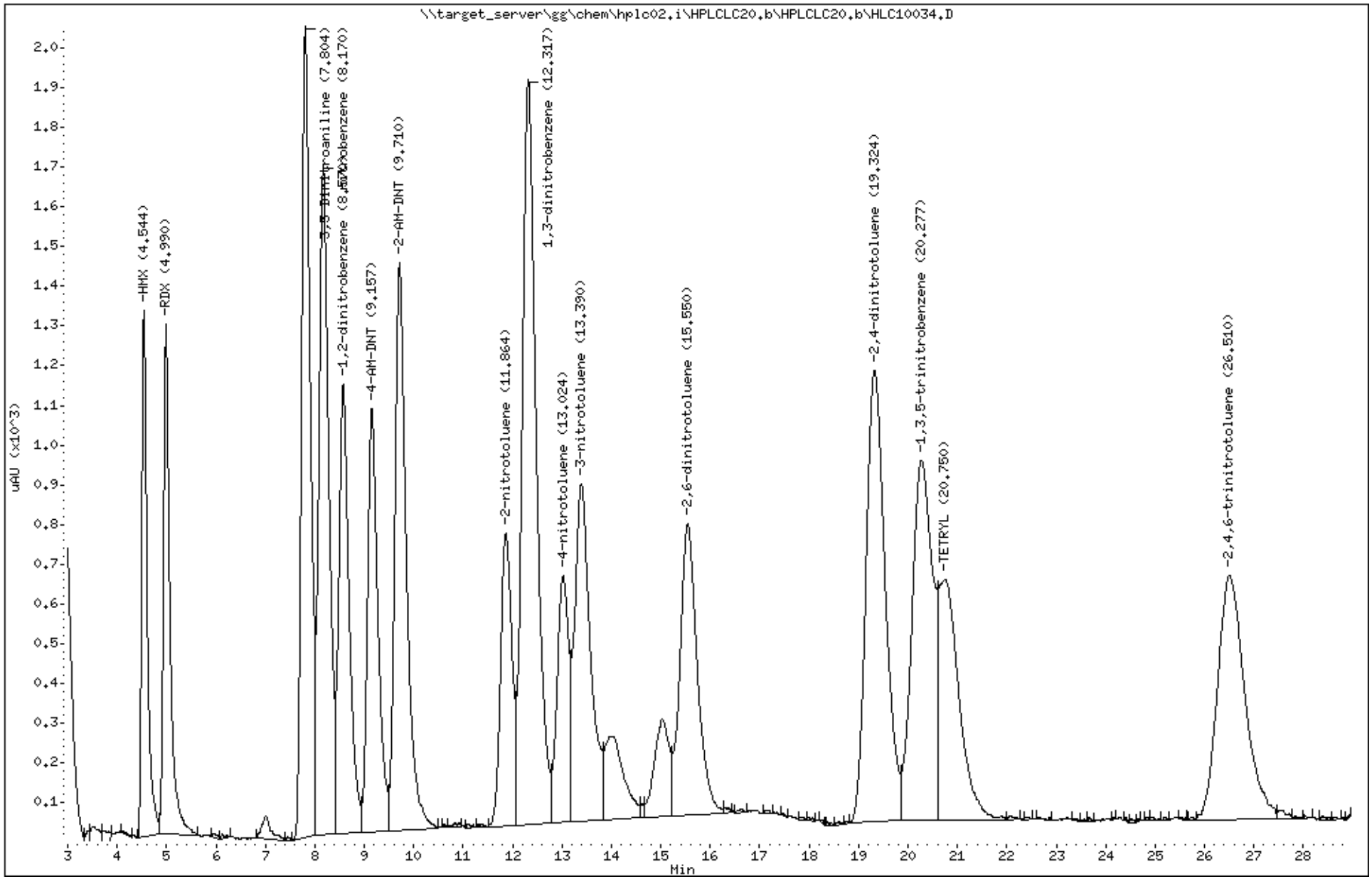
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.543	4.542	0.001	1324	0.25000	0.239(a)	
4	RDX	4.990	4.989	0.001	1287	0.25000	0.233(a)	
51	3,5-Dinitroaniline	7.803	7.809	-0.006	2044	0.25000	0.242(a)	
7	nitrobenzene	8.170	8.175	-0.005	1684	0.25000	0.242(a)	
$ 2	1,2-dinitrobenzene	8.570	8.575	-0.005	1133	0.25000	0.242(a)	
11	4-AM-DNT	9.157	9.155	0.002	1065	0.25000	0.242(a)	
12	2-AM-DNT	9.710	9.715	-0.005	1430	0.25000	0.242(a)	
15	2-nitrotoluene	11.863	11.862	0.001	736	0.25000	0.244(a)	
6	1,3-dinitrobenzene	12.317	12.315	0.002	1877	0.25000	0.244(a)	
16	4-nitrotoluene	13.023	13.022	0.001	621	0.25000	0.254	
17	3-nitrotoluene	13.390	13.389	0.001	851	0.25000	0.255	
13	2,6-dinitrotoluene	15.550	15.542	0.008	733	0.25000	0.251	
14	2,4-dinitrotoluene	19.323	19.309	0.014	1138	0.25000	0.242(a)	
5	1,3,5-trinitrobenzene	20.277	20.222	0.055	907	0.25000	0.240(a)	
9	TETRYL	20.750	20.722	0.028	606	0.25000	0.235(a)	
10	2,4,6-trinitrotoluene	26.510	26.469	0.041	615	0.25000	0.245(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10034.D
Date : 20-MAR-2018 16:30
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-4
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000111

Data File: HLC10035.D
Report Date: 26-Mar-2018 13:10

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10035.D
Lab Smp Id: WG225143-3
Inj Date : 20-MAR-2018 17:01
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-3
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 17:01   Cal File: HLC10035.D
Als bottle: 12   Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: T8-D4700

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

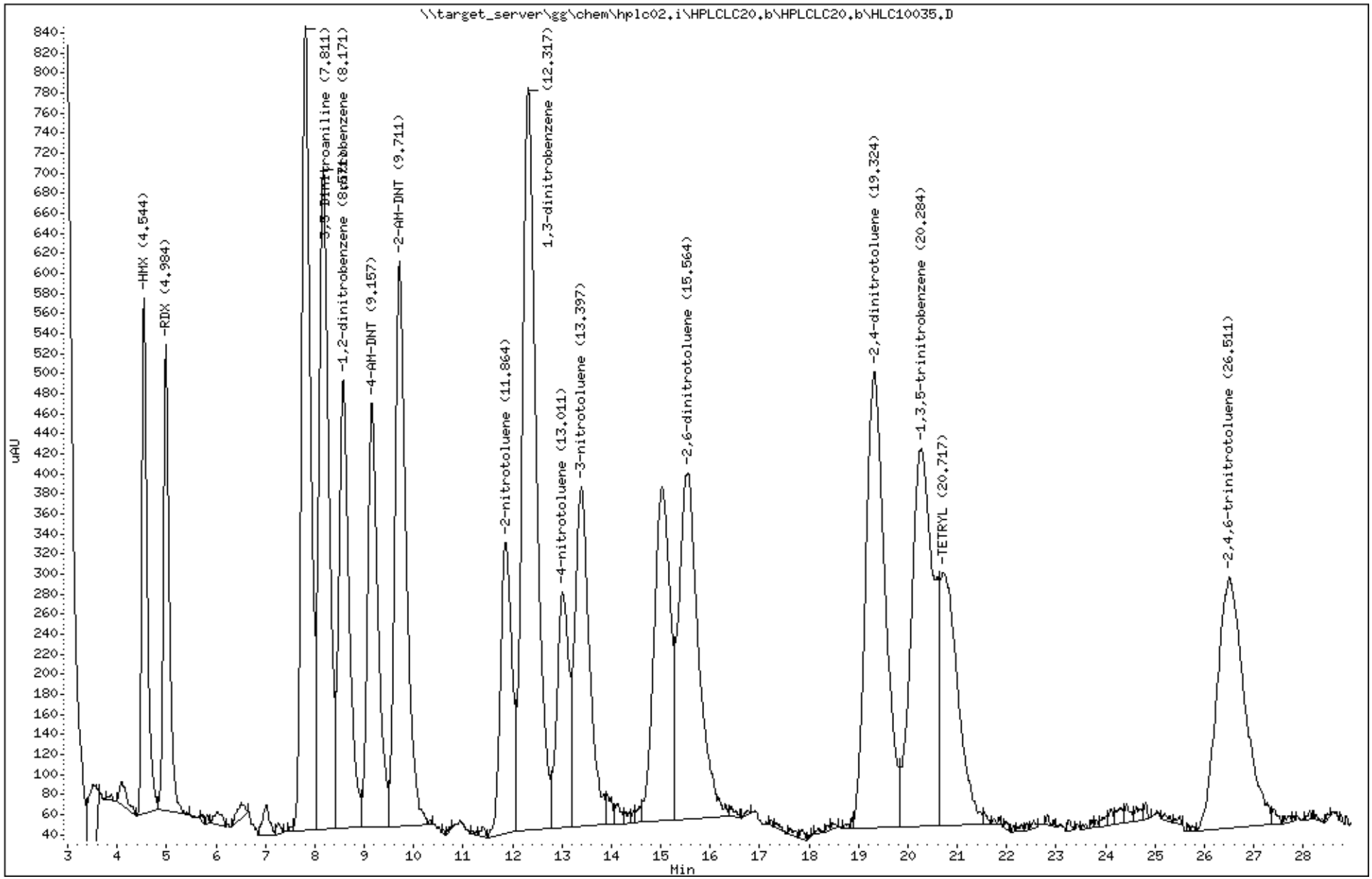
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.544	4.542	0.002	514	0.10000	0.0940(a)	
4	RDX	4.984	4.989	-0.005	466	0.10000	0.0870(a)	
51	3,5-Dinitroaniline	7.810	7.809	0.001	803	0.10000	0.0959(a)	
7	nitrobenzene	8.170	8.175	-0.005	661	0.10000	0.0958(a)	
$ 2	1,2-dinitrobenzene	8.570	8.575	-0.005	448	0.10000	0.0965(a)	
11	4-AM-DNT	9.157	9.155	0.002	424	0.10000	0.0969(a)	
12	2-AM-DNT	9.710	9.715	-0.005	564	0.10000	0.0964(a)	
15	2-nitrotoluene	11.864	11.862	0.002	290	0.10000	0.0970(a)	
6	1,3-dinitrobenzene	12.317	12.315	0.002	741	0.10000	0.0971(a)	
16	4-nitrotoluene	13.010	13.022	-0.012	235	0.10000	0.0968(a)	
17	3-nitrotoluene	13.397	13.389	0.008	339	0.10000	0.101(a)	
13	2,6-dinitrotoluene	15.564	15.542	0.022	345	0.10000	0.114(a)	
14	2,4-dinitrotoluene	19.324	19.309	0.015	456	0.10000	0.0976(a)	
5	1,3,5-trinitrobenzene	20.284	20.222	0.062	377	0.10000	0.0997(a)	
9	TETRYL	20.717	20.722	-0.005	253	0.10000	0.0985(a)	
10	2,4,6-trinitrotoluene	26.510	26.469	0.041	251	0.10000	0.0999(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10035.D
Date : 20-MAR-2018 17:01
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-3
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000113

Data File: HLC10036.D
Report Date: 26-Mar-2018 13:10

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10036.D
Lab Smp Id: WG225143-2
Inj Date : 20-MAR-2018 17:33
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-2
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 17:33   Cal File: HLC10036.D
Als bottle: 13   Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: T8-D4700

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

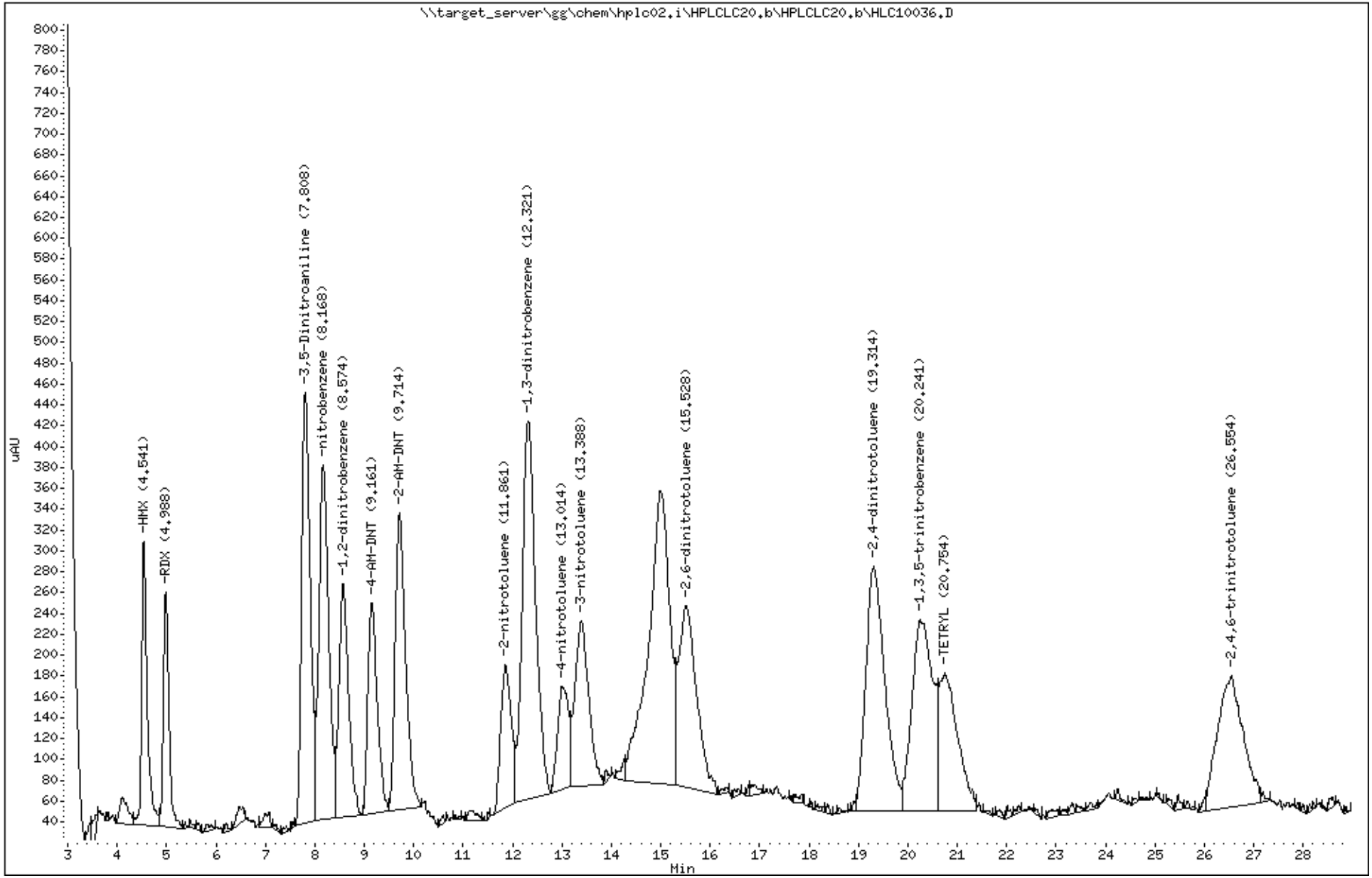
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.541	4.542	-0.001	272	0.05000	0.0504(a)	
4	RDX	4.987	4.989	-0.002	225	0.05000	0.0463(a)	
51	3,5-Dinitroaniline	7.807	7.809	-0.002	414	0.05000	0.0498(a)	
7	nitrobenzene	8.167	8.175	-0.008	341	0.05000	0.0497(a)	
$ 2	1,2-dinitrobenzene	8.574	8.575	-0.001	225	0.05000	0.0486(a)	
11	4-AM-DNT	9.161	9.155	0.006	202	0.05000	0.0469(a)	
12	2-AM-DNT	9.714	9.715	-0.001	285	0.05000	0.0495(a)	
15	2-nitrotoluene	11.861	11.862	-0.001	138	0.05000	0.0478(a)	
6	1,3-dinitrobenzene	12.321	12.315	0.006	364	0.05000	0.0492(a)	
16	4-nitrotoluene	13.014	13.022	-0.008	99	0.05000	0.0449(a)	
17	3-nitrotoluene	13.387	13.389	-0.002	159	0.05000	0.0502(a)	
13	2,6-dinitrotoluene	15.527	15.542	-0.015	175	0.05000	0.0588(a)	
14	2,4-dinitrotoluene	19.307	19.309	-0.002	235	0.05000	0.0508(aM)	M9
5	1,3,5-trinitrobenzene	20.241	20.222	0.019	184	0.05000	0.0548(aM)	M9
9	TETRYL	20.754	20.722	0.032	133	0.05000	0.0593(aM)	M9
10	2,4,6-trinitrotoluene	26.554	26.469	0.085	126	0.05000	0.0551(a)	

2:43 pm, Mar 26, 2018

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10036.D
Date : 20-MAR-2018 17:33
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-2
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000115

Data File: HLC10037.D
Report Date: 26-Mar-2018 13:11

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10037.D
Lab Smp Id: WG225143-1
Inj Date : 20-MAR-2018 18:05
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-1
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 14   Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: T8-D4700

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

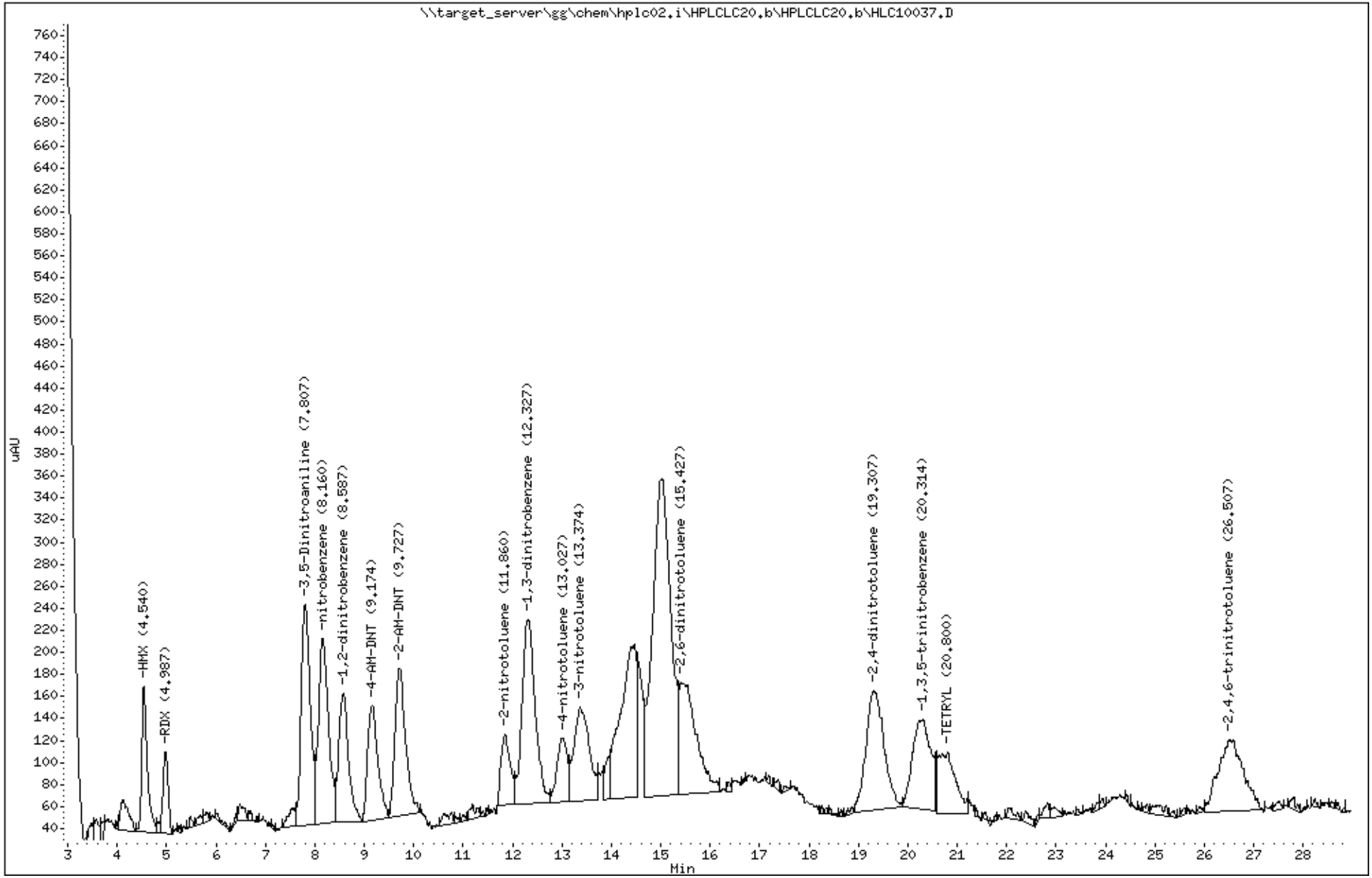
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.540	4.542	-0.002	133	0.02500	0.0247(a)	
4	RDX	4.987	4.989	-0.002	75	0.02500	0.0154(a)	
51	3,5-Dinitroaniline	7.807	7.809	-0.002	202	0.02500	0.0243(a)	
7	nitrobenzene	8.160	8.175	-0.015	169	0.02500	0.0246(a)	
$ 2	1,2-dinitrobenzene	8.587	8.575	0.012	117	0.02500	0.0253(a)	
11	4-AM-DNT	9.173	9.155	0.018	105	0.02500	0.0244(a)	
12	2-AM-DNT	9.727	9.715	0.012	134	0.02500	0.0233(a)	
15	2-nitrotoluene	11.847	11.862	-0.015	63	0.02500	0.0218(aM)	M9
6	1,3-dinitrobenzene	12.327	12.315	0.012	167	0.02500	0.0224(aM)	M9
16	4-nitrotoluene	12.993	13.022	-0.029	57	0.02500	0.0243(aM)	M9
17	3-nitrotoluene	13.373	13.389	-0.016	84	0.02500	0.0252(aM)	M9
13	2,6-dinitrotoluene	15.407	15.542	-0.135	101	0.02500	0.0312(aM)	M5
14	2,4-dinitrotoluene	19.307	19.309	-0.002	107	0.02500	0.0232(aM)	M9
5	1,3,5-trinitrobenzene	20.313	20.222	0.091	81	0.02500	0.0220(aM)	M9
9	TETRYL	20.800	20.722	0.078	56	0.02500	0.0221(aM)	M9
10	2,4,6-trinitrotoluene	26.507	26.469	0.038	65	0.02500	0.0257(aM)	M9

2:43 pm, Mar 26, 2018

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10037.D
Date : 20-MAR-2018 18:05
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-1
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000117

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG227995-1
Lab File ID : HLE10281.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3841
Analytical Date: 05/10/18 06:58
Instrument ID: HPLC02
Column ID: A

	Compound	RRF/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150	NITROGLYCERIN	5513	5322	0.010	-3.46798	20.00000	Averaged
155	PETN	2876	3040	0.010	5.69089	20.00000	Averaged

*** = Compound out of QC criteria**

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P.O. Box 540, Scarborough, ME 04070
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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10281.D
Report Date: 23-May-2018 09:56

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10281.D
Lab Smp Id: WG227995-1
Inj Date : 10-MAY-2018 06:58
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227995-1,SL3841
Misc Info : WG227995,WG227925,WG225143-5,SL3841-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 2   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetnedgn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

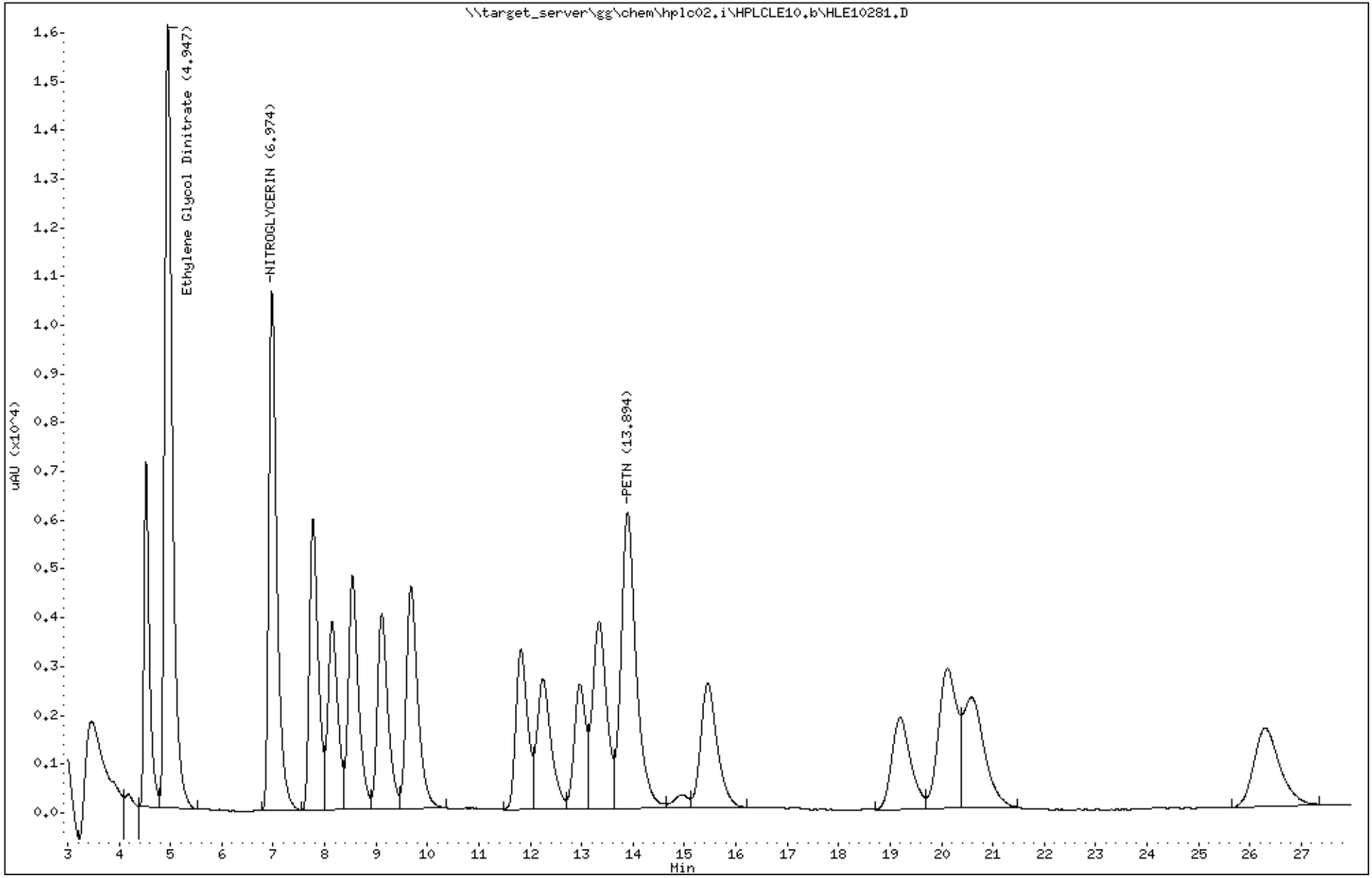
						AMOUNTS		
						CAL-AMT	ON-COL	
	Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8	NITROGLYCERIN	6.974	6.974	0.000	10644	1.00000	1.93(a)	
18	PETN	13.894	13.894	0.000	6079	1.00000	2.11(a)	
3	Ethylene Glycol Dinitrate	4.947	4.947	0.000	16062	1.00000	1.92(aM)	M2

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

AAB
10:29 am, May 23, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10281.D
Date : 10-MAY-2018 06:58
Client ID:
Instrument: hplc02.i
Sample Info: WG227995-1,SL3841
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000120

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG227995-2
Lab File ID : HLE10292.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3841
Analytical Date: 05/10/18 13:18
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150 NITROGLYCERIN	5513	5222	0.010	-5.28181	20.00000	Averaged
155 PETN	2876	2999	0.010	4.28260	20.00000	Averaged

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10292.D
Report Date: 23-May-2018 09:56

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10292.D
Lab Smp Id: WG227995-2
Inj Date : 10-MAY-2018 13:18
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227995-2,SL3841
Misc Info : WG227995,WG227925,WG225143-5,SL3841-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 11   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

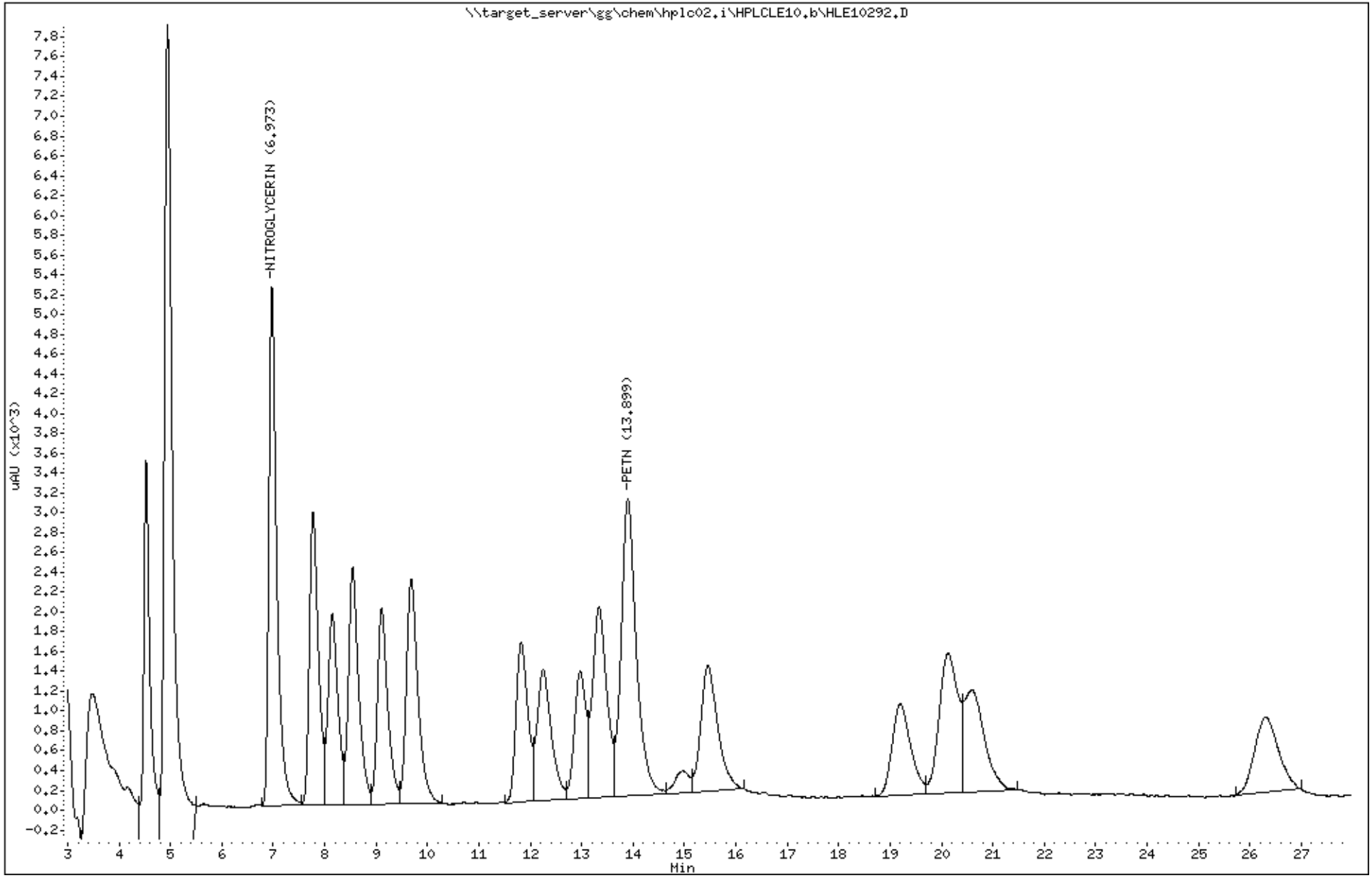
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)
8 NITROGLYCERIN	6.972	6.974	-0.002	5222	1.00000	0.947(a)
18 PETN	13.899	13.894	0.005	2999	1.00000	1.04(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10292.D
Date : 10-MAY-2018 13:18
Client ID:
Instrument: hplc02.i
Sample Info: WG227995-2,SL3841
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000123

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG227995-3
Lab File ID : HLE10303.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3841
Analytical Date: 05/10/18 18:59
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150 NITROGLYCERIN	5513	5328	0.010	-3.35915	20.00000	Averaged
155 PETN	2876	3035	0.010	5.53441	20.00000	Averaged

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10303.D
Report Date: 23-May-2018 09:56

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10303.D
Lab Smp Id: WG227995-3
Inj Date : 10-MAY-2018 18:59
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227995-3,SL3841
Misc Info : WG227995,WG227925,WG225143-5,SL3841-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 22   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

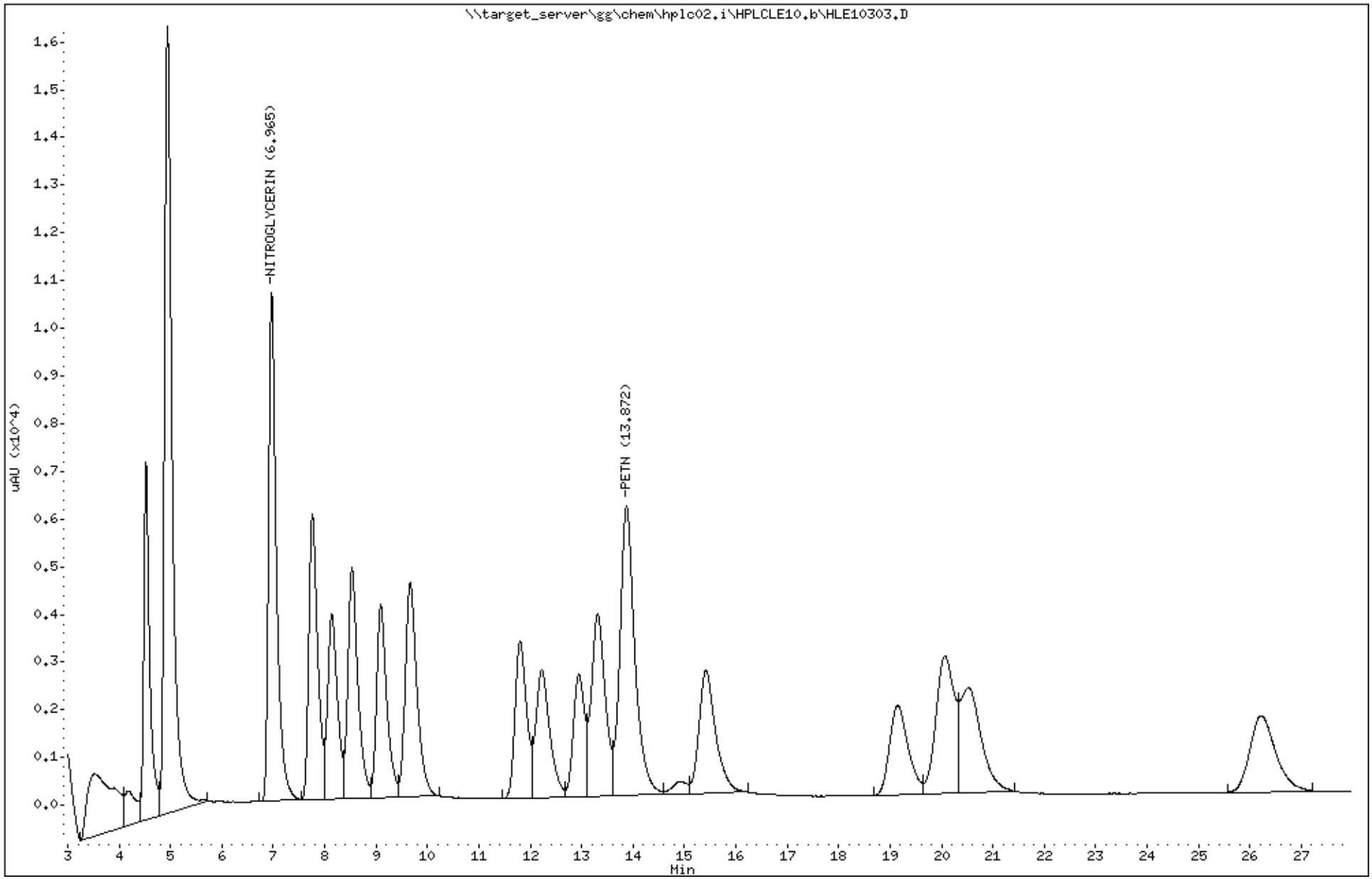
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)
8 NITROGLYCERIN	6.965	6.974	-0.009	10656	1.00000	1.93(a)
18 PETN	13.872	13.894	-0.022	6070	1.00000	2.11(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10303.D
Date : 10-MAY-2018 18:59
Client ID:
Instrument: hplc02.i
Sample Info: WG227995-3,SL3841
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000126

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG227995-1
Analytical Date: 05/10/18 06:58
Lab File ID : HLE10281.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5336	5336	0.010	-1.01366	20.00000	Averaged
4	RDX	0.50000	0.49310	5410	0.010	-1.37968	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3810	3810	0.010	3.28402	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7616	7616	0.010	2.31451	20.00000	Averaged
7	nitrobenzene	6867	6754	6754	0.010	-1.64044	20.00000	Averaged
9	TETRYL	2535	2780	2780	0.010	9.68324	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2538	2538	0.010	0.46086	20.00000	Averaged
11	4-AM-DNT	4303	4360	4360	0.010	1.33139	20.00000	Averaged
12	2-AM-DNT	5761	5886	5886	0.010	2.17483	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.49028	2886	0.010	-1.94471	20.00000	Linear
14	2,4-dinitrotoluene	4619	4730	4730	0.010	2.41420	20.00000	Averaged
15	2-nitrotoluene	2890	2970	2970	0.010	2.78341	20.00000	Averaged
16	4-nitrotoluene	2342	2428	2428	0.010	3.65311	20.00000	Averaged
17	3-nitrotoluene	3326	3314	3314	0.010	-0.35009	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4808	4808	0.010	3.90220	20.00000	Averaged

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
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Data File: HLE10281.D
Report Date: 23-May-2018 09:59

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10281.D
Lab Smp Id: WG227995-1
Inj Date : 10-MAY-2018 06:58
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227995-1,SL3841
Misc Info : WG227995,WG227925,WG225143-5,SL3841-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 2   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

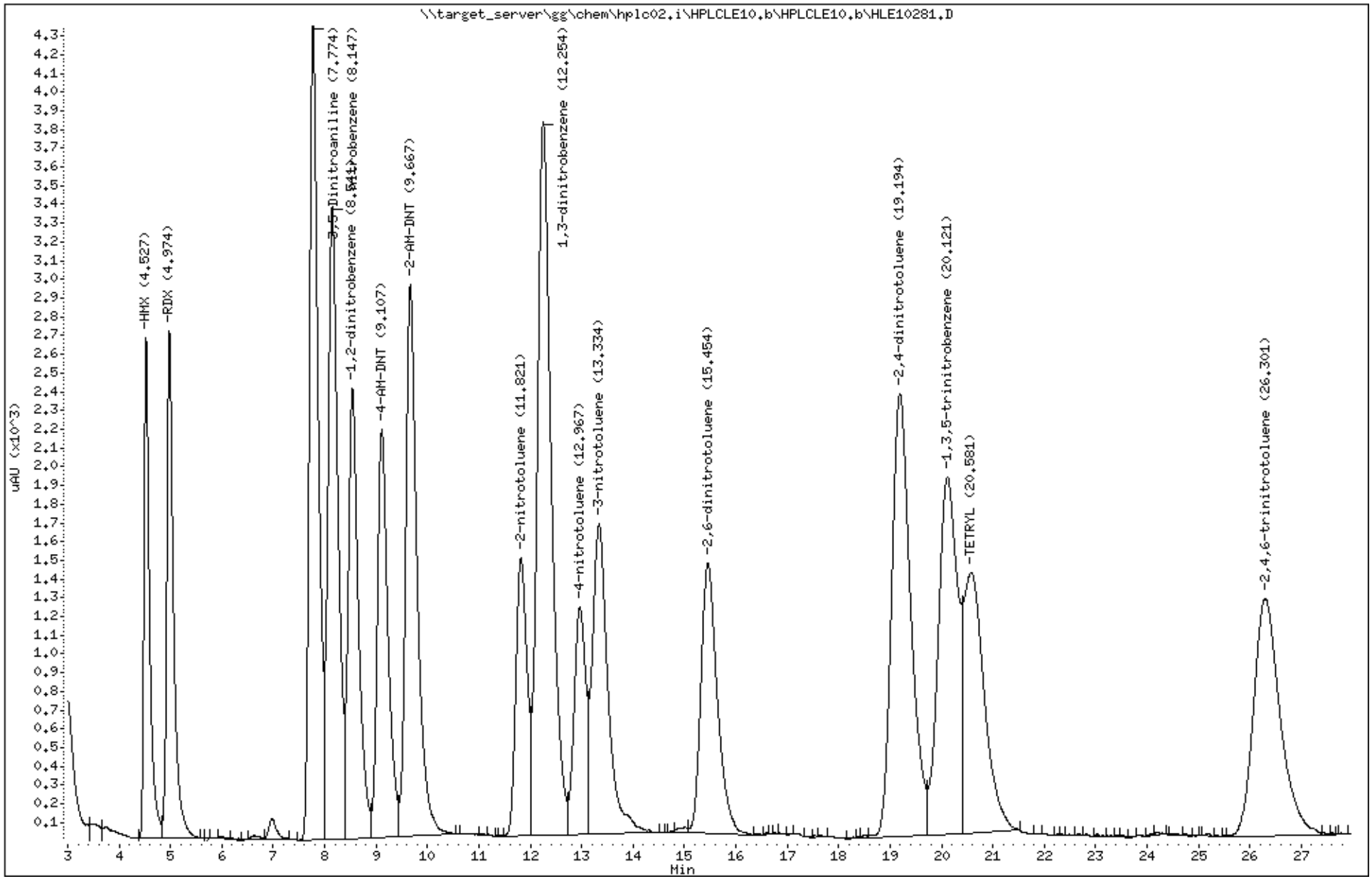
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.527	4.527	0.000	2668	0.25000	0.495(M)	M2
4	RDX	4.974	4.974	0.000	2705	0.25000	0.493(M)	M2
51	3,5-Dinitroaniline	7.774	7.774	0.000	4346	0.25000	0.522	
7	nitrobenzene	8.147	8.147	0.000	3377	0.25000	0.492	
$ 2	1,2-dinitrobenzene	8.540	8.540	0.000	2404	0.25000	0.520	
11	4-AM-DNT	9.107	9.107	0.000	2180	0.25000	0.507	
12	2-AM-DNT	9.667	9.667	0.000	2943	0.25000	0.511	
15	2-nitrotoluene	11.820	11.820	0.000	1485	0.25000	0.514	
6	1,3-dinitrobenzene	12.254	12.254	0.000	3808	0.25000	0.512	
16	4-nitrotoluene	12.967	12.967	0.000	1214	0.25000	0.518	
17	3-nitrotoluene	13.334	13.334	0.000	1657	0.25000	0.498	
13	2,6-dinitrotoluene	15.454	15.454	0.000	1443	0.25000	0.490	
14	2,4-dinitrotoluene	19.194	19.194	0.000	2365	0.25000	0.512	
5	1,3,5-trinitrobenzene	20.120	20.120	0.000	1905	0.25000	0.516	
9	TETRYL	20.580	20.580	0.000	1390	0.25000	0.548	
10	2,4,6-trinitrotoluene	26.300	26.300	0.000	1269	0.25000	0.502	

AAB
10:30 am, May 23, 2018

QC Flag Legend

M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10281.D
Date : 10-MAY-2018 06:58
Client ID:
Instrument: hplc02.i
Sample Info: WG227995-1,SL3841
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000129

Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG227995-2
Analytical Date: 05/10/18 13:18
Lab File ID : HLE10292.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5236	5236	0.010	-2.86873	20.00000	Averaged
4	RDX	0.25000	0.24381	5284	0.010	-2.47473	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3772	3772	0.010	2.25389	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7564	7564	0.010	1.61594	20.00000	Averaged
7	nitrobenzene	6867	6608	6608	0.010	-3.76666	20.00000	Averaged
9	TETRYL	2535	2568	2568	0.010	1.31890	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2484	2484	0.010	-1.67661	20.00000	Averaged
11	4-AM-DNT	4303	4248	4248	0.010	-1.27162	20.00000	Averaged
12	2-AM-DNT	5761	5736	5736	0.010	-0.42901	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.23267	2816	0.010	-6.93393	20.00000	Linear
14	2,4-dinitrotoluene	4619	4628	4628	0.010	0.20569	20.00000	Averaged
15	2-nitrotoluene	2890	2944	2944	0.010	1.88362	20.00000	Averaged
16	4-nitrotoluene	2342	2628	2628	0.010	12.19125	20.00000	Averaged
17	3-nitrotoluene	3326	3584	3584	0.010	7.76864	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4732	4732	0.010	2.25982	20.00000	Averaged

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
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Data File: HLE10292.D
Report Date: 23-May-2018 09:59

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10292.D
Lab Smp Id: WG227995-2
Inj Date : 10-MAY-2018 13:18
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227995-2,SL3841
Misc Info : WG227995,WG227925,WG225143-5,SL3841-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 11   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

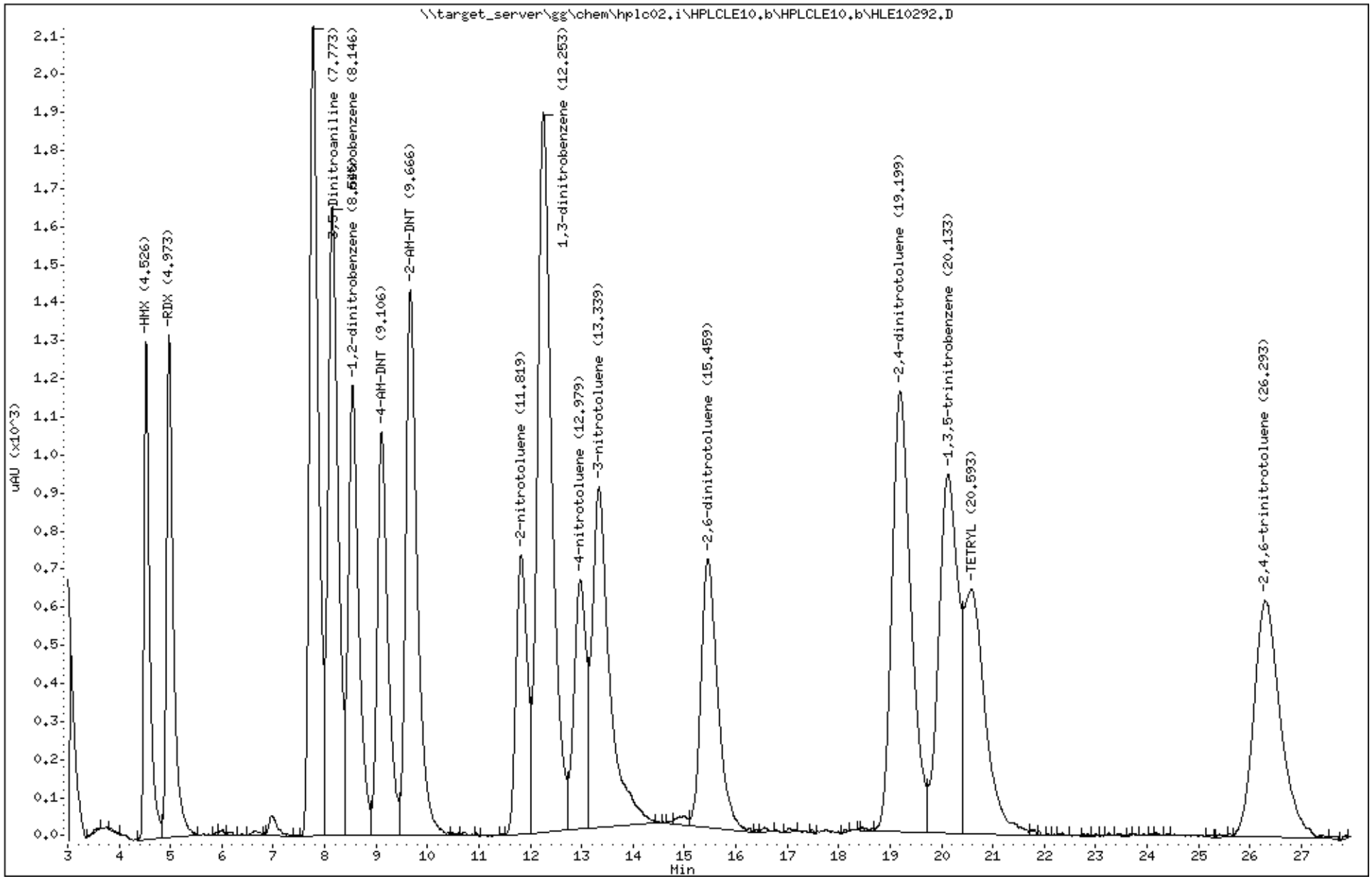
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.526	4.527	-0.001	1309	0.25000	0.243(a)	
4	RDX	4.972	4.974	-0.002	1321	0.25000	0.244(a)	
51	3,5-Dinitroaniline	7.772	7.774	-0.002	2127	0.25000	0.256	
7	nitrobenzene	8.146	8.147	-0.001	1652	0.25000	0.240(a)	
$ 2	1,2-dinitrobenzene	8.546	8.540	0.006	1183	0.25000	0.256	
11	4-AM-DNT	9.106	9.107	-0.001	1062	0.25000	0.247(a)	
12	2-AM-DNT	9.666	9.667	-0.001	1434	0.25000	0.249(a)	
15	2-nitrotoluene	11.819	11.820	-0.001	736	0.25000	0.255	
6	1,3-dinitrobenzene	12.252	12.254	-0.002	1891	0.25000	0.254	
16	4-nitrotoluene	12.979	12.967	0.012	657	0.25000	0.280	
17	3-nitrotoluene	13.339	13.334	0.005	896	0.25000	0.269	
13	2,6-dinitrotoluene	15.459	15.454	0.005	704	0.25000	0.233(a)	
14	2,4-dinitrotoluene	19.199	19.194	0.005	1157	0.25000	0.250	
5	1,3,5-trinitrobenzene	20.132	20.120	0.012	943	0.25000	0.256	
9	TETRYL	20.592	20.580	0.012	642	0.25000	0.253	
10	2,4,6-trinitrotoluene	26.292	26.300	-0.008	621	0.25000	0.246(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10292.D
Date : 10-MAY-2018 13:18
Client ID:
Instrument: hplc02.i
Sample Info: WG227995-2,SL3841
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000132

Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG227995-3
Analytical Date: 05/10/18 18:59
Lab File ID : HLE10303.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5354	5354	0.010	-0.67975	20.00000	Averaged
4	RDX	0.50000	0.49526	5434	0.010	-0.94738	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3856	3856	0.010	4.53102	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7674	7674	0.010	3.09369	20.00000	Averaged
7	nitrobenzene	6867	6742	6742	0.010	-1.81519	20.00000	Averaged
9	TETRYL	2535	2748	2748	0.010	8.42070	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2542	2542	0.010	0.61919	20.00000	Averaged
11	4-AM-DNT	4303	4382	4382	0.010	1.84269	20.00000	Averaged
12	2-AM-DNT	5761	5900	5900	0.010	2.41785	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.49028	2886	0.010	-1.94471	20.00000	Linear
14	2,4-dinitrotoluene	4619	4732	4732	0.010	2.45751	20.00000	Averaged
15	2-nitrotoluene	2890	2980	2980	0.010	3.12948	20.00000	Averaged
16	4-nitrotoluene	2342	2468	2468	0.010	5.36074	20.00000	Averaged
17	3-nitrotoluene	3326	3338	3338	0.010	0.37157	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4828	4828	0.010	4.33440	20.00000	Averaged

*** = Compound out of QC criteria**

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Data File: HLE10303.D
Report Date: 23-May-2018 10:00

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10303.D
Lab Smp Id: WG227995-3
Inj Date : 10-MAY-2018 18:59
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227995-3,SL3841
Misc Info : WG227995,WG227925,WG225143-5,SL3841-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 22   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

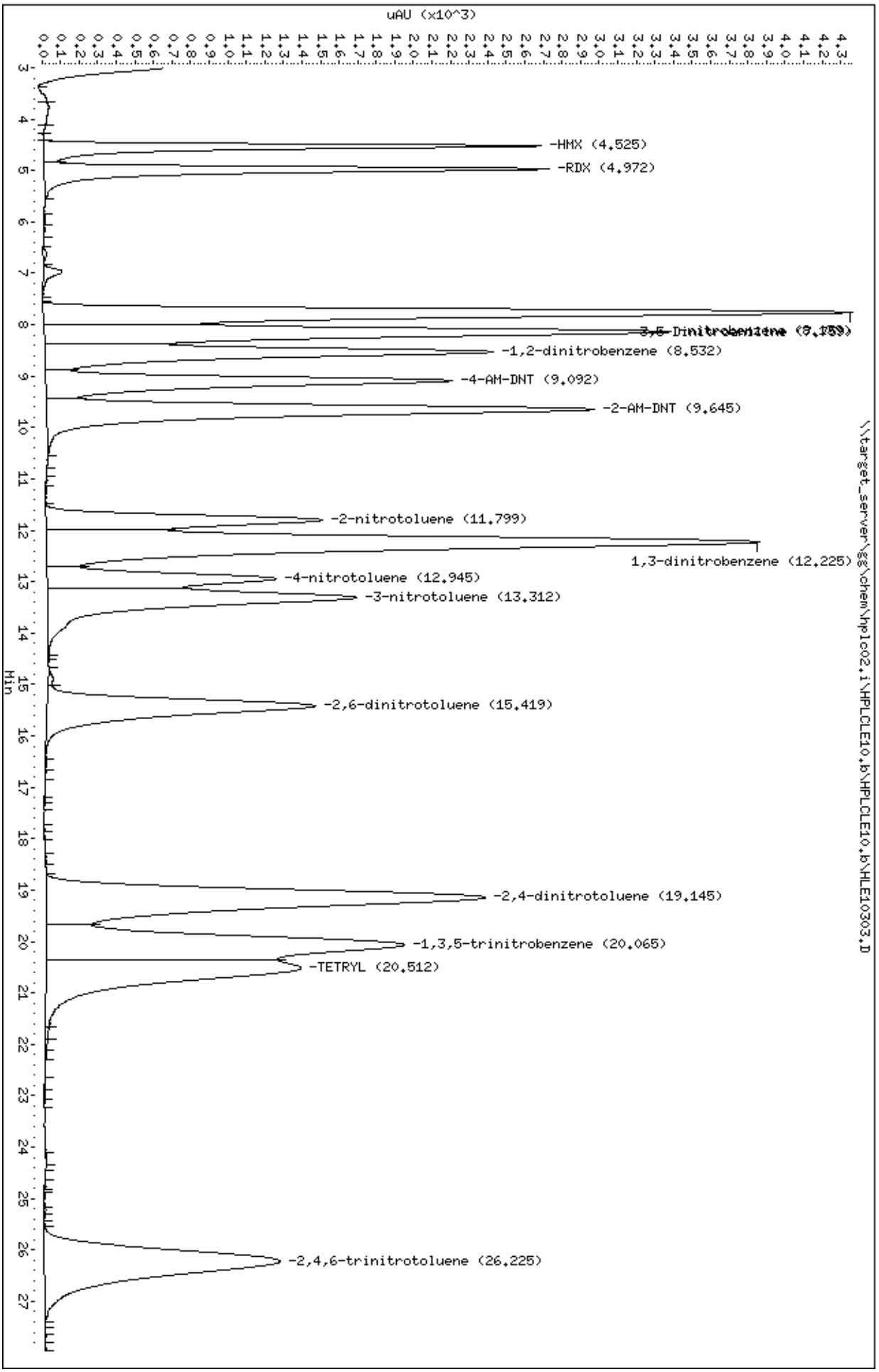
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.525	4.527	-0.002	2677	0.25000	0.497(M)	M2
4	RDX	4.972	4.974	-0.002	2717	0.25000	0.495(M)	M2
51	3,5-Dinitroaniline	7.758	7.774	-0.016	4357	0.25000	0.524	
7	nitrobenzene	8.138	8.147	-0.009	3371	0.25000	0.491	
$ 2	1,2-dinitrobenzene	8.532	8.540	-0.008	2414	0.25000	0.522	
11	4-AM-DNT	9.092	9.107	-0.015	2191	0.25000	0.509	
12	2-AM-DNT	9.645	9.667	-0.022	2950	0.25000	0.512	
15	2-nitrotoluene	11.798	11.820	-0.022	1490	0.25000	0.516	
6	1,3-dinitrobenzene	12.225	12.254	-0.029	3837	0.25000	0.515	
16	4-nitrotoluene	12.945	12.967	-0.022	1234	0.25000	0.527	
17	3-nitrotoluene	13.312	13.334	-0.022	1669	0.25000	0.502	
13	2,6-dinitrotoluene	15.418	15.454	-0.036	1443	0.25000	0.490	
14	2,4-dinitrotoluene	19.145	19.194	-0.049	2366	0.25000	0.512	
5	1,3,5-trinitrobenzene	20.065	20.120	-0.055	1928	0.25000	0.523	
9	TETRYL	20.512	20.580	-0.068	1374	0.25000	0.542	
10	2,4,6-trinitrotoluene	26.225	26.300	-0.075	1271	0.25000	0.503	

AAB
10:30 am, May 23, 2018

QC Flag Legend

M - Compound response manually integrated.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Date : 10-MAY-2018 18:59
Client ID:
Sample Info: WG227995-3,SL3841
Purge Volume: 0.5
Column phase: Acclaim Exp E1
Instrument: hplc02,i
Operator: AAB
Column diameter: 4.60
uAU (x10^3)
Min
-HMX (4.525)
-RDX (4.972)
3,5-Dinitroaniline (7.759)
-1,2-dinitrobenzene (8.532)
-4-AM-DNT (9.092)
-2-AM-DNT (9.645)
-2-nitrotoluene (11.799)
1,3-dinitrobenzene (12.225)
-4-nitrotoluene (12.945)
-3-nitrotoluene (13.312)
-2,6-dinitrotoluene (15.419)
-2,4-dinitrotoluene (19.145)
-1,3,5-trinitrobenzene (20.065)
-TETRYL (20.512)
-2,4,6-trinitrotoluene (26.225)
\\target_server\gg\chem\hplc02,i\HPLCLE10,b\HPLCLE10,b\HLE10303,D

Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG227995-20
Analytical Date: 05/17/18 15:43
Lab File ID : HLE10549.D
Instrument ID: HPLC02
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	0.50000	0.46788	3964	0.010	-6.42305	20.00000	Linear
4	RDX	0.50000	0.47208	3826	0.010	-5.58430	20.00000	Linear
5	1,3,5-trinitrobenzene	0.50000	0.47420	9852	0.010	-5.16014	20.00000	Linear
6	1,3-dinitrobenzene	0.50000	0.47465	11056	0.010	-5.07017	20.00000	Linear
7	nitrobenzene	0.50000	0.47985	6412	0.010	-4.02988	20.00000	Linear
9	TETRYL	0.50000	0.50540	4808	0.010	1.08022	20.00000	Linear
10	2,4,6-trinitrotoluene	0.50000	0.47224	5890	0.010	-5.55151	20.00000	Linear
11	4-AM-DNT	0.50000	0.46263	2248	0.010	-7.47450	20.00000	Linear
12	2-AM-DNT	0.50000	0.47815	3070	0.010	-4.37072	20.00000	Linear
13	2,6-dinitrotoluene	0.50000	0.47509	3586	0.010	-4.98177	20.00000	Linear
14	2,4-dinitrotoluene	0.50000	0.47608	6628	0.010	-4.78436	20.00000	Linear
15	2-nitrotoluene	0.50000	0.47770	2534	0.010	-4.46041	20.00000	Linear
16	4-nitrotoluene	0.50000	0.50225	2040	0.010	0.44967	20.00000	Linear
17	3-nitrotoluene	0.50000	0.46530	2438	0.010	-6.94049	20.00000	Linear
2	1,2-dinitrobenzene	0.50000	0.46592	4950	0.010	-6.81693	20.00000	Linear

*** = Compound out of QC criteria**

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P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: HLE10549.D
Report Date: 23-May-2018 10:04

Katahdin Analytical Services

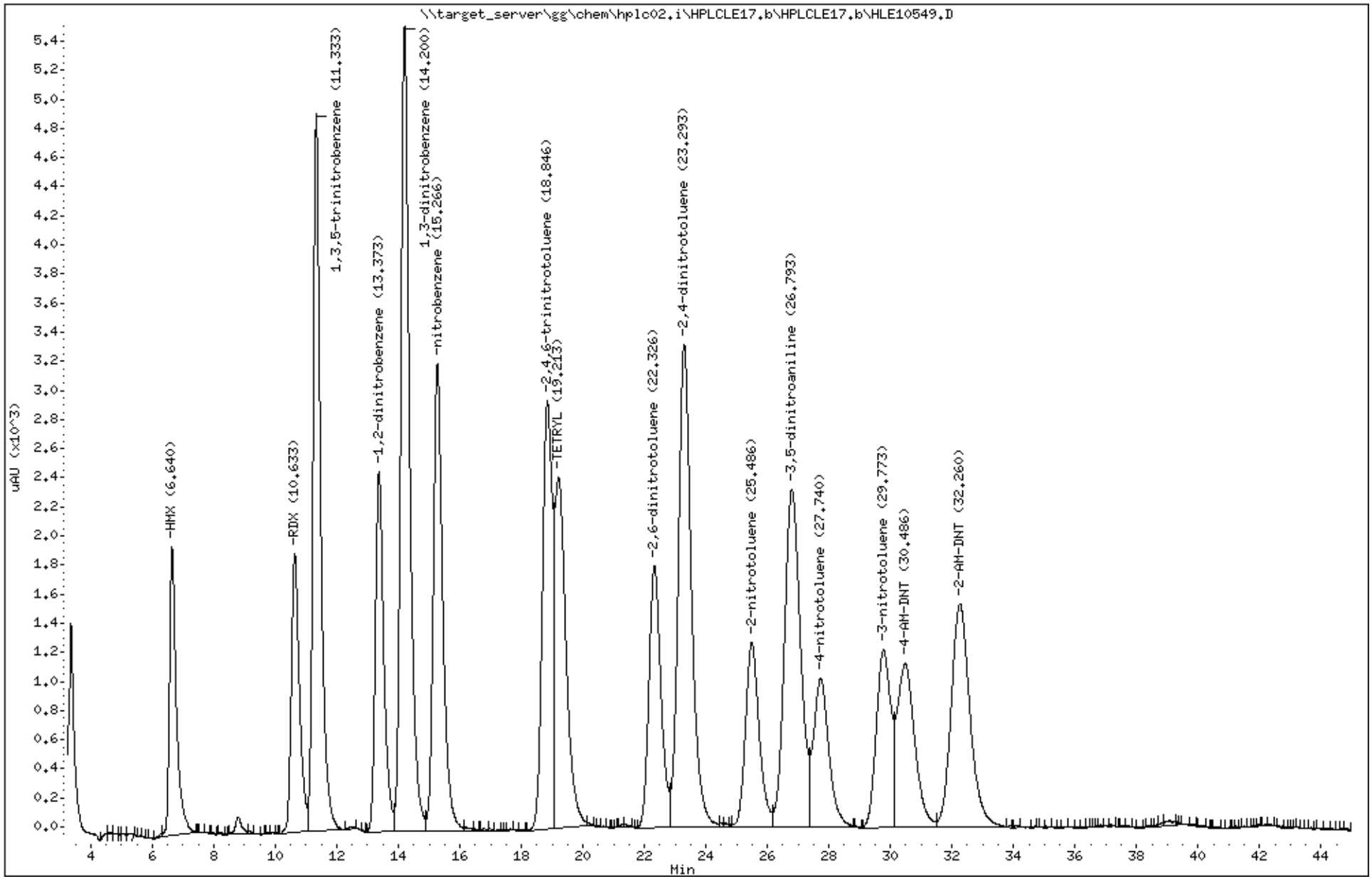
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE17.b\HPLCLE17.b\HLE10549.D
Lab Smp Id: WG227995-20
Inj Date : 17-MAY-2018 15:43
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227995-20,SL3841
Misc Info : WG227995,WG227925,WG210620-13,SL3841-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE17.b\E2016A.m\E2016A.m
Meth Date : 22-May-2018 06:50 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33   Cal File: HKH10014.D
Als bottle: 68   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.10000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.639	6.639	0.000	1982	0.25000	0.468	
4	RDX	10.633	10.633	0.000	1913	0.25000	0.472	
5	1,3,5-trinitrobenzene	11.333	11.333	0.000	4926	0.25000	0.474	
$ 2	1,2-dinitrobenzene	13.373	13.373	0.000	2475	0.25000	0.466	
6	1,3-dinitrobenzene	14.199	14.199	0.000	5528	0.25000	0.475	
7	nitrobenzene	15.266	15.266	0.000	3206	0.25000	0.480	
10	2,4,6-trinitrotoluene	18.846	18.846	0.000	2945	0.25000	0.472	
9	TETRYL	19.213	19.213	0.000	2404	0.25000	0.505	
13	2,6-dinitrotoluene	22.326	22.326	0.000	1793	0.25000	0.475	
14	2,4-dinitrotoluene	23.293	23.293	0.000	3314	0.25000	0.476	
15	2-nitrotoluene	25.486	25.486	0.000	1267	0.25000	0.478	
52	3,5-dinitroaniline	26.793	26.793	0.000	2323	0.25000	0.531	
16	4-nitrotoluene	27.739	27.739	0.000	1020	0.25000	0.502	
17	3-nitrotoluene	29.773	29.773	0.000	1219	0.25000	0.465	
11	4-AM-DNT	30.486	30.486	0.000	1124	0.25000	0.463	
12	2-AM-DNT	32.259	32.259	0.000	1535	0.25000	0.478	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE17.b\HPLCLE17.b\HLE10549.D
Date : 17-MAY-2018 15:43
Client ID:
Instrument: hplc02.i
Sample Info: WG227995-20,SL3841
Purge Volume: 1.0
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000138

Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3841
Lab ID : WG227995-21
Analytical Date: 05/18/18 00:43
Lab File ID : HLE10560.D
Instrument ID: HPLC02
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	0.25000	0.22762	3892	0.010	-8.95044	20.00000	Linear
4	RDX	0.25000	0.22889	3692	0.010	-8.44551	20.00000	Linear
5	1,3,5-trinitrobenzene	0.25000	0.23115	9620	0.010	-7.53936	20.00000	Linear
6	1,3-dinitrobenzene	0.25000	0.22989	10752	0.010	-8.04226	20.00000	Linear
7	nitrobenzene	0.25000	0.23073	6188	0.010	-7.70963	20.00000	Linear
9	TETRYL	0.25000	0.22872	4476	0.010	-8.51235	20.00000	Linear
10	2,4,6-trinitrotoluene	0.25000	0.22454	5676	0.010	-10.18211	20.00000	Linear
11	4-AM-DNT	0.25000	0.21910	2204	0.010	-12.36126	20.00000	Linear
12	2-AM-DNT	0.25000	0.22715	2972	0.010	-9.14062	20.00000	Linear
13	2,6-dinitrotoluene	0.25000	0.22895	3480	0.010	-8.42002	20.00000	Linear
14	2,4-dinitrotoluene	0.25000	0.22884	6432	0.010	-8.46520	20.00000	Linear
15	2-nitrotoluene	0.25000	0.22676	2428	0.010	-9.29554	20.00000	Linear
16	4-nitrotoluene	0.25000	0.24692	2092	0.010	-1.23210	20.00000	Linear
17	3-nitrotoluene	0.25000	0.21817	2344	0.010	-12.73131	20.00000	Linear
2	1,2-dinitrobenzene	0.25000	0.22738	4856	0.010	-9.04858	20.00000	Linear

*** = Compound out of QC criteria**

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Data File: HLE10560.D
Report Date: 23-May-2018 10:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE17.b\HPLCLE17.b\HLE10560.D
Lab Smp Id: WG227995-21
Inj Date : 18-MAY-2018 00:43
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG227995-21,SL3841
Misc Info : WG227995,WG227925,WG210620-13,SL3841-2
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLE17.b\E2016A.m\E2016A.m
Meth Date : 22-May-2018 06:50 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33   Cal File: HKH10014.D
Als bottle: 79   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

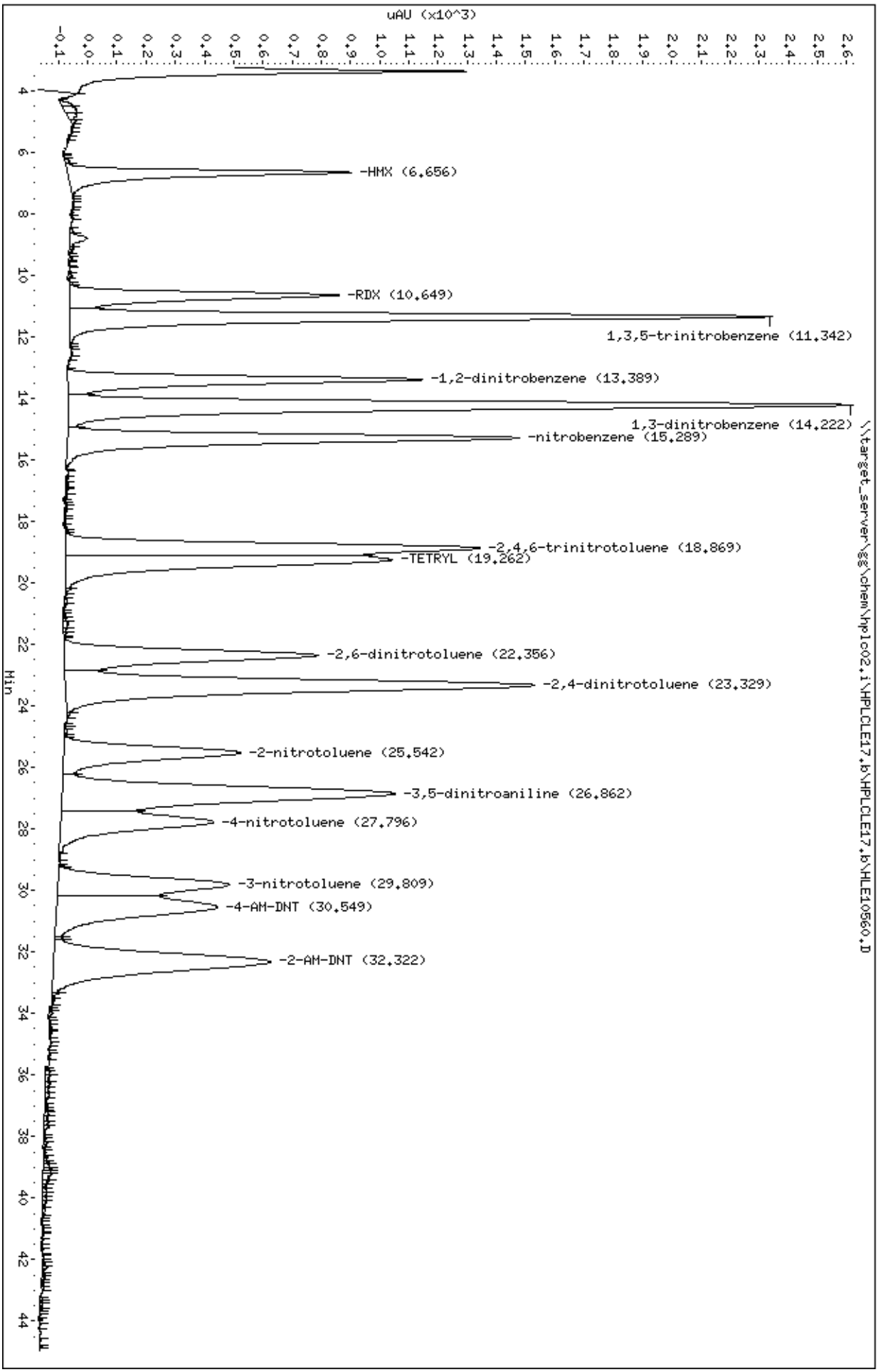
Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.10000	Final Volume (L)
Vo	1.000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.655	6.639	0.016	973	0.25000	0.228(a)	
4	RDX	10.649	10.633	0.016	923	0.25000	0.229(a)	
5	1,3,5-trinitrobenzene	11.342	11.333	0.009	2405	0.25000	0.231(a)	
$ 2	1,2-dinitrobenzene	13.389	13.373	0.016	1214	0.25000	0.227	
6	1,3-dinitrobenzene	14.222	14.199	0.023	2688	0.25000	0.230(a)	
7	nitrobenzene	15.289	15.266	0.023	1547	0.25000	0.231(a)	
10	2,4,6-trinitrotoluene	18.869	18.846	0.023	1419	0.25000	0.224(a)	
9	TETRYL	19.262	19.213	0.049	1119	0.25000	0.229(a)	
13	2,6-dinitrotoluene	22.355	22.326	0.029	870	0.25000	0.229(a)	
14	2,4-dinitrotoluene	23.329	23.293	0.036	1608	0.25000	0.229(a)	
15	2-nitrotoluene	25.542	25.486	0.056	607	0.25000	0.227(a)	
52	3,5-dinitroaniline	26.862	26.793	0.069	1138	0.25000	0.257	
16	4-nitrotoluene	27.795	27.739	0.056	523	0.25000	0.247(a)	
17	3-nitrotoluene	29.809	29.773	0.036	586	0.25000	0.218(a)	
11	4-AM-DNT	30.549	30.486	0.063	551	0.25000	0.219(a)	
12	2-AM-DNT	32.322	32.259	0.063	743	0.25000	0.227(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).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Date : 18-MAY-2018 00:43
Client ID:
Sample Info: WG227995-21,SL3841
Purge Volume: 1.0
Column phase: Acclaim Exp E2
Instrument: hplc02.i
Operator: AAB
Column diameter: 4.60
uAU (x10^3)
Min
-HMX (6.656)
-RDX (10.649)
1,3,5-trinitrobenzene (11.342)
-1,2-dinitrobenzene (13.389)
1,3-dinitrobenzene (14.222)
-nitrobenzene (15.289)
-2,4,6-trinitrotoluene (18.869)
-TETRYL (19.262)
-2,6-dinitrotoluene (22.356)
-2,4-dinitrotoluene (23.329)
-2-nitrotoluene (25.542)
-3,5-dinitroaniline (26.862)
-4-nitrotoluene (27.796)
-3-nitrotoluene (29.809)
-4-AM-DNT (30.549)
-2-AM-DNT (32.322)
\\target_server\gg\chem\hplc02.i\HPLCLE17.b\HPLCLE17.b\HLE10560.D

Raw QC Data Section

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227925-1
Client ID: Method Blank Sample
Project:
SDG: SL3841
Lab File ID: HLE10282.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		90.7	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10282.D
Report Date: 23-May-2018 09:56

Katahdin Analytical Services

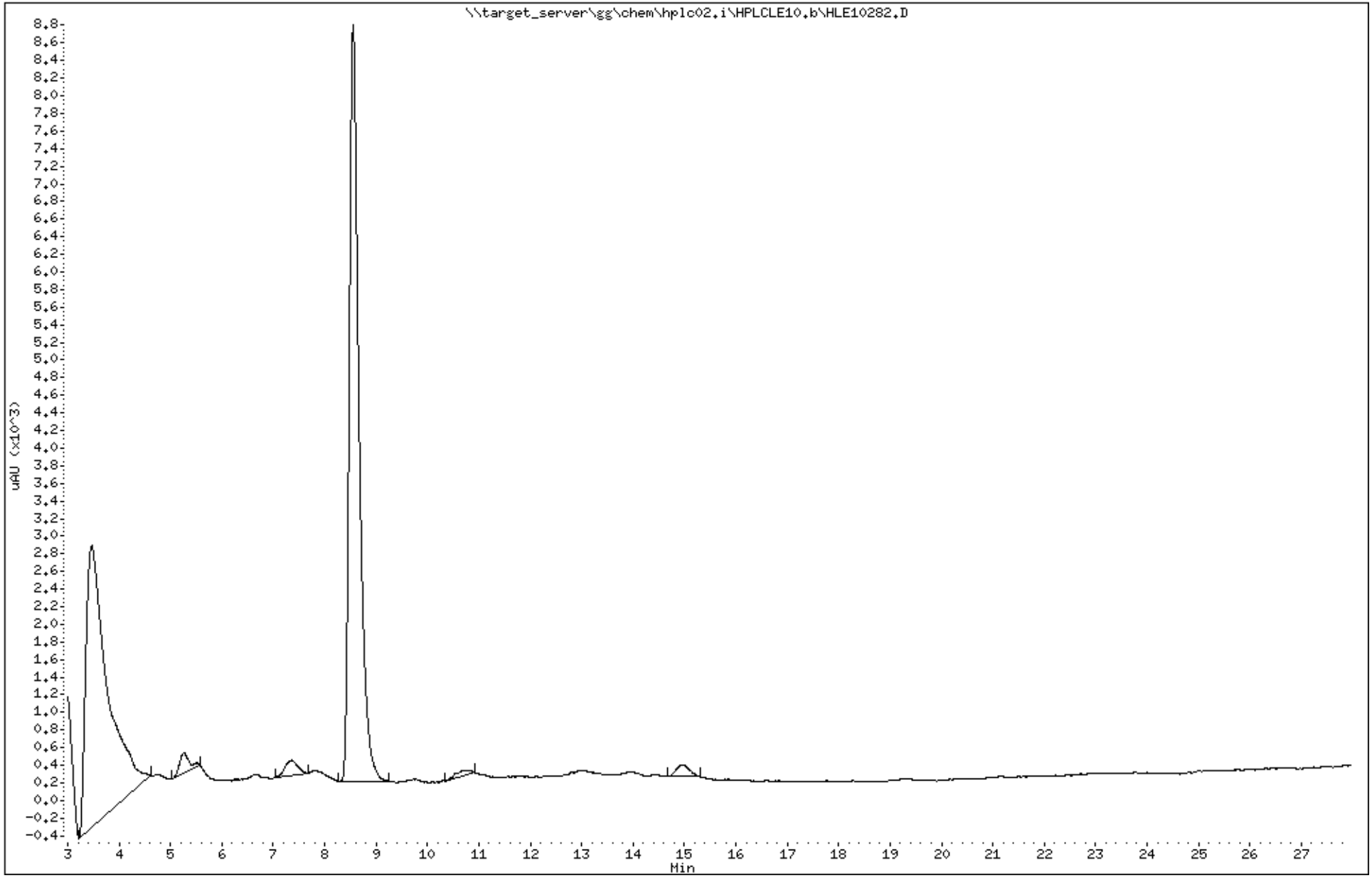
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10282.D
Lab Smp Id: WG227925-1 Client Smp ID: WG227925-Blank
Inj Date : 10-MAY-2018 08:08
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227925-1,SL3841
Misc Info : WG227995,WG227925,WG225143-5,SL3841-2
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 1 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10282.D
Date : 10-MAY-2018 08:08
Client ID: WG227925-Blank
Instrument: hplc02.i
Sample Info: WG227925-1,SL3841
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000145

Data File: HLE10282.D
Report Date: 23-May-2018 09:59

Katahdin Analytical Services

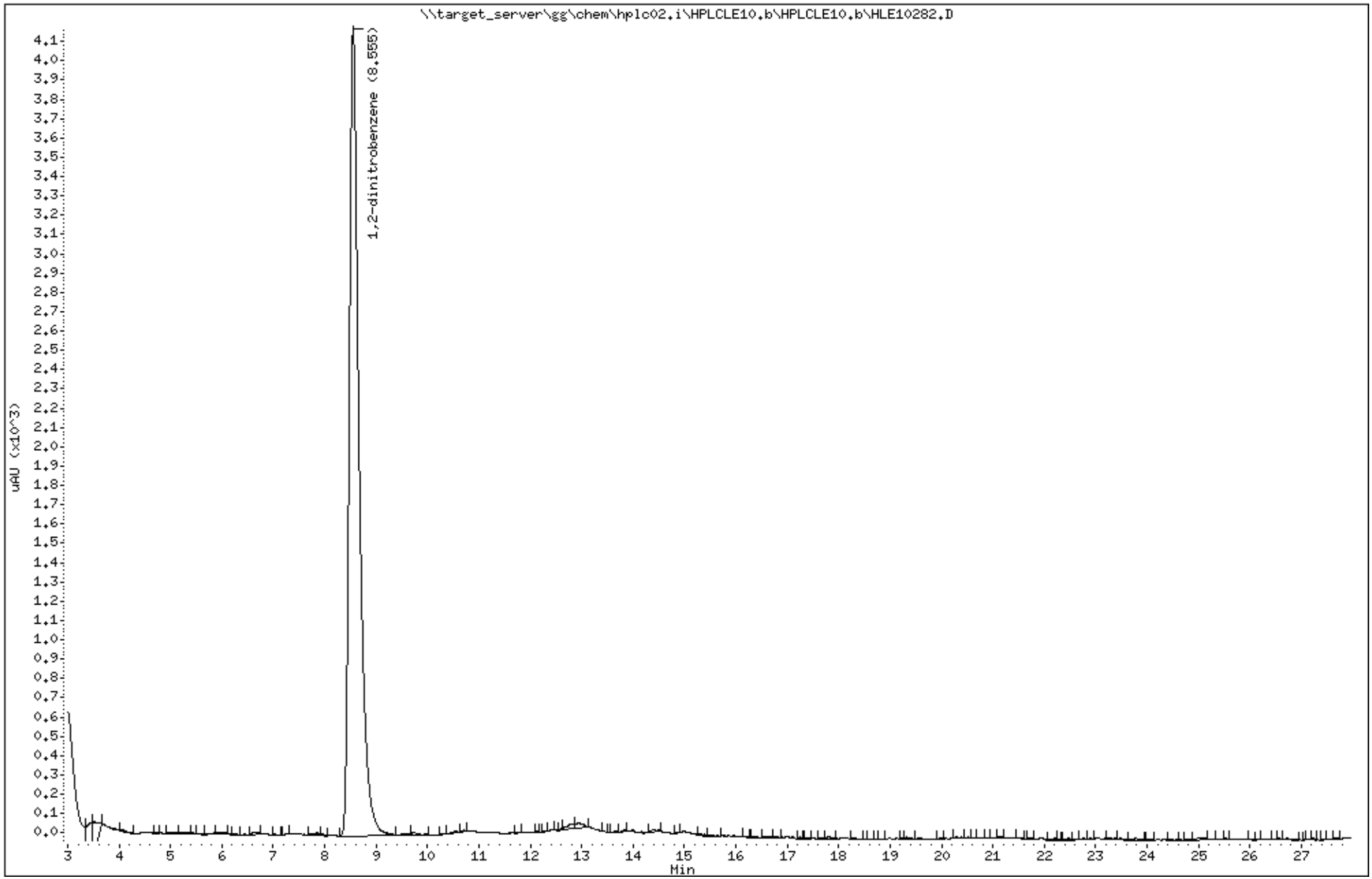
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10282.D
Lab Smp Id: WG227925-1 Client Smp ID: WG227925-Blank
Inj Date : 10-MAY-2018 08:08
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227925-1,SL3841
Misc Info : WG227995,WG227925,WG225143-5,SL3841-2
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 1 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.554	8.540	0.014	4198	0.90720	9.07	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10282.D
Date : 10-MAY-2018 08:08
Client ID: WG227925-Blank
Instrument: hplc02.i
Sample Info: WG227925-1,SL3841
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000147

Data File: HLE10556.D
Report Date: 23-May-2018 10:04

Katahdin Analytical Services

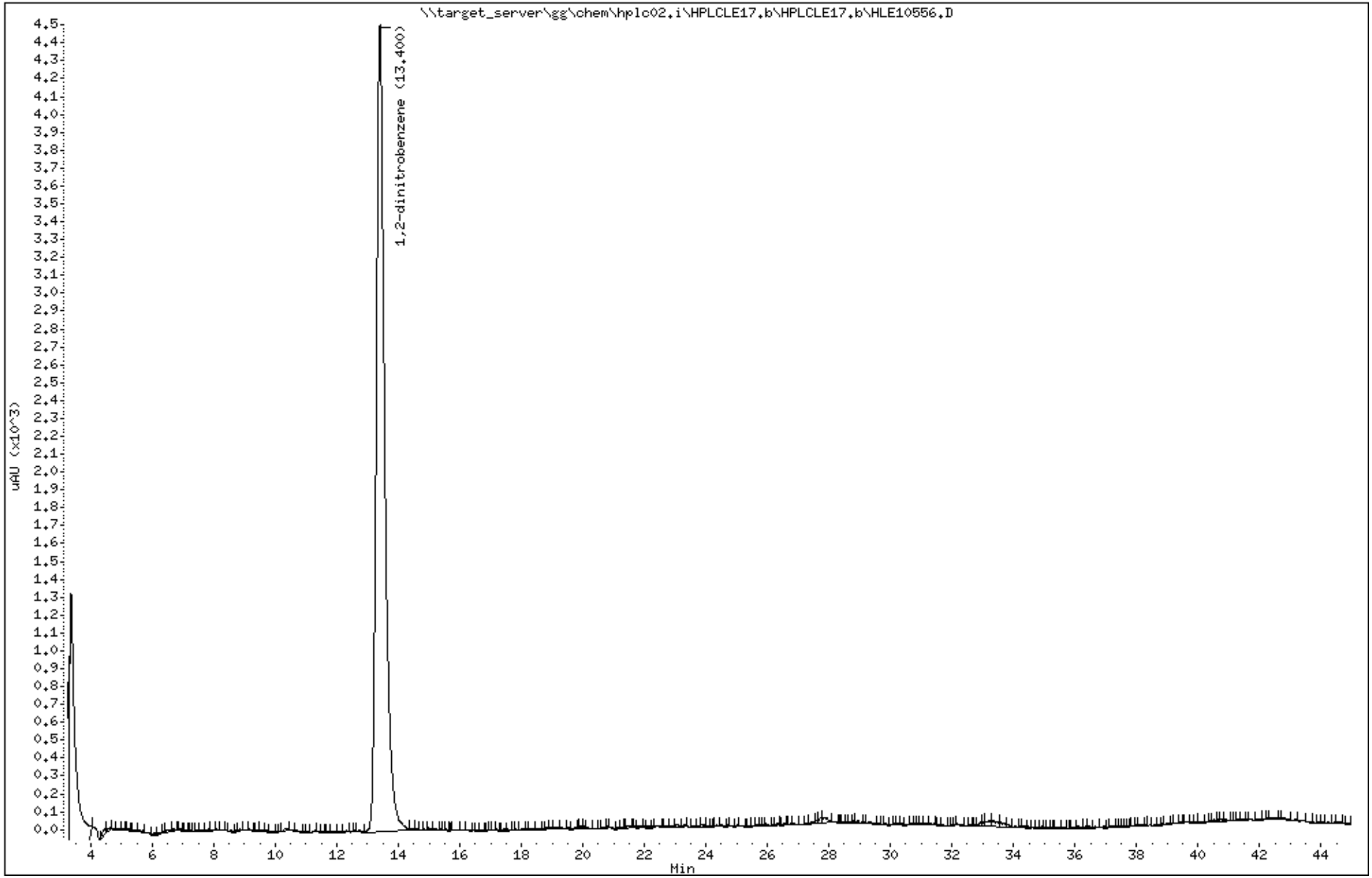
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE17.b\HPLCLE17.b\HLE10556.D
Lab Smp Id: WG227925-1C Client Smp ID: WG227925-Blank
Inj Date : 17-MAY-2018 21:27
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227925-1C,SL3841
Misc Info : WG227995,WG227925,WG210620-13,SL3841-2
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE17.b\E2016A.m\E2016A.m
Meth Date : 22-May-2018 06:50 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 75 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	13.400	13.373	0.027	4513	0.85143	8.51	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE17.b\HPLCLE17.b\HLE10556.D
Date : 17-MAY-2018 21:27
Client ID: WG227925-Blank
Instrument: hplc02.i
Sample Info: WG227925-1C,SL3841
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 3000149

Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227925-2
Client ID: LCS
Project:
SDG: SL3841
LCS File ID: HLE10283.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
HMX	101.	5.00	5.04	ug/L	65-135
RDX	103.	5.00	5.16	ug/L	68-130
1,3,5-Trinitrobenzene	106.	5.00	5.29	ug/L	73-125
1,3-Dinitrobenzene	105.	5.00	5.24	ug/L	78-120
Tetryl	122.	5.00	6.11	ug/L	64-128
Nitrobenzene	98.8	5.00	4.94	ug/L	65-134
2,4,6-Trinitrotoluene	109.	5.00	5.44	ug/L	71-123
4-Am-DNT	111.	5.00	5.53	ug/L	76-125
2-Am-DNT	106.	5.00	5.29	ug/L	79-120
2,6-Dinitrotoluene	101.	5.00	5.06	ug/L	77-127
2,4-Dinitrotoluene	107.	5.00	5.33	ug/L	78-120
2-Nitrotoluene	105.	5.00	5.24	ug/L	70-127
4-Nitrotoluene	107.	5.00	5.35	ug/L	71-127
3-Nitrotoluene	102.	5.00	5.09	ug/L	73-125
Nitroglycerin	98.5	20.0	19.7	ug/L	74-127
PETN	96.5	20.0	19.3	ug/L	73-127
1,2-Dinitrobenzene	94.5				83-120

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10283.D
Report Date: 23-May-2018 09:56

Katahdin Analytical Services

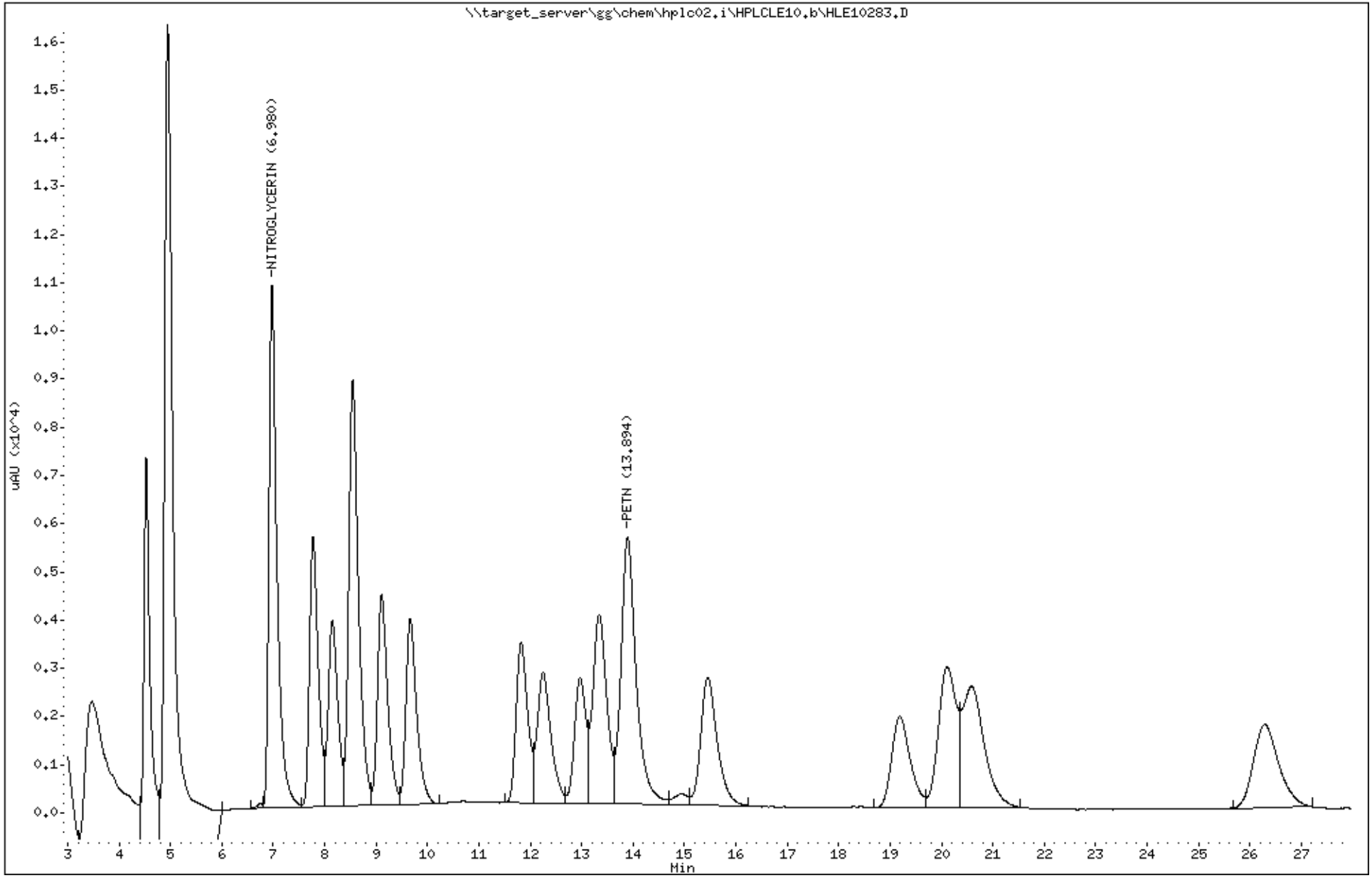
Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10283.D
Lab Smp Id: WG227925-2 Client Smp ID: WG227925-LCS
Inj Date : 10-MAY-2018 08:39
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227925-2,SL3841
Misc Info : WG227995,WG227925,WG225143-5,SL3841-2
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m
Meth Date : 15-May-2018 14:39 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 2 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)
8 NITROGLYCERIN	6.980	6.974	0.006	10845	1.96710	19.7
18 PETN	13.893	13.894	-0.001	5543	1.92744	19.3

Data File: \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HLE10283.D
Date : 10-MAY-2018 08:39
Client ID: WG227925-LCS
Instrument: hplc02.i
Sample Info: WG227925-2,SL3841
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 3000152

Data File: HLE10283.D
Report Date: 23-May-2018 09:59

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\HPLCLE10.b\HLE10283.D
Lab Smp Id: WG227925-2 Client Smp ID: WG227925-LCS
Inj Date : 10-MAY-2018 08:39
Operator : AAB Inst ID: hplc02.i
Smp Info : WG227925-2,SL3841
Misc Info : WG227995,WG227925,WG225143-5,SL3841-2
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLE10.b\EXPB05A.m\EXPB05A.m
Meth Date : 15-May-2018 14:26 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 2 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

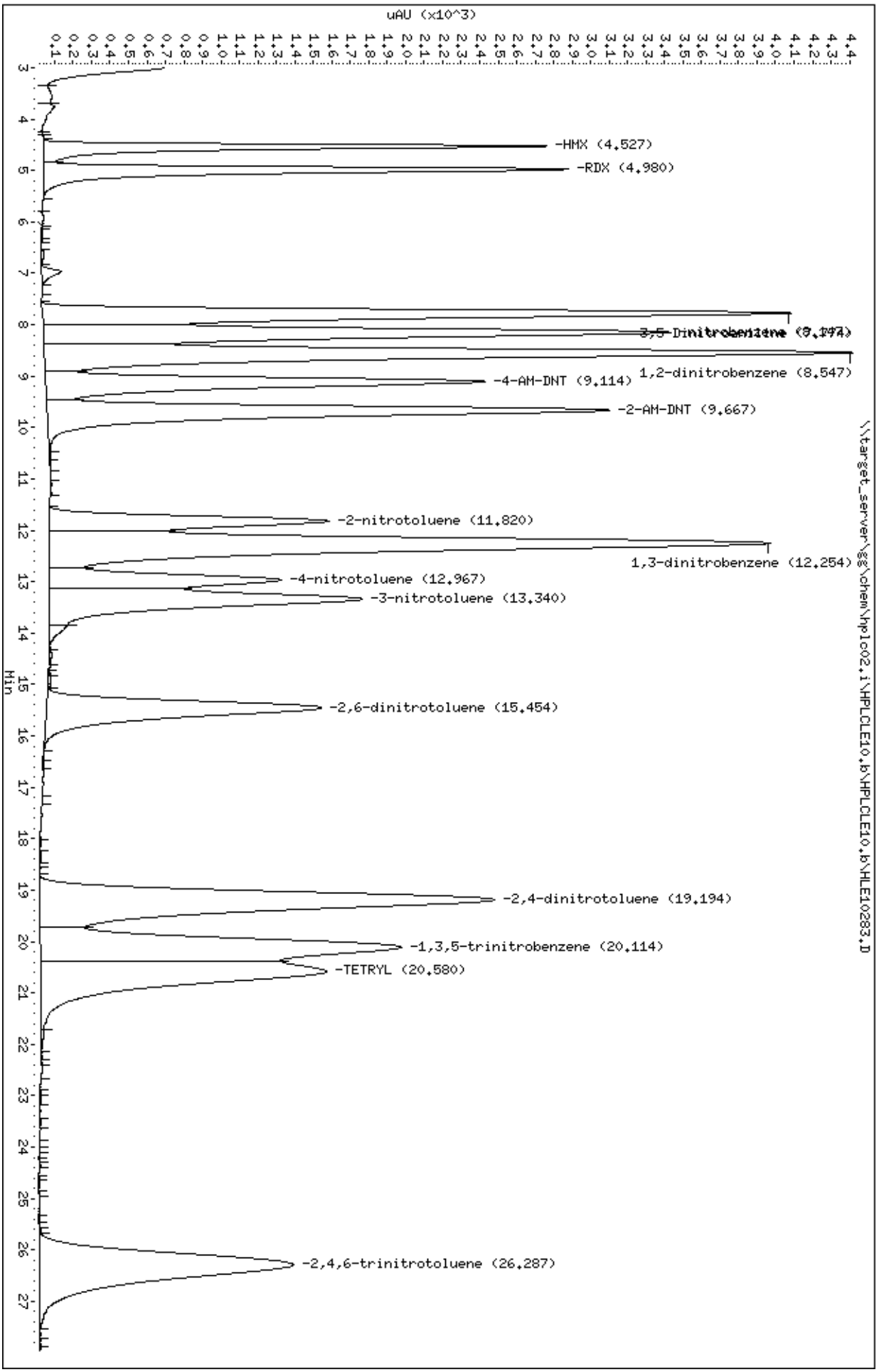
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
1	HMX	4.527	4.527	0.000	2718	0.50421	5.04(M)	M2
4	RDX	4.980	4.974	0.006	2835	0.51652	5.16(M)	M2
51	3,5-Dinitroaniline	7.773	7.774	-0.001	4053	0.48736	4.87	
7	nitrobenzene	8.147	8.147	0.000	3396	0.49456	4.94	
$ 2	1,2-dinitrobenzene	8.547	8.540	0.007	4373	0.94502	9.45	
11	4-AM-DNT	9.113	9.107	0.006	2378	0.55267	5.53	
12	2-AM-DNT	9.667	9.667	0.000	3046	0.52875	5.29	
15	2-nitrotoluene	11.820	11.820	0.000	1515	0.52430	5.24	
6	1,3-dinitrobenzene	12.253	12.254	-0.001	3902	0.52420	5.24	
16	4-nitrotoluene	12.967	12.967	0.000	1254	0.53534	5.35	
17	3-nitrotoluene	13.340	13.334	0.006	1692	0.50877	5.09(M)	M3
13	2,6-dinitrotoluene	15.453	15.454	-0.001	1489	0.50631	5.06	
14	2,4-dinitrotoluene	19.193	19.194	-0.001	2463	0.53329	5.33	
5	1,3,5-trinitrobenzene	20.113	20.120	-0.007	1952	0.52916	5.29	
9	TETRYL	20.580	20.580	0.000	1549	0.61115	6.11	
10	2,4,6-trinitrotoluene	26.287	26.300	-0.013	1375	0.54426	5.44	

AAB
10:28 am, May 23, 2018

QC Flag Legend

M - Compound response manually integrated.


Data File: \\target_server\gg\chem\hplc02,i\HPLCLE10,b\HPLCLE10,b\HLE10283,D
Date : 10-MAY-2018 08:39
Client ID: WG227925-LCS
Sample Info: WG227925-2,SL3841
Purge Volume: 0.5
Column phase: Acclaim Exp E1
Instrument: hplc02,i
Operator: AAB
Column diameter: 4.60
uAU (x10^3)
Min
-HMX (4.527)
-RDX (4.980)
3,5-Dinitrobenzene (9.174)
1,2-dinitrobenzene (8.547)
-4-AM-DNT (9.114)
-2-AM-DNT (9.667)
-2-nitrotoluene (11.820)
1,3-dinitrobenzene (12.254)
-4-nitrotoluene (12.967)
-3-nitrotoluene (13.340)
-2,6-dinitrotoluene (15.454)
-2,4-dinitrotoluene (19.194)
-1,3,5-trinitrobenzene (20.114)
-TETRYL (20.580)
-2,4,6-trinitrotoluene (26.287)
\\target_server\gg\chem\hplc02,i\HPLCLE10,b\HPLCLE10,b\HLE10283,D

Logbooks and Supporting Documents

KATAHDIN ANALYTICAL SERVICES
ORGANIC EXTRACTIONS LOGBOOK - AQUEOUS EXPLOSIVES
METHOD: SW846 8330 B Mod.

Surrogate Lot # P9096
Spike Lot # P9095
Acetonitrile (ACN) Lot # DG 6095
Cartidrge Lot # 1102-019,

Other Lot # NO : STK 5436
Other Lot # PETW : 5438
EDGN: 5437
Extraction Start Time: 12:20
Extraction Finish Time: 14:40

Extract Date	Extract Time	Analyst	Sample ID	Bottle ID.	Initial Vol. (500 mL)	Surr.: Add 500 uL of 10 ug/mL Add to all samples	SPIKE: Add 25 uL of 100 ug/mL to MS/D & LCS/D	Elute 15 mL ACN (at gravity flow rate) thru cartridge and discard	Elute 30 mL water thru cartridge and discard	Elute sample through cartridge and discard	Elute 5 mL ACN through cartridge and collect	Add 10 mL water to ACN extract	Store sample in labeled vial	EXP 238 Tray Location	Comments
5/9/18	12:20	JMS	WG2279251	Z	✓	✓	NR	✓	✓	✓	✓	✓	✓	C9	R472856
			-2				✓							10	
			-3	Q										11	MS SL3902-12
			-4	Q										12	MSD

QAEX339

0000074

HP-001 - Revision 1 - 02/11/2010

Extract Date	Extract Time	Analyst	Sample ID	Bottle ID.	Initial Vol. (500 mL)	Surr.: Add 500 uL of 10 ug/mL Add to all samples	SPIKE: Add 25 uL of 100 ug/mL to MS/D & LCS/D	Elute 15 mL ACN (at gravity flow rate) thru cartridge and discard	Elute 30 mL water thru cartridge and discard	Elute sample through cartridge and discard	Elute 5 mL ACN through cartridge and collect	Add 10 mL water to ACN extract	Store sample in labeled amber vial	EXP 238 Tray Location	Comments
5/9/18	12:20	JMS	SL3841-2	F	✓	✓	NR	✓	✓	✓	✓	✓	✓	D1	
			-4	F										2	
			-6	F										3	
			-8	H										4	
			-10	G										5	
			-12	G										6	
	14:15		-14	H										7	
			-16	G										8	
			-18	H										9	
			-20	I										10	
			SL3902-2	G										11	
			-4	H										12	
			-6	~~H~~ G										E1	
			-8	~~I~~ F										2	
			-10	~~G~~ I										3	
			-12	~~H~~ S										4	MS/D
			-14	F										5	

QAEX339

0000073

HP-001 - Revision 1 - 02/11/2010

Katahdin Analytical Services

HPLC Runlog
Instrument: HPLC02

Method (circle): ~~8330B MOD.~~ ~~8330B~~

Column: PHENOMENEX	Injection Volume: 100µL	Standard	Standard ID
Flow Rate: 1.0mL/min	Methanol lot #: DA788	C5	P8846
Detector Wavelengths: 210nm/254nm		C4	P8847

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
073117	AAB	HKH10216	IND -8	Y	WG210620 (10 ANS 080217)	EXP803A	
080117	AAB	HKH10001	C5 -17	Y		EXP803A	
		002	WG210205-1	Y			
		003	↓ -2				
		004	SK6535-1				
		005	↓ -2				
		006	C4 -18	Y			
CHANGE TO ACCLAIM E2 COLUMN							
080117	AAB	HKH10007	PRIME	N	WG210620 (10 ANS 080217)	E2016A	
		008	C7 -15	Y			P8844
		009	C6 -14				C7 150→300
		010	C5 -13				
		011	C4 -12				
		012	C3 -11				C5 60→300
		013	C2 -10				C4 60→300
		014	C1 -9				C4 30→300
		015	IND	N			P8845
		016	IND -16	Y			TET 4AM 3NT ↑
		017	WG210205-1C	Y			
		018	SK6535-1C				
		019	↓ -2C				
		020	C5	N			WRONG VIAL
080217		021	C5 -19	Y			
CHANGE TO PHENOMENEX COLUMN							
080317	AAB	HKH10022	C5	Y	WG210944-1	EXP803A	
		023	WG210421-1	Y	WG210944		
		024	↓ -2				
		025	↓ -3				

Reviewed by/Date: _____

Katahdin Analytical Services

HPLC Runlog
Instrument: HPLC02

Method (circle): ~~8330B MOD.~~ 8330B

Column: PHENOMENEX	Injection Volume: 100uL	Standard	Standard ID
Flow Rate: 1.0 mL/MIN	Methanol lot #: DS202	C5	P9009
Detector Wavelengths: 210nm / 254 nm		C4	P9010

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
031618	AC	HLC10023	COMBO	N		CANNAB1	CANN TESTING
CHANGE TO PHENOMENEX COLUMN							
032018	AC	HLC10024	C5	Y		EXP80SA	
		025	WG225027-1	N			
		026	-2				
		027	-5				
		028	-3				
		029	-4				
		030	IND	N	WG225143	EXP80SA	
		031	C7 -7	Y			P9008
		032	C6 -6				↓ 150→300
		033	C5 -5				P9009
		034	C4 -4				P9010
		035	C3 -3				P9009 100→500
		036	C2 -2				↓ 50→500
		037	C1 -1				P9010 50→500
		038	IND -8				P9071
		039	WG225027-1	Y			
		040	-2				
		041	-5				
		042	-3				
		043	-4				SS DOUBLE SPIKE
		044	WG225094-1	Y			
		045	-2				
		046	SL2079-14	Y			R,d
		047	SL2135-20	Y			
		048	SL2295-1	Y			PETN SS ROUNDS IN
032118		049	C5 -9	Y			

Reviewed by/Date: _____

HP-003 - Revision 2 - 09/01/2016

Katahdin Analytical Services

HPLC Runlog
Instrument: HPLC02

Method (circle): ~~8330B MOD.~~ 8330B

Column: ACCLAIM EZ	Injection Volume: 150uL	Standard	Standard ID
Flow Rate: 1.0mL/min	Methanol lot #: DS243	C5	PS101
Detector Wavelengths: 210 nm / 254 nm		C4	PS102

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
050918	AAB	HLE10272	SL3453-16C	Y	WG227584	EZ016A	H R TNT 4ADN 2AM
		273	-17C				H R TNT 4ADN 2AM
		274	C4 -33	Y			
		275	SL3453-18C	Y			H R TNT 4ADN 2AM
051018		276	-19C				H R TNT 4ADN 2AM
		277	-20C				H R TNT 4ADN 2AM
		278	-21C				H R TNT 4ADN 2AM
		279	C5 -34	Y			
CHANGE TO PHENOMENEX COLUMN							
051018	MB	HLE10280	PRIME	N		EXP805A	
		281	C5 -35 -1	Y	WG227584 WG227995		
		282	WG227925-1	Y	WG227995 AMB WG227926 051518		
		283	-2				
		284	-3				
		285	-4				4NT ↑
		286	SL3808-10	Y	WG227584		
		287	-12				
		288	-14				NG ZAM
		289	-15				
		290	-17				
		291	SL3809-1	Y			ZAM
		292	C4 -36 -2	Y	WG227584 WG227995		
		293	SL3841-2	Y	WG227995		
		294	-4				
		295	-6				
		296	-8				
		297	-10				
		298	-12				

Reviewed by/Date: _____

Katahdin Analytical Services

HPLC Runlog
Instrument: HPLC02

Method (circle): 8330B MOD. / 8330B

Column: PHENOMENEX	Injection Volume: 100uL	Standard	Standard ID
Flow Rate: 1.0mL/min	Methanol lot #: DS243	C5	P9101
Detector Wavelengths: 210nm / 254nm		C4	P9102

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
051018	MAB	HLE10299	SL3841-14	Y	WG227995	EXPB05A	R
		300	-16				
		301	-18				
		302	-20				NG
		303	C5 -3	Y			
		304	SL3902-2	Y			
		305	-4				
		306	-6				
		307	-8				
		308	-10				
		309	-12				
		310	-14				
	AC	311	C4 -40 -4	Y	WG227584 WG227995		
		312	WG228021-1	Y	WG227995		
051118		313	-2				
		314	SL3993-1	Y			NG
		315	-2				NG 2AM 3NT
		316	SL3995-15	Y			~~NG~~ MAB 052218 2T
		317	SL3452-23RA	Y	WG227584		H 2 4AM 2AM
		318	WG227928-1	Y	WG227995		
		319	-2				
		320	-3				
		321	-4				
		322	C5 -41 -5	Y	WG227584 WG227995		
		323	SL3952-2	Y	WG227995		
		324	-4				
		325	-6				
		326	-8				

Reviewed by/Date:

Katahdin Analytical Services

HPLC Runlog
Instrument: HPLC02

Method (circle): 8330B MOD. 8330B

Column: ACCLAIM E2	Injection Volume: 150 mL	Standard	Standard ID
Flow Rate: 1.0 mL/min	Methanol lot #: ~~DZ~~ DS 243 051817	c5	P9101
Detector Wavelengths: 210 nm / 254 nm		c4	P9102

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
051718	AC	HLE10549	C5 -42 -20	Y	WG227584 WG227995	E2016A	
		550	SL3708-22C	Y	WG227584		NONE
		551	SL3808-14C	Y			NONE
		552	SL3809-1C	Y			NONE
		553	WG228038-1C	Y	WG227995		
		554	SL3802-1C	Y			TNT 4AM 2AM TET
		555	-2C				TNT 4AM 2AM
		556	WG227925-1C	Y			
		557	SL3841-14C				NONE
		558	-20C				NONE
		559	WG227928-1C	Y			
051818		560	c4 -43 -21	Y	WG227584 WG227995		
		561	WG228021-1C	Y	WG227995		
		562	SL3993-1C	Y			NONE
		563	-2C				NONE
		564	SL3952-18C	Y			NONE
		565	SL3809-3C	Y			H
		566	-6C				H
		567	-7C				H
051818	AC	HLE10568	C5 -22	Y		E2016A	
		569	SL3809-9C	Y			NONE
		570	-10C				H R
		571	-11C				H
		572	-12C				NB
		573	-14C				H
		574	-17C				R
		575	-18C				H 4AM 2AM
		576	-21C				TNT 4AM 2AM

Reviewed by/Date: _____

METALS DATA

Sample Data Section

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	The pre-digestion spiked sample recovery is not within control limits.
*	The duplicate sample analysis relative percent difference (RPD) is not within control limits.
B	Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.
A	The post-digestion spiked sample recovery is not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL, "U" LOQ or "U" LOD, where the rate of false negatives is <1%.
J	Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).
Q	One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV).

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Katahdin Analytical Services

SDG Name: SL3841 **SOW No.** SW846

Client Field ID	Lab Sample ID
CHAAP-19C-LGIA-DPT116	SL3841-012
CHAAP-19C-LGIA-DPT116-FF	SL3841-013
CHAAP-19C-LGIA-DPT12	SL3841-016
CHAAP-19C-LGIA-DPT12-FF	SL3841-017
CHAAP-19C-LGIA-DPT16	SL3841-010
CHAAP-19C-LGIA-DPT16	SL3841-010P
CHAAP-19C-LGIA-DPT16	SL3841-010S
CHAAP-19C-LGIA-DPT16-FF	SL3841-011
CHAAP-19C-LGIA-DPT16-FF	SL3841-011P
CHAAP-19C-LGIA-DPT16-FF	SL3841-011S
CHAAP-19C-LGIA-DPT20	SL3841-004
CHAAP-19C-LGIA-DPT20-FF	SL3841-005
CHAAP-19C-LGIA-DPT24	SL3841-006
CHAAP-19C-UGIA-DPT11	SL3841-018
CHAAP-19C-UGIA-DPT11-FF	SL3841-019
CHAAP-19C-UGIA-DPT15	SL3841-014
CHAAP-19C-UGIA-DPT15-FF	SL3841-015
CHAAP-19C-UGIA-DPT19	SL3841-002
CHAAP-19C-UGIA-DPT19-FF	SL3841-003
CHAAP-19C-UGIA-DPT23	SL3841-008
CHAAP-19C-UGIA-DPT23-FF	SL3841-009
CHAAP-EB-050318	SL3841-020

Were ICP interelement corrections applied ?	Yes
Were ICP background corrections applied ?	Yes
If yes - were raw data generated before application of background corrections ?	No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Madison Dinsmore

Date: 5/16/18 Title: Analyst

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT19

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-002

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	7380			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.631	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	24.7			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	272			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.427	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.576	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	250000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	46.1			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	3.64			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	33.6			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	15100			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	27.8			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	41000			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1170			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.027	J		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	17.8			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	16400			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	2.81	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	200000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.099	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	20.8			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	83.8			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT19-FF

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-003

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	12	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.13	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	19			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	35.5			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	212000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	2.33	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.46	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	0.84	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	2990			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	37200			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	770			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	5.19			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	13700			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.1	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	189000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	1.1	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	15			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT20

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-004

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	14800			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.580	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	12			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	261			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.594	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.062	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	368000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	57.8			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	7.66			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	31.8			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	25000			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	23.9			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	74500			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1470			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	26.6			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	21300			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	2.26	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.057	J		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	300000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.22	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	38.0			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	170			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT20-FF

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-005

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	10	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.12	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	9.3			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	32.7			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	364000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	2.2	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.606	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.7	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	7560			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	72800			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1350			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	3.82			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	18000			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.5	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	322000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	0.87	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	26			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT24

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-006

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	3420			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.23	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	10			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	82.4			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.15	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	356000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	30.2			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	2.18			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	9.24			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	10400			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	6.09			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	68500			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1380			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	13.9			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	17400			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	2.58	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	302000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	9.28			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	46.9			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT23

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-008

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	34800			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.926	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	23.0			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	551			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	1.66			MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.325	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	228000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	135			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	17.8			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	52.6			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	44200			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	47.5			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	41300			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1100			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.032	J		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	61.2			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	21200			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	2.40	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.13	J		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	196000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.59	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	115			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	153			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT23-FF

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-009

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	12	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.11	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	13			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	33.2			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	182000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	1.9	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.31	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.0	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	2850			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	31000			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	595			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	1.1	J		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	13200			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.8	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	187000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	0.51	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	6.3	J		MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-010

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	2900			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.22	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	9.9			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	73.9			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.20	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.065	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	380000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	34.2			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	2.64			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	18.2			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	13600			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	7.07			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	89200			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1360			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U	A	CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	13.3			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	21300			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	1.95	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	365000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	9.96			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	76.4			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16-FF

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-011

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	9.8	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.081	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	8.3			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	30.8			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	377000		NA	MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	1.9	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.600	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.6	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	7920		A	MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	88800		NA	MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1300		A	MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	2.52			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	20700			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.2	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	353000		NA	MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	1.4	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	18			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT116

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-012

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	9400			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.32	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	11			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	188			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.396	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.058	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	399000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	50.8			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	4.78			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	21.0			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	19000			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	9.30			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	96100			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1440			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	19.2			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	24000			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	2.97	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	377000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.12	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	24.7			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	89.8			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT116-FF

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-013

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	10	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.087	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	8.4			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	32.6			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	380000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	1.9	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.619	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	2.63	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	7690			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	90800			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1290			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	1.86	J		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	20900			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.7	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	362000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	1.0	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	15			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT15

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-014

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	45900			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.54	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	38.8			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	598			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	2.55			MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.628	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	198000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	139			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	20.6			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	50.6			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	56300			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	38.3			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	41200			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	2460			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.021	J		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	82.0			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	28300			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	3.41	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.18	J		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	67200			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.771	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	110			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	183			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT15-FF

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-015

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	16	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.18	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	9.1			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	55.8			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	130000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	1.1	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.26	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.3	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	1600			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	24600			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	842			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	1.3	J		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	18400			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	2.14	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	67500			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	0.86	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	7.4	J		MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT12

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-016

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	3020			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.15	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	9.4			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	71.1			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.16	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	377000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	39.3			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	1.98			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	13.6			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	12400			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	6.24			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	94800			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1280			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	13.9			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	23300			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	2.37	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	378000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	9.82			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	58.2			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT12-FF

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-017

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	11	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.10	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	9.5			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	32.6			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	384000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	2.2	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.58	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	16.1			MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	7780			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.751	J		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	98100			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1260			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	2.21			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	23000			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.99	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	388000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	0.74	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	24			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT11

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-018

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	18400			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.798	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	37.4			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	430			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.907	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.716	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	351000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	71.7			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	21.8			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	37.6			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	31900			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	33.8			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	68300			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1980			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.039	J		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	41.7			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	25000			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	3.45	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.086	J		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	243000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.44	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	45.4			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	126			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-UGIA-DPT11-FF

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-019

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	12	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.098	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	21			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	66.6			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	318000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	1.4	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.59	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.6	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	4250			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	62500			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1400			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	1.3	J		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	20900			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.5	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	247000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	1.0	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	11			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-EB-050318

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-020

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	16	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.071	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	4.0	U		MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	1.0	U		MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	79	J		MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	1.2	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	0.30	U		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	0.72	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	37	J		MS	5	100	13	60
7439-92-1	LEAD, TOTAL	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	22	J		MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	0.53	J		MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	1.2	U		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	400	U		MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	0.49	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	78	J		MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	0.80	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	8.0	U		MS	5	10	3.9	8.0

Comments:

QC Summary Section

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: ICV

File: HLE07A May 07, 2018 12:13

Analyte	True	Found	%R (1)
MERCURY	6.0	5.74	95.7

SAMPLE: CCV

File: HLE07A May 07, 2018 12:19

Analyte	True	Found	%R (1)
MERCURY	5.0	4.84	96.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: HLE07A May 07, 2018 12:42

Analyte	True	Found	%R (1)
MERCURY	5.0	4.89	97.8

SAMPLE: CCV

File: HLE07A May 07, 2018 13:08

Analyte	True	Found	%R (1)
MERCURY	5.0	4.83	96.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: HLE07A May 07, 2018 13:34

Analyte	True	Found	%R (1)
MERCURY	5.0	4.78	95.6

SAMPLE: CCV

File: HLE07A May 07, 2018 14:01

Analyte	True	Found	%R (1)
MERCURY	5.0	4.67	93.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: HLE07A May 07, 2018 14:27

Analyte	True	Found	%R (1)
MERCURY	5.0	4.66	93.2

SAMPLE: CCV

File: HLE07A May 07, 2018 14:57

Analyte	True	Found	%R (1)
MERCURY	5.0	4.65	93.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: HLE07A May 07, 2018 15:26

Analyte	True	Found	%R (1)
MERCURY	5.0	4.61	92.2

SAMPLE: CCV

File: HLE07A May 07, 2018 15:52

Analyte	True	Found	%R (1)
MERCURY	5.0	4.59	91.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: HLE07A May 07, 2018 16:18

Analyte	True	Found	%R (1)
MERCURY	5.0	4.53	90.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: ICV

File: JLE14A May 14, 2018 15:20

Analyte	True	Found	%R (1)
ALUMINUM	400.0	412.60	103.2
ANTIMONY	20.0	19.92	99.6
BARIUM	20.0	19.88	99.4
CALCIUM	4000.0	3999.00	100.0
IRON	4000.0	3963.00	99.1
LEAD	20.0	19.34	96.7
MAGNESIUM	4000.0	4031.00	100.8
MOLYBDENUM	40.0	37.59	94.0
POTASSIUM	4000.0	3962.00	99.1
SODIUM	4000.0	4031.00	100.8
THALLIUM	20.0	19.76	98.8

SAMPLE: CCV

File: JLE14A May 14, 2018 16:00

Analyte	True	Found	%R (1)
ALUMINUM	500.0	507.10	101.4
ANTIMONY	25.0	25.82	103.3
BARIUM	25.0	25.39	101.6
CALCIUM	5000.0	5012.00	100.2
IRON	5000.0	4950.00	99.0
LEAD	25.0	24.55	98.2
MAGNESIUM	5000.0	5259.00	105.2
MOLYBDENUM	25.0	23.94	95.8
POTASSIUM	5000.0	4848.00	97.0
SODIUM	5000.0	5302.00	106.0
THALLIUM	25.0	24.42	97.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 14, 2018 16:45

Analyte	True	Found	%R (1)
ALUMINUM	500.0	503.30	100.7
ANTIMONY	25.0	24.99	100.0
BARIUM	25.0	24.76	99.0
CALCIUM	5000.0	4893.00	97.9
IRON	5000.0	4931.00	98.6
LEAD	25.0	24.44	97.8
MAGNESIUM	5000.0	5149.00	103.0
MOLYBDENUM	25.0	23.98	95.9
POTASSIUM	5000.0	4878.00	97.6
SODIUM	5000.0	5107.00	102.1
THALLIUM	25.0	24.57	98.3

SAMPLE: CCV

File: JLE14A May 14, 2018 17:32

Analyte	True	Found	%R (1)
ALUMINUM	500.0	506.00	101.2
ANTIMONY	25.0	25.34	101.4
BARIUM	25.0	25.80	103.2
CALCIUM	5000.0	4998.00	100.0
IRON	5000.0	5048.00	101.0
LEAD	25.0	24.62	98.5
MAGNESIUM	5000.0	5154.00	103.1
MOLYBDENUM	25.0	24.29	97.2
POTASSIUM	5000.0	4993.00	99.9
SODIUM	5000.0	5166.00	103.3
THALLIUM	25.0	24.62	98.5

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 14, 2018 18:20

Analyte	True	Found	%R (1)
ALUMINUM	500.0	494.30	98.9
ANTIMONY	25.0	25.61	102.4
BARIUM	25.0	25.53	102.1
CALCIUM	5000.0	4984.00	99.7
IRON	5000.0	4996.00	99.9
LEAD	25.0	24.71	98.8
MAGNESIUM	5000.0	5172.00	103.4
MOLYBDENUM	25.0	24.03	96.1
POTASSIUM	5000.0	4926.00	98.5
SODIUM	5000.0	5178.00	103.6
THALLIUM	25.0	24.63	98.5

SAMPLE: CCV

File: JLE14A May 14, 2018 19:09

Analyte	True	Found	%R (1)
ALUMINUM	500.0	510.50	102.1
ANTIMONY	25.0	25.50	102.0
BARIUM	25.0	25.50	102.0
CALCIUM	5000.0	5012.00	100.2
IRON	5000.0	4965.00	99.3
LEAD	25.0	24.89	99.6
MAGNESIUM	5000.0	5289.00	105.8
MOLYBDENUM	25.0	23.71	94.8
POTASSIUM	5000.0	4923.00	98.5
SODIUM	5000.0	5316.00	106.3
THALLIUM	25.0	24.93	99.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 14, 2018 19:59

Analyte	True	Found	%R (1)
ALUMINUM	500.0	454.70	90.9
ANTIMONY	25.0	24.19	96.8
BARIUM	25.0	24.39	97.6
CALCIUM	5000.0	5001.00	100.0
IRON	5000.0	5021.00	100.4
LEAD	25.0	24.89	99.6
MAGNESIUM	5000.0	4572.00	91.4
MOLYBDENUM	25.0	25.79	103.2
POTASSIUM	5000.0	4776.00	95.5
SODIUM	5000.0	4536.00	90.7
THALLIUM	25.0	24.49	98.0

SAMPLE: CCV

File: JLE14A May 14, 2018 20:49

Analyte	True	Found	%R (1)
ALUMINUM	500.0	462.60	92.5
ANTIMONY	25.0	23.87	95.5
BARIUM	25.0	24.17	96.7
CALCIUM	5000.0	5012.00	100.2
IRON	5000.0	4952.00	99.0
LEAD	25.0	25.06	100.2
MAGNESIUM	5000.0	4604.00	92.1
MOLYBDENUM	25.0	26.10	104.4
POTASSIUM	5000.0	4649.00	93.0
SODIUM	5000.0	4412.00	88.2•
THALLIUM	25.0	24.81	99.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 14, 2018 21:40

Analyte	True	Found	%R (1)
ALUMINUM	500.0	469.40	93.9
ANTIMONY	25.0	23.62	94.5
BARIUM	25.0	24.17	96.7
CALCIUM	5000.0	5035.00	100.7
IRON	5000.0	5023.00	100.5
LEAD	25.0	24.99	100.0
MAGNESIUM	5000.0	4663.00	93.3
MOLYBDENUM	25.0	25.76	103.0
POTASSIUM	5000.0	4803.00	96.1
SODIUM	5000.0	4447.00	88.9•
THALLIUM	25.0	24.53	98.1

SAMPLE: CCV

File: JLE14A May 14, 2018 22:31

Analyte	True	Found	%R (1)
ALUMINUM	500.0	455.90	91.2
ANTIMONY	25.0	23.84	95.4
BARIUM	25.0	24.07	96.3
CALCIUM	5000.0	5011.00	100.2
IRON	5000.0	4988.00	99.8
LEAD	25.0	24.49	98.0
MAGNESIUM	5000.0	4466.00	89.3•
MOLYBDENUM	25.0	25.80	103.2
POTASSIUM	5000.0	4736.00	94.7
SODIUM	5000.0	4250.00	85.0•
THALLIUM	25.0	24.29	97.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 14, 2018 23:21

Analyte	True	Found	%R (1)
ALUMINUM	500.0	468.60	93.7
ANTIMONY	25.0	23.94	95.8
BARIUM	25.0	24.18	96.7
CALCIUM	5000.0	4966.00	99.3
IRON	5000.0	4954.00	99.1
LEAD	25.0	24.47	97.9
MAGNESIUM	5000.0	4626.00	92.5
MOLYBDENUM	25.0	25.55	102.2
POTASSIUM	5000.0	4809.00	96.2
SODIUM	5000.0	4486.00	89.7
THALLIUM	25.0	24.14	96.6

SAMPLE: CCV

File: JLE14A May 15, 2018 0:12

Analyte	True	Found	%R (1)
ALUMINUM	500.0	474.10	94.8
ANTIMONY	25.0	24.05	96.2
BARIUM	25.0	24.32	97.3
CALCIUM	5000.0	5021.00	100.4
IRON	5000.0	5090.00	101.8
LEAD	25.0	24.79	99.2
MAGNESIUM	5000.0	4725.00	94.5
MOLYBDENUM	25.0	25.61	102.4
POTASSIUM	5000.0	4811.00	96.2
SODIUM	5000.0	4576.00	91.5
THALLIUM	25.0	24.40	97.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: JLE14A May 15, 2018 1:03

Analyte	True	Found	%R (1)
ALUMINUM	500.0	463.80	92.8
ANTIMONY	25.0	23.61	94.4
BARIUM	25.0	23.87	95.5
CALCIUM	5000.0	5034.00	100.7
IRON	5000.0	5023.00	100.5
LEAD	25.0	24.63	98.5
MAGNESIUM	5000.0	4707.00	94.1
MOLYBDENUM	25.0	25.70	102.8
POTASSIUM	5000.0	4821.00	96.4
SODIUM	5000.0	4599.00	92.0
THALLIUM	25.0	24.24	97.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: ICV

File: JLE15C May 15, 2018 18:44

Analyte	True	Found	%R (1)
ALUMINUM	400.0	400.10	100.0
ARSENIC	20.0	20.14	100.7
BERYLLIUM	20.0	20.02	100.1
CADMIUM	20.0	20.08	100.4
CALCIUM	4000.0	4046.00	101.2
CHROMIUM	20.0	19.51	97.5
COBALT	20.0	20.05	100.3
COPPER	20.0	19.96	99.8
IRON	4000.0	3993.00	99.8
MAGNESIUM	4000.0	3846.00	96.2
MANGANESE	20.0	19.59	98.0
MOLYBDENUM	40.0	38.80	97.0
NICKEL	20.0	20.07	100.4
POTASSIUM	4000.0	3913.00	97.8
SELENIUM	20.0	20.39	102.0
SILVER	20.0	19.93	99.6
SODIUM	4000.0	3902.00	97.5
VANADIUM	20.0	19.62	98.1
ZINC	20.0	20.48	102.4

SAMPLE: CCV

File: JLE15C May 15, 2018 19:29

Analyte	True	Found	%R (1)
ALUMINUM	500.0	490.70	98.1
ARSENIC	25.0	24.92	99.7
BERYLLIUM	25.0	25.37	101.5
CADMIUM	25.0	24.93	99.7
CALCIUM	5000.0	4941.00	98.8
CHROMIUM	25.0	24.81	99.2
COBALT	25.0	24.93	99.7
COPPER	25.0	24.93	99.7
IRON	5000.0	4942.00	98.8
MAGNESIUM	5000.0	4845.00	96.9
MANGANESE	25.0	24.52	98.1
MOLYBDENUM	25.0	24.72	98.9
NICKEL	25.0	24.56	98.2
POTASSIUM	5000.0	4833.00	96.7
SELENIUM	25.0	25.33	101.3
SILVER	25.0	24.80	99.2
SODIUM	5000.0	4828.00	96.6
VANADIUM	25.0	24.51	98.0
ZINC	25.0	24.60	98.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: JLE15C May 15, 2018 20:19

Analyte	True	Found	%R (1)
ALUMINUM	500.0	479.70	95.9
ARSENIC	25.0	24.72	98.9
BERYLLIUM	25.0	24.66	98.6
CADMIUM	25.0	24.98	99.9
CALCIUM	5000.0	4918.00	98.4
CHROMIUM	25.0	24.45	97.8
COBALT	25.0	24.49	98.0
COPPER	25.0	24.50	98.0
IRON	5000.0	4875.00	97.5
MAGNESIUM	5000.0	4686.00	93.7
MANGANESE	25.0	24.21	96.8
MOLYBDENUM	25.0	24.66	98.6
NICKEL	25.0	24.60	98.4
POTASSIUM	5000.0	4757.00	95.1
SELENIUM	25.0	25.41	101.6
SILVER	25.0	24.95	99.8
SODIUM	5000.0	4618.00	92.4
VANADIUM	25.0	24.04	96.2
ZINC	25.0	24.97	99.9

SAMPLE: CCV

File: JLE15C May 15, 2018 21:09

Analyte	True	Found	%R (1)
ALUMINUM	500.0	498.70	99.7
ARSENIC	25.0	24.61	98.4
BERYLLIUM	25.0	25.11	100.4
CADMIUM	25.0	24.53	98.1
CALCIUM	5000.0	4924.00	98.5
CHROMIUM	25.0	24.44	97.8
COBALT	25.0	24.20	96.8
COPPER	25.0	24.54	98.2
IRON	5000.0	4884.00	97.7
MAGNESIUM	5000.0	4897.00	97.9
MANGANESE	25.0	24.44	97.8
MOLYBDENUM	25.0	24.22	96.9
NICKEL	25.0	24.70	98.8
POTASSIUM	5000.0	4848.00	97.0
SELENIUM	25.0	25.19	100.8
SILVER	25.0	24.61	98.4
SODIUM	5000.0	4816.00	96.3
VANADIUM	25.0	24.16	96.6
ZINC	25.0	24.76	99.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: JLE15C May 15, 2018 21:59

Analyte	True	Found	%R (1)
ALUMINUM	500.0	494.30	98.9
ARSENIC	25.0	24.69	98.8
BERYLLIUM	25.0	24.84	99.4
CADMIUM	25.0	24.33	97.3
CALCIUM	5000.0	4870.00	97.4
CHROMIUM	25.0	24.43	97.7
COBALT	25.0	24.26	97.0
COPPER	25.0	24.18	96.7
IRON	5000.0	4840.00	96.8
MAGNESIUM	5000.0	4900.00	98.0
MANGANESE	25.0	24.20	96.8
MOLYBDENUM	25.0	24.17	96.7
NICKEL	25.0	24.47	97.9
POTASSIUM	5000.0	4812.00	96.2
SELENIUM	25.0	24.95	99.8
SILVER	25.0	24.49	98.0
SODIUM	5000.0	4835.00	96.7
VANADIUM	25.0	24.27	97.1
ZINC	25.0	24.60	98.4

SAMPLE: CCV

File: JLE15C May 15, 2018 22:49

Analyte	True	Found	%R (1)
ALUMINUM	500.0	488.70	97.7
ARSENIC	25.0	24.31	97.2
BERYLLIUM	25.0	24.94	99.8
CADMIUM	25.0	24.29	97.2
CALCIUM	5000.0	4898.00	98.0
CHROMIUM	25.0	24.50	98.0
COBALT	25.0	24.11	96.4
COPPER	25.0	24.27	97.1
IRON	5000.0	4806.00	96.1
MAGNESIUM	5000.0	4900.00	98.0
MANGANESE	25.0	24.05	96.2
MOLYBDENUM	25.0	23.96	95.8
NICKEL	25.0	24.46	97.8
POTASSIUM	5000.0	4846.00	96.9
SELENIUM	25.0	24.99	100.0
SILVER	25.0	24.21	96.8
SODIUM	5000.0	4891.00	97.8
VANADIUM	25.0	24.14	96.6
ZINC	25.0	24.40	97.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: JLE15C May 15, 2018 23:41

Analyte	True	Found	%R (1)
ALUMINUM	500.0	489.10	97.8
ARSENIC	25.0	24.31	97.2
BERYLLIUM	25.0	23.42	93.7
CADMIUM	25.0	24.21	96.8
CALCIUM	5000.0	4943.00	98.9
CHROMIUM	25.0	24.65	98.6
COBALT	25.0	24.31	97.2
COPPER	25.0	24.49	98.0
IRON	5000.0	4880.00	97.6
MAGNESIUM	5000.0	4819.00	96.4
MANGANESE	25.0	24.36	97.4
MOLYBDENUM	25.0	24.21	96.8
NICKEL	25.0	24.75	99.0
POTASSIUM	5000.0	4888.00	97.8
SELENIUM	25.0	24.83	99.3
SILVER	25.0	24.02	96.1
SODIUM	5000.0	4907.00	98.1
VANADIUM	25.0	24.85	99.4
ZINC	25.0	24.60	98.4

SAMPLE: CCV

File: JLE15C May 16, 2018 0:31

Analyte	True	Found	%R (1)
ALUMINUM	500.0	507.30	101.5
ARSENIC	25.0	24.39	97.6
BERYLLIUM	25.0	22.92	91.7
CADMIUM	25.0	23.73	94.9
CALCIUM	5000.0	4954.00	99.1
CHROMIUM	25.0	24.74	99.0
COBALT	25.0	24.32	97.3
COPPER	25.0	24.50	98.0
IRON	5000.0	4902.00	98.0
MAGNESIUM	5000.0	5096.00	101.9
MANGANESE	25.0	24.28	97.1
MOLYBDENUM	25.0	23.88	95.5
NICKEL	25.0	24.47	97.9
POTASSIUM	5000.0	4851.00	97.0
SELENIUM	25.0	24.55	98.2
SILVER	25.0	23.76	95.0
SODIUM	5000.0	5041.00	100.8
VANADIUM	25.0	24.42	97.7
ZINC	25.0	24.10	96.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCV

File: JLE15C May 16, 2018 1:21

Analyte	True	Found	%R (1)
ALUMINUM	500.0	514.70	102.9
ARSENIC	25.0	24.35	97.4
BERYLLIUM	25.0	24.72	98.9
CADMIUM	25.0	23.76	95.0
CALCIUM	5000.0	4967.00	99.3
CHROMIUM	25.0	24.73	98.9
COBALT	25.0	24.42	97.7
COPPER	25.0	24.61	98.4
IRON	5000.0	4926.00	98.5
MAGNESIUM	5000.0	5062.00	101.2
MANGANESE	25.0	24.50	98.0
MOLYBDENUM	25.0	24.03	96.1
NICKEL	25.0	24.57	98.3
POTASSIUM	5000.0	4771.00	95.4
SELENIUM	25.0	24.30	97.2
SILVER	25.0	24.08	96.3
SODIUM	5000.0	5009.00	100.2
VANADIUM	25.0	24.92	99.7
ZINC	25.0	24.43	97.7

SAMPLE: CCV

File: JLE15C May 16, 2018 2:12

Analyte	True	Found	%R (1)
ALUMINUM	500.0	501.90	100.4
ARSENIC	25.0	24.42	97.7
BERYLLIUM	25.0	23.98	95.9
CADMIUM	25.0	23.78	95.1
CALCIUM	5000.0	4857.00	97.1
CHROMIUM	25.0	24.65	98.6
COBALT	25.0	24.04	96.2
COPPER	25.0	24.15	96.6
IRON	5000.0	4865.00	97.3
MAGNESIUM	5000.0	4933.00	98.7
MANGANESE	25.0	24.25	97.0
MOLYBDENUM	25.0	23.75	95.0
NICKEL	25.0	24.44	97.8
POTASSIUM	5000.0	4833.00	96.7
SELENIUM	25.0	24.43	97.7
SILVER	25.0	23.86	95.4
SODIUM	5000.0	4936.00	98.7
VANADIUM	25.0	24.55	98.2
ZINC	25.0	24.39	97.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: PQL

File: HLE07A May 07, 2018 12:17

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.23	115.0

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: PQL

File: JLE14A May 14, 2018 15:26

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	20.37	101.8
ANTIMONY	0.2	0.22	110.0
BARIUM	0.4	0.42	105.0
CALCIUM	20.0	20.40	102.0
IRON	20.0	19.66	98.3
LEAD	0.2	0.22	110.0
MAGNESIUM	20.0	20.57	102.8
MOLYBDENUM	1.0	1.00	100.0
POTASSIUM	200.0	198.10	99.0
SODIUM	200.0	211.10	105.5
THALLIUM	0.2	0.22	110.0

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: PQL

File: JLE15C May 15, 2018 18:52

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	19.29	96.4
ARSENIC	1.0	0.99	99.0
BERYLLIUM	0.2	0.21	105.0
CADMIUM	0.2	0.20	100.0
CALCIUM	20.0	19.83	99.1
CHROMIUM	1.0	0.92	92.0
COBALT	0.2	0.19	95.0
COPPER	0.6	0.60	100.0
IRON	20.0	19.56	97.8
MAGNESIUM	20.0	19.19	96.0
MANGANESE	0.4	0.38	95.0
MOLYBDENUM	1.0	0.97	97.0
NICKEL	0.4	0.38	95.0
POTASSIUM	200.0	191.10	95.5
SELENIUM	1.0	1.16	116.0
SILVER	0.2	0.20	100.0
SODIUM	200.0	194.10	97.0
VANADIUM	1.0	1.03	103.0
ZINC	2.0	2.13	106.5

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: ICB

File: HLE07A May 07, 2018 12:15

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB

File: HLE07A May 07, 2018 12:21

Analyte	Result	C
MERCURY	0.027	J

SAMPLE: CCB

File: HLE07A May 07, 2018 12:44

Analyte	Result	C
MERCURY	0.025	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCB

File: HLE07A May 07, 2018 13:10

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB

File: HLE07A May 07, 2018 13:36

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB

File: HLE07A May 07, 2018 14:03

Analyte	Result	C
MERCURY	0.025	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCB
File: HLE07A May 07, 2018 14:29

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB
File: HLE07A May 07, 2018 14:59

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB
File: HLE07A May 07, 2018 15:28

Analyte	Result	C
MERCURY	0.025	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCB

File: HLE07A May 07, 2018 15:54

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB

File: HLE07A May 07, 2018 16:20

Analyte	Result	C
MERCURY	0.025	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: ICB

File: JLE14A May 14, 2018 15:23

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	-0.017	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.075	J
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.009	J

SAMPLE: CCB

File: JLE14A May 14, 2018 16:03

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.012	J
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	-0.039	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.066	J
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.008	U

SAMPLE: CCB

File: JLE14A May 14, 2018 16:49

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	J
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	-0.022	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.039	J
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.008	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCB
File: JLE14A May 14, 2018 17:36

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.007	J
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	-0.023	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.009	J

SAMPLE: CCB
File: JLE14A May 14, 2018 18:24

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	-0.022	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.008	U

SAMPLE: CCB
File: JLE14A May 14, 2018 19:13

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	J
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	0.116	B
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.008	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCB
File: JLE14A May 14, 2018 20:03

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.007	J
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	0.080	J
MAGNESIUM	1.300	U
MOLYBDENUM	0.039	J
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.008	U

SAMPLE: CCB
File: JLE14A May 14, 2018 20:53

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.010	J
BARIUM	0.075	U
CALCIUM	7.151	J
IRON	4.300	U
LEAD	0.094	J
MAGNESIUM	1.509	J
MOLYBDENUM	0.036	J
POTASSIUM	7.900	U
SODIUM	8.908	J
THALLIUM	0.008	U

SAMPLE: CCB
File: JLE14A May 14, 2018 21:44

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.008	J
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	0.082	J
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.008	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCB
File: JLE14A May 14, 2018 22:35

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.009	J
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	0.096	J
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.008	U

SAMPLE: CCB
File: JLE14A May 14, 2018 23:25

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.010	J
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	0.098	J
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.008	U

SAMPLE: CCB
File: JLE14A May 15, 2018 0:16

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	0.091	J
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.008	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCB

File: JLE14A May 15, 2018 1:07

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
BARIUM	0.075	U
CALCIUM	5.300	U
IRON	4.300	U
LEAD	0.091	J
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U
THALLIUM	0.008	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: ICB
File: JLE15C May 15, 2018 18:48

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.056	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.004	J
SODIUM	4.400	U
VANADIUM	0.110	J
ZINC	0.270	U

SAMPLE: CCB
File: JLE15C May 15, 2018 19:33

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.282	J
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.051	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	J
SODIUM	4.400	U
VANADIUM	0.067	J
ZINC	0.270	U

SAMPLE: CCB
File: JLE15C May 15, 2018 20:23

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.004	J
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCB
File: JLE15C May 15, 2018 21:13

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.041	J
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.937	J
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE15C May 15, 2018 22:03

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.042	J
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	J
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE15C May 15, 2018 22:53

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.060	J
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCB
File: JLE15C May 15, 2018 23:45

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.070	J
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE15C May 16, 2018 0:35

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.048	J
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE15C May 16, 2018 1:25

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.060	J
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.028	J
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	J
SODIUM	5.475	J
VANADIUM	0.065	J
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: CCB

File: JLE15C May 16, 2018 2:16

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.057	J
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWLE07HGW4

Matrix: WATER **SDG Name:** SL3841

QC Batch ID: LE07HGW4

Concentration Units : ug/L

Analyte	RESULT	C
MERCURY	0.10	U

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWLE07IMW2

Matrix: WATER **SDG Name:** SL3841

QC Batch ID: LE07IMW2

Concentration Units : ug/L

Analyte	RESULT	C
ALUMINUM	7.0	J
ANTIMONY	0.50	U
ARSENIC	4.0	U
BARIUM	1.0	U
BERYLLIUM	0.20	U
CADMIUM	0.20	U
CALCIUM	80	U
CHROMIUM	4.0	U
COBALT	0.30	U
COPPER	0.45	J
IRON	60	U
LEAD	0.50	U
MAGNESIUM	10	J
MANGANESE	1.0	U
NICKEL	1.2	U
POTASSIUM	400	U
SELENIUM	0.27	J
SILVER	0.40	U
SODIUM	400	U
THALLIUM	0.40	U
VANADIUM	4.0	U
ZINC	8.0	U

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: ICSA

File: JLE14A May 14, 2018 15:34

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	99860.00	99.9
ANTIMONY	0	0.04	
BARIUM	0	0.09	
CALCIUM	100000.00	97280.00	97.3
IRON	100000.00	92940.00	92.9
LEAD	0	0.06	
MAGNESIUM	100000.00	99940.00	99.9
MOLYBDENUM	2000.00	1890.00	94.5
POTASSIUM	100000.00	99380.00	99.4
SODIUM	100000.00	102200.00	102.2
THALLIUM	0	0.01	

SAMPLE: ICSAB

File: JLE14A May 14, 2018 15:38

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	100600.00	100.6
ANTIMONY	20.00	21.00	105.0
BARIUM	21.00	21.12	100.0
CALCIUM	100000.00	96790.00	96.8
IRON	100000.00	93950.00	94.0
LEAD	20.00	21.15	105.0
MAGNESIUM	100000.00	101300.00	101.3
MOLYBDENUM	2000.00	1912.00	95.6
POTASSIUM	100000.00	98850.00	98.9
SODIUM	100000.00	105400.00	105.4
THALLIUM	20.00	21.27	105.0

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Concentration Units: ug/L

SAMPLE: ICSA

File: JLE15C May 15, 2018 19:00

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	91500.00	91.5
ARSENIC	0	0.29	
BERYLLIUM	0	0.00	
CADMIUM	0	0.04	
CALCIUM	100000.00	95500.00	95.5
CHROMIUM	0	0.93	
COBALT	0	0.10	
COPPER	0	1.00	
IRON	100000.00	90640.00	90.6
MAGNESIUM	100000.00	89100.00	89.1
MANGANESE	0	0.38	
MOLYBDENUM	2000.00	1911.00	95.5
NICKEL	0	-0.31	
POTASSIUM	100000.00	95450.00	95.5
SELENIUM	0	0.25	
SILVER	0	0.02	
SODIUM	100000.00	92410.00	92.4
VANADIUM	0	0.22	
ZINC	0	2.48	

SAMPLE: ICSAB

File: JLE15C May 15, 2018 19:04

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	93940.00	93.9
ARSENIC	20.00	19.62	100.0
BERYLLIUM	20.00	21.05	105.0
CADMIUM	20.00	18.49	90.0
CALCIUM	100000.00	96200.00	96.2
CHROMIUM	20.00	20.13	100.0
COBALT	20.00	19.25	95.0
COPPER	20.00	19.39	95.0
IRON	100000.00	91150.00	91.1
MAGNESIUM	100000.00	91850.00	91.8
MANGANESE	20.00	19.54	100.0
MOLYBDENUM	2000.00	1960.00	98.0
NICKEL	20.00	18.31	90.0
POTASSIUM	100000.00	97210.00	97.2
SELENIUM	20.00	19.32	95.0
SILVER	20.00	18.35	90.0
SODIUM	100000.00	94170.00	94.2
VANADIUM	20.00	19.81	100.0
ZINC	20.00	20.19	100.0

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16S

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-010P

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
MERCURY, TOTAL	0.885		0.10	U	1	88.5		82	119	CV

Comments:

FORM V (Part 1) - IN

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16S

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-010S

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
MERCURY, TOTAL	0.894		0.10	U	1	89.4		82	119	CV

Comments:

FORM V (Part 1) - IN

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16-FFS

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-011P

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, DISSOLVED	2180		9.8	J	2000	108.5		84	117	MS
ANTIMONY, DISSOLVED	95.6		0.081	J	100	95.6		85	117	MS
ARSENIC, DISSOLVED	109		8.3		100	100.7		84	116	MS
BARIUM, DISSOLVED	1980		30.8		2000	97.7		86	114	MS
BERYLLIUM, DISSOLVED	49.1		0.20	U	50	98.1		83	121	MS
CADMIUM, DISSOLVED	231		0.20	U	250	92.4		87	115	MS
CALCIUM, DISSOLVED	371000		377000		2500	-224.0	N	87	118	MS
CHROMIUM, DISSOLVED	201		1.9	J	200	99.4		85	116	MS
COBALT, DISSOLVED	509		0.600	J	500	101.7		86	115	MS
COPPER, DISSOLVED	242		1.6	J	250	96.2		85	118	MS
IRON, DISSOLVED	8800		7920		1000	87.5		87	118	MS
LEAD, DISSOLVED	102		0.50	U	100	101.7		88	115	MS
MAGNESIUM, DISSOLVED	92700		88800		5000	78.0	N	83	118	MS
MANGANESE, DISSOLVED	1770		1300		500	93.5		87	115	MS
NICKEL, DISSOLVED	485		2.52		500	96.6		85	117	MS
POTASSIUM, DISSOLVED	30000		20700		10000	92.5		87	115	MS
SELENIUM, DISSOLVED	97.4		1.2	J	100	96.2		80	120	MS
SILVER, DISSOLVED	46.6		0.40	U	50	93.1		85	116	MS
SODIUM, DISSOLVED	361000		353000		7500	108.7		85	117	MS
THALLIUM, DISSOLVED	101		0.40	U	100	100.8		82	116	MS
VANADIUM, DISSOLVED	530		1.4	J	500	105.7		86	115	MS
ZINC, DISSOLVED	472		18		500	90.9		83	119	MS

Comments:

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16-FFS

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-011S

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, DISSOLVED	2160		9.8	J	2000	107.5		84	117	MS
ANTIMONY, DISSOLVED	102		0.081	J	100	101.5		85	117	MS
ARSENIC, DISSOLVED	114		8.3		100	105.5		84	116	MS
BARIUM, DISSOLVED	2040		30.8		2000	100.6		86	114	MS
BERYLLIUM, DISSOLVED	48.9		0.20	U	50	97.9		83	121	MS
CADMIUM, DISSOLVED	239		0.20	U	250	95.5		87	115	MS
CALCIUM, DISSOLVED	381000		377000		2500	166.0	N	87	118	MS
CHROMIUM, DISSOLVED	207		1.9	J	200	102.5		85	116	MS
COBALT, DISSOLVED	516		0.600	J	500	103.1		86	115	MS
COPPER, DISSOLVED	244		1.6	J	250	96.9		85	118	MS
IRON, DISSOLVED	8940		7920		1000	102.5		87	118	MS
LEAD, DISSOLVED	108		0.50	U	100	107.6		88	115	MS
MAGNESIUM, DISSOLVED	95000		88800		5000	123.0	N	83	118	MS
MANGANESE, DISSOLVED	1790		1300		500	98.8		87	115	MS
NICKEL, DISSOLVED	499		2.52		500	99.3		85	117	MS
POTASSIUM, DISSOLVED	30600		20700		10000	99.5		87	115	MS
SELENIUM, DISSOLVED	101		1.2	J	100	99.5		80	120	MS
SILVER, DISSOLVED	47.5		0.40	U	50	95.1		85	116	MS
SODIUM, DISSOLVED	364000		353000		7500	143.3	N	85	117	MS
THALLIUM, DISSOLVED	108		0.40	U	100	107.7		82	116	MS
VANADIUM, DISSOLVED	552		1.4	J	500	110.0		86	115	MS
ZINC, DISSOLVED	488		18		500	94.0		83	119	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16S

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-010A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
MERCURY, TOTAL	0.774		0.013	U	1	77.4	A	80	120	CV

Comments:

FORM V (Part 2) - IN

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16-FFS

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-011A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, DISSOLVED	213		2.0	J	200	105.5		80	120	MS
ANTIMONY, DISSOLVED	1.94		0.016	J	2	96.2		80	120	MS
ARSENIC, DISSOLVED	11.3		1.6		10	97.0		80	120	MS
BARIUM, DISSOLVED	10.0		6.16		4	97.3		80	120	MS
BERYLLIUM, DISSOLVED	1.91		0.0067	U	2	95.7		80	120	MS
CADMIUM, DISSOLVED	1.83		0.0059	U	2	91.5		80	120	MS
CALCIUM, DISSOLVED	73300		75300		200	-985.0	A	80	120	MS
CHROMIUM, DISSOLVED	10.2		0.39	J	10	98.3		80	120	MS
COBALT, DISSOLVED	2.06		0.120	J	2	97.0		80	120	MS
COPPER, DISSOLVED	5.98		0.31	J	6	94.5		80	120	MS
IRON, DISSOLVED	1670		1580		200	46.5	A	80	120	MS
LEAD, DISSOLVED	2.05		0.015	U	2	102.5		80	120	MS
MAGNESIUM, DISSOLVED	17700		17800		200	-35.0	A	80	120	MS
MANGANESE, DISSOLVED	251		261		4	-245.0	A	80	120	MS
NICKEL, DISSOLVED	4.33		0.504		4	95.6		80	120	MS
POTASSIUM, DISSOLVED	5960		4140		2000	90.8		80	120	MS
SELENIUM, DISSOLVED	9.32		0.24	J	10	90.8		80	120	MS
SILVER, DISSOLVED	1.88		0.010	U	2	94.1		80	120	MS
SODIUM, DISSOLVED	70600		70700		2000	-3.5	A	80	120	MS
THALLIUM, DISSOLVED	2.05		0.012	U	2	102.7		80	120	MS
VANADIUM, DISSOLVED	10.1		0.27	J	10	98.3		80	120	MS
ZINC, DISSOLVED	21.4		3.6		20	89.1		80	120	MS

Comments:

5D

SPIKE DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-010

Concentration Units : ug/L

Analyte	Control Limits	Spike Result	C	Spike Dup. Result	C	RPD	Q	M
MERCURY, TOTAL		0.894		0.885		1.0		CV

Comments:

FORM VD - IN

5D

SPIKE DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16-FF

Matrix: WATER **SDG Name:** SL3841

Percent Solids: 0.00 **Lab Sample ID:** SL3841-011

Concentration Units : ug/L

Analyte	Control Limits	Spike Result	C	Spike Dup. Result	C	RPD	Q	M
ALUMINUM, DISSOLVED		2160		2180		0.9		MS
ANTIMONY, DISSOLVED		102		95.6		6.0		MS
ARSENIC, DISSOLVED		114		109		4.3		MS
BARIUM, DISSOLVED		2040		1980		2.9		MS
BERYLLIUM, DISSOLVED		48.9		49.1		0.3		MS
CADMIUM, DISSOLVED		239		231		3.3		MS
CALCIUM, DISSOLVED		381000		371000		2.6		MS
CHROMIUM, DISSOLVED		207		201		3.0		MS
COBALT, DISSOLVED		516		509		1.4		MS
COPPER, DISSOLVED		244		242		0.7		MS
IRON, DISSOLVED		8940		8800		1.7		MS
LEAD, DISSOLVED		108		102		5.6		MS
MAGNESIUM, DISSOLVED		95000		92700		2.4		MS
MANGANESE, DISSOLVED		1790		1770		1.5		MS
NICKEL, DISSOLVED		499		485		2.8		MS
POTASSIUM, DISSOLVED		30600		30000		2.3		MS
SELENIUM, DISSOLVED		101		97.4		3.3		MS
SILVER, DISSOLVED		47.5		46.6		2.1		MS
SODIUM, DISSOLVED		364000		361000		0.7		MS
THALLIUM, DISSOLVED		108		101		6.6		MS
VANADIUM, DISSOLVED		552		530		4.0		MS
ZINC, DISSOLVED		488		472		3.2		MS

Comments:

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWLE07HGW4

Matrix: WATER **SDG Name:** SL3841

QC Batch ID: LE07HGW4

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	5.00	4.28	85.8	82	119

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWLE07IMW2

Matrix: WATER **SDG Name:** SL3841

QC Batch ID: LE07IMW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	2000	2100	105.0	84	117
ANTIMONY	100	97.4	97.4	85	117
ARSENIC	100	101	101.0	84	116
BARIUM	2000	2000	99.8	86	114
BERYLLIUM	50.0	45.1	90.3	83	121
CADMIUM	250	249	99.5	87	115
CALCIUM	2500	2580	103.4	87	118
CHROMIUM	200	206	103.0	85	116
COBALT	500	528	105.7	86	115
COPPER	250	257	102.9	85	118
IRON	1000	1040	104.0	87	118
LEAD	100	104	103.9	88	115
MAGNESIUM	5000	5300	105.9	83	118
MANGANESE	500	517	103.4	87	115
NICKEL	500	520	103.9	85	117
POTASSIUM	10000	9960	99.6	87	115
SELENIUM	100	99.6	99.6	80	120
SILVER	50.0	51.6	103.1	85	116
SODIUM	7500	7660	102.2	85	117
THALLIUM	100	103	103.5	82	116
VANADIUM	500	528	105.7	86	115
ZINC	500	496	99.3	83	119

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16L

Matrix: WATER **SDG Name:** SL3841

Lab Sample ID: SL3841-010L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
MERCURY, TOTAL	0.013	U	0.065	U			CV

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT16-FFL

Matrix: WATER **SDG Name:** SL3841

Lab Sample ID: SL3841-011L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, DISSOLVED	2.0	J	4.5	J	125.0		MS
ANTIMONY, DISSOLVED	0.016	J	0.055	U	100.0		MS
ARSENIC, DISSOLVED	1.6		2.4	J	50.0		MS
BARIUM, DISSOLVED	6.16		6.38		3.6		MS
BERYLLIUM, DISSOLVED	0.0067	U	0.034	U			MS
CADMIUM, DISSOLVED	0.0059	U	0.029	U			MS
CALCIUM, DISSOLVED	75300		76200		1.2		MS
CHROMIUM, DISSOLVED	0.39	J	0.22	U	100.0		MS
COBALT, DISSOLVED	0.120	J	0.11	J	8.3		MS
COPPER, DISSOLVED	0.31	J	0.48	J	54.8		MS
IRON, DISSOLVED	1580		1600		1.3		MS
LEAD, DISSOLVED	0.015	U	0.29	J			MS
MAGNESIUM, DISSOLVED	17800		18700		5.1		MS
MANGANESE, DISSOLVED	261		268		2.7		MS
NICKEL, DISSOLVED	0.504		0.59	J	17.1		MS
POTASSIUM, DISSOLVED	4140		4040		2.4		MS
SELENIUM, DISSOLVED	0.24	J	1.1	J	358.3		MS
SILVER, DISSOLVED	0.010	U	0.050	U			MS
SODIUM, DISSOLVED	70700		73100		3.4		MS
THALLIUM, DISSOLVED	0.012	U	0.060	U			MS
VANADIUM, DISSOLVED	0.27	J	0.50	U	100.0		MS
ZINC, DISSOLVED	3.6		4.1	J	13.9		MS

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 4/6/2018

Concentration Units: ug/L

Analyte	PQL/LOQ	IDL	M
MERCURY	0.20	0.025	CV

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/15/2018

Concentration Units: ug/L

Analyte	PQL/LOQ	IDL	M
ALUMINUM	20	1.9	MS
ANTIMONY	0.20	0.0056	MS
ARSENIC	1.0	0.18	MS
BARIUM	0.40	0.075	MS
BERYLLIUM	0.20	0.0037	MS
CADMIUM	0.20	0.0069	MS
CALCIUM	20	5.3	MS
CHROMIUM	1.0	0.062	MS
COBALT	0.20	0.0062	MS
COPPER	0.60	0.030	MS
IRON	20	4.3	MS
LEAD	0.20	0.010	MS
MAGNESIUM	20	1.3	MS
MANGANESE	0.40	0.021	MS
MOLYBDENUM	1.0	0.034	MS
NICKEL	0.40	0.018	MS
POTASSIUM	200	7.9	MS
SELENIUM	1.0	0.47	MS
SILVER	0.20	0.0030	MS
SODIUM	200	4.4	MS
THALLIUM	0.20	0.0084	MS
VANADIUM	1.0	0.063	MS
ZINC	2.0	0.27	MS

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 2/9/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
MERCURY	0.10	ug/L	CV	SW846 7470A / SW846 7470A

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ALUMINUM	8.0	ug/L	MS	SW846 3010A / SW846 6020A
ANTIMONY	0.10	ug/L	MS	SW846 3010A / SW846 6020A
ARSENIC	0.80	ug/L	MS	SW846 3010A / SW846 6020A
BARIUM	0.20	ug/L	MS	SW846 3010A / SW846 6020A
BERYLLIUM	0.040	ug/L	MS	SW846 3010A / SW846 6020A
CADMIUM	0.040	ug/L	MS	SW846 3010A / SW846 6020A
CALCIUM	16	ug/L	MS	SW846 3010A / SW846 6020A
CHROMIUM	0.80	ug/L	MS	SW846 3010A / SW846 6020A
COBALT	0.060	ug/L	MS	SW846 3010A / SW846 6020A
COPPER	0.40	ug/L	MS	SW846 3010A / SW846 6020A
IRON	12	ug/L	MS	SW846 3010A / SW846 6020A
LEAD	0.10	ug/L	MS	SW846 3010A / SW846 6020A
MAGNESIUM	16	ug/L	MS	SW846 3010A / SW846 6020A
MANGANESE	0.20	ug/L	MS	SW846 3010A / SW846 6020A
NICKEL	0.24	ug/L	MS	SW846 3010A / SW846 6020A
POTASSIUM	80	ug/L	MS	SW846 3010A / SW846 6020A
SELENIUM	0.60	ug/L	MS	SW846 3010A / SW846 6020A
SILVER	0.080	ug/L	MS	SW846 3010A / SW846 6020A
SODIUM	80	ug/L	MS	SW846 3010A / SW846 6020A
THALLIUM	0.080	ug/L	MS	SW846 3010A / SW846 6020A
VANADIUM	0.80	ug/L	MS	SW846 3010A / SW846 6020A
ZINC	1.6	ug/L	MS	SW846 3010A / SW846 6020A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 2/9/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
MERCURY	0.013	ug/L	CV	SW846 7470A / SW846 7470A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.88	ug/L	MS	SW846 3010A / SW846 6020A
ANTIMONY	0.011	ug/L	MS	SW846 3010A / SW846 6020A
ARSENIC	0.45	ug/L	MS	SW846 3010A / SW846 6020A
BARIUM	0.054	ug/L	MS	SW846 3010A / SW846 6020A
BERYLLIUM	0.0067	ug/L	MS	SW846 3010A / SW846 6020A
CADMIUM	0.0059	ug/L	MS	SW846 3010A / SW846 6020A
CALCIUM	4.1	ug/L	MS	SW846 3010A / SW846 6020A
CHROMIUM	0.044	ug/L	MS	SW846 3010A / SW846 6020A
COBALT	0.012	ug/L	MS	SW846 3010A / SW846 6020A
COPPER	0.037	ug/L	MS	SW846 3010A / SW846 6020A
IRON	2.6	ug/L	MS	SW846 3010A / SW846 6020A
LEAD	0.015	ug/L	MS	SW846 3010A / SW846 6020A
MAGNESIUM	1.6	ug/L	MS	SW846 3010A / SW846 6020A
MANGANESE	0.070	ug/L	MS	SW846 3010A / SW846 6020A
NICKEL	0.030	ug/L	MS	SW846 3010A / SW846 6020A
POTASSIUM	6.1	ug/L	MS	SW846 3010A / SW846 6020A
SELENIUM	0.037	ug/L	MS	SW846 3010A / SW846 6020A
SILVER	0.010	ug/L	MS	SW846 3010A / SW846 6020A
SODIUM	3.7	ug/L	MS	SW846 3010A / SW846 6020A
THALLIUM	0.012	ug/L	MS	SW846 3010A / SW846 6020A
VANADIUM	0.10	ug/L	MS	SW846 3010A / SW846 6020A
ZINC	0.78	ug/L	MS	SW846 3010A / SW846 6020A

ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/31/2018

Concentration Units: ug/L

Analyte	Integration Time (sec)	Linear Range	M
ALUMINUM	0.01	200000	MS
ANTIMONY	0.10	1000	MS
ARSENIC	0.30	1000	MS
BARIUM	0.10	2000	MS
BERYLLIUM	0.30	100	MS
CADMIUM	0.10	1000	MS
CALCIUM	0.03	200000	MS
CHROMIUM	0.10	2000	MS
COBALT	0.10	1000	MS
COPPER	0.10	2000	MS
IRON	0.03	100000	MS
LEAD	0.10	2000	MS
MAGNESIUM	0.05	200000	MS
MANGANESE	0.10	2000	MS
MOLYBDENUM	0.10	1000	MS
NICKEL	0.10	1000	MS
POTASSIUM	0.01	200000	MS
SELENIUM	0.30	1000	MS
SILVER	0.10	100	MS
SODIUM	0.01	200000	MS
THALLIUM	0.10	1000	MS
VANADIUM	0.10	1000	MS
ZINC	0.10	2000	MS

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LE07HGW4

Matrix: WATER **SDG Name:** SL3841

Method: CV **Prep Date:** 05/07/2018

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWLE07HGW4	LCSWLE07HGW4	0.025	0.025	
PBWLE07HGW4	PBWLE07HGW4	0.025	0.025	
CHAAP-19C-UGIA-DPT19	SL3841-002	0.025	0.025	D
CHAAP-19C-UGIA-DPT19-FF	SL3841-003	0.025	0.025	A
CHAAP-19C-LGIA-DPT20	SL3841-004	0.025	0.025	D
CHAAP-19C-LGIA-DPT20-FF	SL3841-005	0.025	0.025	A
CHAAP-19C-LGIA-DPT24	SL3841-006	0.025	0.025	D
CHAAP-19C-UGIA-DPT23	SL3841-008	0.025	0.025	D
CHAAP-19C-UGIA-DPT23-FF	SL3841-009	0.025	0.025	A
CHAAP-19C-LGIA-DPT16	SL3841-010	0.025	0.025	D
CHAAP-19C-LGIA-DPT16P	SL3841-010P	0.025	0.025	D
CHAAP-19C-LGIA-DPT16S	SL3841-010S	0.025	0.025	D
CHAAP-19C-LGIA-DPT16-FF	SL3841-011	0.025	0.025	A
CHAAP-19C-LGIA-DPT116	SL3841-012	0.025	0.025	D
CHAAP-19C-LGIA-DPT116-FF	SL3841-013	0.025	0.025	A
CHAAP-19C-UGIA-DPT15	SL3841-014	0.025	0.025	D
CHAAP-19C-UGIA-DPT15-FF	SL3841-015	0.025	0.025	A
CHAAP-19C-LGIA-DPT12	SL3841-016	0.025	0.025	D
CHAAP-19C-LGIA-DPT12-FF	SL3841-017	0.025	0.025	A
CHAAP-19C-UGIA-DPT11	SL3841-018	0.025	0.025	D
CHAAP-19C-UGIA-DPT11-FF	SL3841-019	0.025	0.025	A
CHAAP-EB-050318	SL3841-020	0.025	0.025	D

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LE07IMW2

Matrix: WATER **SDG Name:** SL3841

Method: MS **Prep Date:** 05/07/2018

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWLE07IMW2	LCSWLE07IMW2	0.05	0.05	
PBWLE07IMW2	PBWLE07IMW2	0.05	0.05	
CHAAP-19C-UGIA-DPT19	SL3841-002	0.05	0.05	A
CHAAP-19C-UGIA-DPT19-FF	SL3841-003	0.05	0.05	D
CHAAP-19C-LGIA-DPT20	SL3841-004	0.05	0.05	A
CHAAP-19C-LGIA-DPT20-FF	SL3841-005	0.05	0.05	D
CHAAP-19C-LGIA-DPT24	SL3841-006	0.05	0.05	A
CHAAP-19C-UGIA-DPT23	SL3841-008	0.05	0.05	D
CHAAP-19C-UGIA-DPT23-FF	SL3841-009	0.05	0.05	A
CHAAP-19C-LGIA-DPT16	SL3841-010	0.05	0.05	D
CHAAP-19C-LGIA-DPT16-FF	SL3841-011	0.05	0.05	A
CHAAP-19C-LGIA-DPT16-FFP	SL3841-011P	0.05	0.05	A
CHAAP-19C-LGIA-DPT16-FFS	SL3841-011S	0.05	0.05	A
CHAAP-19C-LGIA-DPT116	SL3841-012	0.05	0.05	D
CHAAP-19C-LGIA-DPT116-FF	SL3841-013	0.05	0.05	A
CHAAP-19C-UGIA-DPT15	SL3841-014	0.05	0.05	D
CHAAP-19C-UGIA-DPT15-FF	SL3841-015	0.05	0.05	A
CHAAP-19C-LGIA-DPT12	SL3841-016	0.05	0.05	D
CHAAP-19C-LGIA-DPT12-FF	SL3841-017	0.05	0.05	A
CHAAP-19C-UGIA-DPT11	SL3841-018	0.05	0.05	D
CHAAP-19C-UGIA-DPT11-FF	SL3841-019	0.05	0.05	A
CHAAP-EB-050318	SL3841-020	0.05	0.05	D

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: CETAC M6100 **File Name:** HLE07A

Date: 5/7/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	12:00	Hg
Standard #1 (0.2 ppb		1	12:02	Hg
Standard #2 (0.5 ppb		1	12:04	Hg
Standard #3 (1.0 ppb		1	12:06	Hg
Standard #4 (5.0 ppb		1	12:08	Hg
Standard #5 (10.0 pp		1	12:10	Hg
ICV		1	12:13	HG
ICB		1	12:15	HG
PQL		1	12:17	HG
CCV		1	12:19	HG
CCB		1	12:21	HG
ZZZZZZ		1	12:23	
ZZZZZZ		1	12:25	
ZZZZZZ		1	12:27	
ZZZZZZ		1	12:29	
ZZZZZZ		1	12:32	
ZZZZZZ		1	12:34	
ZZZZZZ		5	12:36	
ZZZZZZ		1	12:38	
ZZZZZZ		1	12:40	
CCV		1	12:42	HG
CCB		1	12:44	HG
ZZZZZZ		1	12:47	
ZZZZZZ		1	12:49	
ZZZZZZ		1	12:51	
ZZZZZZ		1	12:53	
ZZZZZZ		1	12:55	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: CETAC M6100 **File Name:** HLE07A

Date: 5/7/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	12:57	
ZZZZZZ		1	12:59	
ZZZZZZ		1	13:01	
ZZZZZZ		1	13:04	
ZZZZZZ		1	13:06	
CCV		1	13:08	HG
CCB		1	13:10	HG
ZZZZZZ		1	13:12	
ZZZZZZ		1	13:14	
ZZZZZZ		1	13:16	
ZZZZZZ		5	13:19	
ZZZZZZ		1	13:21	
ZZZZZZ		1	13:23	
ZZZZZZ		1	13:25	
ZZZZZZ		1	13:27	
ZZZZZZ		1	13:29	
ZZZZZZ		1	13:32	
CCV		1	13:34	HG
CCB		1	13:36	HG
ZZZZZZ		1	13:38	
ZZZZZZ		1	13:40	
ZZZZZZ		1	13:42	
ZZZZZZ		1	13:44	
ZZZZZZ		1	13:47	
ZZZZZZ		1	13:49	
ZZZZZZ		1	13:52	
ZZZZZZ		1	13:54	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: CETAC M6100 **File Name:** HLE07A

Date: 5/7/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	13:56	
ZZZZZZ		1	13:59	
CCV		1	14:01	HG
CCB		1	14:03	HG
ZZZZZZ		1	14:05	
ZZZZZZ		1	14:07	
ZZZZZZ		1	14:09	
ZZZZZZ		5	14:12	
ZZZZZZ		1	14:14	
ZZZZZZ		1	14:16	
ZZZZZZ		1	14:18	
ZZZZZZ		1	14:20	
ZZZZZZ		5	14:22	
ZZZZZZ		1	14:25	
CCV		1	14:27	HG
CCB		1	14:29	HG
ZZZZZZ		1	14:31	
ZZZZZZ		1	14:35	
ZZZZZZ		1	14:37	
ZZZZZZ		1	14:39	
ZZZZZZ		1	14:41	
ZZZZZZ		1	14:43	
ZZZZZZ		1	14:46	
ZZZZZZ		1	14:48	
ZZZZZZ		1	14:50	
ZZZZZZ		1	14:52	
CCV		1	14:57	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: CETAC M6100 **File Name:** HLE07A

Date: 5/7/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
CCB		1	14:59	HG
ZZZZZZ		1	15:01	
PBWLE07HGW4		1	15:03	HG
LCSWLE07HGW4		1	15:05	HG
SL3841-002	CHAAP-19C-UGIA-DPT19	1	15:07	HG
SL3841-003	CHAAP-19C-UGIA-DPT19-FF	1	15:10	HG
SL3841-004	CHAAP-19C-LGIA-DPT20	1	15:15	HG
SL3841-005	CHAAP-19C-LGIA-DPT20-FF	1	15:18	HG
SL3841-006	CHAAP-19C-LGIA-DPT24	1	15:20	HG
SL3841-008	CHAAP-19C-UGIA-DPT23	1	15:22	HG
SL3841-009	CHAAP-19C-UGIA-DPT23-FF	1	15:24	HG
CCV		1	15:26	HG
CCB		1	15:28	HG
SL3841-010	CHAAP-19C-LGIA-DPT16	1	15:30	HG
SL3841-010L	CHAAP-19C-LGIA-DPT16L	5	15:33	HG
SL3841-010A	CHAAP-19C-LGIA-DPT16A	1	15:35	HG
SL3841-010S	CHAAP-19C-LGIA-DPT16S	1	15:37	HG
SL3841-010P	CHAAP-19C-LGIA-DPT16P	1	15:39	HG
SL3841-011	CHAAP-19C-LGIA-DPT16-FF	1	15:41	HG
SL3841-012	CHAAP-19C-LGIA-DPT116	1	15:43	HG
SL3841-013	CHAAP-19C-LGIA-DPT116-FF	1	15:45	HG
SL3841-014	CHAAP-19C-UGIA-DPT15	1	15:48	HG
SL3841-015	CHAAP-19C-UGIA-DPT15-FF	1	15:50	HG
CCV		1	15:52	HG
CCB		1	15:54	HG
SL3841-016	CHAAP-19C-LGIA-DPT12	1	15:56	HG
SL3841-017	CHAAP-19C-LGIA-DPT12-FF	1	15:58	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: CETAC M6100 **File Name:** HLE07A

Date: 5/7/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
SL3841-018	CHAAP-19C-UGIA-DPT11	1	16:00	HG
SL3841-019	CHAAP-19C-UGIA-DPT11-FF	1	16:03	HG
SL3841-020	CHAAP-EB-050318	1	16:05	HG
ZZZZZZ		1	16:07	
ZZZZZZ		1	16:09	
ZZZZZZ		1	16:11	
ZZZZZZ		1	16:13	
ZZZZZZ		1	16:16	
CCV		1	16:18	HG
CCB		1	16:20	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements										
6020 TUNE		1	14:23											
200.8 TUNE		1	14:26											
Cal Blank		1	15:12	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
Cal Std		1	15:16	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
ICV		1	15:20	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
ICB		1	15:23	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
PQL		1	15:26	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
ZZZZZZ		1	15:30											
ICSA		1	15:34	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
ICSAB		1	15:38	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
ZZZZZZ		1	15:41											
ZZZZZZ		1	15:45											
ZZZZZZ		1	15:48											
ZZZZZZ		1	15:52											
ZZZZZZ		1	15:56											
CCV		1	16:00	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
CCB		1	16:03	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
ZZZZZZ		1	16:07											
ZZZZZZ		1	16:11											
ZZZZZZ		1	16:14											
ZZZZZZ		5	16:18											
ZZZZZZ		1	16:22											
ZZZZZZ		25	16:26											
ZZZZZZ		1	16:30											
ZZZZZZ		1	16:33											
ZZZZZZ		5	16:37											
ZZZZZZ		5	16:41											

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
CCV		1	16:45	Al Sb Ba Ca Fe Pb Mg Mo K Na Tl
CCB		1	16:49	Al Sb Ba Ca Fe Pb Mg Mo K Na Tl
ZZZZZZ		10	16:52	
ZZZZZZ		10	16:56	
ZZZZZZ		10	17:00	
ZZZZZZ		10	17:04	
ZZZZZZ		10	17:08	
ZZZZZZ		10	17:12	
ZZZZZZ		1	17:16	
ZZZZZZ		5	17:20	
ZZZZZZ		5	17:24	
ZZZZZZ		5	17:28	
CCV		1	17:32	Al Sb Ba Ca Fe Pb Mg Mo K Na Tl
CCB		1	17:36	Al Sb Ba Ca Fe Pb Mg Mo K Na Tl
ZZZZZZ		5	17:40	
ZZZZZZ		5	17:44	
ZZZZZZ		5	17:48	
ZZZZZZ		5	17:52	
ZZZZZZ		5	17:56	
ZZZZZZ		5	18:00	
ZZZZZZ		10	18:04	
ZZZZZZ		10	18:08	
ZZZZZZ		50	18:12	
ZZZZZZ		10	18:16	
CCV		1	18:20	Al Sb Ba Ca Fe Pb Mg Mo K Na Tl
CCB		1	18:24	Al Sb Ba Ca Fe Pb Mg Mo K Na Tl
ZZZZZZ		10	18:28	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements									
ZZZZZZ		10	18:32										
ZZZZZZ		10	18:37										
ZZZZZZ		1	18:41										
ZZZZZZ		1	18:45										
ZZZZZZ		5	18:49										
ZZZZZZ		1	18:53										
ZZZZZZ		1	18:57										
ZZZZZZ		1	19:01										
ZZZZZZ		1	19:05										
CCV		1	19:09	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
CCB		1	19:13	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
ZZZZZZ		1	19:17										
ZZZZZZ		1	19:22										
ZZZZZZ		5	19:26										
ZZZZZZ		5	19:30										
ZZZZZZ		5	19:34										
ZZZZZZ		5	19:38										
ZZZZZZ		5	19:42										
ZZZZZZ		25	19:47										
ZZZZZZ		5	19:51										
ZZZZZZ		5	19:55										
CCV		1	19:59	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
CCB		1	20:03	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
ZZZZZZ		5	20:07										
ZZZZZZ		5	20:11										
ZZZZZZ		25	20:16										
ZZZZZZ		5	20:20										

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements										
ZZZZZZ		5	20:24											
ZZZZZZ		5	20:28											
ZZZZZZ		5	20:33											
ZZZZZZ		5	20:37											
ZZZZZZ		5	20:41											
ZZZZZZ		5	20:45											
CCV		1	20:49	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
CCB		1	20:53	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
ZZZZZZ		5	20:58											
ZZZZZZ		5	21:02											
ZZZZZZ		5	21:06											
ZZZZZZ		5	21:10											
ZZZZZZ		5	21:14											
ZZZZZZ		5	21:19											
ZZZZZZ		5	21:23											
ZZZZZZ		5	21:27											
ZZZZZZ		5	21:31											
ZZZZZZ		1	21:36											
CCV		1	21:40	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
CCB		1	21:44	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
ZZZZZZ		5	21:48											
ZZZZZZ		5	21:52											
ZZZZZZ		5	21:56											
ZZZZZZ		25	22:01											
ZZZZZZ		5	22:05											
ZZZZZZ		5	22:09											
ZZZZZZ		5	22:13											

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/14/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements											
ZZZZZZ		5	22:18												
ZZZZZZ		5	22:22												
ZZZZZZ		1	22:26												
CCV		1	22:31	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl	
CCB		1	22:35	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl	
ZZZZZZ		5	22:39												
ZZZZZZ		5	22:43												
ZZZZZZ		5	22:48												
ZZZZZZ		5	22:52												
ZZZZZZ		1	22:56												
PBWLE07IMW2		5	23:00		Sb	Ba			Pb					Tl	
LCSWLE07IMW2		5	23:04		Sb	Ba			Pb					Tl	
SL3841-002	CHAAP-19C-UGIA-DPT19	5	23:09		Sb	Ba			Pb					Tl	
SL3841-003	CHAAP-19C-UGIA-DPT19-FF	5	23:13		Sb	Ba			Pb					Tl	
SL3841-004	CHAAP-19C-LGIA-DPT20	5	23:17		Sb	Ba			Pb					Tl	
CCV		1	23:21	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl	
CCB		1	23:25	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl	
SL3841-005	CHAAP-19C-LGIA-DPT20-FF	5	23:30		Sb	Ba			Pb					Tl	
SL3841-006	CHAAP-19C-LGIA-DPT24	5	23:34		Sb	Ba			Pb					Tl	
SL3841-010	CHAAP-19C-LGIA-DPT16	5	23:38		Sb	Ba			Pb					Tl	
SL3841-011	CHAAP-19C-LGIA-DPT16-FF	5	23:42		Sb	Ba			Pb					Tl	
SL3841-011L	CHAAP-19C-LGIA-DPT16-FFL	25	23:47		Sb	Ba			Pb					Tl	
SL3841-011A	HAAP-19C-LGIA-DPT16-FFA	5	23:51		Sb	Ba			Pb					Tl	
SL3841-011S	HAAP-19C-LGIA-DPT16-FFS	5	23:55		Sb	Ba			Pb					Tl	
SL3841-011P	HAAP-19C-LGIA-DPT16-FFP	5	23:59		Sb	Ba			Pb					Tl	
SL3841-012	CHAAP-19C-LGIA-DPT116	5	0:04		Sb	Ba			Pb					Tl	
SL3841-013	CHAAP-19C-LGIA-DPT116-FF	5	0:08		Sb	Ba			Pb					Tl	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE14A

Date: 5/15/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements										
CCV		1	0:12	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
CCB		1	0:16	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
SL3841-014	CHAAP-19C-UGIA-DPT15	5	0:21		Sb	Ba			Pb					Tl
SL3841-015	CHAAP-19C-UGIA-DPT15-FF	5	0:25		Sb	Ba			Pb					Tl
SL3841-016	CHAAP-19C-LGIA-DPT12	5	0:29		Sb	Ba			Pb					Tl
SL3841-018	CHAAP-19C-UGIA-DPT11	5	0:33		Sb	Ba			Pb					Tl
SL3841-019	CHAAP-19C-UGIA-DPT11-FF	5	0:38		Sb	Ba			Pb					Tl
SL3841-020	CHAAP-EB-050318	5	0:42		Sb	Ba			Pb					Tl
SL3841-008	CHAAP-19C-UGIA-DPT23	5	0:46		Sb	Ba			Pb					Tl
SL3841-009	CHAAP-19C-UGIA-DPT23-FF	5	0:50		Sb	Ba			Pb					Tl
SL3841-017	CHAAP-19C-LGIA-DPT12-FF	5	0:55		Sb	Ba			Pb					Tl
ZZZZZZ		1	0:59											
CCV		1	1:03	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl
CCB		1	1:07	Al	Sb	Ba	Ca	Fe	Pb	Mg	Mo	K	Na	Tl

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE15C

Date: 5/15/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
6020 TUNE		1	14:18	
200.8 TUNE		1	14:21	
Cal Blank		1	18:36	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
Cal Std		1	18:40	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ICV		1	18:44	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ICB		1	18:48	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
PQL		1	18:52	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	18:56	
ICSA		1	19:00	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ICSAB		1	19:04	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	19:08	
ZZZZZZ		1	19:13	
ZZZZZZ		1	19:16	
ZZZZZZ		1	19:21	
ZZZZZZ		1	19:25	
CCV		1	19:29	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	19:33	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	19:37	
ZZZZZZ		5	19:41	
ZZZZZZ		1	19:45	
ZZZZZZ		1	19:50	
ZZZZZZ		5	19:54	
ZZZZZZ		5	19:58	
ZZZZZZ		1	20:02	
ZZZZZZ		5	20:07	
ZZZZZZ		5	20:11	
ZZZZZZ		5	20:15	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE15C

Date: 5/15/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
CCV		1	20:19	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	20:23	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		5	20:27	
ZZZZZZ		5	20:31	
ZZZZZZ		25	20:36	
ZZZZZZ		5	20:40	
ZZZZZZ		5	20:44	
ZZZZZZ		5	20:48	
ZZZZZZ		5	20:52	
ZZZZZZ		25	20:56	
ZZZZZZ		5	21:01	
ZZZZZZ		5	21:05	
CCV		1	21:09	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	21:13	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		5	21:17	
ZZZZZZ		5	21:21	
ZZZZZZ		5	21:25	
ZZZZZZ		5	21:30	
ZZZZZZ		5	21:34	
ZZZZZZ		5	21:38	
ZZZZZZ		5	21:42	
ZZZZZZ		5	21:47	
ZZZZZZ		5	21:51	
ZZZZZZ		1	21:55	
CCV		1	21:59	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	22:03	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		5	22:07	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE15C

Date: 5/15/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		5	22:12	
ZZZZZZ		5	22:16	
ZZZZZZ		5	22:20	
ZZZZZZ		5	22:24	
ZZZZZZ		5	22:28	
ZZZZZZ		1	22:33	
ZZZZZZ		1	22:37	
ZZZZZZ		5	22:41	
ZZZZZZ		5	22:45	
CCV		1	22:49	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	22:53	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		5	22:58	
ZZZZZZ		25	23:02	
ZZZZZZ		5	23:06	
ZZZZZZ		5	23:10	
ZZZZZZ		5	23:15	
ZZZZZZ		5	23:19	
ZZZZZZ		5	23:23	
ZZZZZZ		5	23:28	
ZZZZZZ		5	23:32	
ZZZZZZ		5	23:36	
CCV		1	23:41	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	23:45	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		5	23:49	
ZZZZZZ		5	23:53	
ZZZZZZ		1	23:57	
PBWLE07IMW2		5	0:02	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE15C

Date: 5/16/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
LCSWLE07IMW2		5	0:06	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-002	CHAAP-19C-UGIA-DPT19	5	0:10	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-003	CHAAP-19C-UGIA-DPT19-FF	5	0:14	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-004	CHAAP-19C-LGIA-DPT20	5	0:18	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-005	CHAAP-19C-LGIA-DPT20-FF	5	0:23	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
ZZZZZZ		1	0:27	
CCV		1	0:31	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	0:35	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
SL3841-006	CHAAP-19C-LGIA-DPT24	5	0:39	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-008	CHAAP-19C-UGIA-DPT23	5	0:43	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-009	CHAAP-19C-UGIA-DPT23-FF	5	0:48	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-010	CHAAP-19C-LGIA-DPT16	5	0:52	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-011	CHAAP-19C-LGIA-DPT16-FF	5	0:56	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-011L	CHAAP-19C-LGIA-DPT16-FFL	25	1:00	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-011A	CHAAP-19C-LGIA-DPT16-FFA	5	1:05	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-011S	CHAAP-19C-LGIA-DPT16-FFS	5	1:09	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-011P	CHAAP-19C-LGIA-DPT16-FFP	5	1:13	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
ZZZZZZ		1	1:17	
CCV		1	1:21	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	1:25	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
SL3841-012	CHAAP-19C-LGIA-DPT116	5	1:30	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-013	CHAAP-19C-LGIA-DPT116-FF	5	1:34	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-014	CHAAP-19C-UGIA-DPT15	5	1:38	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-015	CHAAP-19C-UGIA-DPT15-FF	5	1:42	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-016	CHAAP-19C-LGIA-DPT12	5	1:47	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-017	CHAAP-19C-LGIA-DPT12-FF	5	1:51	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-018	CHAAP-19C-UGIA-DPT11	5	1:55	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3841

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE15C

Date: 5/16/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
SL3841-019	CHAAP-19C-UGIA-DPT11-FF	5	1:59	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
SL3841-020	CHAAP-EB-050318	5	2:04	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na V Zn
ZZZZZZ		1	2:08	
CCV		1	2:12	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	2:16	Al As Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn

Raw Data Section

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: Cetac M6100 (H) **ANALYST**: JS **ANALYSIS DATE**: 05/07/2018

FILE NAME: HLE07A **METHOD**: CVAA

☐ 245.1
☑ 7470
☐ 7471
☑ DoD
☐ _____

REVIEWED
amj 5/7/18
KATAHDIN ANALYTICAL
METALS SECTION

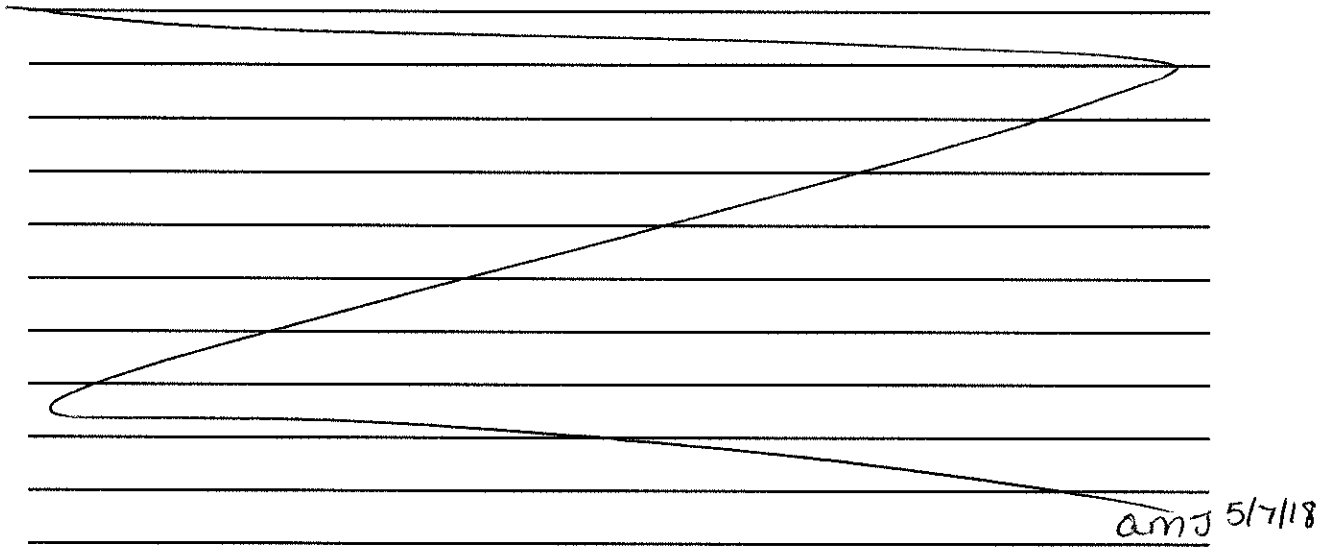
Analyte : Mercury

$SnCl_2$ Lot : MR2005

STANDARDS USED:

Standard Name	Prep. Date	Expiration Date	Standard Conc.
Cal. Blank / ICB / CCB	05/07/2018	06/01/2018	0.00 ug/L
Standard #1 / PQL	05/07/2018	06/01/2018	0.20 ug/L
Standard #2	05/07/2018	06/01/2018	0.50 ug/L
Standard #3	05/07/2018	06/01/2018	1.00 ug/L
Standard #4	05/07/2018	06/01/2018	5.00 ug/L
Standard #5	05/07/2018	06/01/2018	10.00 ug/L
ICV	05/07/2018	06/01/2018	6.00 ug/L

Additional Comments and Notes:



Post Spike (245.1/7470): 0.005 mL MW17721 (pipet M17) into 8.0mL (pipet M12) of sample

Post Spike (7471): 0.008 mL MW17721 (pipet M17) into 8.0mL (pipet M12) of sample

5x Dilution: 1.6mL (pipet M13) of sample + 6.4mL (pipet M13) of Cal. Blank

O flag: Sample concentration over calibration, re-analyzed at dilution

Q flag: Analytical run QC outside laboratory limits

INSTRUMENT RUNLOG

Instrument: CETAC M6100

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
Calibration Blank	1.0000	HLE07A	5/7/2018	12:00	JS
Standard #1 (0.2 ppb)	1.0000	HLE07A	5/7/2018	12:02	JS
Standard #2 (0.5 ppb)	1.0000	HLE07A	5/7/2018	12:04	JS
Standard #3 (1.0 ppb)	1.0000	HLE07A	5/7/2018	12:06	JS
Standard #4 (5.0 ppb)	1.0000	HLE07A	5/7/2018	12:08	JS
Standard #5 (10.0 ppb)	1.0000	HLE07A	5/7/2018	12:10	JS
ICV	1.0000	HLE07A	5/7/2018	12:13	JS
ICB	1.0000	HLE07A	5/7/2018	12:15	JS
PQL	1.0000	HLE07A	5/7/2018	12:17	JS
CCV	1.0000	HLE07A	5/7/2018	12:19	JS
CCB	1.0000	HLE07A	5/7/2018	12:21	JS
PBWLE07HGW1	1.0000	HLE07A	5/7/2018	12:23	JS
LCSWLE07HGW1	1.0000	HLE07A	5/7/2018	12:25	JS
PBSLE04ICS3	1.0000	HLE07A	5/7/2018	12:27	JS
LCSOLE04ICS3	1.0000	HLE07A	5/7/2018	12:29	JS
Q2 SEM MDL01	1.0000	HLE07A	5/7/2018	12:32	JS
SL3557-013	1.0000	HLE07A	5/7/2018	12:34	JS
SL3557-013L	5.0000	HLE07A	5/7/2018	12:36	JS
SL3557-013A	1.0000	HLE07A	5/7/2018	12:38	JS
SL3557-013S	1.0000	HLE07A	5/7/2018	12:40	JS
CCV	1.0000	HLE07A	5/7/2018	12:42	JS
CCB	1.0000	HLE07A	5/7/2018	12:44	JS
SL3557-013P	1.0000	HLE07A	5/7/2018	12:47	JS
SL3557-014	1.0000	HLE07A	5/7/2018	12:49	JS
SL3557-015	1.0000	HLE07A	5/7/2018	12:51	JS
SL3557-016	1.0000	HLE07A	5/7/2018	12:53	JS
SL3557-017	1.0000	HLE07A	5/7/2018	12:55	JS
PBWLE07HGW2	1.0000	HLE07A	5/7/2018	12:57	JS
LCSWLE07HGW2	1.0000	HLE07A	5/7/2018	12:59	JS
SL3265-001	1.0000	HLE07A	5/7/2018	13:01	JS
SL3265-002	1.0000	HLE07A	5/7/2018	13:04	JS
SL3265-003	1.0000	HLE07A	5/7/2018	13:06	JS
CCV	1.0000	HLE07A	5/7/2018	13:08	JS
CCB	1.0000	HLE07A	5/7/2018	13:10	JS
SL3380-001	1.0000	HLE07A	5/7/2018	13:12	JS
SL3380-002	1.0000	HLE07A	5/7/2018	13:14	JS
SL3380-003	1.0000	HLE07A	5/7/2018	13:16	JS
SL3380-003L	5.0000	HLE07A	5/7/2018	13:19	JS
SL3380-003A	1.0000	HLE07A	5/7/2018	13:21	JS
SL3380-003S	1.0000	HLE07A	5/7/2018	13:23	JS
SL3380-003P	1.0000	HLE07A	5/7/2018	13:25	JS
SL3604-001	1.0000	HLE07A	5/7/2018	13:27	JS
SL3708-022	1.0000	HLE07A	5/7/2018	13:29	JS
SL3764-001	1.0000	HLE07A	5/7/2018	13:32	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
CCV	1.0000	HLE07A	5/7/2018	13:34	JS
CCB	1.0000	HLE07A	5/7/2018	13:36	JS
SL3764-002	1.0000	HLE07A	5/7/2018	13:38	JS
SL3764-003	1.0000	HLE07A	5/7/2018	13:40	JS
SL3809-001	1.0000	HLE07A	5/7/2018	13:42	JS
SL3810-001	1.0000	HLE07A	5/7/2018	13:44	JS
SL3810-002	1.0000	HLE07A	5/7/2018	13:47	JS
SL3810-003	1.0000	HLE07A	5/7/2018	13:49	JS
SL3810-004	1.0000	HLE07A	5/7/2018	13:52	JS
SL3810-005	1.0000	HLE07A	5/7/2018	13:54	JS
SL3557-013S	1.0000	HLE07A	5/7/2018	13:56	JS
SL3380-003A	1.0000	HLE07A	5/7/2018	13:59	JS
CCV	1.0000	HLE07A	5/7/2018	14:01	JS
CCB	1.0000	HLE07A	5/7/2018	14:03	JS
SL3808-002	1.0000	HLE07A	5/7/2018	14:05	JS
SL3808-003	1.0000	HLE07A	5/7/2018	14:07	JS
SL3808-004	1.0000	HLE07A	5/7/2018	14:09	JS
SL3808-004L	5.0000	HLE07A	5/7/2018	14:12	JS
SL3808-004A	1.0000	HLE07A	5/7/2018	14:14	JS
SL3808-004S	1.0000	HLE07A	5/7/2018	14:16	JS
SL3808-004P	1.0000	HLE07A	5/7/2018	14:18	JS
SL3808-005	1.0000	HLE07A	5/7/2018	14:20	JS
SL3808-005L	5.0000	HLE07A	5/7/2018	14:22	JS
SL3808-005A	1.0000	HLE07A	5/7/2018	14:25	JS
CCV	1.0000	HLE07A	5/7/2018	14:27	JS
CCB	1.0000	HLE07A	5/7/2018	14:29	JS
SL3808-006	1.0000	HLE07A	5/7/2018	14:31	JS
SL3808-007	1.0000	HLE07A	5/7/2018	14:35	JS
SL3808-009	1.0000	HLE07A	5/7/2018	14:37	JS
SL3808-010	1.0000	HLE07A	5/7/2018	14:39	JS
SL3808-011	1.0000	HLE07A	5/7/2018	14:41	JS
SL3808-012	1.0000	HLE07A	5/7/2018	14:43	JS
SL3808-013	1.0000	HLE07A	5/7/2018	14:46	JS
SL3808-014	1.0000	HLE07A	5/7/2018	14:48	JS
SL3808-015	1.0000	HLE07A	5/7/2018	14:50	JS
SL3808-017	1.0000	HLE07A	5/7/2018	14:52	JS
CCV	1.0000	HLE07A	5/7/2018	14:57	JS
CCB	1.0000	HLE07A	5/7/2018	14:59	JS
SL3808-018	1.0000	HLE07A	5/7/2018	15:01	JS
PBWLE07HGW4	1.0000	HLE07A	5/7/2018	15:03	JS
LCSWLE07HGW4	1.0000	HLE07A	5/7/2018	15:05	JS
SL3841-002	1.0000	HLE07A	5/7/2018	15:07	JS
SL3841-003	1.0000	HLE07A	5/7/2018	15:10	JS
SL3841-004	1.0000	HLE07A	5/7/2018	15:15	JS
SL3841-005	1.0000	HLE07A	5/7/2018	15:18	JS
SL3841-006	1.0000	HLE07A	5/7/2018	15:20	JS
SL3841-008	1.0000	HLE07A	5/7/2018	15:22	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3841-009	1.0000	HLE07A	5/7/2018	15:24	JS
CCV	1.0000	HLE07A	5/7/2018	15:26	JS
CCB	1.0000	HLE07A	5/7/2018	15:28	JS
SL3841-010	1.0000	HLE07A	5/7/2018	15:30	JS
SL3841-010L	5.0000	HLE07A	5/7/2018	15:33	JS
SL3841-010A	1.0000	HLE07A	5/7/2018	15:35	JS
SL3841-010S	1.0000	HLE07A	5/7/2018	15:37	JS
SL3841-010P	1.0000	HLE07A	5/7/2018	15:39	JS
SL3841-011	1.0000	HLE07A	5/7/2018	15:41	JS
SL3841-012	1.0000	HLE07A	5/7/2018	15:43	JS
SL3841-013	1.0000	HLE07A	5/7/2018	15:45	JS
SL3841-014	1.0000	HLE07A	5/7/2018	15:48	JS
SL3841-015	1.0000	HLE07A	5/7/2018	15:50	JS
CCV	1.0000	HLE07A	5/7/2018	15:52	JS
CCB	1.0000	HLE07A	5/7/2018	15:54	JS
SL3841-016	1.0000	HLE07A	5/7/2018	15:56	JS
SL3841-017	1.0000	HLE07A	5/7/2018	15:58	JS
SL3841-018	1.0000	HLE07A	5/7/2018	16:00	JS
SL3841-019	1.0000	HLE07A	5/7/2018	16:03	JS
SL3841-020	1.0000	HLE07A	5/7/2018	16:05	JS
PBWLE07HGW3	1.0000	HLE07A	5/7/2018	16:07	JS
LCSWLE07HGW3	1.0000	HLE07A	5/7/2018	16:09	JS
SL3808-005S	1.0000	HLE07A	5/7/2018	16:11	JS
SL3808-005P	1.0000	HLE07A	5/7/2018	16:13	JS
SL3808-008	1.0000	HLE07A	5/7/2018	16:16	JS
CCV	1.0000	HLE07A	5/7/2018	16:18	JS
CCB	1.0000	HLE07A	5/7/2018	16:20	JS
SL3808-~~010K~~ JS 5.7.18	1.0000	HLE07A	5/7/2018	16:22	JS
CCV	1.0000	HLE07A	5/7/2018	16:24	JS
CCB	1.0000	HLE07A	5/7/2018	16:27	JS

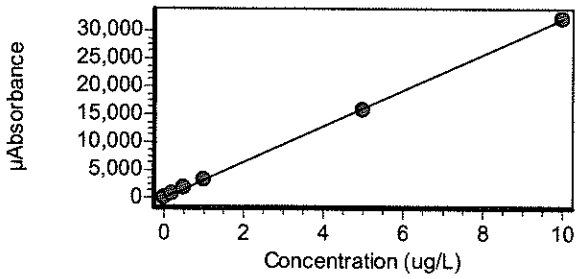
Report Generated By CETAC QuickTrace
Analyst: kasgc
Worksheet file: C:\Program Files\QuickTrace\Worksheets\HLE07A.wsz
Date Started: 5/7/2018 11:39:05 AM
Comment:

Results

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Calibration Blank				STD	05/07/18 12:00:13 pm	0.000	9	152.41		1.00
Replicates	-8.0	5.0	15.2	25.3						
Standard #1 (0.2 ppb)				STD	05/07/18 12:02:19 pm	0.200	660	2.71		1.00
Replicates	648.2	641.8	679.6	670.3						
Standard #2 (0.5 ppb)				STD	05/07/18 12:04:26 pm	0.500	1632	1.75		1.00
Replicates	1602.7	1651.0	1611.9	1660.7						
Standard #3 (1.0 ppb)				STD	05/07/18 12:06:34 pm	1.000	3309	0.58		1.00
Replicates	3336.2	3302.7	3304.2	3291.7						
Standard #4 (5.0 ppb)				STD	05/07/18 12:08:42 pm	5.000	15794	0.37		1.00
Replicates	15854.0	15753.4	15735.4	15834.9						
Standard #5 (10.0 ppb)				STD	05/07/18 12:10:50 pm	10.000	32262	0.22		1.00
Replicates	32295.6	32161.9	32262.6	32327.9						

Calibration

Equation: A = -0.391 + 3213.675C
R2: 0.99988
SEE: 158.7390
Flags:



ICV				ICV	05/07/18 12:13:00 pm	5.739	18442	0.38		1.00
Replicates	18513.3	18373.3	18389.8	18492.8						
% Recovery	95.65									
ICB				ICB	05/07/18 12:15:06 pm	-0.001	-4	609.66		1.00
Replicates	-6.3	-29.2	-9.9	29.4						

Katahdin Analytical Services 4000104

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
PQL					CRDL	05/07/18 12:17:12 pm	0.228	732	0.82		1.00
	Replicates	730.5	727.0	740.8	730.5						
	% Recovery	113.98									
CCV					CCV	05/07/18 12:19:20 pm	4.843	15563	0.22		1.00
	Replicates	15602.9	15520.7	15571.7	15558.7						
	% Recovery	96.86									
CCB					CCB	05/07/18 12:21:27 pm	0.027	85	25.18		1.00
	Replicates	108.5	67.9	98.7	66.2						
PBWLE07HGW1					PBK	05/07/18 12:23:34 pm	0.005	16	211.98		1.00
	Replicates	-33.4	24.1	33.1	39.0						
LCSWLE07HGW1					LCS	05/07/18 12:25:41 pm	4.771	15331	0.32		1.00
	Replicates	15400.8	15320.0	15314.3	15287.6						
	% Recovery	95.41									
PBSLE04ICS3					UNK	05/07/18 12:27:49 pm	0.018	58	22.62		1.00
	Replicates	59.9	64.2	38.8	68.2						
LCSOLE04ICS3					UNK	05/07/18 12:29:57 pm	4.178	13426	0.35		1.00
	Replicates	13496.6	13402.2	13396.5	13407.4						
Q2 SEM MDL01					UNK	05/07/18 12:32:05 pm	0.124	397	11.14		1.00
	Replicates	418.4	429.1	331.9	409.4						
SL3557-013					UNK	05/07/18 12:34:13 pm	0.037	120	6.95		1.00
	Replicates	129.0	125.4	113.4	112.6						
SL3557-013L					UNK	05/07/18 12:36:21 pm	0.113	72	10.22		5.00
	Replicates	70.0	75.7	79.9	62.9						
SL3557-013A					UNK	05/07/18 12:38:29 pm	0.859	2759	0.85		1.00
	Replicates	2770.4	2733.2	2785.3	2746.3						
SL3557-013S					UNK	05/07/18 12:40:37 pm	0.331	1062	3.35		1.00
	Replicates	1070.3	1039.9	1028.9	1108.4						

Reanalyzed to Confirm result JS 5.7.18

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV					CCV	05/07/18 12:42:45 pm	4.887	15706	0.33		1.00
	Replicates	15775.4	15699.1	15649.1	15698.6						
	% Recovery	97.74									
CCB					CCB	05/07/18 12:44:52 pm	0.006	20	170.66		1.00
	Replicates	24.8	30.8	-27.9	51.1						
SL3557-013P					UNK	05/07/18 12:47:00 pm	1.301	4182	0.79		1.00
	Replicates	4170.2	4140.2	4202.4	4213.4						
SL3557-014					UNK	05/07/18 12:49:08 pm	0.011	36	57.19		1.00
	Replicates	8.3	52.2	50.7	32.2						
SL3557-015					UNK	05/07/18 12:51:16 pm	0.009	29	140.40		1.00
	Replicates	51.1	75.2	6.6	-15.4						
SL3557-016					UNK	05/07/18 12:53:25 pm	0.013	42	59.68		1.00
	Replicates	29.7	60.2	66.9	13.2						
SL3557-017					UNK	05/07/18 12:55:34 pm	0.016	51	42.41		1.00
	Replicates	77.6	38.0	29.5	57.1						
PBWLE07HGW2					PBK	05/07/18 12:57:43 pm	0.002	5	149.57		1.00
	Replicates	10.4	12.1	-3.4	0.8						
LCSWLE07HGW2					LCS	05/07/18 12:59:51 pm	4.670	15008	0.27		1.00
	Replicates	15064.9	15011.2	14986.0	14971.5						
	% Recovery	93.41									
SL3265-001					UNK	05/07/18 01:01:59 pm	-0.001	-5	580.73		1.00
	Replicates	4.0	-2.7	22.5	-42.5						
SL3265-002					UNK	05/07/18 01:04:08 pm	0.005	14	225.40		1.00
	Replicates	-13.0	60.3	-1.9	11.9						
SL3265-003					UNK	05/07/18 01:06:17 pm	-0.004	-14	149.18		1.00
	Replicates	-41.6	3.6	-16.2	-0.7						

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV				CCV	05/07/18 01:08:26 pm	4.831	15526	0.31		1.00
Replicates	15576.3	15514.5	15465.6	15547.1						
% Recovery	96.63									
CCB				CCB	05/07/18 01:10:32 pm	-0.009	-29	89.29		1.00
Replicates	-0.7	-17.8	-60.3	-35.3						
SL3380-001				UNK	05/07/18 01:12:41 pm	-0.014	-45	47.99		1.00
Replicates	-15.0	-65.5	-54.3	-45.6						
SL3380-002				UNK	05/07/18 01:14:50 pm	-0.012	-38	45.08		1.00
Replicates	-26.1	-46.2	-21.0	-57.2						
SL3380-003				UNK	05/07/18 01:16:59 pm	-0.017	-55	65.52		1.00
Replicates	-96.8	-9.3	-58.3	-54.3						
SL3380-003L				UNK	05/07/18 01:19:08 pm	-0.120	-77	17.10		5.00
Replicates	-80.0	-86.0	-85.6	-58.0						
SL3380-003A				UNK	05/07/18 01:21:17 pm	-0.018	-58	26.22		1.00
Replicates	-56.2	-63.4	-75.1	-38.6						
reanalyzed due to missed spike JS 5.7.18										
SL3380-003S				UNK	05/07/18 01:23:27 pm	0.966	3103	0.60		1.00
Replicates	3094.9	3131.1	3090.0	3097.5						
SL3380-003P				UNK	05/07/18 01:25:36 pm	0.974	3130	0.26		1.00
Replicates	3131.1	3119.0	3138.8	3131.1						
SL3604-001				UNK	05/07/18 01:27:45 pm	0.028	90	26.55		1.00
Replicates	60.3	92.4	118.2	87.1						
SL3708-022				UNK	05/07/18 01:29:54 pm	0.020	65	29.21		1.00
Replicates	83.1	48.6	79.1	48.3						
SL3764-001				UNK	05/07/18 01:32:04 pm	0.011	35	30.83		1.00
Replicates	24.1	50.1	32.3	34.6						

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV				CCV	05/07/18 01:34:12 pm	4.780	15360	0.41		1.00
Replicates	15449.7	15358.2	15308.0	15322.7						
% Recovery	95.59									
CCB				CCB	05/07/18 01:36:19 pm	-0.016	-53	13.05		1.00
Replicates	-54.8	-42.6	-57.1	-56.7						
SL3764-002				UNK	05/07/18 01:38:29 pm	-0.006	-18	236.74		1.00
Replicates	-63.0	-35.9	-11.5	38.0						
SL3764-003				UNK	05/07/18 01:40:38 pm	0.003	8	429.45		1.00
Replicates	-23.3	44.5	-22.2	34.8						
SL3809-001				UNK	05/07/18 01:42:47 pm	-0.003	-10	400.77		1.00
Replicates	-17.2	-36.7	-37.5	50.1						
SL3810-001				UNK	05/07/18 01:44:57 pm	-0.010	-33	87.26		1.00
Replicates	2.0	-67.4	-27.1	-39.3						
SL3810-002				UNK	05/07/18 01:47:07 pm	0.001	1	405.23		1.00
Replicates	-9.8	-5.7	45.9	-25.2						
SL3810-003				UNK	05/07/18 01:49:18 pm	-0.008	-26	118.48		1.00
Replicates	14.2	-24.1	-61.2	-34.4						
SL3810-004				UNK	05/07/18 01:52:39 pm	-0.002	-5	607.56		1.00
Replicates	-38.4	-22.6	0.6	38.4						
SL3810-005				UNK	05/07/18 01:54:49 pm	-0.010	-32	68.72		1.00
Replicates	-19.8	-11.5	-61.4	-34.7						
SL3557-013S				UNK	05/07/18 01:56:58 pm	0.323	1036	2.78		1.00
Replicates	1056.8	1063.8	1004.1	1019.5						
SL3380-003A				UNK	05/07/18 01:59:07 pm	0.813	2612	1.44		1.00
Replicates	2655.9	2603.7	2622.7	2565.7						

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV				CCV	05/07/18 02:01:16 pm	4.670	15007	0.29		1.00
Replicates	15065.8	14996.9	14961.5	15005.2						
% Recovery	93.40									
CCB				CCB	05/07/18 02:03:22 pm	0.012	38	81.77		1.00
Replicates	23.7	4.5	76.5	47.2						
SL3808-002				UNK	05/07/18 02:05:33 pm	0.014	44	32.01		1.00
Replicates	28.0	38.4	60.9	48.7						
SL3808-003				UNK	05/07/18 02:07:42 pm	0.007	23	86.28		1.00
Replicates	39.6	-5.2	24.7	31.2						
SL3808-004				UNK	05/07/18 02:09:53 pm	0.044	142	15.87		1.00
Replicates	115.1	139.8	170.1	142.1						
SL3808-004L				UNK	05/07/18 02:12:03 pm	0.068	43	77.45		5.00
Replicates	-2.6	47.9	77.7	49.7						
SL3808-004A				UNK	05/07/18 02:14:14 pm	0.846	2719	1.18		1.00
Replicates	2694.4	2700.6	2714.5	2765.0						
SL3808-004S				UNK	05/07/18 02:16:25 pm	0.965	3100	0.64		1.00
Replicates	3095.8	3127.7	3096.2	3080.5						
SL3808-004P				UNK	05/07/18 02:18:35 pm	0.816	2622	0.71		1.00
Replicates	2641.9	2617.4	2628.5	2598.2						
SL3808-005				UNK	05/07/18 02:20:46 pm	0.008	26	119.12		1.00
Replicates	38.5	58.6	-15.7	24.1						
SL3808-005L				UNK	05/07/18 02:22:56 pm	0.007	4	432.20		5.00
Replicates	-12.5	26.8	-1.4	2.5						
SL3808-005A				UNK	05/07/18 02:25:07 pm	0.813	2611	0.97		1.00
Replicates	2596.0	2593.9	2648.1	2605.1						

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV				CCV	05/07/18 02:27:16 pm	4.658	14969	0.40		1.00
Replicates	15049.5	14944.1	14908.9	14972.8						
% Recovery	93.16									
CCB				CCB	05/07/18 02:29:22 pm	0.006	19	152.82		1.00
Replicates	25.2	36.0	39.3	-23.8						
SL3808-006				UNK	05/07/18 02:31:33 pm	0.030	98	9.48		1.00
Replicates	103.3	90.6	107.6	88.9						
SL3808-007				UNK	05/07/18 02:35:07 pm	-0.015	-50	89.41		1.00
Replicates	8.7	-50.0	-58.1	-98.6						
SL3808-009				UNK	05/07/18 02:37:18 pm	-0.006	-20	111.58		1.00
Replicates	-16.2	-17.4	-49.2	4.0						
SL3808-010				UNK	05/07/18 02:39:29 pm	0.026	82	38.59		1.00
Replicates	111.4	43.8	104.8	68.8						
SL3808-011				UNK	05/07/18 02:41:40 pm	0.003	9	312.71		1.00
Replicates	15.3	21.5	33.6	-33.0						
SL3808-012				UNK	05/07/18 02:43:52 pm	0.007	23	100.21		1.00
Replicates	48.9	24.2	25.4	-7.0						
SL3808-013				UNK	05/07/18 02:46:03 pm	-0.005	-15	158.06		1.00
Replicates	-14.6	15.0	-17.5	-43.8						
SL3808-014				UNK	05/07/18 02:48:14 pm	0.000	0	050.87		1.00
Replicates	13.5	-4.0	-16.0	7.3						
SL3808-015				UNK	05/07/18 02:50:26 pm	0.009	27	36.63		1.00
Replicates	17.4	40.6	29.5	22.5						
SL3808-017				UNK	05/07/18 02:52:37 pm	-0.002	-6	252.29		1.00
Replicates	-2.3	14.7	-20.6	-17.6						

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV					CCV	05/07/18 02:57:15 pm	4.650	14944	0.54		1.00
	Replicates	14922.8	14875.3	14917.5	15060.3						
	% Recovery	93.00									
CCB					CCB	05/07/18 02:59:21 pm	0.001	4	358.59		1.00
	Replicates	20.2	-1.2	-14.5	12.6						
SL3808-018					UNK	05/07/18 03:01:33 pm	0.014	45	42.14		1.00
	Replicates	67.0	43.7	48.4	20.9						
PBWLE07HGW4					PBK	05/07/18 03:03:40 pm	-0.006	-19	176.08		1.00
	Replicates	-27.7	-2.6	15.8	-62.7						
LCSWLE07HGW4					LCS	05/07/18 03:05:48 pm	4.285	13770	0.28		1.00
	Replicates	13804.1	13717.5	13792.3	13768.0						
	% Recovery	85.70									
SL3841-002					UNK	05/07/18 03:07:55 pm	0.027	87	6.33		1.00
	Replicates	93.5	85.0	80.4	88.0						
SL3841-003					UNK	05/07/18 03:10:03 pm	0.003	8	317.43		1.00
	Replicates	29.5	27.4	5.7	-28.6						
SL3841-004					UNK	05/07/18 03:15:59 pm	0.010	32	75.48		1.00
	Replicates	31.8	16.8	13.5	66.5						
SL3841-005					UNK	05/07/18 03:18:06 pm	0.007	21	212.66		1.00
	Replicates	57.3	25.8	-43.8	46.0						
SL3841-006					UNK	05/07/18 03:20:14 pm	0.000	-1	298.25		1.00
	Replicates	33.9	-50.8	16.4	-1.5						
SL3841-008					UNK	05/07/18 03:22:22 pm	0.032	103	30.34		1.00
	Replicates	113.5	88.4	68.7	140.7						
SL3841-009					UNK	05/07/18 03:24:31 pm	0.005	16	195.50		1.00
	Replicates	29.6	41.9	20.7	-28.8						

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV					CCV	05/07/18 03:26:39 pm	4.609	14812	0.46		1.00
	Replicates	14801.1	14724.2	14837.4	14884.1						
	% Recovery	92.18									
CCB					CCB	05/07/18 03:28:45 pm	-0.010	-33	95.27		1.00
	Replicates	-49.7	12.4	-36.8	-57.1						
SL3841-010					UNK	05/07/18 03:30:54 pm	0.010	31	30.50		1.00
	Replicates	28.0	34.6	41.8	19.6						
SL3841-010L					UNK	05/07/18 03:33:02 pm	-0.054	-35	58.72		5.00
	Replicates	-21.7	-65.2	-20.7	-33.9						
SL3841-010A					UNK	05/07/18 03:35:10 pm	0.774	2487	0.75		1.00
	Replicates	2510.4	2465.1	2484.6	2489.1						
SL3841-010S					UNK	05/07/18 03:37:18 pm	0.894	2873	0.90		1.00
	Replicates	2840.9	2880.3	2903.1	2867.6						
SL3841-010P					UNK	05/07/18 03:39:27 pm	0.885	2845	1.44		1.00
	Replicates	2872.4	2811.8	2807.6	2886.9						
SL3841-011					UNK	05/07/18 03:41:36 pm	-0.017	-56	62.19		1.00
	Replicates	-30.2	-99.1	-25.5	-68.5						
SL3841-012					UNK	05/07/18 03:43:45 pm	-0.005	-15	238.95		1.00
	Replicates	-55.1	16.9	-38.5	15.0						
SL3841-013					UNK	05/07/18 03:45:53 pm	-0.007	-24	74.99		1.00
	Replicates	-0.8	-21.2	-43.2	-29.7						
SL3841-014					UNK	05/07/18 03:48:02 pm	0.021	66	24.36		1.00
	Replicates	85.4	67.6	64.1	46.3						
SL3841-015					UNK	05/07/18 03:50:11 pm	-0.003	-9	450.38		1.00
	Replicates	35.7	-60.3	-13.1	2.4						

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV					CCV	05/07/18 03:52:19 pm	4.593	14760	0.35		1.00
Replicates	14768.2	14703.2	14740.9	14826.7							
% Recovery	91.86										
CCB					CCB	05/07/18 03:54:26 pm	-0.001	-4	297.14		1.00
Replicates	-8.8	-5.0	-15.0	12.8							
SL3841-016					UNK	05/07/18 03:56:35 pm	-0.001	-3	737.67		1.00
Replicates	15.7	14.1	-23.1	-17.8							
SL3841-017					UNK	05/07/18 03:58:43 pm	-0.002	-7	362.06		1.00
Replicates	-15.5	16.0	9.8	-37.4							
SL3841-018					UNK	05/07/18 04:00:52 pm	0.039	124	8.65		1.00
Replicates	121.0	137.6	124.5	111.8							
SL3841-019					UNK	05/07/18 04:03:01 pm	0.001	4	371.57		1.00
Replicates	8.9	17.1	1.6	-13.6							
SL3841-020					UNK	05/07/18 04:05:11 pm	0.008	24	80.24		1.00
Replicates	42.6	27.8	28.9	-3.1							
PBWLE07HGW3					PBK	05/07/18 04:07:21 pm	0.004	11	147.91		1.00
Replicates	22.0	11.3	-12.4	24.8							
LCSWLE07HGW3					LCS	05/07/18 04:09:32 pm	4.317	13871	0.56		1.00
Replicates	13828.3	13808.0	13868.6	13981.1							
% Recovery	86.33										
SL3808-005S					UNK	05/07/18 04:11:41 pm	0.891	2865	0.83		1.00
Replicates	2899.4	2846.9	2856.1	2855.6							
SL3808-005P					UNK	05/07/18 04:13:50 pm	0.905	2907	0.64		1.00
Replicates	2916.2	2888.1	2895.5	2928.3							
SL3808-008					UNK	05/07/18 04:16:00 pm	0.028	90	14.64		1.00
Replicates	102.8	73.8	84.5	98.0							

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV					CCV	05/07/18 04:18:08 pm	4.533	14568	0.69		1.00
	Replicates	14463.9	14518.4	14598.1	14693.2						
	% Recovery	90.67									
CCB					CCB	05/07/18 04:20:14 pm	-0.009	-28	103.73		1.00
	Replicates	-46.7	-13.0	-58.5	5.0						
SL3808-01 ~~06~~ 5/7/18					UNK	05/07/18 04:22:48 pm	0.004	12	89.00		1.00
	Replicates	3.1	3.0	24.0	16.6						
CCV					CCV	05/07/18 04:24:57 pm	4.583	14727	0.62		1.00
	Replicates	14628.3	14686.2	14752.7	14839.2						
	% Recovery	91.65									
CCB					CCB	05/07/18 04:27:03 pm	0.000	0	564.50		1.00
	Replicates	12.5	1.2	1.4	-17.0						

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500)

ANALYST: JS

ANALYSIS DATE: 05/14/2018

REVIEWED
MD 5/25/18
KATAHDIN ANALYTICAL
METALS SECTION

FILE NAME: JLE14A

METHOD: ICP-MS
- ☑ 200.8
- ☑ 6020
- ☑ DOD

The pHs of all samples that were tested by direct analysis in this analytical run were checked just prior to analysis and confirmed to be <2. The time of preservation of these samples was checked in the "Measured Turbidity and Preservation of Incoming Samples" logbook to verify that they had been preserved at least 16 hours prior to analysis. These verifications were performed by JS (initals) on 5.14.18 (date).
5.14.18

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17761	05/14/2018	05/14/2019	0 ug/L
Standard 1	MW17738	05/11/2018	06/21/2018	Varies by Element
ICV	MW17701	04/24/2018	07/24/2018	Varies by Element
PQL	MW17755	05/10/2018	07/13/2018	Varies by Element
LRS1	MW17735	05/04/2018	08/04/2018	Varies by Element
LRS2	MW17704	04/25/2018	07/25/2018	Varies by Element
ICSA	MW17763	05/14/2018	05/20/2018	Varies by Element
ICSAB	MW17764	05/14/2018	05/20/2018	Varies by Element
CCV	MW17759	05/11/2018	06/21/2018	Varies by Element
Internal Standard	MW17762	05/14/2018	08/142018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

10x diln. Post Spike: 0.1mL of MW17698 (pipet M16) into 10x diln. of sample (pipet M18)

Pb failed in final PQL due to sample carryover; accepted Pb results for all non-DW samples analyzed prior to CCV/CCB for analyte at 20:49/20:53.

MD 5/25/18

Dilutions: Some samples were diluted based on history or due to interfering element concentrations. Dilution preparations are as follows:

25x serial diln.: 1.6mL of 10x diln. of sample(pipet M18) + 6.4mL of MW17761 (pipet M18)

10x diln.: 1.0mL of sample (pipet M19) + 9.0mL of MW17761 (pipet M18)

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17761 (pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL of MW17761 (pipet M18)

Post Spike: 0.08mL of MW17698 (pipet M16) into 5x diln. of sample (pipet M18)

(Unless otherwise specified)

ME-019 – Revision 1 – 01/20/2016

INSTRUMENT RUNLOG

Instrument: AGILENT 7500

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
6020 TUNE	1	JLE14A	5/14/2018 3:12:00	14:23	JS
200.8 TUNE	1	JLE14A	5/14/2018 3:12:00	14:26	JS
Cal Blank	1	JLE14A	5/14/2018 3:12:00	15:12	JS
Cal Std	1	JLE14A	5/14/2018 3:16:00	15:16	JS
ICV	1	JLE14A	5/14/2018 3:20:00	15:20	JS
ICB	1	JLE14A	5/14/2018 3:23:00	15:23	JS
PQL	1	JLE14A	5/14/2018 3:26:00	15:26	JS
RINSE	1	JLE14A	5/14/2018 3:30:00	15:30	JS
ICSA	1	JLE14A	5/14/2018 3:34:00	15:34	JS
ICSAB	1	JLE14A	5/14/2018 3:38:00	15:38	JS
RINSE	1	JLE14A	5/14/2018 3:41:00	15:41	JS
LRS1	1	JLE14A	5/14/2018 3:45:00	15:45	JS
LRS2	1	JLE14A	5/14/2018 3:48:00	15:48	JS
RINSE	1	JLE14A	5/14/2018 3:52:00	15:52	JS
RINSE	1	JLE14A	5/14/2018 3:56:00	15:56	JS
CCV	1	JLE14A	5/14/2018 4:00:00	16:00	JS
CCB	1	JLE14A	5/14/2018 4:03:00	16:03	JS
SL4088-001	1	JLE14A	5/14/2018 4:07:00	16:07	JS
SL4104-001	1	JLE14A	5/14/2018 4:11:00	16:11	JS
PBWLE11IMW1	1	JLE14A	5/14/2018 4:14:00	16:14	JS
LCSWLE11IMW1	5	JLE14A	5/14/2018 4:18:00	16:18	JS
SL4028-001	1	JLE14A	5/14/2018 4:22:00	16:22	JS
SL4027-001	25	JLE14A	5/14/2018 4:26:00	16:26	JS
RINSE	1	JLE14A	5/14/2018 4:30:00	16:30	JS
RISNE	1	JLE14A	5/14/2018 4:33:00	16:33	JS
PBSLE04IMS1	5	JLE14A	5/14/2018 4:37:00	16:37	JS
LCSOLE04IMS1	5	JLE14A	5/14/2018 4:41:00	16:41	JS
CCV	1	JLE14A	5/14/2018 4:45:00	16:45	JS
CCB	1	JLE14A	5/14/2018 4:49:00	16:49	JS
SL3708-007	10	JLE14A	5/14/2018 4:52:00	16:52	JS
SL3708-019	10	JLE14A	5/14/2018 4:56:00	16:56	JS
SL3708-020	10	JLE14A	5/14/2018 5:00:00	17:00	JS
SL3708-021	10	JLE14A	5/14/2018 5:04:00	17:04	JS
SL3807-001	10	JLE14A	5/14/2018 5:08:00	17:08	JS
SL3807-002	10	JLE14A	5/14/2018 5:12:00	17:12	JS
RINSE	1	JLE14A	5/14/2018 5:16:00	17:16	JS
PBSLE11IMS2	5	JLE14A	5/14/2018 5:20:00	17:20	JS
LCSOLE11IMS2	5	JLE14A	5/14/2018 5:24:00	17:24	JS
LC2OLE11IMS2	5	JLE14A	5/14/2018 5:28:00	17:28	JS
CCV	1	JLE14A	5/14/2018 5:32:00	17:32	JS
CCB	1	JLE14A	5/14/2018 5:36:00	17:36	JS
SL3756-001	5	JLE14A	5/14/2018 5:40:00	17:40	JS
SL3756-003	5	JLE14A	5/14/2018 5:44:00	17:44	JS
SL3756-004	5	JLE14A	5/14/2018 5:48:00	17:48	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3756-005	5	JLE14A	5/14/2018	5:52:00 17:52	JS
PBSLE09IMS1	5	JLE14A	5/14/2018	5:56:00 17:56	JS
LCSOLE09IMS1	5	JLE14A	5/14/2018	6:00:00 18:00	JS
SL3809-048	10	JLE14A	5/14/2018	6:04:00 18:04	JS
SL3951-001	10	JLE14A	5/14/2018	6:08:00 18:08	JS
SL3951-001L	50	JLE14A	5/14/2018	6:12:00 18:12	JS
SL3951-001A	10	JLE14A	5/14/2018	6:16:00 18:16	JS
CCV	1	JLE14A	5/14/2018	6:20:00 18:20	JS
CCB	1	JLE14A	5/14/2018	6:24:00 18:24	JS
SL3951-001S	10	JLE14A	5/14/2018	6:28:00 18:28	JS
SL3951-001P	10	JLE14A	5/14/2018	6:32:00 18:32	JS
SL3809-020	10	JLE14A	5/14/2018	6:37:00 18:37	JS
RINSE	1	JLE14A	5/14/2018	6:41:00 18:41	JS
PBWLE14IMW1	1	JLE14A	5/14/2018	6:45:00 18:45	JS
LCSWLE14IMW1	5	JLE14A	5/14/2018	6:49:00 18:49	JS
SL4085-001	1	JLE14A	5/14/2018	6:53:00 18:53	JS
SL4085-002	1	JLE14A	5/14/2018	6:57:00 18:57	JS
SL4096-002	1	JLE14A	5/14/2018	7:01:00 19:01	JS
SL4105-001	1	JLE14A	5/14/2018	7:05:00 19:05	JS
CCV	1	JLE14A	5/14/2018	7:09:00 19:09	JS
CCB	1	JLE14A	5/14/2018	7:13:00 19:13	JS
SL4105-003	1	JLE14A	5/14/2018	7:17:00 19:17	JS
SL4096-001	1	JLE14A	5/14/2018	7:22:00 19:22	JS
PBWLE07IMW1	5	JLE14A	5/14/2018	7:26:00 19:26	JS
LCSWLE07IMW1	5	JLE14A	5/14/2018	7:30:00 19:30	JS
SL3808-002	5	JLE14A	5/14/2018	7:34:00 19:34	JS
SL3808-003	5	JLE14A	5/14/2018	7:38:00 19:38	JS
SL3808-004	5	JLE14A	5/14/2018	7:42:00 19:42	JS
SL3808-004L	25	JLE14A	5/14/2018	7:47:00 19:47	JS
SL3808-004A	5	JLE14A	5/14/2018	7:51:00 19:51	JS
SL3808-004S	5	JLE14A	5/14/2018	7:55:00 19:55	JS
CCV	1	JLE14A	5/14/2018	7:59:00 19:59	JS
CCB	1	JLE14A	5/14/2018	8:03:00 20:03	JS
SL3808-004P	5	JLE14A	5/14/2018	8:07:00 20:07	JS
SL3808-005	5	JLE14A	5/14/2018	8:11:00 20:11	JS
SL3808-005L	25	JLE14A	5/14/2018	8:16:00 20:16	JS
SL3808-005A	5	JLE14A	5/14/2018	8:20:00 20:20	JS
SL3808-005S	5	JLE14A	5/14/2018	8:24:00 20:24	JS
SL3808-005P	5	JLE14A	5/14/2018	8:28:00 20:28	JS
SL3808-006	5	JLE14A	5/14/2018	8:33:00 20:33	JS
SL3808-007	5	JLE14A	5/14/2018	8:37:00 20:37	JS
SL3808-008	5	JLE14A	5/14/2018	8:41:00 20:41	JS
SL3808-009	5	JLE14A	5/14/2018	8:45:00 20:45	JS
CCV	1	JLE14A	5/14/2018	8:49:00 20:49	JS
CCB	1	JLE14A	5/14/2018	8:53:00 20:53	JS
SL3808-010	5	JLE14A	5/14/2018	8:58:00 20:58	JS
SL3808-011	5	JLE14A	5/14/2018	9:02:00 21:02	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3808-012	5	JLE14A	5/14/2018	9:06:00 21:06	JS
SL3808-013	5	JLE14A	5/14/2018	9:10:00 21:10	JS
SL3808-014	5	JLE14A	5/14/2018	9:14:00 21:14	JS
SL3808-015	5	JLE14A	5/14/2018	9:19:00 21:19	JS
SL3808-016	5	JLE14A	5/14/2018	9:23:00 21:23	JS
SL3808-017	5	JLE14A	5/14/2018	9:27:00 21:27	JS
SL3808-018	5	JLE14A	5/14/2018	9:31:00 21:31	JS
RINSE	1	JLE14A	5/14/2018	9:36:00 21:36	JS
CCV	1	JLE14A	5/14/2018	9:40:00 21:40	JS
CCB	1	JLE14A	5/14/2018	9:44:00 21:44	JS
PBSLE08IMS2	5	JLE14A	5/14/2018	9:48:00 21:48	JS
LCSOLE08IMS2	5	JLE14A	5/14/2018	9:52:00 21:52	JS
SL3809-024	5	JLE14A	5/14/2018	9:56:00 21:56	JS
SL3809-024L	25	JLE14A	5/14/2018	10:01:0 22:01	JS
SL3809-024A	5	JLE14A	5/14/2018	10:05:0 22:05	JS
SL3809-024S	5	JLE14A	5/14/2018	10:09:0 22:09	JS
SL3809-024P	5	JLE14A	5/14/2018	10:13:0 22:13	JS
SL3809-041	5	JLE14A	5/14/2018	10:18:0 22:18	JS
SL3809-042	5	JLE14A	5/14/2018	10:22:0 22:22	JS
RINSE	1	JLE14A	5/14/2018	10:26:0 22:26	JS
CCV	1	JLE14A	5/14/2018	10:31:0 22:31	JS
CCB	1	JLE14A	5/14/2018	10:35:0 22:35	JS
SL3809-043	5	JLE14A	5/14/2018	10:39:0 22:39	JS
SL3809-044	5	JLE14A	5/14/2018	10:43:0 22:43	JS
SL3809-046	5	JLE14A	5/14/2018	10:48:0 22:48	JS
SL3809-047	5	JLE14A	5/14/2018	10:52:0 22:52	JS
RINSE	1	JLE14A	5/14/2018	10:56:0 22:56	JS
PBWLE07IMW2	5	JLE14A	5/14/2018	11:00:0 23:00	JS
LCSWLE07IMW2	5	JLE14A	5/14/2018	11:04:0 23:04	JS
SL3841-002	5	JLE14A	5/14/2018	11:09:0 23:09	JS
SL3841-003	5	JLE14A	5/14/2018	11:13:0 23:13	JS
SL3841-004	5	JLE14A	5/14/2018	11:17:0 23:17	JS
CCV	1	JLE14A	5/14/2018	11:21:0 23:21	JS
CCB	1	JLE14A	5/14/2018	11:25:0 23:25	JS
SL3841-005	5	JLE14A	5/14/2018	11:30:0 23:30	JS
SL3841-006	5	JLE14A	5/14/2018	11:34:0 23:34	JS
SL3841-010	5	JLE14A	5/14/2018	11:38:0 23:38	JS
SL3841-011	5	JLE14A	5/14/2018	11:42:0 23:42	JS
SL3841-011L	25	JLE14A	5/14/2018	11:47:0 23:47	JS
SL3841-011A	5	JLE14A	5/14/2018	11:51:0 23:51	JS
SL3841-011S	5	JLE14A	5/14/2018	11:55:0 23:55	JS
SL3841-011P	5	JLE14A	5/14/2018	11:59:0 23:59	JS
SL3841-012	5	JLE14A	5/15/2018	12:04:0 0:04	JS
SL3841-013	5	JLE14A	5/15/2018	12:08:0 0:08	JS
CCV	1	JLE14A	5/15/2018	12:12:0 0:12	JS
CCB	1	JLE14A	5/15/2018	12:16:0 0:16	JS
SL3841-014	5	JLE14A	5/15/2018	12:21:0 0:21	JS

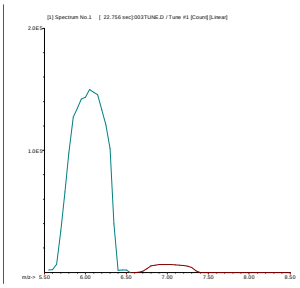
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3841-015	5	JLE14A	5/15/2018	12:25:0 0:25	JS
SL3841-016	5	JLE14A	5/15/2018	12:29:0 0:29	JS
SL3841-018	5	JLE14A	5/15/2018	12:33:0 0:33	JS
SL3841-019	5	JLE14A	5/15/2018	12:38:0 0:38	JS
SL3841-020	5	JLE14A	5/15/2018	12:42:0 0:42	JS
SL3841-008	5	JLE14A	5/15/2018	12:46:0 0:46	JS
SL3841-009	5	JLE14A	5/15/2018	12:50:0 0:50	JS
SL3841-017	5	JLE14A	5/15/2018	12:55:0 0:55	JS
RINSE	1	JLE14A	5/15/2018	12:59:0 0:59	JS
CCV	1	JLE14A	5/15/2018	1:03:00 1:03	JS
CCB	1	JLE14A	5/15/2018	1:07:00 1:07	JS
PQL	1	JLE14A	5/15/2018	1:11:00 1:11	JS
CCV	1	JLE14A	5/15/2018	1:16:00 1:16	JS
CCB	1	JLE14A	5/15/2018	1:20:00 1:20	JS

6020 QC Tune Report

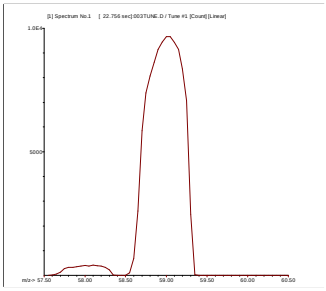
Data File: C:\ICPCHEM\1\DATA\JLE14A.B\003TUNE.D
Date Acquired: May 14 2018 02:23 pm
Acq. Method: TN6020E.M
Operator: JS
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

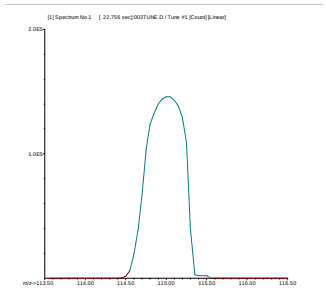
Element	Actual	Required	Flag
7 Li	2.74	5.00	
59 Co	2.02	5.00	
115 In	1.00	5.00	
205 Tl	0.68	5.00	



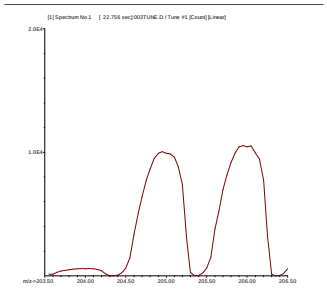
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 0.90
Flag:



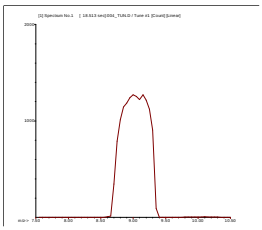
205 Tl
Mass Calib.
Actual: 205.00
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

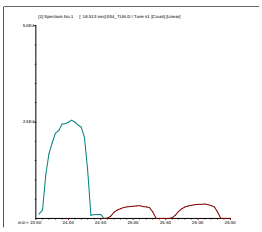
Data File: C:\ICPCHEM\1\DATA\JLE14A.B\004_TUN.D
Date Acquired: May 14 2018 02:26 pm
Acq. Method: TN200_8E.M
Operator: JS
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

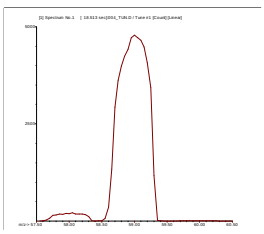
Element	Actual	Required	Flag
9 Be	1.13	5.00	
24 Mg	4.09	5.00	
59 Co	1.47	5.00	
115 In	1.15	5.00	
208 Pb	1.25	5.00	



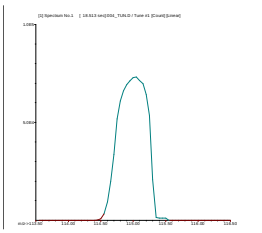
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



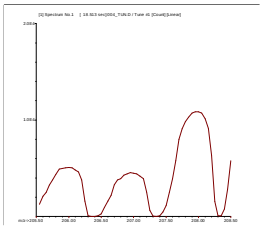
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.05
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:

Tune Result: Pass

Katahdin Analytical Services 4000121

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.I
Date Acquired: May 14 2018 03:12 pm
Operator: JS
Sample Name: Cal Blank
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: May 14 2018 03:14 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	4492941.00	A	63100.00	1.40
9	Be	8.52	P	3.39	39.84
11	B	363.35	P	23.33	6.42
23	Na	27923.40	P	1151.00	4.12
25	Mg	235.57	P	10.19	4.33
27	Al	2790.18	P	467.30	16.75
28	Si	1028041.00	A	9654.00	0.94
29	Si	87162.95	P	378.00	0.43
39	K	869563.19	A	7103.00	0.82
43	Ca	196.32	P	55.93	28.49
44	Ca	3096.37	P	46.37	1.50
45	Sc	3094961.00	A	25110.00	0.81
51	V	3827.64	P	97.58	2.55
52	Cr	9817.96	P	77.09	0.79
53	Cr	7332.00	P	146.30	2.00
55	Mn	1281.21	P	102.80	8.02
56	Fe	1940419.00	A	6890.00	0.36
57	Fe	9757.58	P	524.30	5.37
59	Co	126.68	P	13.33	10.52
60	Ni	57.42	P	15.40	26.82
63	Cu	493.36	P	50.45	10.23
65	Cu	236.67	P	24.04	10.16
66	Zn	951.17	P	86.57	9.10
68	Zn	1210.09	P	76.24	6.30
72	Ge	631723.63	P	4177.00	0.66
75	As	-79.20	P	79.24	100.05
82	Se	-8.77	P	41.39	471.73
88	Sr	81.49	P	16.97	20.83
89	Y	4547444.00	A	48600.00	1.07
98	Mo	22.20	P	1.96	8.81
107	Ag	33.33	P	8.82	26.46
109	Ag	24.45	P	12.62	51.63
111	Cd	941.05	P	13.84	1.47
114	Cd	10.19	P	20.58	202.01
115	In	4449646.00	A	16060.00	0.36
118	Sn	480.02	P	23.33	4.86
120	Sn	734.49	P	30.25	4.12
121	Sb	35.56	P	3.85	10.83
123	Sb	33.33	P	20.82	62.46
135	Ba	16.67	P	8.82	52.91
137	Ba	36.67	P	5.77	15.75
159	Tb	6220065.00	A	6427.00	0.10
182	W	33.33	P	5.77	17.32
203	Tl	280.01	P	44.10	15.75
205	Tl	720.04	P	45.10	6.26
208	Pb	2367.94	P	207.20	8.75
209	Bi	3318257.00	A	46850.00	1.41
232	Th	17.78	P	7.70	43.30
238	U	8.89	P	5.09	57.28

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\018CALI.D\018CALI.D#
Date Acquired: May 14 2018 03:16 pm
Operator: JS
Sample Name: Cal Std
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: May 14 2018 03:15 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	4392296.00	A	175800.00	4.00
9 Be	155583.41	P	3385.00	2.18
11 B	78512.41	P	4006.00	5.10
23 Na	87351000.00	A	3325000.00	3.81
25 Mg	7282041.00	A	107400.00	1.47
27 Al	6936554.00	A	372500.00	5.37
28 Si	4907787.00	A	166600.00	3.39
29 Si	297128.00	P	4726.00	1.59
39 K	97162120.00	A	1541000.00	1.59
43 Ca	173829.09	P	3799.00	2.19
44 Ca	2787016.00	A	27020.00	0.97
45 Sc	3192133.00	A	13830.00	0.43
51 V	537061.69	P	11930.00	2.22
52 Cr	473225.50	P	4999.00	1.06
53 Cr	61469.20	P	1430.00	2.33
55 Mn	600436.38	P	5586.00	0.93
56 Fe	98280152.00	A	1630000.00	1.66
57 Fe	2402100.00	A	33670.00	1.40
59 Co	526513.63	P	3691.00	0.70
60 Ni	120150.60	P	2336.00	1.94
63 Cu	285760.41	P	394.70	0.14
65 Cu	132106.20	P	1202.00	0.91
66 Zn	67576.40	P	847.30	1.25
68 Zn	49902.06	P	100.30	0.20
72 Ge	614107.69	P	3683.00	0.60
75 As	66479.13	P	1104.00	1.66
82 Se	5359.70	P	46.96	0.88
88 Sr	727325.00	P	2674.00	0.37
89 Y	4523317.00	A	45600.00	1.01
98 Mo	225425.09	P	869.60	0.39
107 Ag	365532.31	P	1726.00	0.47
109 Ag	347452.41	P	1654.00	0.48
111 Cd	72763.38	P	725.70	1.00
114 Cd	160262.80	P	1032.00	0.64
115 In	4357767.00	A	51820.00	1.19
118 Sn	217639.41	P	1337.00	0.61
120 Sn	299108.00	P	2144.00	0.72
121 Sb	254592.59	P	442.80	0.17
123 Sb	193107.09	P	1885.00	0.98
135 Ba	65242.41	P	142.10	0.22
137 Ba	114025.60	P	749.70	0.66
159 Tb	6276308.00	A	43250.00	0.69
182 W	283551.31	P	2614.00	0.92
203 Tl	237673.80	P	1898.00	0.80
205 Tl	563718.38	P	6126.00	1.09
208 Pb	771226.19	P	5415.00	0.70
209 Bi	3189297.00	A	6814.00	0.21
232 Th	792938.38	M	906.20	0.11
238 U	753721.63	P	14960.00	1.98

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4392296.00	4.00	4492941.00	97.8	79.5 - 120.4	
45 Sc	3192133.50	0.43	3094960.50	103.1	79.5 - 120.4	
72 Ge	614107.75	0.60	631723.63	97.2	79.5 - 120.4	
159 Tb	6276308.00	0.69	6220065.50	100.9	79.5 - 120.4	
209 Bi	3189297.50	0.21	3318256.50	96.1	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000123

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\019_ICV.D\019_ICV.D#
Date Acquired: May 14 2018 03:20 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: ICV
Misc Info:
Vial Number: 1202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.07	ppb	2.37	20	95.35	
11 B	21.69	ppb	1.86	20	108.45	
23 Na	4,031.	ppb	1.06	4,000	100.775	
25 Mg	4,031.	ppb	2.23	4,000	100.775	
27 Al	412.6	ppb	1.43	400	103.15	
28 Si	388.7	ppb	5.27	400	97.175	
29 Si	373.9	ppb	3.98	400	93.475	
39 K	3,962.	ppb	1.32	4,000	99.05	
43 Ca	3,896.	ppb	1.89	4,000	97.4	
44 Ca	3,999.	ppb	0.40	4,000	99.975	
51 V	19.56	ppb	1.01	20	97.8	
52 Cr	19.14	ppb	0.86	20	95.7	
53 Cr	16.39	ppb	3.43	20	81.95	
55 Mn	19.33	ppb	0.84	20	96.65	
56 Fe	3,920.	ppb	0.32	4,000	98	
57 Fe	3,963.	ppb	1.52	4,000	99.075	
59 Co	19.7	ppb	1.34	20	98.5	
60 Ni	19.36	ppb	2.27	20	96.8	
63 Cu	19.53	ppb	1.36	20	97.65	
65 Cu	19.99	ppb	1.35	20	99.95	
66 Zn	20.57	ppb	1.51	20	102.85	
68 Zn	20.19	ppb	0.43	20	100.95	
75 As	19.33	ppb	1.13	20	96.65	
82 Se	20.14	ppb	2.10	20	100.7	
88 Sr	19.35	ppb	0.51	20	96.75	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	37.59	ppb	0.47	40	93.975	
107 Ag	19.39	ppb	0.94	20	96.95	
109 Ag	19.53	ppb	0.47	20	97.65	
111 Cd	19.55	ppb	0.17	20	97.75	
114 Cd	19.6	ppb	0.25	20	98	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	19.83	ppb	1.26	20	99.15	
120 Sn	20.15	ppb	1.25	20	100.75	
121 Sb	20.01	ppb	0.97	20	100.05	
123 Sb	19.92	ppb	0.55	20	99.6	
135 Ba	19.88	ppb	0.74	20	99.4	
137 Ba	19.9	ppb	0.47	20	99.5	
182 W	19.44	ppb	1.81	20	97.2	
203 Tl	19.76	ppb	1.16	20	98.8	
205 Tl	19.79	ppb	0.59	20	98.95	
208 Pb	19.34	ppb	1.19	20	96.7	
232 Th	19.15	ppb	1.38	20	95.75	
238 U	19.17	ppb	2.33	20	95.85	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4554242.00	2.43	4492941.00	101.4	80 - 120.4	
45 Sc	3280234.30	0.99	3094960.50	106.0	80 - 120.4	
72 Ge	646170.63	0.77	631723.63	102.3	80 - 120.4	
159 Tb	6296521.00	0.37	6220065.50	101.2	80 - 120.4	
209 Bi	3282468.30	1.21	3318256.50	98.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000124

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\020_ICB.D\020_ICB.D#
Date Acquired: May 14 2018 03:23 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: ICB
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0024	ppb	203.14	1.00	
11 B	1.625	ppb	21.03	1.00	
23 Na	0.4833	ppb	128.20	1.00	
25 Mg	0.3642	ppb	185.28	1.00	
27 Al	0.0388	ppb	267.78	1.00	
28 Si	0.4705	ppb	1145.80	1.00	
29 Si	-12.3	ppb	72.41	1.00	
39 K	-0.4823	ppb	405.56	1.00	
43 Ca	0.4224	ppb	175.83	1.00	
44 Ca	1.092	ppb	121.52	1.00	
51 V	-0.1244	ppb	39.87	1.00	
52 Cr	-0.0797	ppb	32.14	1.00	
53 Cr	-1.143	ppb	27.94	1.00	
55 Mn	0.0099	ppb	42.69	1.00	
56 Fe	-6.95	ppb	44.73	1.00	
57 Fe	0.6893	ppb	106.86	1.00	
59 Co	0.0012	ppb	255.72	1.00	
60 Ni	0.0018	ppb	262.78	1.00	
63 Cu	-0.0053	ppb	73.02	1.00	
65 Cu	-0.0111	ppb	172.65	1.00	
66 Zn	0.0008	ppb	4280.90	1.00	
68 Zn	0.0718	ppb	116.03	1.00	
75 As	-0.074	ppb	72.76	1.00	
82 Se	0.1465	ppb	172.08	1.00	
88 Sr	0.0017	ppb	63.36	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0746	ppb	30.42	1.00	
107 Ag	0.0062	ppb	69.51	1.00	
109 Ag	0.0045	ppb	73.59	1.00	
111 Cd	-0.0299	ppb	32.39	1.00	
114 Cd	-0.0009	ppb	254.81	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0363	ppb	20.14	1.00	
120 Sn	0.0206	ppb	14.13	1.00	
121 Sb	0.005	ppb	48.38	1.00	
123 Sb	0.0025	ppb	141.07	1.00	
135 Ba	0.0042	ppb	89.05	1.00	
137 Ba	0.0043	ppb	164.01	1.00	
182 W	0.0606	ppb	26.73	1.00	
203 Tl	0.0088	ppb	126.55	1.00	
205 Tl	0.0054	ppb	107.50	1.00	
208 Pb	-0.0174	ppb	30.95	1.00	
232 Th	0.0573	ppb	11.13	1.00	
238 U	0.0064	ppb	24.96	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4481757.00	3.35	4492941.00	99.8	79.5 - 120	
45 Sc	3096233.80	1.70	3094960.50	100.0	79.5 - 120	
72 Ge	631557.81	0.62	631723.63	100.0	79.5 - 120	
159 Tb	6238624.50	1.48	6220065.50	100.3	79.5 - 120	
209 Bi	3309879.00	1.87	3318256.50	99.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\021_PQL.D\021_PQL.D#
Date Acquired: May 14 2018 03:26 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PQL
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.1904	ppb	3.58	0.20	95.2	
11 B	4.479	ppb	2.96	4.00	111.975	
23 Na	211.1	ppb	3.65	200.00	105.55	
25 Mg	20.57	ppb	3.21	20.00	102.85	
27 Al	20.37	ppb	1.79	20.00	101.85	
28 Si	107.4	ppb	3.22	100.00	107.4	
29 Si	90.32	ppb	7.79	100.00	90.32	
39 K	198.1	ppb	2.73	200.00	99.05	
43 Ca	14.45	ppb	15.68	20.00	72.25	
44 Ca	20.4	ppb	6.09	20.00	102	
51 V	0.9234	ppb	3.39	1.00	92.34	
52 Cr	0.8888	ppb	4.56	1.00	88.88	
53 Cr	-0.9714	ppb	9.47	---	#VALUE!	
55 Mn	0.4067	ppb	4.84	0.40	101.675	
56 Fe	15.81	ppb	22.02	20.00	79.05	
57 Fe	19.66	ppb	12.74	20.00	98.3	
59 Co	0.1998	ppb	5.49	0.20	99.9	
60 Ni	0.3995	ppb	2.10	0.40	99.875	
63 Cu	0.6149	ppb	8.58	0.60	102.483	
65 Cu	0.5779	ppb	5.29	0.60	96.3167	
66 Zn	2.082	ppb	4.59	2.00	104.1	
68 Zn	1.961	ppb	6.74	2.00	98.05	
75 As	0.9836	ppb	28.33	1.00	98.36	
82 Se	0.9533	ppb	34.25	1.00	95.33	
88 Sr	0.9733	ppb	6.85	1.00	97.33	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	0.9958	ppb	1.59	1.00	99.58	
107 Ag	0.1996	ppb	1.54	0.20	99.8	
109 Ag	0.2023	ppb	4.06	0.20	101.15	
111 Cd	0.1522	ppb	19.26	0.20	76.1	
114 Cd	0.2013	ppb	5.68	0.20	100.65	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	1.01	ppb	4.66	1.00	101	
120 Sn	1.028	ppb	4.57	1.00	102.8	
121 Sb	0.2139	ppb	1.88	0.20	106.95	
123 Sb	0.2206	ppb	6.49	0.20	110.3	
135 Ba	0.4154	ppb	4.29	0.40	103.85	
137 Ba	0.4108	ppb	4.25	0.40	102.7	
182 W	0.9916	ppb	1.89	1.00	99.16	
203 Tl	0.2199	ppb	5.96	0.20	109.95	
205 Tl	0.2031	ppb	6.07	0.20	101.55	
208 Pb	0.2184	ppb	7.78	0.20	109.2	
232 Th	0.2097	ppb	5.51	0.20	104.85	
238 U	0.2019	ppb	3.11	0.20	100.95	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4444047.50	1.03	4492941.00	98.9	80 - 120.4	
45 Sc	3077699.80	1.28	3094960.50	99.4	80 - 120.4	
72 Ge	629745.25	1.20	631723.63	99.7	80 - 120.4	
159 Tb	6219506.00	1.88	6220065.50	100.0	80 - 120.4	
209 Bi	3244998.80	1.68	3318256.50	97.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000126

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\022SMPL.D\022SMPL.D#
Date Acquired: May 14 2018 03:30 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0005	0.0005	ppb	137.77	100.	
11 B	0.436	0.436	ppb	18.90	1000.	
23 Na	0.7888	0.7888	ppb	32.44	200000.	
25 Mg	0.0542	0.0542	ppb	190.30	200000.	
27 Al	0.4346	0.4346	ppb	23.72	200000.	
28 Si	1.401	1.401	ppb	356.46	#VALUE!	
29 Si	-11.54	-11.54	ppb	9.58	10000.	
39 K	-0.8045	-0.8045	ppb	117.92	200000.	
43 Ca	-2.125	-2.125	ppb	183.53	#VALUE!	
44 Ca	1.18	1.18	ppb	33.25	200000.	
51 V	-0.0835	-0.0835	ppb	66.90	1000.	
52 Cr	-0.0481	-0.0481	ppb	23.69	2000.	
53 Cr	-1.862	-1.862	ppb	4.98	#VALUE!	
55 Mn	-0.0058	-0.0058	ppb	18.09	2000.	
56 Fe	-0.139	-0.139	ppb	3915.10	#VALUE!	
57 Fe	0.8098	0.8098	ppb	124.10	100000.	
59 Co	-0.0014	-0.0014	ppb	122.85	1000.	
60 Ni	0.0139	0.0139	ppb	129.62	1000.	
63 Cu	0.1345	0.1345	ppb	8.17	#VALUE!	
65 Cu	0.1353	0.1353	ppb	10.85	2000.	
66 Zn	0.0079	0.0079	ppb	406.56	2000.	
68 Zn	0.0125	0.0125	ppb	657.67	#VALUE!	
75 As	0.0086	0.0086	ppb	1671.70	1000.	
82 Se	0.1142	0.1142	ppb	105.34	1000.	
88 Sr	-0.0008	-0.0008	ppb	64.71	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0104	0.0104	ppb	43.62	1000.	
107 Ag	0.0019	0.0019	ppb	88.65	100.	
109 Ag	0.001	0.001	ppb	18.07	#VALUE!	
111 Cd	-0.0329	-0.0329	ppb	30.45	#VALUE!	
114 Cd	-0.0021	-0.0021	ppb	39.34	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0033	-0.0033	ppb	179.33	1000.	
120 Sn	-0.014	-0.014	ppb	70.57	#VALUE!	
121 Sb	-0.0008	-0.0008	ppb	128.72	#VALUE!	
123 Sb	0.001	0.001	ppb	451.61	1000.	
135 Ba	0.0134	0.0134	ppb	60.19	2000.	
137 Ba	0.0033	0.0033	ppb	45.96	#VALUE!	
182 W	0.0088	0.0088	ppb	17.26	1000.	
203 Tl	0.0046	0.0046	ppb	34.34	1000.	
205 Tl	-0.0047	-0.0047	ppb	55.81	#VALUE!	
208 Pb	0.1539	0.1539	ppb	7.46	2000.	
232 Th	0.0085	0.0085	ppb	28.43	1000.	
238 U	0.001	0.001	ppb	97.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4664009.00	4.81	4492941.00	103.8	69.5 - 120	
45 Sc	3153090.30	2.15	3094960.50	101.9	69.5 - 120	
72 Ge	638596.25	1.79	631723.63	101.1	69.5 - 120	
159 Tb	6112078.50	0.70	6220065.50	98.3	69.5 - 120	
209 Bi	3190041.30	1.55	3318256.50	96.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000127

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\023ICSA.D\023ICSA.D#
Date Acquired: May 14 2018 03:34 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: ICSA
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0018	ppb	78.58		
11 B	0.6987	ppb	12.46		
23 Na	102,200.	ppb	1.42		
25 Mg	99,940.	ppb	3.06		
27 Al	99,860.	ppb	3.13		
28 Si	20.08	ppb	6.03		
29 Si	54.59	ppb	8.16		
39 K	99,380.	ppb	1.26		
43 Ca	101,500.	ppb	1.80		
44 Ca	97,280.	ppb	1.99		
51 V	0.1946	ppb	38.18		
52 Cr	1.129	ppb	3.48		
53 Cr	0.434	ppb	116.18		
55 Mn	0.3535	ppb	3.80		
56 Fe	96,200.	ppb	2.31		
57 Fe	92,940.	ppb	0.97		
59 Co	0.0926	ppb	8.26		
60 Ni	-0.2361	ppb	5.15		
63 Cu	4.21	ppb	2.84		
65 Cu	1.045	ppb	3.45		
66 Zn	2.543	ppb	6.28		
68 Zn	0.4309	ppb	15.97		
75 As	0.0733	ppb	175.10		
82 Se	0.1863	ppb	114.06		
88 Sr	0.9453	ppb	3.25		
89 Y	--------	---	--------		
98 Mo	1,890.	ppb	1.29		
107 Ag	0.0248	ppb	24.67		
109 Ag	0.0172	ppb	15.52		
111 Cd	0.0345	ppb	32.33		
114 Cd	0.017	ppb	103.35		
115 In	--------	---	--------		
118 Sn	0.0491	ppb	18.29		
120 Sn	0.0273	ppb	62.33		
121 Sb	0.0373	ppb	5.28		
123 Sb	0.045	ppb	9.56		
135 Ba	0.0925	ppb	7.74		
137 Ba	0.0878	ppb	13.09		
182 W	0.2336	ppb	1.86		
203 Tl	0.0088	ppb	3.85		
205 Tl	-0.0024	ppb	154.03		
208 Pb	0.0625	ppb	19.23		
232 Th	0.0469	ppb	13.67		
238 U	0.0013	ppb	50.10		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4353064.00	1.58	4492941.00	96.9	69.5 - 120.4	
45 Sc	3237120.30	3.31	3094960.50	104.6	69.5 - 120.4	
72 Ge	639350.69	1.73	631723.63	101.2	69.5 - 120.4	
159 Tb	6088915.50	0.18	6220065.50	97.9	69.5 - 120.4	
209 Bi	2721698.50	0.92	3318256.50	82.0	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000128

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\024ICSB.D\024ICSB.D#
Date Acquired: May 14 2018 03:38 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: ICSAB
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	19.25	ppb	5.62	20.00	79.5 - 120	
11 B	22.54	ppb	4.29	20.00	79.5 - 120	
23 Na	105,400.	ppb	1.28	#########	79.5 - 120	
25 Mg	101,300.	ppb	1.35	#########	79.5 - 120	
27 Al	100,600.	ppb	1.78	#########	79.5 - 120	
28 Si	532.8	ppb	1.77	---	##### - #####	
29 Si	557.7	ppb	2.74	---	##### - #####	
39 K	98,850.	ppb	0.87	#########	79.5 - 120	
43 Ca	101,400.	ppb	1.51	#########	79.5 - 120	
44 Ca	96,790.	ppb	0.63	#########	79.5 - 120	
51 V	20.78	ppb	1.14	20.00	79.5 - 120	
52 Cr	20.93	ppb	1.68	20.00	79.5 - 120	
53 Cr	21.48	ppb	1.61	---	##### - #####	
55 Mn	19.71	ppb	0.89	20.00	79.5 - 120	
56 Fe	96,320.	ppb	0.83	#########	79.5 - 120	
57 Fe	93,950.	ppb	0.96	#########	79.5 - 120	
59 Co	19.52	ppb	2.01	20.00	79.5 - 120	
60 Ni	18.27	ppb	1.76	20.00	79.5 - 120	
63 Cu	22.58	ppb	1.15	20.00	79.5 - 120	
65 Cu	19.98	ppb	1.71	20.00	79.5 - 120	
66 Zn	19.69	ppb	0.24	20.00	79.5 - 120	
68 Zn	17.97	ppb	2.46	20.00	79.5 - 120	
75 As	19.69	ppb	0.59	20.00	79.5 - 120	
82 Se	19.38	ppb	2.06	20.00	79.5 - 120	
88 Sr	21.04	ppb	0.92	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,912.	ppb	1.01	2000.00	79.5 - 120	
107 Ag	17.84	ppb	2.04	20.00	79.5 - 120	
109 Ag	18.	ppb	1.71	20.00	79.5 - 120	
111 Cd	18.08	ppb	1.66	20.00	79.5 - 120	
114 Cd	18.01	ppb	1.07	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	21.12	ppb	1.37	20.00	79.5 - 120	
120 Sn	21.19	ppb	1.03	20.00	79.5 - 120	
121 Sb	20.82	ppb	0.90	20.00	79.5 - 120	
123 Sb	21.	ppb	0.69	20.00	79.5 - 120	
135 Ba	21.12	ppb	1.60	20.00	79.5 - 120	
137 Ba	20.93	ppb	0.48	20.00	79.5 - 120	
182 W	20.21	ppb	1.42	20.00	79.5 - 120	
203 Tl	21.27	ppb	0.95	20.00	79.5 - 120	
205 Tl	21.31	ppb	2.14	20.00	79.5 - 120	
208 Pb	21.15	ppb	1.50	20.00	79.5 - 120	
232 Th	22.13	ppb	1.43	20.00	79.5 - 120	
238 U	21.82	ppb	1.98	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4469143.00	4.45	4492941.00	99.5	69.5 - 120	
45 Sc	3342195.80	1.59	3094960.50	108.0	69.5 - 120	
72 Ge	656262.25	1.58	631723.63	103.9	69.5 - 120	
159 Tb	6200078.50	1.32	6220065.50	99.7	69.5 - 120	
209 Bi	2746144.30	1.36	3318256.50	82.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000129

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\025SMPL.D\025SMPL.D#
Date Acquired: May 14 2018 03:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0013	0.0013	ppb	141.83	100.	
11 B	0.382	0.382	ppb	15.94	1000.	
23 Na	8.213	8.213	ppb	75.02	200000.	
25 Mg	6.045	6.045	ppb	95.60	200000.	
27 Al	7.325	7.325	ppb	91.90	200000.	
28 Si	5.261	5.261	ppb	74.40	#VALUE!	
29 Si	-28.5	-28.5	ppb	17.73	10000.	
39 K	1.954	1.954	ppb	276.97	200000.	
43 Ca	4.073	4.073	ppb	73.39	#VALUE!	
44 Ca	5.841	5.841	ppb	83.19	200000.	
51 V	-0.0922	-0.0922	ppb	40.17	1000.	
52 Cr	-0.0064	-0.0064	ppb	162.19	2000.	
53 Cr	1.336	1.336	ppb	10.42	#VALUE!	
55 Mn	0.0023	0.0023	ppb	272.38	2000.	
56 Fe	3.359	3.359	ppb	74.96	#VALUE!	
57 Fe	8.593	8.593	ppb	28.02	100000.	
59 Co	-0.0001	-0.0001	ppb	2888.70	1000.	
60 Ni	0.0223	0.0223	ppb	32.26	1000.	
63 Cu	0.1581	0.1581	ppb	7.33	#VALUE!	
65 Cu	0.1542	0.1542	ppb	5.98	2000.	
66 Zn	0.1394	0.1394	ppb	66.61	2000.	
68 Zn	0.12	0.12	ppb	52.58	#VALUE!	
75 As	0.0177	0.0177	ppb	1054.70	1000.	
82 Se	-0.0035	-0.0035	ppb	2385.10	1000.	
88 Sr	0.0009	0.0009	ppb	220.73	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.214	1.214	ppb	34.62	1000.	
107 Ag	0.0055	0.0055	ppb	76.14	100.	
109 Ag	0.0046	0.0046	ppb	54.44	#VALUE!	
111 Cd	-0.0689	-0.0689	ppb	29.71	#VALUE!	
114 Cd	-0.0003	-0.0003	ppb	869.80	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0071	0.0071	ppb	83.16	1000.	
120 Sn	0.0003	0.0003	ppb	1882.80	#VALUE!	
121 Sb	0.0066	0.0066	ppb	54.91	#VALUE!	
123 Sb	0.	0.	ppb	18969.00	1000.	
135 Ba	0.0284	0.0284	ppb	47.20	2000.	
137 Ba	0.0404	0.0404	ppb	22.28	#VALUE!	
182 W	0.0115	0.0115	ppb	42.11	1000.	
203 Tl	0.0107	0.0107	ppb	46.22	1000.	
205 Tl	-0.0026	-0.0026	ppb	78.42	#VALUE!	
208 Pb	0.1394	0.1394	ppb	5.86	2000.	
232 Th	0.0109	0.0109	ppb	17.75	1000.	
238 U	0.0029	0.0029	ppb	12.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4698673.50	1.50	4492941.00	104.6	69.5 - 120	
45 Sc	3332540.80	0.94	3094960.50	107.7	69.5 - 120	
72 Ge	670699.69	0.52	631723.63	106.2	69.5 - 120	
159 Tb	6211803.50	0.10	6220065.50	99.9	69.5 - 120	
209 Bi	3211532.50	0.71	3318256.50	96.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000130

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\026SMPL.D\026SMPL.D#
Date Acquired: May 14 2018 03:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LRS1
Misc Info:
Vial Number: 3511
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	95.75	95.75	ppb	1.77	100.	
11 B	0.175	0.175	ppb	8.77	1000.	
23 Na	3.2	3.2	ppb	10.04	200000.	
25 Mg	1.057	1.057	ppb	3.53	200000.	
27 Al	3.751	3.751	ppb	4.63	200000.	
28 Si	-1.858	-1.858	ppb	250.54	#VALUE!	
29 Si	-6.36	-6.36	ppb	38.52	10000.	
39 K	0.6925	0.6925	ppb	195.81	200000.	
43 Ca	1,593.	1,593.	ppb	0.51	#VALUE!	
44 Ca	124.7	124.7	ppb	5.32	200000.	
51 V	1,078.	1,078.	ppb	1.16	1000.	>LDR
52 Cr	2,077.	2,077.	ppb	1.39	2000.	>LDR
53 Cr	2,120.	2,120.	ppb	0.82	#VALUE!	
55 Mn	2,032.	2,032.	ppb	1.22	2000.	>LDR
56 Fe	-0.0508	-0.0508	ppb	4049.60	#VALUE!	
57 Fe	0.1191	0.1191	ppb	359.78	100000.	
59 Co	1,039.	1,039.	ppb	0.61	1000.	>LDR
60 Ni	1,024.	1,024.	ppb	1.53	1000.	>LDR
63 Cu	2,000.	2,000.	ppb	1.87	#VALUE!	
65 Cu	2,058.	2,058.	ppb	1.60	2000.	>LDR
66 Zn	2,093.	2,093.	ppb	1.70	2000.	>LDR
68 Zn	2,096.	2,096.	ppb	1.45	#VALUE!	
75 As	1,059.	1,059.	ppb	1.27	1000.	>LDR
82 Se	1,095.	1,095.	ppb	0.44	1000.	>LDR
88 Sr	1,972.	1,972.	ppb	0.44	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1,002.	1,002.	ppb	0.85	1000.	>LDR
107 Ag	107.2	107.2	ppb	0.35	100.	>LDR
109 Ag	107.5	107.5	ppb	0.42	#VALUE!	
111 Cd	1,050.	1,050.	ppb	2.14	#VALUE!	
114 Cd	1,014.	1,014.	ppb	0.93	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,038.	1,038.	ppb	1.19	1000.	>LDR
120 Sn	1,039.	1,039.	ppb	0.51	#VALUE!	
121 Sb	1,050.	1,050.	ppb	1.03	#VALUE!	
123 Sb	1,065.	1,065.	ppb	0.70	1000.	>LDR
135 Ba	2,124.	2,124.	ppb	1.24	2000.	>LDR
137 Ba	2,091.	2,091.	ppb	1.79	#VALUE!	
182 W	1,008.	1,008.	ppb	1.62	1000.	>LDR
203 Tl	1,013.	1,013.	ppb	1.22	1000.	>LDR
205 Tl	993.6	993.6	ppb	1.44	#VALUE!	
208 Pb	1,981.	1,981.	ppb	1.72	2000.	
232 Th	980.6	980.6	ppb	2.04	1000.	
238 U	964.8	964.8	ppb	0.92	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4737063.50	1.51	4492941.00	105.4	69.5 - 120	
45 Sc	3138263.00	0.98	3094960.50	101.4	69.5 - 120	
72 Ge	617598.38	1.73	631723.63	97.8	69.5 - 120	
159 Tb	6094814.50	1.26	6220065.50	98.0	69.5 - 120	
209 Bi	3233750.00	0.83	3318256.50	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

17 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000131

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\027SMPL.D\027SMPL.D#
Date Acquired: May 14 2018 03:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LRS2
Misc Info:
Vial Number: 3512
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0075	0.0075	ppb	17.13	100.	
11 B	0.5894	0.5894	ppb	7.38	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	204,300.	204,300.	ppb	2.12	200000.	>LDR
27 Al	203,300.	203,300.	ppb	0.75	200000.	>LDR
28 Si	10,460.	10,460.	ppb	2.09	#VALUE!	
29 Si	10,650.	10,650.	ppb	2.02	10000.	>LDR
39 K	194,500.	194,500.	ppb	2.89	200000.	
43 Ca	196,100.	196,100.	ppb	1.72	#VALUE!	
44 Ca	192,800.	192,800.	ppb	0.82	200000.	
51 V	0.1165	0.1165	ppb	63.26	1000.	
52 Cr	3.045	3.045	ppb	2.51	2000.	
53 Cr	1.139	1.139	ppb	13.92	#VALUE!	
55 Mn	7.572	7.572	ppb	0.51	2000.	
56 Fe	98,020.	98,020.	ppb	0.62	#VALUE!	
57 Fe	94,840.	94,840.	ppb	0.63	100000.	
59 Co	2.848	2.848	ppb	0.73	1000.	
60 Ni	3.123	3.123	ppb	4.92	1000.	
63 Cu	10.14	10.14	ppb	1.18	#VALUE!	
65 Cu	3.067	3.067	ppb	2.95	2000.	
66 Zn	3.9	3.9	ppb	1.40	2000.	
68 Zn	1.192	1.192	ppb	3.20	#VALUE!	
75 As	0.2336	0.2336	ppb	28.20	1000.	
82 Se	0.4522	0.4522	ppb	1.83	1000.	
88 Sr	6.963	6.963	ppb	0.99	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.52	1.52	ppb	41.95	1000.	
107 Ag	0.3507	0.3507	ppb	3.43	100.	
109 Ag	0.361	0.361	ppb	4.13	#VALUE!	
111 Cd	0.0216	0.0216	ppb	80.42	#VALUE!	
114 Cd	-0.0068	-0.0068	ppb	68.05	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.5872	0.5872	ppb	17.00	1000.	
120 Sn	0.5519	0.5519	ppb	14.27	#VALUE!	
121 Sb	0.173	0.173	ppb	15.17	#VALUE!	
123 Sb	0.1852	0.1852	ppb	6.51	1000.	
135 Ba	0.2458	0.2458	ppb	8.38	2000.	
137 Ba	0.2546	0.2546	ppb	7.39	#VALUE!	
182 W	1.228	1.228	ppb	36.19	1000.	
203 Tl	0.0425	0.0425	ppb	22.16	1000.	
205 Tl	0.046	0.046	ppb	11.64	#VALUE!	
208 Pb	0.4767	0.4767	ppb	3.33	2000.	
232 Th	1.034	1.034	ppb	22.76	1000.	
238 U	0.1286	0.1286	ppb	19.08	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4356302.50	4.05	4492941.00	97.0	69.5 - 120	
45 Sc	3386027.50	5.69	3094960.50	109.4	69.5 - 120	
72 Ge	633735.94	3.61	631723.63	100.3	69.5 - 120	
159 Tb	5556815.00	1.03	6220065.50	89.3	69.5 - 120	
209 Bi	2277712.30	1.60	3318256.50	68.6	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

4 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000132

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\028SMPL.D\028SMPL.D#
Date Acquired: May 14 2018 03:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.002	0.002	ppb	44.51	100.	
11 B	0.1114	0.1114	ppb	33.73	1000.	
23 Na	15.13	15.13	ppb	65.08	200000.	
25 Mg	6.106	6.106	ppb	106.06	200000.	
27 Al	6.494	6.494	ppb	112.26	200000.	
28 Si	19.67	19.67	ppb	8.81	#VALUE!	
29 Si	-24.68	-24.68	ppb	27.35	10000.	
39 K	5.93	5.93	ppb	136.17	200000.	
43 Ca	4.335	4.335	ppb	115.89	#VALUE!	
44 Ca	6.913	6.913	ppb	78.88	200000.	
51 V	0.012	0.012	ppb	621.75	1000.	
52 Cr	0.0059	0.0059	ppb	83.39	2000.	
53 Cr	3.468	3.468	ppb	10.12	#VALUE!	
55 Mn	-0.0026	-0.0026	ppb	201.16	2000.	
56 Fe	8.523	8.523	ppb	84.65	#VALUE!	
57 Fe	7.524	7.524	ppb	46.48	100000.	
59 Co	0.0017	0.0017	ppb	114.89	1000.	
60 Ni	0.0248	0.0248	ppb	16.62	1000.	
63 Cu	0.193	0.193	ppb	11.24	#VALUE!	
65 Cu	0.1661	0.1661	ppb	2.58	2000.	
66 Zn	0.1708	0.1708	ppb	23.37	2000.	
68 Zn	0.2252	0.2252	ppb	32.61	#VALUE!	
75 As	-0.0605	-0.0605	ppb	158.49	1000.	
82 Se	-0.0989	-0.0989	ppb	299.71	1000.	
88 Sr	0.0027	0.0027	ppb	47.28	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.2214	0.2214	ppb	48.51	1000.	
107 Ag	0.0019	0.0019	ppb	95.69	100.	
109 Ag	0.0027	0.0027	ppb	105.00	#VALUE!	
111 Cd	-0.0817	-0.0817	ppb	3.81	#VALUE!	
114 Cd	-0.0008	-0.0008	ppb	367.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0741	0.0741	ppb	31.44	1000.	
120 Sn	0.0713	0.0713	ppb	15.16	#VALUE!	
121 Sb	0.0211	0.0211	ppb	26.27	#VALUE!	
123 Sb	0.0243	0.0243	ppb	24.59	1000.	
135 Ba	0.0428	0.0428	ppb	27.66	2000.	
137 Ba	0.0433	0.0433	ppb	59.15	#VALUE!	
182 W	0.2225	0.2225	ppb	38.54	1000.	
203 Tl	0.0061	0.0061	ppb	49.96	1000.	
205 Tl	0.0043	0.0043	ppb	84.25	#VALUE!	
208 Pb	0.1451	0.1451	ppb	7.34	2000.	
232 Th	0.0378	0.0378	ppb	56.06	1000.	
238 U	0.0056	0.0056	ppb	20.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4675134.00	0.31	4492941.00	104.1	69.5 - 120	
45 Sc	3493044.50	1.14	3094960.50	112.9	69.5 - 120	
72 Ge	694221.38	1.26	631723.63	109.9	69.5 - 120	
159 Tb	6229378.00	0.52	6220065.50	100.1	69.5 - 120	
209 Bi	3102786.50	1.17	3318256.50	93.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000133

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\029SMPL.D\029SMPL.D#
Date Acquired: May 14 2018 03:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0001	-0.0001	ppb	555.95	100.	
11 B	0.1167	0.1167	ppb	8.58	1000.	
23 Na	4.542	4.542	ppb	9.13	200000.	
25 Mg	1.038	1.038	ppb	9.53	200000.	
27 Al	1.248	1.248	ppb	8.46	200000.	
28 Si	15.76	15.76	ppb	39.66	#VALUE!	
29 Si	-17.75	-17.75	ppb	13.71	10000.	
39 K	-0.7393	-0.7393	ppb	244.29	200000.	
43 Ca	-2.352	-2.352	ppb	108.55	#VALUE!	
44 Ca	1.545	1.545	ppb	60.63	200000.	
51 V	-0.0589	-0.0589	ppb	136.21	1000.	
52 Cr	0.0041	0.0041	ppb	552.64	2000.	
53 Cr	4.153	4.153	ppb	5.69	#VALUE!	
55 Mn	0.0009	0.0009	ppb	56.62	2000.	
56 Fe	-3.143	-3.143	ppb	59.66	#VALUE!	
57 Fe	2.474	2.474	ppb	58.04	100000.	
59 Co	-0.003	-0.003	ppb	89.84	1000.	
60 Ni	0.0169	0.0169	ppb	80.76	1000.	
63 Cu	0.183	0.183	ppb	10.08	#VALUE!	
65 Cu	0.159	0.159	ppb	1.77	2000.	
66 Zn	0.125	0.125	ppb	9.12	2000.	
68 Zn	0.1245	0.1245	ppb	75.23	#VALUE!	
75 As	0.123	0.123	ppb	78.81	1000.	
82 Se	-0.0321	-0.0321	ppb	97.66	1000.	
88 Sr	0.0009	0.0009	ppb	133.55	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0997	0.0997	ppb	43.55	1000.	
107 Ag	0.0014	0.0014	ppb	126.29	100.	
109 Ag	0.0004	0.0004	ppb	165.19	#VALUE!	
111 Cd	-0.0852	-0.0852	ppb	21.00	#VALUE!	
114 Cd	-0.0038	-0.0038	ppb	17.55	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0279	0.0279	ppb	10.55	1000.	
120 Sn	0.0178	0.0178	ppb	35.91	#VALUE!	
121 Sb	0.0106	0.0106	ppb	32.13	#VALUE!	
123 Sb	0.0082	0.0082	ppb	13.76	1000.	
135 Ba	0.0389	0.0389	ppb	28.69	2000.	
137 Ba	0.0362	0.0362	ppb	46.25	#VALUE!	
182 W	0.0977	0.0977	ppb	23.18	1000.	
203 Tl	0.0014	0.0014	ppb	390.83	1000.	
205 Tl	-0.002	-0.002	ppb	116.99	#VALUE!	
208 Pb	0.1315	0.1315	ppb	5.38	2000.	
232 Th	0.0262	0.0262	ppb	63.84	1000.	
238 U	0.0026	0.0026	ppb	17.63	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4631282.00	2.10	4492941.00	103.1	69.5 - 120	
45 Sc	3366437.80	1.56	3094960.50	108.8	69.5 - 120	
72 Ge	667159.63	1.04	631723.63	105.6	69.5 - 120	
159 Tb	6194958.00	1.25	6220065.50	99.6	69.5 - 120	
209 Bi	3183284.00	0.98	3318256.50	95.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000134

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\030_CCV.D\030_CCV.D#
Date Acquired: May 14 2018 04:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.14	ppb	3.55	25	92.56	
11 B	24.09	ppb	5.13	25	96.36	
23 Na	5,302.	ppb	3.99	5,000	106.04	
25 Mg	5,259.	ppb	1.70	5,000	105.18	
27 Al	507.1	ppb	1.73	500	101.42	
28 Si	510.4	ppb	3.60	500	102.08	
29 Si	475.5	ppb	5.01	500	95.1	
39 K	4,848.	ppb	1.05	5,000	96.96	
43 Ca	4,937.	ppb	2.37	5,000	98.74	
44 Ca	5,012.	ppb	0.17	5,000	100.24	
51 V	25.17	ppb	2.31	25	100.68	
52 Cr	24.55	ppb	1.37	25	98.2	
53 Cr	25.08	ppb	3.43	25	100.32	
55 Mn	24.45	ppb	0.38	25	97.8	
56 Fe	4,872.	ppb	1.05	5,000	97.44	
57 Fe	4,950.	ppb	1.41	5,000	99	
59 Co	24.75	ppb	0.55	25	99	
60 Ni	24.2	ppb	1.31	25	96.8	
63 Cu	24.74	ppb	1.21	25	98.96	
65 Cu	24.9	ppb	0.84	25	99.6	
66 Zn	24.98	ppb	0.42	25	99.92	
68 Zn	24.58	ppb	0.94	25	98.32	
75 As	24.37	ppb	1.42	25	97.48	
82 Se	24.52	ppb	0.47	25	98.08	
88 Sr	24.07	ppb	1.57	25	96.28	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.94	ppb	0.82	25	95.76	
107 Ag	24.29	ppb	1.00	25	97.16	
109 Ag	24.38	ppb	0.50	25	97.52	
111 Cd	24.38	ppb	0.59	25	97.52	
114 Cd	24.37	ppb	0.40	25	97.48	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.11	ppb	0.41	25	100.44	
120 Sn	25.29	ppb	1.06	25	101.16	
121 Sb	25.67	ppb	1.42	25	102.68	
123 Sb	25.82	ppb	1.29	25	103.28	
135 Ba	25.39	ppb	2.94	25	101.56	
137 Ba	25.26	ppb	1.51	25	101.04	
182 W	24.11	ppb	0.96	25	96.44	
203 Tl	24.42	ppb	0.87	25	97.68	
205 Tl	24.41	ppb	1.63	25	97.64	
208 Pb	24.55	ppb	1.56	25	98.2	
232 Th	23.91	ppb	0.96	25	95.64	
238 U	23.76	ppb	1.86	25	95.04	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4779091.00	2.93	4492941.00	106.4	80 - 120.4	
45 Sc	3299230.00	1.20	3094960.50	106.6	80 - 120.4	
72 Ge	642495.13	1.01	631723.63	101.7	80 - 120.4	
159 Tb	6194052.50	0.76	6220065.50	99.6	80 - 120.4	
209 Bi	3159346.30	0.63	3318256.50	95.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000135

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\031_CCB.D\031_CCB.D#
Date Acquired: May 14 2018 04:03 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0014	ppb	82.34	1.00	
11 B	0.9984	ppb	17.72	1.00	
23 Na	2.923	ppb	22.36	1.00	
25 Mg	0.9045	ppb	69.93	1.00	
27 Al	0.5653	ppb	91.53	1.00	
28 Si	9.482	ppb	32.21	1.00	
29 Si	-7.587	ppb	107.46	1.00	
39 K	1.493	ppb	111.19	1.00	
43 Ca	-1.615	ppb	99.38	1.00	
44 Ca	1.587	ppb	61.22	1.00	
51 V	-0.0448	ppb	284.02	1.00	
52 Cr	-0.0665	ppb	48.82	1.00	
53 Cr	1.351	ppb	26.80	1.00	
55 Mn	0.0035	ppb	265.35	1.00	
56 Fe	-7.403	ppb	18.97	1.00	
57 Fe	-0.6607	ppb	172.24	1.00	
59 Co	0.0004	ppb	612.17	1.00	
60 Ni	0.0009	ppb	864.46	1.00	
63 Cu	0.0158	ppb	45.58	1.00	
65 Cu	0.0148	ppb	45.24	1.00	
66 Zn	0.0134	ppb	185.36	1.00	
68 Zn	-0.0111	ppb	259.04	1.00	
75 As	0.0498	ppb	163.80	1.00	
82 Se	0.1398	ppb	102.36	1.00	
88 Sr	0.0036	ppb	78.30	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0664	ppb	28.45	1.00	
107 Ag	0.0059	ppb	42.48	1.00	
109 Ag	0.0038	ppb	87.51	1.00	
111 Cd	-0.0311	ppb	72.58	1.00	
114 Cd	-0.0004	ppb	622.65	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0411	ppb	10.96	1.00	
120 Sn	0.038	ppb	6.52	1.00	
121 Sb	0.007	ppb	87.78	1.00	
123 Sb	0.0116	ppb	89.66	1.00	
135 Ba	0.0128	ppb	73.91	1.00	
137 Ba	0.0015	ppb	109.77	1.00	
182 W	0.0789	ppb	41.16	1.00	
203 Tl	0.0015	ppb	648.05	1.00	
205 Tl	0.0004	ppb	2219.10	1.00	
208 Pb	-0.0389	ppb	10.84	1.00	
232 Th	0.0825	ppb	10.85	1.00	
238 U	0.0039	ppb	81.62	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4777584.00	0.61	4492941.00	106.3	79.5 - 120	
45 Sc	3181318.30	0.72	3094960.50	102.8	79.5 - 120	
72 Ge	641312.81	0.76	631723.63	101.5	79.5 - 120	
159 Tb	6051368.00	0.87	6220065.50	97.3	79.5 - 120	
209 Bi	3203150.30	1.83	3318256.50	96.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\032SMPL.D\032SMPL.D#
Date Acquired: May 14 2018 04:07 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4088-001
Misc Info: DW
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.3216	0.3216	ppb	4.29	100.	
11 B	5.6	5.6	ppb	3.36	1000.	
23 Na	145,100.	145,100.	ppb	1.21	200000.	
25 Mg	1,500.	1,500.	ppb	1.50	200000.	
27 Al	676.1	676.1	ppb	1.42	200000.	
28 Si	2,520.	2,520.	ppb	0.37	#VALUE!	
29 Si	2,541.	2,541.	ppb	0.88	10000.	
39 K	2,537.	2,537.	ppb	2.41	200000.	
43 Ca	27,600.	27,600.	ppb	1.58	#VALUE!	
44 Ca	27,060.	27,060.	ppb	0.44	200000.	
51 V	0.1489	0.1489	ppb	39.07	1000.	
52 Cr	0.7271	0.7271	ppb	3.40	2000.	
53 Cr	-1.31	-1.31	ppb	41.38	#VALUE!	
55 Mn	110.2	110.2	ppb	0.80	2000.	
56 Fe	25.5	25.5	ppb	17.24	#VALUE!	
57 Fe	45.32	45.32	ppb	13.92	100000.	
59 Co	0.2846	0.2846	ppb	3.84	1000.	
60 Ni	4.26	4.26	ppb	1.31	1000.	
63 Cu	42.7	42.7	ppb	0.61	#VALUE!	
65 Cu	38.14	38.14	ppb	1.34	2000.	
66 Zn	9.262	9.262	ppb	1.63	2000.	
68 Zn	12.81	12.81	ppb	3.85	#VALUE!	
75 As	0.1692	0.1692	ppb	21.84	1000.	
82 Se	0.4385	0.4385	ppb	12.97	1000.	
88 Sr	102.3	102.3	ppb	1.22	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0514	0.0514	ppb	28.99	1000.	
107 Ag	0.0857	0.0857	ppb	30.50	100.	
109 Ag	0.0985	0.0985	ppb	31.47	#VALUE!	
111 Cd	0.3008	0.3008	ppb	5.49	#VALUE!	
114 Cd	0.2808	0.2808	ppb	1.22	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.012	0.012	ppb	66.62	1000.	
120 Sn	-0.0025	-0.0025	ppb	348.39	#VALUE!	
121 Sb	0.0173	0.0173	ppb	17.88	#VALUE!	
123 Sb	0.0173	0.0173	ppb	12.30	1000.	
135 Ba	103.4	103.4	ppb	1.42	2000.	
137 Ba	102.7	102.7	ppb	1.11	#VALUE!	
182 W	0.0442	0.0442	ppb	35.36	1000.	
203 Tl	0.0286	0.0286	ppb	33.65	1000.	
205 Tl	0.0228	0.0228	ppb	12.23	#VALUE!	
208 Pb	0.7485	0.7485	ppb	1.61	2000.	
232 Th	0.0609	0.0609	ppb	23.39	1000.	
238 U	0.0337	0.0337	ppb	11.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4617807.50	5.03	4492941.00	102.8	69.5 - 120	
45 Sc	3355415.30	2.28	3094960.50	108.4	69.5 - 120	
72 Ge	640903.63	0.87	631723.63	101.5	69.5 - 120	
159 Tb	5966605.50	1.34	6220065.50	95.9	69.5 - 120	
209 Bi	2855604.30	1.36	3318256.50	86.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000137

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\033SMPL.D\033SMPL.D#
Date Acquired: May 14 2018 04:11 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4104-001
Misc Info: DW
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0019	0.0019	ppb	43.78	100.	
11 B	3.64	3.64	ppb	7.88	1000.	
23 Na	3,835.	3,835.	ppb	2.60	200000.	
25 Mg	1,086.	1,086.	ppb	2.13	200000.	
27 Al	2.171	2.171	ppb	4.59	200000.	
28 Si	6,355.	6,355.	ppb	2.81	#VALUE!	
29 Si	6,681.	6,681.	ppb	4.03	10000.	
39 K	642.	642.	ppb	4.31	200000.	
43 Ca	4,776.	4,776.	ppb	1.87	#VALUE!	
44 Ca	4,891.	4,891.	ppb	2.01	200000.	
51 V	0.1554	0.1554	ppb	20.36	1000.	
52 Cr	0.7197	0.7197	ppb	2.78	2000.	
53 Cr	12.12	12.12	ppb	20.41	#VALUE!	
55 Mn	0.2532	0.2532	ppb	3.47	2000.	
56 Fe	-4.797	-4.797	ppb	73.96	#VALUE!	
57 Fe	2.634	2.634	ppb	113.21	100000.	
59 Co	0.0054	0.0054	ppb	79.04	1000.	
60 Ni	0.0363	0.0363	ppb	27.72	1000.	
63 Cu	0.2341	0.2341	ppb	2.10	#VALUE!	
65 Cu	0.1398	0.1398	ppb	7.70	2000.	
66 Zn	0.2374	0.2374	ppb	35.02	2000.	
68 Zn	0.3812	0.3812	ppb	18.95	#VALUE!	
75 As	0.3111	0.3111	ppb	83.48	1000.	
82 Se	0.2328	0.2328	ppb	117.78	1000.	
88 Sr	33.35	33.35	ppb	1.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.5272	0.5272	ppb	2.73	1000.	
107 Ag	0.0057	0.0057	ppb	6.97	100.	
109 Ag	0.0027	0.0027	ppb	42.66	#VALUE!	
111 Cd	-0.084	-0.084	ppb	25.74	#VALUE!	
114 Cd	-0.0011	-0.0011	ppb	480.12	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0079	-0.0079	ppb	103.61	1000.	
120 Sn	-0.0155	-0.0155	ppb	68.26	#VALUE!	
121 Sb	0.0061	0.0061	ppb	26.39	#VALUE!	
123 Sb	0.0071	0.0071	ppb	39.30	1000.	
135 Ba	0.8492	0.8492	ppb	6.68	2000.	
137 Ba	0.8386	0.8386	ppb	1.23	#VALUE!	
182 W	0.0261	0.0261	ppb	27.19	1000.	
203 Tl	0.0023	0.0023	ppb	410.98	1000.	
205 Tl	0.0031	0.0031	ppb	97.65	#VALUE!	
208 Pb	0.0159	0.0159	ppb	84.42	2000.	
232 Th	0.0421	0.0421	ppb	31.64	1000.	
238 U	0.0023	0.0023	ppb	1.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4686413.50	5.12	4492941.00	104.3	69.5 - 120	
45 Sc	3264231.80	3.84	3094960.50	105.5	69.5 - 120	
72 Ge	645425.00	1.56	631723.63	102.2	69.5 - 120	
159 Tb	6166778.00	1.86	6220065.50	99.1	69.5 - 120	
209 Bi	3249049.30	1.03	3318256.50	97.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000138

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\034SMPL.D\034SMPL.D#
Date Acquired: May 14 2018 04:14 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE11IMW1
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0001	0.0001	ppb	1184.50	100.	
11 B	0.3897	0.3897	ppb	5.43	1000.	
23 Na	12.14	12.14	ppb	2.07	200000.	
25 Mg	8.983	8.983	ppb	3.89	200000.	
27 Al	5.288	5.288	ppb	3.53	200000.	
28 Si	-5.42	-5.42	ppb	133.95	#VALUE!	
29 Si	-9.229	-9.229	ppb	201.65	10000.	
39 K	-2.116	-2.116	ppb	161.67	200000.	
43 Ca	-0.4333	-0.4333	ppb	707.82	#VALUE!	
44 Ca	3.	3.	ppb	1.80	200000.	
51 V	0.0311	0.0311	ppb	84.20	1000.	
52 Cr	0.0818	0.0818	ppb	34.03	2000.	
53 Cr	10.41	10.41	ppb	2.71	#VALUE!	
55 Mn	0.0901	0.0901	ppb	9.33	2000.	
56 Fe	0.9356	0.9356	ppb	234.18	#VALUE!	
57 Fe	4.645	4.645	ppb	43.42	100000.	
59 Co	-0.003	-0.003	ppb	32.99	1000.	
60 Ni	0.0239	0.0239	ppb	61.62	1000.	
63 Cu	0.0368	0.0368	ppb	24.77	#VALUE!	
65 Cu	0.0305	0.0305	ppb	37.44	2000.	
66 Zn	0.642	0.642	ppb	9.73	2000.	
68 Zn	0.6056	0.6056	ppb	2.76	#VALUE!	
75 As	-0.0715	-0.0715	ppb	135.62	1000.	
82 Se	-0.1396	-0.1396	ppb	148.28	1000.	
88 Sr	0.0092	0.0092	ppb	61.90	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0176	0.0176	ppb	43.24	1000.	
107 Ag	-0.0008	-0.0008	ppb	122.39	100.	
109 Ag	-0.0017	-0.0017	ppb	28.38	#VALUE!	
111 Cd	-0.0113	-0.0113	ppb	109.88	#VALUE!	
114 Cd	-0.0022	-0.0022	ppb	190.62	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.1388	0.1388	ppb	5.46	1000.	
120 Sn	0.1244	0.1244	ppb	5.28	#VALUE!	
121 Sb	0.003	0.003	ppb	119.01	#VALUE!	
123 Sb	0.0013	0.0013	ppb	115.84	1000.	
135 Ba	0.0367	0.0367	ppb	12.83	2000.	
137 Ba	0.0341	0.0341	ppb	21.62	#VALUE!	
182 W	0.0183	0.0183	ppb	30.28	1000.	
203 Tl	0.0014	0.0014	ppb	380.58	1000.	
205 Tl	-0.0007	-0.0007	ppb	763.95	#VALUE!	
208 Pb	0.0058	0.0058	ppb	92.57	2000.	
232 Th	0.0129	0.0129	ppb	48.41	1000.	
238 U	0.0002	0.0002	ppb	146.57	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4954067.00	4.51	4492941.00	110.3	69.5 - 120	
45 Sc	3286522.50	3.34	3094960.50	106.2	69.5 - 120	
72 Ge	641809.88	1.93	631723.63	101.6	69.5 - 120	
159 Tb	6141080.50	1.72	6220065.50	98.7	69.5 - 120	
209 Bi	3253345.30	1.22	3318256.50	98.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000139

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\035SMPL.D\035SMPL.D#
Date Acquired: May 14 2018 04:18 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE11IMW1
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	47.585	9.517	ppb	8.22	100.	
11 B	490.9	98.18	ppb	1.06	1000.	
23 Na	8,335.	1,667.	ppb	0.08	200000.	
25 Mg	5,665.	1,133.	ppb	3.57	200000.	
27 Al	2,166.5	433.3	ppb	2.79	200000.	
28 Si	1,066.5	213.3	ppb	3.31	#VALUE!	
29 Si	950.5	190.1	ppb	6.98	10000.	
39 K	10,090.	2,018.	ppb	3.48	200000.	
43 Ca	2,841.	568.2	ppb	6.83	#VALUE!	
44 Ca	2,580.	516.	ppb	3.58	200000.	
51 V	541.	108.2	ppb	1.38	1000.	
52 Cr	205.5	41.1	ppb	2.31	2000.	
53 Cr	235.25	47.05	ppb	3.16	#VALUE!	
55 Mn	521.5	104.3	ppb	0.88	2000.	
56 Fe	1,041.	208.2	ppb	3.51	#VALUE!	
57 Fe	1,070.	214.	ppb	4.04	100000.	
59 Co	532.	106.4	ppb	2.25	1000.	
60 Ni	518.5	103.7	ppb	2.31	1000.	
63 Cu	259.5	51.9	ppb	2.21	#VALUE!	
65 Cu	265.4	53.08	ppb	2.12	2000.	
66 Zn	542.5	108.5	ppb	2.10	2000.	
68 Zn	603.	120.6	ppb	2.72	#VALUE!	
75 As	106.75	21.35	ppb	3.01	1000.	
82 Se	108.05	21.61	ppb	3.77	1000.	
88 Sr	503.5	100.7	ppb	1.48	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.2	20.24	ppb	3.84	1000.	
107 Ag	52.2	10.44	ppb	3.05	100.	
109 Ag	52.4	10.48	ppb	2.66	#VALUE!	
111 Cd	261.3	52.26	ppb	3.18	#VALUE!	
114 Cd	262.2	52.44	ppb	3.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	521.	104.2	ppb	3.94	1000.	
120 Sn	524.	104.8	ppb	4.13	#VALUE!	
121 Sb	108.5	21.7	ppb	4.12	#VALUE!	
123 Sb	108.95	21.79	ppb	3.93	1000.	
135 Ba	2,139.5	427.9	ppb	4.21	2000.	
137 Ba	2,158.	431.6	ppb	4.03	#VALUE!	
182 W	103.2	20.64	ppb	5.81	1000.	
203 Tl	104.45	20.89	ppb	2.35	1000.	
205 Tl	104.25	20.85	ppb	3.59	#VALUE!	
208 Pb	105.45	21.09	ppb	3.28	2000.	
232 Th	98.55	19.71	ppb	2.17	1000.	
238 U	101.6	20.32	ppb	3.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4804903.00	10.29	4492941.00	106.9	69.5 - 120	
45 Sc	3145366.30	3.68	3094960.50	101.6	69.5 - 120	
72 Ge	608951.25	2.61	631723.63	96.4	69.5 - 120	
159 Tb	6037850.50	2.98	6220065.50	97.1	69.5 - 120	
209 Bi	3200861.80	1.22	3318256.50	96.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000140

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\036SMPL.D\036SMPL.D#
Date Acquired: May 14 2018 04:22 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4028-001
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0035	0.0035	ppb	55.70	100.	
11 B	563.8	563.8	ppb	2.27	1000.	
23 Na	150,700.	150,700.	ppb	0.50	200000.	
25 Mg	195.1	195.1	ppb	0.72	200000.	
27 Al	295.7	295.7	ppb	1.68	200000.	
28 Si	24,680.	24,680.	ppb	0.60	#VALUE!	
29 Si	24,620.	24,620.	ppb	2.99	10000.	>LDR
39 K	48,120.	48,120.	ppb	3.96	200000.	
43 Ca	1,051.	1,051.	ppb	0.29	#VALUE!	
44 Ca	1,098.	1,098.	ppb	0.98	200000.	
51 V	0.7133	0.7133	ppb	13.54	1000.	
52 Cr	6.615	6.615	ppb	8.53	2000.	
53 Cr	16.38	16.38	ppb	5.43	#VALUE!	
55 Mn	7.324	7.324	ppb	0.86	2000.	
56 Fe	61.91	61.91	ppb	13.21	#VALUE!	
57 Fe	55.46	55.46	ppb	1.42	100000.	
59 Co	8.197	8.197	ppb	1.95	1000.	
60 Ni	40.16	40.16	ppb	0.60	1000.	
63 Cu	131.3	131.3	ppb	2.56	#VALUE!	
65 Cu	132.5	132.5	ppb	0.52	2000.	
66 Zn	21.37	21.37	ppb	0.26	2000.	
68 Zn	21.1	21.1	ppb	0.84	#VALUE!	
75 As	0.3353	0.3353	ppb	52.43	1000.	
82 Se	0.0612	0.0612	ppb	102.01	1000.	
88 Sr	2.529	2.529	ppb	0.85	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	2.139	2.139	ppb	1.63	1000.	
107 Ag	0.0132	0.0132	ppb	5.37	100.	
109 Ag	0.011	0.011	ppb	19.90	#VALUE!	
111 Cd	-0.0373	-0.0373	ppb	117.29	#VALUE!	
114 Cd	-0.0025	-0.0025	ppb	80.33	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.9024	0.9024	ppb	4.48	1000.	
120 Sn	0.8946	0.8946	ppb	7.66	#VALUE!	
121 Sb	2.505	2.505	ppb	1.14	#VALUE!	
123 Sb	2.519	2.519	ppb	1.77	1000.	
135 Ba	1.653	1.653	ppb	3.87	2000.	
137 Ba	1.596	1.596	ppb	3.34	#VALUE!	
182 W	5.192	5.192	ppb	0.30	1000.	
203 Tl	0.0117	0.0117	ppb	36.96	1000.	
205 Tl	0.0022	0.0022	ppb	87.51	#VALUE!	
208 Pb	7.193	7.193	ppb	0.25	2000.	
232 Th	0.2086	0.2086	ppb	31.49	1000.	
238 U	0.0975	0.0975	ppb	5.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4497600.50	2.67	4492941.00	100.1	69.5 - 120	
45 Sc	3241483.50	0.37	3094960.50	104.7	69.5 - 120	
72 Ge	628529.13	1.41	631723.63	99.5	69.5 - 120	
159 Tb	5964664.00	0.82	6220065.50	95.9	69.5 - 120	
209 Bi	2812955.30	1.78	3318256.50	84.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000141

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\037SMPL.D\037SMPL.D#
Date Acquired: May 14 2018 04:26 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4027-001
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0127	0.0005	ppb	164.87	100.	
11 B	3,732.5	149.3	ppb	1.83	1000.	
23 Na	1,408,000.	56,320.	ppb	2.36	200000.	
25 Mg	844.25	33.77	ppb	1.56	200000.	
27 Al	871.5	34.86	ppb	2.06	200000.	
28 Si	81,200.	3,248.	ppb	2.64	#VALUE!	
29 Si	86,925.	3,477.	ppb	2.07	10000.	
39 K	431,500.	17,260.	ppb	1.67	200000.	
43 Ca	10,230.	409.2	ppb	1.98	#VALUE!	
44 Ca	10,295.	411.8	ppb	1.68	200000.	
51 V	4.5075	0.1803	ppb	9.12	1000.	
52 Cr	21.29	0.8516	ppb	4.38	2000.	
53 Cr	232.2	9.288	ppb	2.41	#VALUE!	
55 Mn	6.55	0.262	ppb	1.86	2000.	
56 Fe	158.4	6.336	ppb	45.64	#VALUE!	
57 Fe	125.375	5.015	ppb	24.73	100000.	
59 Co	19.7475	0.7899	ppb	5.13	1000.	
60 Ni	57.15	2.286	ppb	8.03	1000.	
63 Cu	191.85	7.674	ppb	0.31	#VALUE!	
65 Cu	151.675	6.067	ppb	1.65	2000.	
66 Zn	49.25	1.97	ppb	1.31	2000.	
68 Zn	52.575	2.103	ppb	3.18	#VALUE!	
75 As	0.8568	0.0343	ppb	222.12	1000.	
82 Se	4.5425	0.1817	ppb	93.34	1000.	
88 Sr	68.6	2.744	ppb	2.40	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.115	0.3246	ppb	3.33	1000.	
107 Ag	0.0206	0.0008	ppb	109.12	100.	
109 Ag	0.0384	0.0015	ppb	30.81	#VALUE!	
111 Cd	-1.3383	-0.0535	ppb	18.27	#VALUE!	
114 Cd	0.0195	0.0008	ppb	269.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	4.06	0.1624	ppb	15.67	1000.	
120 Sn	3.09	0.1236	ppb	9.92	#VALUE!	
121 Sb	4.3275	0.1731	ppb	2.88	#VALUE!	
123 Sb	4.295	0.1718	ppb	3.20	1000.	
135 Ba	6.16	0.2464	ppb	3.91	2000.	
137 Ba	6.0575	0.2423	ppb	16.05	#VALUE!	
182 W	21.945	0.8778	ppb	1.48	1000.	
203 Tl	0.1601	0.0064	ppb	66.85	1000.	
205 Tl	0.0252	0.001	ppb	248.26	#VALUE!	
208 Pb	16.825	0.673	ppb	1.74	2000.	
232 Th	0.5393	0.0216	ppb	35.81	1000.	
238 U	0.526	0.021	ppb	9.99	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4764936.00	3.55	4492941.00	106.1	69.5 - 120	
45 Sc	3362311.80	1.74	3094960.50	108.6	69.5 - 120	
72 Ge	655194.25	1.51	631723.63	103.7	69.5 - 120	
159 Tb	6082687.00	0.65	6220065.50	97.8	69.5 - 120	
209 Bi	2980553.30	0.17	3318256.50	89.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000142

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\038SMPL.D\038SMPL.D#
Date Acquired: May 14 2018 04:30 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0003	0.0003	ppb	66.65	100.	
11 B	4.519	4.519	ppb	14.00	1000.	
23 Na	15.12	15.12	ppb	10.98	200000.	
25 Mg	0.7485	0.7485	ppb	19.60	200000.	
27 Al	1.042	1.042	ppb	7.84	200000.	
28 Si	4.427	4.427	ppb	88.46	#VALUE!	
29 Si	-13.2	-13.2	ppb	62.88	10000.	
39 K	-0.624	-0.624	ppb	382.85	200000.	
43 Ca	24.82	24.82	ppb	11.97	#VALUE!	
44 Ca	28.8	28.8	ppb	3.46	200000.	
51 V	0.0319	0.0319	ppb	129.70	1000.	
52 Cr	0.1511	0.1511	ppb	18.77	2000.	
53 Cr	7.956	7.956	ppb	1.33	#VALUE!	
55 Mn	0.0384	0.0384	ppb	5.55	2000.	
56 Fe	3.574	3.574	ppb	86.40	#VALUE!	
57 Fe	3.326	3.326	ppb	34.73	100000.	
59 Co	0.0026	0.0026	ppb	47.98	1000.	
60 Ni	0.0124	0.0124	ppb	16.69	1000.	
63 Cu	0.1841	0.1841	ppb	3.19	#VALUE!	
65 Cu	0.1805	0.1805	ppb	1.91	2000.	
66 Zn	0.1586	0.1586	ppb	15.56	2000.	
68 Zn	0.168	0.168	ppb	23.55	#VALUE!	
75 As	0.0962	0.0962	ppb	14.77	1000.	
82 Se	0.1686	0.1686	ppb	91.87	1000.	
88 Sr	0.0168	0.0168	ppb	31.07	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0375	0.0375	ppb	12.34	1000.	
107 Ag	-0.0004	-0.0004	ppb	143.16	100.	
109 Ag	-0.0012	-0.0012	ppb	68.42	#VALUE!	
111 Cd	-0.03	-0.03	ppb	49.97	#VALUE!	
114 Cd	-0.0034	-0.0034	ppb	96.39	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0112	0.0112	ppb	116.77	1000.	
120 Sn	0.0034	0.0034	ppb	219.38	#VALUE!	
121 Sb	0.0008	0.0008	ppb	156.28	#VALUE!	
123 Sb	-0.0012	-0.0012	ppb	227.02	1000.	
135 Ba	0.0717	0.0717	ppb	18.88	2000.	
137 Ba	0.0587	0.0587	ppb	22.77	#VALUE!	
182 W	0.0155	0.0155	ppb	22.02	1000.	
203 Tl	-0.0018	-0.0018	ppb	123.68	1000.	
205 Tl	-0.0004	-0.0004	ppb	514.25	#VALUE!	
208 Pb	0.1331	0.1331	ppb	5.79	2000.	
232 Th	0.0118	0.0118	ppb	19.77	1000.	
238 U	0.	0.	ppb	2899.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5020043.00	2.40	4492941.00	111.7	69.5 - 120	
45 Sc	3318592.50	1.83	3094960.50	107.2	69.5 - 120	
72 Ge	654051.75	0.66	631723.63	103.5	69.5 - 120	
159 Tb	6254588.00	1.18	6220065.50	100.6	69.5 - 120	
209 Bi	3238309.80	1.34	3318256.50	97.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000143

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\039SMPL.D\039SMPL.D#
Date Acquired: May 14 2018 04:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RISNE
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0004	-0.0004	ppb	252.44	100.	
11 B	2.42	2.42	ppb	10.42	1000.	
23 Na	5.05	5.05	ppb	7.56	200000.	
25 Mg	0.4762	0.4762	ppb	11.29	200000.	
27 Al	0.8725	0.8725	ppb	2.01	200000.	
28 Si	4.279	4.279	ppb	119.19	#VALUE!	
29 Si	-2.942	-2.942	ppb	148.61	10000.	
39 K	1.716	1.716	ppb	44.18	200000.	
43 Ca	12.35	12.35	ppb	45.25	#VALUE!	
44 Ca	17.3	17.3	ppb	12.74	200000.	
51 V	0.044	0.044	ppb	27.38	1000.	
52 Cr	0.0557	0.0557	ppb	66.25	2000.	
53 Cr	7.444	7.444	ppb	5.62	#VALUE!	
55 Mn	0.0272	0.0272	ppb	34.09	2000.	
56 Fe	-1.589	-1.589	ppb	271.68	#VALUE!	
57 Fe	3.982	3.982	ppb	21.38	100000.	
59 Co	-0.0027	-0.0027	ppb	16.01	1000.	
60 Ni	0.0113	0.0113	ppb	59.88	1000.	
63 Cu	0.1612	0.1612	ppb	11.84	#VALUE!	
65 Cu	0.1965	0.1965	ppb	17.87	2000.	
66 Zn	0.3958	0.3958	ppb	6.24	2000.	
68 Zn	0.4182	0.4182	ppb	12.21	#VALUE!	
75 As	0.0431	0.0431	ppb	569.07	1000.	
82 Se	-0.0846	-0.0846	ppb	221.97	1000.	
88 Sr	0.0123	0.0123	ppb	41.17	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0109	0.0109	ppb	55.91	1000.	
107 Ag	0.0017	0.0017	ppb	49.61	100.	
109 Ag	-0.0012	-0.0012	ppb	41.45	#VALUE!	
111 Cd	-0.0218	-0.0218	ppb	179.87	#VALUE!	
114 Cd	-0.0017	-0.0017	ppb	198.68	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0052	0.0052	ppb	119.82	1000.	
120 Sn	-0.0123	-0.0123	ppb	53.27	#VALUE!	
121 Sb	0.0014	0.0014	ppb	156.72	#VALUE!	
123 Sb	0.0016	0.0016	ppb	193.43	1000.	
135 Ba	0.0177	0.0177	ppb	38.67	2000.	
137 Ba	0.0048	0.0048	ppb	83.59	#VALUE!	
182 W	0.008	0.008	ppb	35.34	1000.	
203 Tl	-0.0015	-0.0015	ppb	562.90	1000.	
205 Tl	0.0017	0.0017	ppb	210.20	#VALUE!	
208 Pb	0.1397	0.1397	ppb	7.44	2000.	
232 Th	0.0079	0.0079	ppb	35.63	1000.	
238 U	0.0002	0.0002	ppb	47.05	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4855947.50	2.03	4492941.00	108.1	69.5 - 120	
45 Sc	3177009.80	0.83	3094960.50	102.7	69.5 - 120	
72 Ge	634195.00	1.19	631723.63	100.4	69.5 - 120	
159 Tb	6122523.00	1.33	6220065.50	98.4	69.5 - 120	
209 Bi	3234714.30	2.38	3318256.50	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000144

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\040SMPL.D\040SMPL.D#
Date Acquired: May 14 2018 04:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE04IMS1
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0007	-0.0001	ppb	124.74	100.	
11 B	10.07	2.014	ppb	2.04	1000.	
23 Na	69.05	13.81	ppb	4.52	200000.	
25 Mg	23.485	4.697	ppb	3.61	200000.	
27 Al	9.92	1.984	ppb	6.95	200000.	
28 Si	-60.3	-12.06	ppb	33.07	#VALUE!	
29 Si	-49.615	-9.923	ppb	25.13	10000.	
39 K	31.315	6.263	ppb	25.48	200000.	
43 Ca	51.8	10.36	ppb	33.02	#VALUE!	
44 Ca	56.8	11.36	ppb	12.03	200000.	
51 V	0.631	0.1262	ppb	45.84	1000.	
52 Cr	2.706	0.5412	ppb	5.90	2000.	
53 Cr	107.4	21.48	ppb	2.18	#VALUE!	
55 Mn	1.3275	0.2655	ppb	6.10	2000.	
56 Fe	30.185	6.037	ppb	11.41	#VALUE!	
57 Fe	30.74	6.148	ppb	16.06	100000.	
59 Co	-0.0071	-0.0014	ppb	108.70	1000.	
60 Ni	0.3889	0.0778	ppb	19.16	1000.	
63 Cu	1.16	0.232	ppb	9.28	#VALUE!	
65 Cu	1.1645	0.2329	ppb	5.87	2000.	
66 Zn	0.7545	0.1509	ppb	36.69	2000.	
68 Zn	0.901	0.1802	ppb	22.14	#VALUE!	
75 As	0.9225	0.1845	ppb	100.54	1000.	
82 Se	-0.1373	-0.0275	ppb	322.00	1000.	
88 Sr	0.1742	0.0348	ppb	14.58	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.1315	0.0263	ppb	21.89	1000.	
107 Ag	0.0331	0.0066	ppb	36.56	100.	
109 Ag	0.0203	0.0041	ppb	17.07	#VALUE!	
111 Cd	0.034	0.0068	ppb	418.34	#VALUE!	
114 Cd	-0.0821	-0.0164	ppb	15.32	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	43.14	8.628	ppb	0.68	1000.	
120 Sn	43.93	8.786	ppb	1.98	#VALUE!	
121 Sb	0.0464	0.0093	ppb	60.85	#VALUE!	
123 Sb	0.0243	0.0049	ppb	76.79	1000.	
135 Ba	0.2755	0.0551	ppb	13.68	2000.	
137 Ba	0.2984	0.0597	ppb	33.69	#VALUE!	
182 W	0.0546	0.0109	ppb	43.37	1000.	
203 Tl	0.0063	0.0013	ppb	567.23	1000.	
205 Tl	-0.0076	-0.0015	ppb	182.45	#VALUE!	
208 Pb	0.1783	0.0357	ppb	44.34	2000.	
232 Th	0.2306	0.0461	ppb	11.66	1000.	
238 U	0.0018	0.0004	ppb	34.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4747934.00	0.82	4492941.00	105.7	69.5 - 120	
45 Sc	3122076.30	0.30	3094960.50	100.9	69.5 - 120	
72 Ge	617412.69	0.78	631723.63	97.7	69.5 - 120	
159 Tb	6130698.00	0.55	6220065.50	98.6	69.5 - 120	
209 Bi	3269302.80	1.00	3318256.50	98.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000145

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\041SMPL.D\041SMPL.D#
Date Acquired: May 14 2018 04:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE04IMS1
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	47.475	9.495	ppb	2.97	100.	
11 B	521.5	104.3	ppb	1.99	1000.	
23 Na	8,640.	1,728.	ppb	1.65	200000.	
25 Mg	5,855.	1,171.	ppb	1.06	200000.	
27 Al	2,265.5	453.1	ppb	2.94	200000.	
28 Si	1,059.	211.8	ppb	3.19	#VALUE!	
29 Si	1,078.	215.6	ppb	6.15	10000.	
39 K	10,735.	2,147.	ppb	3.52	200000.	
43 Ca	2,909.	581.8	ppb	5.18	#VALUE!	
44 Ca	2,680.5	536.1	ppb	3.42	200000.	
51 V	555.	111.	ppb	2.05	1000.	
52 Cr	212.75	42.55	ppb	1.67	2000.	
53 Cr	307.8	61.56	ppb	2.89	#VALUE!	
55 Mn	534.	106.8	ppb	1.37	2000.	
56 Fe	1,121.5	224.3	ppb	3.42	#VALUE!	
57 Fe	1,123.5	224.7	ppb	3.14	100000.	
59 Co	550.5	110.1	ppb	0.17	1000.	
60 Ni	528.5	105.7	ppb	0.72	1000.	
63 Cu	264.15	52.83	ppb	2.63	#VALUE!	
65 Cu	272.15	54.43	ppb	0.79	2000.	
66 Zn	512.	102.4	ppb	1.93	2000.	
68 Zn	574.	114.8	ppb	2.77	#VALUE!	
75 As	103.4	20.68	ppb	1.16	1000.	
82 Se	101.4	20.28	ppb	1.12	1000.	
88 Sr	518.5	103.7	ppb	0.39	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	102.9	20.58	ppb	1.95	1000.	
107 Ag	53.1	10.62	ppb	1.53	100.	
109 Ag	53.	10.6	ppb	2.19	#VALUE!	
111 Cd	261.3	52.26	ppb	1.43	#VALUE!	
114 Cd	259.45	51.89	ppb	1.99	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	565.5	113.1	ppb	2.65	1000.	
120 Sn	570.	114.	ppb	3.30	#VALUE!	
121 Sb	106.4	21.28	ppb	3.02	#VALUE!	
123 Sb	107.75	21.55	ppb	2.37	1000.	
135 Ba	2,154.5	430.9	ppb	3.23	2000.	
137 Ba	2,158.	431.6	ppb	2.07	#VALUE!	
182 W	108.35	21.67	ppb	3.73	1000.	
203 Tl	107.5	21.5	ppb	2.01	1000.	
205 Tl	107.2	21.44	ppb	1.81	#VALUE!	
208 Pb	108.	21.6	ppb	1.84	2000.	
232 Th	104.45	20.89	ppb	0.69	1000.	
238 U	106.3	21.26	ppb	2.14	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4724471.50	3.73	4492941.00	105.2	69.5 - 120	
45 Sc	3018500.30	2.20	3094960.50	97.5	69.5 - 120	
72 Ge	592091.56	1.17	631723.63	93.7	69.5 - 120	
159 Tb	5988898.50	2.35	6220065.50	96.3	69.5 - 120	
209 Bi	3227712.80	1.37	3318256.50	97.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\042_CCV.D\042_CCV.D#
Date Acquired: May 14 2018 04:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.76	ppb	1.65	25	91.04	
11 B	28.54	ppb	5.19	25	114.16	Fail
23 Na	5,107.	ppb	3.98	5,000	102.14	
25 Mg	5,149.	ppb	2.15	5,000	102.98	
27 Al	503.3	ppb	2.20	500	100.66	
28 Si	492.9	ppb	3.72	500	98.58	
29 Si	468.	ppb	3.49	500	93.6	
39 K	4,878.	ppb	1.45	5,000	97.56	
43 Ca	4,790.	ppb	2.58	5,000	95.8	
44 Ca	4,893.	ppb	2.26	5,000	97.86	
51 V	25.05	ppb	0.97	25	100.2	
52 Cr	24.65	ppb	1.44	25	98.6	
53 Cr	28.25	ppb	7.25	25	113	
55 Mn	24.54	ppb	1.17	25	98.16	
56 Fe	4,895.	ppb	0.89	5,000	97.9	
57 Fe	4,931.	ppb	1.75	5,000	98.62	
59 Co	24.38	ppb	2.03	25	97.52	
60 Ni	24.47	ppb	0.97	25	97.88	
63 Cu	24.51	ppb	1.90	25	98.04	
65 Cu	24.74	ppb	1.55	25	98.96	
66 Zn	24.91	ppb	2.59	25	99.64	
68 Zn	24.28	ppb	2.19	25	97.12	
75 As	24.38	ppb	2.29	25	97.52	
82 Se	25.09	ppb	2.27	25	100.36	
88 Sr	24.44	ppb	2.11	25	97.76	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.98	ppb	1.66	25	95.92	
107 Ag	24.55	ppb	0.92	25	98.2	
109 Ag	24.63	ppb	1.59	25	98.52	
111 Cd	24.67	ppb	1.29	25	98.68	
114 Cd	24.71	ppb	2.03	25	98.84	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.34	ppb	1.16	25	97.36	
120 Sn	24.41	ppb	1.52	25	97.64	
121 Sb	24.67	ppb	1.50	25	98.68	
123 Sb	24.99	ppb	1.02	25	99.96	
135 Ba	24.76	ppb	0.83	25	99.04	
137 Ba	24.7	ppb	1.35	25	98.8	
182 W	24.5	ppb	1.13	25	98	
203 Tl	24.57	ppb	2.61	25	98.28	
205 Tl	24.45	ppb	1.88	25	97.8	
208 Pb	24.44	ppb	1.72	25	97.76	
232 Th	24.06	ppb	2.37	25	96.24	
238 U	24.3	ppb	1.82	25	97.2	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4703443.50	1.20	4492941.00	104.7	80 - 120.4	
45 Sc	3147044.50	1.61	3094960.50	101.7	80 - 120.4	
72 Ge	609165.81	1.27	631723.63	96.4	80 - 120.4	
159 Tb	6157993.00	0.95	6220065.50	99.0	80 - 120.4	
209 Bi	3260452.30	0.88	3318256.50	98.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000147

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\043_CCB.D\043_CCB.D#
Date Acquired: May 14 2018 04:49 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0004	ppb	244.08	1.00	
11 B	3.044	ppb	11.00	1.00	
23 Na	1.96	ppb	3.69	1.00	
25 Mg	0.0625	ppb	102.15	1.00	
27 Al	0.114	ppb	28.09	1.00	
28 Si	-10.33	ppb	71.35	1.00	
29 Si	-13.34	ppb	59.72	1.00	
39 K	-1.108	ppb	96.84	1.00	
43 Ca	-0.3326	ppb	631.99	1.00	
44 Ca	0.5745	ppb	139.50	1.00	
51 V	0.0066	ppb	714.82	1.00	
52 Cr	0.035	ppb	38.66	1.00	
53 Cr	4.038	ppb	10.31	1.00	
55 Mn	0.0013	ppb	520.97	1.00	
56 Fe	-4.53	ppb	89.51	1.00	
57 Fe	0.5267	ppb	85.00	1.00	
59 Co	-0.0022	ppb	77.97	1.00	
60 Ni	-0.0003	ppb	1758.00	1.00	
63 Cu	0.0081	ppb	38.14	1.00	
65 Cu	0.0103	ppb	1.27	1.00	
66 Zn	0.0423	ppb	134.55	1.00	
68 Zn	-0.0178	ppb	189.80	1.00	
75 As	-0.0144	ppb	532.96	1.00	
82 Se	-0.0077	ppb	1015.30	1.00	
88 Sr	0.0032	ppb	112.30	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.039	ppb	43.16	1.00	
107 Ag	0.0041	ppb	16.81	1.00	
109 Ag	0.0036	ppb	73.16	1.00	
111 Cd	-0.0073	ppb	203.22	1.00	
114 Cd	-0.0031	ppb	145.24	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0353	ppb	11.09	1.00	
120 Sn	0.0304	ppb	39.93	1.00	
121 Sb	0.0021	ppb	157.07	1.00	
123 Sb	0.0057	ppb	24.27	1.00	
135 Ba	0.0124	ppb	52.17	1.00	
137 Ba	-0.0012	ppb	331.83	1.00	
182 W	0.0494	ppb	38.31	1.00	
203 Tl	0.0052	ppb	186.94	1.00	
205 Tl	-0.0025	ppb	304.84	1.00	
208 Pb	-0.0224	ppb	17.37	1.00	
232 Th	0.0829	ppb	2.47	1.00	
238 U	0.0035	ppb	60.37	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4712421.00	2.30	4492941.00	104.9	79.5 - 120	
45 Sc	3125634.50	1.29	3094960.50	101.0	79.5 - 120	
72 Ge	615452.94	0.65	631723.63	97.4	79.5 - 120	
159 Tb	6123339.00	1.02	6220065.50	98.4	79.5 - 120	
209 Bi	3309427.50	1.34	3318256.50	99.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000148

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\044SMPL.D\044SMPL.D#
Date Acquired: May 14 2018 04:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-007
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	11.72	1.172	ppb	7.25	100.	
11 B	184.3	18.43	ppb	5.26	1000.	
23 Na	21,630.	2,163.	ppb	3.49	200000.	
25 Mg	129,800.	12,980.	ppb	2.78	200000.	
27 Al	273,400.	27,340.	ppb	1.59	200000.	
28 Si	3,364.	336.4	ppb	2.04	#VALUE!	
29 Si	3,209.	320.9	ppb	4.34	10000.	
39 K	62,190.	6,219.	ppb	2.52	200000.	
43 Ca	588,100.	58,810.	ppb	2.37	#VALUE!	
44 Ca	554,600.	55,460.	ppb	0.76	200000.	
51 V	509.4	50.94	ppb	1.04	1000.	
52 Cr	260.7	26.07	ppb	1.07	2000.	
53 Cr	283.6	28.36	ppb	3.19	#VALUE!	
55 Mn	13,700.	1,370.	ppb	1.20	2000.	
56 Fe	272,200.	27,220.	ppb	0.94	#VALUE!	
57 Fe	263,500.	26,350.	ppb	1.27	100000.	
59 Co	104.2	10.42	ppb	1.70	1000.	
60 Ni	267.4	26.74	ppb	1.02	1000.	
63 Cu	177.9	17.79	ppb	1.59	#VALUE!	
65 Cu	185.3	18.53	ppb	0.36	2000.	
66 Zn	708.8	70.88	ppb	0.56	2000.	
68 Zn	816.	81.6	ppb	0.39	#VALUE!	
75 As	36.97	3.697	ppb	3.84	1000.	
82 Se	7.016	0.7016	ppb	9.97	1000.	
88 Sr	1,508.	150.8	ppb	0.78	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.95	1.795	ppb	1.77	1000.	
107 Ag	1.13	0.113	ppb	5.93	100.	
109 Ag	0.9151	0.0915	ppb	2.91	#VALUE!	
111 Cd	5.375	0.5375	ppb	5.45	#VALUE!	
114 Cd	1.491	0.1491	ppb	8.65	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	54.03	5.403	ppb	1.04	1000.	
120 Sn	54.25	5.425	ppb	2.21	#VALUE!	
121 Sb	2.916	0.2916	ppb	5.66	#VALUE!	
123 Sb	2.817	0.2817	ppb	3.81	1000.	
135 Ba	3,820.	382.	ppb	0.94	2000.	
137 Ba	3,744.	374.4	ppb	1.44	#VALUE!	
182 W	1.239	0.1239	ppb	12.07	1000.	
203 Tl	4.371	0.4371	ppb	6.53	1000.	
205 Tl	4.505	0.4505	ppb	3.66	#VALUE!	
208 Pb	158.5	15.85	ppb	1.00	2000.	
232 Th	116.	11.6	ppb	0.98	1000.	
238 U	16.73	1.673	ppb	0.91	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4596578.00	4.36	4492941.00	102.3	69.5 - 120	
45 Sc	3129128.80	1.99	3094960.50	101.1	69.5 - 120	
72 Ge	593802.00	0.28	631723.63	94.0	69.5 - 120	
159 Tb	6118795.50	0.26	6220065.50	98.4	69.5 - 120	
209 Bi	3159649.00	0.91	3318256.50	95.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000149

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\045SMPL.D\045SMPL.D#
Date Acquired: May 14 2018 04:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-019
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.98	1.398	ppb	3.53	100.	
11 B	203.4	20.34	ppb	8.40	1000.	
23 Na	5,113.	511.3	ppb	3.35	200000.	
25 Mg	122,700.	12,270.	ppb	0.72	200000.	
27 Al	338,100.	33,810.	ppb	0.87	200000.	
28 Si	4,577.	457.7	ppb	3.20	#VALUE!	
29 Si	4,327.	432.7	ppb	3.41	10000.	
39 K	78,870.	7,887.	ppb	0.95	200000.	
43 Ca	513,100.	51,310.	ppb	3.33	#VALUE!	
44 Ca	483,800.	48,380.	ppb	1.54	200000.	
51 V	670.8	67.08	ppb	0.71	1000.	
52 Cr	290.4	29.04	ppb	1.41	2000.	
53 Cr	312.5	31.25	ppb	0.97	#VALUE!	
55 Mn	11,750.	1,175.	ppb	0.62	2000.	
56 Fe	304,500.	30,450.	ppb	1.57	#VALUE!	
57 Fe	298,400.	29,840.	ppb	0.60	100000.	
59 Co	207.3	20.73	ppb	1.58	1000.	
60 Ni	334.7	33.47	ppb	3.02	1000.	
63 Cu	194.2	19.42	ppb	1.01	#VALUE!	
65 Cu	203.9	20.39	ppb	1.42	2000.	
66 Zn	783.1	78.31	ppb	1.75	2000.	
68 Zn	1,007.	100.7	ppb	0.64	#VALUE!	
75 As	139.2	13.92	ppb	0.78	1000.	
82 Se	6.313	0.6313	ppb	47.68	1000.	
88 Sr	1,765.	176.5	ppb	1.38	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	16.48	1.648	ppb	2.18	1000.	
107 Ag	1.207	0.1207	ppb	6.48	100.	
109 Ag	0.9985	0.0999	ppb	4.90	#VALUE!	
111 Cd	7.41	0.741	ppb	3.66	#VALUE!	
114 Cd	2.976	0.2976	ppb	8.79	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	56.27	5.627	ppb	1.89	1000.	
120 Sn	56.51	5.651	ppb	1.43	#VALUE!	
121 Sb	3.412	0.3412	ppb	2.24	#VALUE!	
123 Sb	3.261	0.3261	ppb	0.94	1000.	
135 Ba	6,854.	685.4	ppb	1.84	2000.	
137 Ba	6,738.	673.8	ppb	1.34	#VALUE!	
182 W	1.412	0.1412	ppb	7.49	1000.	
203 Tl	5.564	0.5564	ppb	1.76	1000.	
205 Tl	5.585	0.5585	ppb	1.41	#VALUE!	
208 Pb	248.8	24.88	ppb	0.42	2000.	
232 Th	134.4	13.44	ppb	0.42	1000.	
238 U	25.57	2.557	ppb	1.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4598611.50	4.38	4492941.00	102.4	69.5 - 120	
45 Sc	3114014.80	2.89	3094960.50	100.6	69.5 - 120	
72 Ge	595082.31	1.41	631723.63	94.2	69.5 - 120	
159 Tb	6107695.50	1.30	6220065.50	98.2	69.5 - 120	
209 Bi	3160861.00	0.34	3318256.50	95.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000150

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\046SMPL.D\046SMPL.D#
Date Acquired: May 14 2018 05:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-020
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.908	0.6908	ppb	5.35	100.	
11 B	148.2	14.82	ppb	0.41	1000.	
23 Na	3,770.	377.	ppb	0.88	200000.	
25 Mg	125,700.	12,570.	ppb	2.83	200000.	
27 Al	177,700.	17,770.	ppb	2.60	200000.	
28 Si	3,059.	305.9	ppb	3.28	#VALUE!	
29 Si	2,858.	285.8	ppb	3.67	10000.	
39 K	43,030.	4,303.	ppb	1.69	200000.	
43 Ca	1,602,000.	160,200.	ppb	1.46	#VALUE!	
44 Ca	1,562,000.	156,200.	ppb	1.61	200000.	
51 V	359.9	35.99	ppb	1.22	1000.	
52 Cr	157.3	15.73	ppb	1.91	2000.	
53 Cr	164.	16.4	ppb	1.84	#VALUE!	
55 Mn	5,292.	529.2	ppb	1.06	2000.	
56 Fe	154,100.	15,410.	ppb	0.08	#VALUE!	
57 Fe	152,100.	15,210.	ppb	1.12	100000.	
59 Co	84.11	8.411	ppb	1.19	1000.	
60 Ni	182.6	18.26	ppb	0.69	1000.	
63 Cu	99.99	9.999	ppb	1.28	#VALUE!	
65 Cu	104.4	10.44	ppb	1.21	2000.	
66 Zn	393.	39.3	ppb	1.21	2000.	
68 Zn	542.	54.2	ppb	1.03	#VALUE!	
75 As	63.74	6.374	ppb	0.75	1000.	
82 Se	5.95	0.595	ppb	13.97	1000.	
88 Sr	3,594.	359.4	ppb	1.80	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.94	1.094	ppb	1.85	1000.	
107 Ag	0.6867	0.0687	ppb	7.52	100.	
109 Ag	0.4121	0.0412	ppb	6.69	#VALUE!	
111 Cd	5.058	0.5058	ppb	1.81	#VALUE!	
114 Cd	2.035	0.2035	ppb	4.14	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.68	5.068	ppb	2.71	1000.	
120 Sn	50.71	5.071	ppb	1.06	#VALUE!	
121 Sb	2.031	0.2031	ppb	2.95	#VALUE!	
123 Sb	2.142	0.2142	ppb	7.63	1000.	
135 Ba	4,424.	442.4	ppb	1.05	2000.	
137 Ba	4,353.	435.3	ppb	1.35	#VALUE!	
182 W	1.244	0.1244	ppb	3.29	1000.	
203 Tl	3.488	0.3488	ppb	2.37	1000.	
205 Tl	3.213	0.3213	ppb	2.35	#VALUE!	
208 Pb	117.	11.7	ppb	1.12	2000.	
232 Th	67.94	6.794	ppb	1.76	1000.	
238 U	19.13	1.913	ppb	0.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4829804.00	4.18	4492941.00	107.5	69.5 - 120	
45 Sc	3120462.30	1.80	3094960.50	100.8	69.5 - 120	
72 Ge	590034.13	0.92	631723.63	93.4	69.5 - 120	
159 Tb	6066736.00	0.95	6220065.50	97.5	69.5 - 120	
209 Bi	3074171.50	0.70	3318256.50	92.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000151

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\047SMPL.D\047SMPL.D#
Date Acquired: May 14 2018 05:04 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3708-021
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.798	0.8798	ppb	2.39	100.	
11 B	144.6	14.46	ppb	3.46	1000.	
23 Na	5,347.	534.7	ppb	3.30	200000.	
25 Mg	92,300.	9,230.	ppb	1.89	200000.	
27 Al	212,100.	21,210.	ppb	0.74	200000.	
28 Si	3,896.	389.6	ppb	2.45	#VALUE!	
29 Si	3,575.	357.5	ppb	2.41	10000.	
39 K	48,670.	4,867.	ppb	1.37	200000.	
43 Ca	525,500.	52,550.	ppb	1.64	#VALUE!	
44 Ca	496,300.	49,630.	ppb	0.19	200000.	
51 V	388.7	38.87	ppb	1.65	1000.	
52 Cr	197.5	19.75	ppb	1.23	2000.	
53 Cr	204.4	20.44	ppb	1.05	#VALUE!	
55 Mn	2,006.	200.6	ppb	1.30	2000.	
56 Fe	236,900.	23,690.	ppb	1.03	#VALUE!	
57 Fe	232,700.	23,270.	ppb	1.95	100000.	
59 Co	50.12	5.012	ppb	2.27	1000.	
60 Ni	145.	14.5	ppb	0.75	1000.	
63 Cu	144.9	14.49	ppb	1.90	#VALUE!	
65 Cu	147.	14.7	ppb	1.46	2000.	
66 Zn	510.7	51.07	ppb	0.81	2000.	
68 Zn	553.8	55.38	ppb	1.06	#VALUE!	
75 As	33.25	3.325	ppb	1.63	1000.	
82 Se	5.18	0.518	ppb	41.37	1000.	
88 Sr	1,237.	123.7	ppb	1.18	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.349	0.4349	ppb	5.66	1000.	
107 Ag	0.8161	0.0816	ppb	11.53	100.	
109 Ag	0.6946	0.0695	ppb	4.04	#VALUE!	
111 Cd	3.761	0.3761	ppb	4.11	#VALUE!	
114 Cd	0.3952	0.0395	ppb	91.17	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	56.2	5.62	ppb	3.19	1000.	
120 Sn	56.1	5.61	ppb	1.34	#VALUE!	
121 Sb	2.179	0.2179	ppb	2.26	#VALUE!	
123 Sb	2.291	0.2291	ppb	4.28	1000.	
135 Ba	1,808.	180.8	ppb	1.59	2000.	
137 Ba	1,799.	179.9	ppb	1.15	#VALUE!	
182 W	0.6111	0.0611	ppb	5.93	1000.	
203 Tl	3.173	0.3173	ppb	6.96	1000.	
205 Tl	3.118	0.3118	ppb	2.23	#VALUE!	
208 Pb	118.2	11.82	ppb	0.74	2000.	
232 Th	90.29	9.029	ppb	0.55	1000.	
238 U	11.3	1.13	ppb	2.45	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4571476.50	1.77	4492941.00	101.7	69.5 - 120	
45 Sc	3070011.50	0.48	3094960.50	99.2	69.5 - 120	
72 Ge	594391.63	0.96	631723.63	94.1	69.5 - 120	
159 Tb	6179867.50	1.07	6220065.50	99.4	69.5 - 120	
209 Bi	3215048.80	0.28	3318256.50	96.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000152

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\048SMPL.D\048SMPL.D#
Date Acquired: May 14 2018 05:08 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-001
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.19	0.519	ppb	5.07	100.	
11 B	69.05	6.905	ppb	5.28	1000.	
23 Na	1,259.	125.9	ppb	3.87	200000.	
25 Mg	27,070.	2,707.	ppb	2.08	200000.	
27 Al	108,600.	10,860.	ppb	2.38	200000.	
28 Si	3,689.	368.9	ppb	6.04	#VALUE!	
29 Si	3,174.	317.4	ppb	5.14	10000.	
39 K	34,780.	3,478.	ppb	0.93	200000.	
43 Ca	26,630.	2,663.	ppb	1.92	#VALUE!	
44 Ca	26,310.	2,631.	ppb	0.99	200000.	
51 V	222.8	22.28	ppb	0.68	1000.	
52 Cr	113.6	11.36	ppb	0.93	2000.	
53 Cr	147.9	14.79	ppb	2.06	#VALUE!	
55 Mn	2,920.	292.	ppb	0.33	2000.	
56 Fe	97,930.	9,793.	ppb	1.09	#VALUE!	
57 Fe	97,590.	9,759.	ppb	1.89	100000.	
59 Co	55.56	5.556	ppb	2.23	1000.	
60 Ni	86.37	8.637	ppb	2.32	1000.	
63 Cu	97.5	9.75	ppb	0.63	#VALUE!	
65 Cu	101.4	10.14	ppb	1.58	2000.	
66 Zn	343.7	34.37	ppb	0.90	2000.	
68 Zn	392.9	39.29	ppb	0.46	#VALUE!	
75 As	28.14	2.814	ppb	2.83	1000.	
82 Se	4.386	0.4386	ppb	13.35	1000.	
88 Sr	348.4	34.84	ppb	0.39	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.75	1.175	ppb	0.63	1000.	
107 Ag	0.5349	0.0535	ppb	10.33	100.	
109 Ag	0.5028	0.0503	ppb	21.38	#VALUE!	
111 Cd	3.006	0.3006	ppb	4.16	#VALUE!	
114 Cd	1.939	0.1939	ppb	8.94	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.14	4.714	ppb	0.37	1000.	
120 Sn	47.6	4.76	ppb	1.22	#VALUE!	
121 Sb	1.456	0.1456	ppb	7.63	#VALUE!	
123 Sb	1.349	0.1349	ppb	6.50	1000.	
135 Ba	1,676.	167.6	ppb	0.92	2000.	
137 Ba	1,665.	166.5	ppb	0.66	#VALUE!	
182 W	0.7759	0.0776	ppb	3.35	1000.	
203 Tl	2.305	0.2305	ppb	3.80	1000.	
205 Tl	2.294	0.2294	ppb	5.93	#VALUE!	
208 Pb	132.7	13.27	ppb	2.54	2000.	
232 Th	78.45	7.845	ppb	3.02	1000.	
238 U	17.94	1.794	ppb	1.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4676636.00	3.23	4492941.00	104.1	69.5 - 120	
45 Sc	3108395.50	0.94	3094960.50	100.4	69.5 - 120	
72 Ge	612528.19	0.41	631723.63	97.0	69.5 - 120	
159 Tb	6199708.00	0.22	6220065.50	99.7	69.5 - 120	
209 Bi	3293176.30	1.47	3318256.50	99.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000153

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\049SMPL.D\049SMPL.D#
Date Acquired: May 14 2018 05:12 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-002
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.072	0.7072	ppb	4.78	100.	
11 B	146.1	14.61	ppb	5.03	1000.	
23 Na	2,241.	224.1	ppb	0.64	200000.	
25 Mg	97,100.	9,710.	ppb	1.21	200000.	
27 Al	182,900.	18,290.	ppb	3.09	200000.	
28 Si	4,335.	433.5	ppb	2.89	#VALUE!	
29 Si	4,052.	405.2	ppb	2.86	10000.	
39 K	48,210.	4,821.	ppb	0.70	200000.	
43 Ca	328,500.	32,850.	ppb	0.67	#VALUE!	
44 Ca	319,700.	31,970.	ppb	0.41	200000.	
51 V	455.1	45.51	ppb	1.30	1000.	
52 Cr	172.1	17.21	ppb	0.48	2000.	
53 Cr	184.3	18.43	ppb	0.75	#VALUE!	
55 Mn	3,056.	305.6	ppb	1.14	2000.	
56 Fe	172,500.	17,250.	ppb	0.48	#VALUE!	
57 Fe	168,200.	16,820.	ppb	1.44	100000.	
59 Co	67.84	6.784	ppb	1.22	1000.	
60 Ni	149.8	14.98	ppb	1.38	1000.	
63 Cu	114.9	11.49	ppb	0.51	#VALUE!	
65 Cu	120.2	12.02	ppb	0.44	2000.	
66 Zn	447.2	44.72	ppb	0.39	2000.	
68 Zn	510.1	51.01	ppb	0.43	#VALUE!	
75 As	115.6	11.56	ppb	1.60	1000.	
82 Se	3.431	0.3431	ppb	34.42	1000.	
88 Sr	1,418.	141.8	ppb	0.99	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.44	1.044	ppb	1.04	1000.	
107 Ag	0.744	0.0744	ppb	8.88	100.	
109 Ag	0.6254	0.0625	ppb	9.06	#VALUE!	
111 Cd	2.308	0.2308	ppb	10.79	#VALUE!	
114 Cd	-0.0201	-0.002	ppb	622.45	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.5	5.05	ppb	1.58	1000.	
120 Sn	50.89	5.089	ppb	1.03	#VALUE!	
121 Sb	2.475	0.2475	ppb	4.72	#VALUE!	
123 Sb	2.638	0.2638	ppb	7.02	1000.	
135 Ba	2,290.	229.	ppb	0.78	2000.	
137 Ba	2,287.	228.7	ppb	0.55	#VALUE!	
182 W	0.8114	0.0811	ppb	8.06	1000.	
203 Tl	2.778	0.2778	ppb	2.66	1000.	
205 Tl	2.757	0.2757	ppb	0.91	#VALUE!	
208 Pb	107.5	10.75	ppb	0.44	2000.	
232 Th	72.66	7.266	ppb	1.59	1000.	
238 U	15.62	1.562	ppb	0.36	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4726084.00	1.50	4492941.00	105.2	69.5 - 120	
45 Sc	3085480.80	0.94	3094960.50	99.7	69.5 - 120	
72 Ge	602808.56	0.69	631723.63	95.4	69.5 - 120	
159 Tb	6243403.00	0.44	6220065.50	100.4	69.5 - 120	
209 Bi	3269470.30	0.94	3318256.50	98.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000154

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\050SMPL.D\050SMPL.D#
Date Acquired: May 14 2018 05:16 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0005	-0.0005	ppb	201.45	100.	
11 B	1.225	1.225	ppb	10.15	1000.	
23 Na	26.21	26.21	ppb	4.23	200000.	
25 Mg	2.064	2.064	ppb	17.41	200000.	
27 Al	2.881	2.881	ppb	30.51	200000.	
28 Si	-1.093	-1.093	ppb	375.75	#VALUE!	
29 Si	-25.51	-25.51	ppb	33.90	10000.	
39 K	-1.136	-1.136	ppb	42.53	200000.	
43 Ca	9.212	9.212	ppb	23.14	#VALUE!	
44 Ca	15.87	15.87	ppb	11.82	200000.	
51 V	-0.1784	-0.1784	ppb	33.99	1000.	
52 Cr	-0.0966	-0.0966	ppb	27.53	2000.	
53 Cr	-1.595	-1.595	ppb	4.77	#VALUE!	
55 Mn	0.1228	0.1228	ppb	13.90	2000.	
56 Fe	1.206	1.206	ppb	317.25	#VALUE!	
57 Fe	5.609	5.609	ppb	59.41	100000.	
59 Co	0.006	0.006	ppb	24.27	1000.	
60 Ni	7.349	7.349	ppb	1.76	1000.	
63 Cu	4.345	4.345	ppb	0.86	#VALUE!	
65 Cu	4.551	4.551	ppb	1.23	2000.	
66 Zn	0.6473	0.6473	ppb	4.42	2000.	
68 Zn	0.7208	0.7208	ppb	11.44	#VALUE!	
75 As	0.0091	0.0091	ppb	425.43	1000.	
82 Se	0.0981	0.0981	ppb	124.22	1000.	
88 Sr	0.0318	0.0318	ppb	23.05	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0088	0.0088	ppb	41.83	1000.	
107 Ag	0.0012	0.0012	ppb	249.79	100.	
109 Ag	-0.0006	-0.0006	ppb	206.25	#VALUE!	
111 Cd	-0.0669	-0.0669	ppb	2.48	#VALUE!	
114 Cd	-0.0024	-0.0024	ppb	139.29	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0128	0.0128	ppb	39.69	1000.	
120 Sn	0.0122	0.0122	ppb	97.95	#VALUE!	
121 Sb	0.0025	0.0025	ppb	15.63	#VALUE!	
123 Sb	0.	0.	ppb	7059.50	1000.	
135 Ba	0.1646	0.1646	ppb	11.08	2000.	
137 Ba	0.1401	0.1401	ppb	8.29	#VALUE!	
182 W	0.0032	0.0032	ppb	76.18	1000.	
203 Tl	0.0016	0.0016	ppb	168.04	1000.	
205 Tl	-0.0058	-0.0058	ppb	72.82	#VALUE!	
208 Pb	0.1801	0.1801	ppb	4.91	2000.	
232 Th	0.0132	0.0132	ppb	33.40	1000.	
238 U	0.0035	0.0035	ppb	5.89	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4879572.50	3.71	4492941.00	108.6	69.5 - 120	
45 Sc	3131826.50	0.85	3094960.50	101.2	69.5 - 120	
72 Ge	630687.06	0.59	631723.63	99.8	69.5 - 120	
159 Tb	6201667.50	0.88	6220065.50	99.7	69.5 - 120	
209 Bi	3315243.30	0.20	3318256.50	99.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000155

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\051SMPL.D\051SMPL.D#
Date Acquired: May 14 2018 05:20 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE11IMS2
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0039	-0.0008	ppb	121.37	100.	
11 B	4.913	0.9826	ppb	16.64	1000.	
23 Na	105.8	21.16	ppb	1.26	200000.	
25 Mg	22.07	4.414	ppb	4.87	200000.	
27 Al	18.305	3.661	ppb	6.44	200000.	
28 Si	-20.18	-4.036	ppb	135.06	#VALUE!	
29 Si	-103.6	-20.72	ppb	0.41	10000.	
39 K	11.93	2.386	ppb	34.21	200000.	
43 Ca	-6.335	-1.267	ppb	352.49	#VALUE!	
44 Ca	7.375	1.475	ppb	47.40	200000.	
51 V	-0.2545	-0.0509	ppb	67.42	1000.	
52 Cr	0.5635	0.1127	ppb	21.05	2000.	
53 Cr	-6.455	-1.291	ppb	10.91	#VALUE!	
55 Mn	0.1482	0.0296	ppb	32.68	2000.	
56 Fe	13.03	2.606	ppb	115.96	#VALUE!	
57 Fe	6.47	1.294	ppb	20.05	100000.	
59 Co	-0.0094	-0.0019	ppb	112.97	1000.	
60 Ni	0.3674	0.0735	ppb	13.79	1000.	
63 Cu	0.5645	0.1129	ppb	14.13	#VALUE!	
65 Cu	0.5845	0.1169	ppb	5.94	2000.	
66 Zn	0.6765	0.1353	ppb	36.79	2000.	
68 Zn	0.5745	0.1149	ppb	61.81	#VALUE!	
75 As	0.1774	0.0355	ppb	168.51	1000.	
82 Se	0.1575	0.0315	ppb	171.86	1000.	
88 Sr	0.0456	0.0091	ppb	48.24	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0791	0.0158	ppb	8.22	1000.	
107 Ag	0.0028	0.0006	ppb	155.10	100.	
109 Ag	-0.0031	-0.0006	ppb	128.57	#VALUE!	
111 Cd	-0.2371	-0.0474	ppb	38.49	#VALUE!	
114 Cd	-0.0878	-0.0176	ppb	91.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.5	8.9	ppb	0.65	1000.	
120 Sn	44.55	8.91	ppb	1.03	#VALUE!	
121 Sb	-0.0003	-0.0001	ppb	1736.00	#VALUE!	
123 Sb	-0.0005	-0.0001	ppb	3683.90	1000.	
135 Ba	0.0763	0.0153	ppb	60.61	2000.	
137 Ba	0.0749	0.015	ppb	76.44	#VALUE!	
182 W	0.024	0.0048	ppb	51.10	1000.	
203 Tl	0.0585	0.0117	ppb	48.71	1000.	
205 Tl	0.0274	0.0055	ppb	22.29	#VALUE!	
208 Pb	0.563	0.1126	ppb	37.44	2000.	
232 Th	0.0823	0.0165	ppb	26.94	1000.	
238 U	0.0008	0.0002	ppb	328.71	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5100677.50	6.14	4492941.00	113.5	69.5 - 120	
45 Sc	3261646.00	1.46	3094960.50	105.4	69.5 - 120	
72 Ge	633628.88	0.87	631723.63	100.3	69.5 - 120	
159 Tb	6077184.00	0.11	6220065.50	97.7	69.5 - 120	
209 Bi	3185726.30	1.20	3318256.50	96.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000156

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\052SMPL.D\052SMPL.D#
Date Acquired: May 14 2018 05:24 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE11IMS2
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	45.555	9.111	ppb	3.78	100.	
11 B	492.8	98.56	ppb	3.29	1000.	
23 Na	8,730.	1,746.	ppb	0.44	200000.	
25 Mg	6,045.	1,209.	ppb	4.40	200000.	
27 Al	2,278.5	455.7	ppb	4.31	200000.	
28 Si	891.5	178.3	ppb	5.06	#VALUE!	
29 Si	780.	156.	ppb	5.60	10000.	
39 K	10,435.	2,087.	ppb	1.60	200000.	
43 Ca	3,020.	604.	ppb	4.07	#VALUE!	
44 Ca	2,636.5	527.3	ppb	2.12	200000.	
51 V	557.5	111.5	ppb	0.71	1000.	
52 Cr	213.3	42.66	ppb	0.50	2000.	
53 Cr	207.65	41.53	ppb	2.41	#VALUE!	
55 Mn	531.	106.2	ppb	0.70	2000.	
56 Fe	1,125.5	225.1	ppb	2.33	#VALUE!	
57 Fe	1,083.	216.6	ppb	0.95	100000.	
59 Co	545.	109.	ppb	1.58	1000.	
60 Ni	530.5	106.1	ppb	0.48	1000.	
63 Cu	262.65	52.53	ppb	0.35	#VALUE!	
65 Cu	271.85	54.37	ppb	0.06	2000.	
66 Zn	507.	101.4	ppb	0.49	2000.	
68 Zn	569.	113.8	ppb	1.59	#VALUE!	
75 As	102.45	20.49	ppb	1.26	1000.	
82 Se	98.15	19.63	ppb	0.16	1000.	
88 Sr	514.5	102.9	ppb	1.46	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.5	20.3	ppb	0.57	1000.	
107 Ag	51.9	10.38	ppb	0.88	100.	
109 Ag	51.95	10.39	ppb	1.00	#VALUE!	
111 Cd	252.95	50.59	ppb	0.72	#VALUE!	
114 Cd	251.6	50.32	ppb	0.40	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	583.	116.6	ppb	1.91	1000.	
120 Sn	586.5	117.3	ppb	1.68	#VALUE!	
121 Sb	108.75	21.75	ppb	2.55	#VALUE!	
123 Sb	109.25	21.85	ppb	2.92	1000.	
135 Ba	2,196.5	439.3	ppb	1.51	2000.	
137 Ba	2,187.	437.4	ppb	0.76	#VALUE!	
182 W	105.4	21.08	ppb	1.75	1000.	
203 Tl	107.05	21.41	ppb	2.47	1000.	
205 Tl	106.25	21.25	ppb	2.36	#VALUE!	
208 Pb	107.45	21.49	ppb	1.60	2000.	
232 Th	102.05	20.41	ppb	2.99	1000.	
238 U	102.35	20.47	ppb	2.26	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5171522.50	3.57	4492941.00	115.1	69.5 - 120	
45 Sc	3259848.80	2.46	3094960.50	105.3	69.5 - 120	
72 Ge	621268.13	0.61	631723.63	98.3	69.5 - 120	
159 Tb	5961187.00	1.63	6220065.50	95.8	69.5 - 120	
209 Bi	3098841.50	1.99	3318256.50	93.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000157

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\053SMPL.D\053SMPL.D#
Date Acquired: May 14 2018 05:28 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LC2OLE11IMS2
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	44.805	8.961	ppb	3.65	100.	
11 B	507.5	101.5	ppb	3.33	1000.	
23 Na	8,675.	1,735.	ppb	2.67	200000.	
25 Mg	6,015.	1,203.	ppb	0.84	200000.	
27 Al	2,321.5	464.3	ppb	2.24	200000.	
28 Si	897.	179.4	ppb	6.39	#VALUE!	
29 Si	772.	154.4	ppb	10.47	10000.	
39 K	10,965.	2,193.	ppb	3.11	200000.	
43 Ca	3,011.	602.2	ppb	4.71	#VALUE!	
44 Ca	2,691.	538.2	ppb	1.65	200000.	
51 V	550.5	110.1	ppb	3.19	1000.	
52 Cr	213.95	42.79	ppb	2.76	2000.	
53 Cr	213.65	42.73	ppb	0.62	#VALUE!	
55 Mn	540.5	108.1	ppb	1.30	2000.	
56 Fe	1,149.5	229.9	ppb	3.03	#VALUE!	
57 Fe	1,106.5	221.3	ppb	1.20	100000.	
59 Co	554.5	110.9	ppb	2.12	1000.	
60 Ni	537.	107.4	ppb	1.53	1000.	
63 Cu	265.95	53.19	ppb	1.51	#VALUE!	
65 Cu	272.1	54.42	ppb	2.63	2000.	
66 Zn	518.5	103.7	ppb	2.61	2000.	
68 Zn	586.	117.2	ppb	1.02	#VALUE!	
75 As	103.35	20.67	ppb	1.86	1000.	
82 Se	100.4	20.08	ppb	2.27	1000.	
88 Sr	519.5	103.9	ppb	1.88	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	103.95	20.79	ppb	1.79	1000.	
107 Ag	52.45	10.49	ppb	2.35	100.	
109 Ag	52.6	10.52	ppb	1.81	#VALUE!	
111 Cd	256.5	51.3	ppb	1.77	#VALUE!	
114 Cd	255.15	51.03	ppb	1.32	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	582.	116.4	ppb	1.33	1000.	
120 Sn	586.	117.2	ppb	1.02	#VALUE!	
121 Sb	108.55	21.71	ppb	0.77	#VALUE!	
123 Sb	109.8	21.96	ppb	1.71	1000.	
135 Ba	2,190.5	438.1	ppb	1.91	2000.	
137 Ba	2,188.	437.6	ppb	1.37	#VALUE!	
182 W	104.55	20.91	ppb	1.03	1000.	
203 Tl	106.85	21.37	ppb	2.56	1000.	
205 Tl	106.75	21.35	ppb	1.60	#VALUE!	
208 Pb	107.5	21.5	ppb	1.14	2000.	
232 Th	102.35	20.47	ppb	2.33	1000.	
238 U	102.7	20.54	ppb	1.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5252613.50	3.78	4492941.00	116.9	69.5 - 120	
45 Sc	3202045.50	3.34	3094960.50	103.5	69.5 - 120	
72 Ge	620392.94	1.29	631723.63	98.2	69.5 - 120	
159 Tb	6053057.00	1.06	6220065.50	97.3	69.5 - 120	
209 Bi	3123357.50	1.13	3318256.50	94.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000158

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\054_CCV.D\054_CCV.D#
Date Acquired: May 14 2018 05:32 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.08	ppb	4.57	25	92.32	
11 B	29.5	ppb	3.07	25	118	Fail
23 Na	5,166.	ppb	2.80	5,000	103.32	
25 Mg	5,154.	ppb	0.92	5,000	103.08	
27 Al	506.	ppb	2.52	500	101.2	
28 Si	500.5	ppb	1.87	500	100.1	
29 Si	473.7	ppb	4.59	500	94.74	
39 K	4,993.	ppb	2.86	5,000	99.86	
43 Ca	4,894.	ppb	2.22	5,000	97.88	
44 Ca	4,998.	ppb	0.77	5,000	99.96	
51 V	25.26	ppb	0.45	25	101.04	
52 Cr	24.84	ppb	1.16	25	99.36	
53 Cr	24.35	ppb	1.52	25	97.4	
55 Mn	24.75	ppb	1.09	25	99	
56 Fe	4,960.	ppb	1.44	5,000	99.2	
57 Fe	5,048.	ppb	2.37	5,000	100.96	
59 Co	25.15	ppb	0.69	25	100.6	
60 Ni	24.53	ppb	1.20	25	98.12	
63 Cu	24.88	ppb	1.97	25	99.52	
65 Cu	25.61	ppb	0.94	25	102.44	
66 Zn	24.81	ppb	0.75	25	99.24	
68 Zn	24.68	ppb	2.10	25	98.72	
75 As	24.56	ppb	1.85	25	98.24	
82 Se	25.35	ppb	1.65	25	101.4	
88 Sr	24.4	ppb	2.24	25	97.6	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.29	ppb	1.82	25	97.16	
107 Ag	24.69	ppb	1.03	25	98.76	
109 Ag	24.81	ppb	1.34	25	99.24	
111 Cd	24.85	ppb	0.73	25	99.4	
114 Cd	24.64	ppb	1.55	25	98.56	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.92	ppb	0.89	25	99.68	
120 Sn	24.9	ppb	0.92	25	99.6	
121 Sb	25.39	ppb	0.94	25	101.56	
123 Sb	25.34	ppb	0.80	25	101.36	
135 Ba	25.8	ppb	1.39	25	103.2	
137 Ba	25.13	ppb	1.70	25	100.52	
182 W	24.65	ppb	0.35	25	98.6	
203 Tl	24.62	ppb	1.31	25	98.48	
205 Tl	24.52	ppb	1.47	25	98.08	
208 Pb	24.62	ppb	1.84	25	98.48	
232 Th	24.04	ppb	1.53	25	96.16	
238 U	23.91	ppb	1.87	25	95.64	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4698694.50	4.18	4492941.00	104.6	80 - 120.4	
45 Sc	3158179.00	1.26	3094960.50	102.0	80 - 120.4	
72 Ge	615455.00	1.53	631723.63	97.4	80 - 120.4	
159 Tb	6124527.50	0.52	6220065.50	98.5	80 - 120.4	
209 Bi	3224862.00	0.69	3318256.50	97.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000159

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\055_CCB.D\055_CCB.D#
Date Acquired: May 14 2018 05:36 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.	ppb	2655.90	1.00	
11 B	2.938	ppb	16.87	1.00	
23 Na	1.084	ppb	47.39	1.00	
25 Mg	0.2821	ppb	69.20	1.00	
27 Al	0.109	ppb	68.24	1.00	
28 Si	-6.522	ppb	55.60	1.00	
29 Si	-24.98	ppb	11.44	1.00	
39 K	-3.412	ppb	51.64	1.00	
43 Ca	-2.088	ppb	89.90	1.00	
44 Ca	-0.2322	ppb	162.88	1.00	
51 V	-0.1629	ppb	67.59	1.00	
52 Cr	-0.0844	ppb	33.60	1.00	
53 Cr	-0.2948	ppb	107.94	1.00	
55 Mn	-0.0017	ppb	442.32	1.00	
56 Fe	-5.924	ppb	24.56	1.00	
57 Fe	0.0791	ppb	596.69	1.00	
59 Co	-0.0014	ppb	35.40	1.00	
60 Ni	0.0037	ppb	229.47	1.00	
63 Cu	0.0169	ppb	32.99	1.00	
65 Cu	-0.0046	ppb	126.60	1.00	
66 Zn	0.0273	ppb	214.83	1.00	
68 Zn	0.0461	ppb	158.68	1.00	
75 As	-0.0784	ppb	36.95	1.00	
82 Se	0.1182	ppb	166.84	1.00	
88 Sr	0.003	ppb	124.46	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0319	ppb	31.17	1.00	
107 Ag	0.0061	ppb	22.94	1.00	
109 Ag	0.0054	ppb	54.35	1.00	
111 Cd	-0.0486	ppb	34.19	1.00	
114 Cd	-0.0015	ppb	145.69	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0456	ppb	10.53	1.00	
120 Sn	0.0393	ppb	26.67	1.00	
121 Sb	0.0037	ppb	67.52	1.00	
123 Sb	0.0069	ppb	44.88	1.00	
135 Ba	0.0194	ppb	20.30	1.00	
137 Ba	0.0078	ppb	103.29	1.00	
182 W	0.0527	ppb	35.47	1.00	
203 Tl	0.0089	ppb	112.34	1.00	
205 Tl	-0.0027	ppb	69.88	1.00	
208 Pb	-0.0232	ppb	18.86	1.00	
232 Th	0.0673	ppb	8.76	1.00	
238 U	0.0036	ppb	15.84	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4846041.00	0.85	4492941.00	107.9	79.5 - 120	
45 Sc	3195603.30	1.09	3094960.50	103.3	79.5 - 120	
72 Ge	628458.88	1.38	631723.63	99.5	79.5 - 120	
159 Tb	6120629.50	0.72	6220065.50	98.4	79.5 - 120	
209 Bi	3283907.80	0.96	3318256.50	99.0	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000160

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\056SMPL.D\056SMPL.D#
Date Acquired: May 14 2018 05:40 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-001
Misc Info:
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0086	0.0017	ppb	141.14	100.	
11 B	10.33	2.066	ppb	5.83	1000.	
23 Na	14,280.	2,856.	ppb	0.69	200000.	
25 Mg	9,060.	1,812.	ppb	0.29	200000.	
27 Al	78.75	15.75	ppb	2.53	200000.	
28 Si	118.95	23.79	ppb	16.19	#VALUE!	
29 Si	181.7	36.34	ppb	14.55	10000.	
39 K	117,400.	23,480.	ppb	1.51	200000.	
43 Ca	4,201.	840.2	ppb	4.17	#VALUE!	
44 Ca	4,224.5	844.9	ppb	1.56	200000.	
51 V	0.5125	0.1025	ppb	64.57	1000.	
52 Cr	4.3895	0.8779	ppb	7.03	2000.	
53 Cr	-1.4975	-0.2995	ppb	157.66	#VALUE!	
55 Mn	7.265	1.453	ppb	1.32	2000.	
56 Fe	271.5	54.3	ppb	8.88	#VALUE!	
57 Fe	278.55	55.71	ppb	1.06	100000.	
59 Co	0.1362	0.0272	ppb	20.32	1000.	
60 Ni	0.732	0.1464	ppb	5.01	1000.	
63 Cu	26.845	5.369	ppb	1.58	#VALUE!	
65 Cu	27.15	5.43	ppb	1.38	2000.	
66 Zn	127.4	25.48	ppb	1.49	2000.	
68 Zn	120.25	24.05	ppb	2.69	#VALUE!	
75 As	0.631	0.1262	ppb	33.83	1000.	
82 Se	3.174	0.6348	ppb	29.19	1000.	
88 Sr	5.695	1.139	ppb	1.81	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1652	0.033	ppb	20.36	1000.	
107 Ag	0.0235	0.0047	ppb	22.92	100.	
109 Ag	0.0171	0.0034	ppb	81.85	#VALUE!	
111 Cd	-0.2797	-0.0559	ppb	9.24	#VALUE!	
114 Cd	-0.0575	-0.0115	ppb	40.44	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.355	9.471	ppb	1.34	1000.	
120 Sn	46.725	9.345	ppb	1.65	#VALUE!	
121 Sb	0.0207	0.0041	ppb	102.39	#VALUE!	
123 Sb	0.0185	0.0037	ppb	125.16	1000.	
135 Ba	1.02	0.204	ppb	5.74	2000.	
137 Ba	1.1125	0.2225	ppb	6.54	#VALUE!	
182 W	0.0841	0.0168	ppb	18.58	1000.	
203 Tl	0.1257	0.0251	ppb	19.26	1000.	
205 Tl	0.0553	0.0111	ppb	47.86	#VALUE!	
208 Pb	1.053	0.2106	ppb	14.42	2000.	
232 Th	0.5765	0.1153	ppb	14.57	1000.	
238 U	0.0141	0.0028	ppb	34.93	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4972476.00	1.93	4492941.00	110.7	69.5 - 120	
45 Sc	3223737.80	0.14	3094960.50	104.2	69.5 - 120	
72 Ge	632739.56	0.43	631723.63	100.2	69.5 - 120	
159 Tb	6111211.00	1.00	6220065.50	98.2	69.5 - 120	
209 Bi	3128048.80	0.20	3318256.50	94.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000161

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\057SMPL.D\057SMPL.D#
Date Acquired: May 14 2018 05:44 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-003
Misc Info:
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0034	-0.0007	ppb	108.99	100.	
11 B	7.565	1.513	ppb	5.12	1000.	
23 Na	13,280.	2,656.	ppb	1.69	200000.	
25 Mg	9,510.	1,902.	ppb	2.83	200000.	
27 Al	76.3	15.26	ppb	5.87	200000.	
28 Si	99.3	19.86	ppb	30.30	#VALUE!	
29 Si	183.6	36.72	ppb	13.31	10000.	
39 K	134,850.	26,970.	ppb	1.90	200000.	
43 Ca	10,185.	2,037.	ppb	1.05	#VALUE!	
44 Ca	10,105.	2,021.	ppb	2.78	200000.	
51 V	0.754	0.1508	ppb	18.86	1000.	
52 Cr	4.991	0.9982	ppb	5.21	2000.	
53 Cr	1.2355	0.2471	ppb	107.16	#VALUE!	
55 Mn	11.895	2.379	ppb	1.63	2000.	
56 Fe	252.65	50.53	ppb	3.82	#VALUE!	
57 Fe	216.45	43.29	ppb	5.74	100000.	
59 Co	0.1407	0.0281	ppb	22.02	1000.	
60 Ni	0.51	0.102	ppb	23.79	1000.	
63 Cu	15.335	3.067	ppb	1.96	#VALUE!	
65 Cu	15.415	3.083	ppb	0.95	2000.	
66 Zn	135.4	27.08	ppb	2.44	2000.	
68 Zn	128.4	25.68	ppb	2.91	#VALUE!	
75 As	0.5	0.1	ppb	154.00	1000.	
82 Se	3.538	0.7076	ppb	59.09	1000.	
88 Sr	15.995	3.199	ppb	2.39	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1487	0.0297	ppb	14.68	1000.	
107 Ag	0.0158	0.0032	ppb	88.90	100.	
109 Ag	0.0152	0.003	ppb	89.23	#VALUE!	
111 Cd	-0.365	-0.073	ppb	50.11	#VALUE!	
114 Cd	-0.0425	-0.0085	ppb	100.07	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.33	9.266	ppb	2.33	1000.	
120 Sn	46.605	9.321	ppb	2.12	#VALUE!	
121 Sb	0.0086	0.0017	ppb	107.83	#VALUE!	
123 Sb	0.023	0.0046	ppb	101.76	1000.	
135 Ba	1.1795	0.2359	ppb	12.25	2000.	
137 Ba	1.2905	0.2581	ppb	5.35	#VALUE!	
182 W	0.0521	0.0104	ppb	36.65	1000.	
203 Tl	0.0612	0.0122	ppb	64.22	1000.	
205 Tl	0.084	0.0168	ppb	33.26	#VALUE!	
208 Pb	0.8355	0.1671	ppb	19.59	2000.	
232 Th	0.2311	0.0462	ppb	29.60	1000.	
238 U	0.0056	0.0011	ppb	52.10	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4989537.50	1.07	4492941.00	111.1	69.5 - 120	
45 Sc	3328112.00	1.08	3094960.50	107.5	69.5 - 120	
72 Ge	637414.38	1.34	631723.63	100.9	69.5 - 120	
159 Tb	6081391.50	2.08	6220065.50	97.8	69.5 - 120	
209 Bi	3074320.80	0.44	3318256.50	92.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000162

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\058SMPL.D\058SMPL.D#
Date Acquired: May 14 2018 05:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-004
Misc Info:
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0047	0.0009	ppb	132.53	100.	
11 B	6.345	1.269	ppb	9.94	1000.	
23 Na	12,590.	2,518.	ppb	3.44	200000.	
25 Mg	10,665.	2,133.	ppb	2.09	200000.	
27 Al	66.8	13.36	ppb	2.05	200000.	
28 Si	152.45	30.49	ppb	12.82	#VALUE!	
29 Si	293.35	58.67	ppb	8.83	10000.	
39 K	158,800.	31,760.	ppb	1.91	200000.	
43 Ca	2,981.5	596.3	ppb	0.30	#VALUE!	
44 Ca	3,016.5	603.3	ppb	0.98	200000.	
51 V	0.7255	0.1451	ppb	32.85	1000.	
52 Cr	5.13	1.026	ppb	2.06	2000.	
53 Cr	14.425	2.885	ppb	33.78	#VALUE!	
55 Mn	5.44	1.088	ppb	3.05	2000.	
56 Fe	219.5	43.9	ppb	2.54	#VALUE!	
57 Fe	177.45	35.49	ppb	7.76	100000.	
59 Co	0.1572	0.0314	ppb	19.37	1000.	
60 Ni	0.514	0.1028	ppb	10.12	1000.	
63 Cu	15.36	3.072	ppb	1.89	#VALUE!	
65 Cu	15.18	3.036	ppb	2.39	2000.	
66 Zn	145.1	29.02	ppb	1.57	2000.	
68 Zn	136.25	27.25	ppb	0.73	#VALUE!	
75 As	0.976	0.1952	ppb	71.06	1000.	
82 Se	3.2855	0.6571	ppb	20.03	1000.	
88 Sr	3.0765	0.6153	ppb	3.60	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1301	0.026	ppb	26.90	1000.	
107 Ag	0.0237	0.0047	ppb	31.46	100.	
109 Ag	0.0097	0.0019	ppb	44.84	#VALUE!	
111 Cd	-0.4027	-0.0805	ppb	10.53	#VALUE!	
114 Cd	-0.0773	-0.0155	ppb	102.98	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.68	9.536	ppb	1.11	1000.	
120 Sn	47.705	9.541	ppb	1.16	#VALUE!	
121 Sb	0.0169	0.0034	ppb	9.95	#VALUE!	
123 Sb	0.0072	0.0014	ppb	230.82	1000.	
135 Ba	0.8075	0.1615	ppb	19.04	2000.	
137 Ba	0.7695	0.1539	ppb	12.46	#VALUE!	
182 W	0.0672	0.0134	ppb	24.64	1000.	
203 Tl	0.1449	0.029	ppb	20.46	1000.	
205 Tl	0.0573	0.0115	ppb	40.86	#VALUE!	
208 Pb	0.836	0.1672	ppb	4.65	2000.	
232 Th	0.143	0.0286	ppb	27.16	1000.	
238 U	0.0006	0.0001	ppb	187.38	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5040500.00	1.80	4492941.00	112.2	69.5 - 120	
45 Sc	3275311.30	2.48	3094960.50	105.8	69.5 - 120	
72 Ge	640735.75	1.71	631723.63	101.4	69.5 - 120	
159 Tb	6041418.00	1.11	6220065.50	97.1	69.5 - 120	
209 Bi	3083239.50	1.35	3318256.50	92.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000163

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\059SMPL.D\059SMPL.D#
Date Acquired: May 14 2018 05:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3756-005
Misc Info:
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0046	-0.0009	ppb	50.09	100.	
11 B	5.345	1.069	ppb	4.78	1000.	
23 Na	12,350.	2,470.	ppb	0.44	200000.	
25 Mg	10,295.	2,059.	ppb	1.88	200000.	
27 Al	65.6	13.12	ppb	1.50	200000.	
28 Si	123.65	24.73	ppb	31.02	#VALUE!	
29 Si	251.75	50.35	ppb	14.32	10000.	
39 K	153,150.	30,630.	ppb	2.42	200000.	
43 Ca	2,842.5	568.5	ppb	2.17	#VALUE!	
44 Ca	2,962.5	592.5	ppb	0.86	200000.	
51 V	1.1655	0.2331	ppb	30.55	1000.	
52 Cr	6.445	1.289	ppb	1.36	2000.	
53 Cr	20.78	4.156	ppb	17.82	#VALUE!	
55 Mn	8.66	1.732	ppb	1.14	2000.	
56 Fe	237.75	47.55	ppb	7.15	#VALUE!	
57 Fe	192.6	38.52	ppb	6.36	100000.	
59 Co	0.1469	0.0294	ppb	6.05	1000.	
60 Ni	0.596	0.1192	ppb	7.45	1000.	
63 Cu	12.195	2.439	ppb	1.63	#VALUE!	
65 Cu	12.185	2.437	ppb	1.77	2000.	
66 Zn	123.1	24.62	ppb	1.17	2000.	
68 Zn	116.6	23.32	ppb	1.66	#VALUE!	
75 As	0.682	0.1364	ppb	15.54	1000.	
82 Se	3.4565	0.6913	ppb	11.25	1000.	
88 Sr	3.2525	0.6505	ppb	1.74	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1351	0.027	ppb	29.42	1000.	
107 Ag	0.0098	0.002	ppb	87.96	100.	
109 Ag	0.0075	0.0015	ppb	49.49	#VALUE!	
111 Cd	-0.325	-0.065	ppb	41.06	#VALUE!	
114 Cd	-0.071	-0.0142	ppb	26.24	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.64	9.128	ppb	1.68	1000.	
120 Sn	46.105	9.221	ppb	0.87	#VALUE!	
121 Sb	0.0127	0.0025	ppb	99.73	#VALUE!	
123 Sb	0.0048	0.001	ppb	639.74	1000.	
135 Ba	0.6525	0.1305	ppb	2.58	2000.	
137 Ba	0.5915	0.1183	ppb	10.75	#VALUE!	
182 W	0.0369	0.0074	ppb	27.73	1000.	
203 Tl	0.122	0.0244	ppb	23.77	1000.	
205 Tl	0.0903	0.0181	ppb	4.52	#VALUE!	
208 Pb	0.6375	0.1275	ppb	6.08	2000.	
232 Th	0.1268	0.0254	ppb	31.64	1000.	
238 U	0.0046	0.0009	ppb	56.36	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5065483.00	4.01	4492941.00	112.7	69.5 - 120	
45 Sc	3341659.00	0.74	3094960.50	108.0	69.5 - 120	
72 Ge	640523.63	0.91	631723.63	101.4	69.5 - 120	
159 Tb	6002289.50	0.87	6220065.50	96.5	69.5 - 120	
209 Bi	3010510.00	1.68	3318256.50	90.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000164

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\060SMPL.D\060SMPL.D#
Date Acquired: May 14 2018 05:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE09IMS1
Misc Info:
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0032	0.0006	ppb	141.55	100.	
11 B	3.765	0.753	ppb	5.20	1000.	
23 Na	35.	7.	ppb	8.04	200000.	
25 Mg	23.72	4.744	ppb	4.47	200000.	
27 Al	16.925	3.385	ppb	9.08	200000.	
28 Si	-21.055	-4.211	ppb	80.91	#VALUE!	
29 Si	-145.85	-29.17	ppb	22.67	10000.	
39 K	26.965	5.393	ppb	29.93	200000.	
43 Ca	91.2	18.24	ppb	6.22	#VALUE!	
44 Ca	94.25	18.85	ppb	2.03	200000.	
51 V	-0.2115	-0.0423	ppb	222.63	1000.	
52 Cr	1.6215	0.3243	ppb	4.43	2000.	
53 Cr	46.075	9.215	ppb	8.51	#VALUE!	
55 Mn	0.4651	0.093	ppb	4.18	2000.	
56 Fe	40.085	8.017	ppb	34.49	#VALUE!	
57 Fe	20.8	4.16	ppb	53.27	100000.	
59 Co	0.0002	0.	ppb	4737.80	1000.	
60 Ni	0.4061	0.0812	ppb	9.54	1000.	
63 Cu	0.812	0.1624	ppb	2.25	#VALUE!	
65 Cu	0.839	0.1678	ppb	16.98	2000.	
66 Zn	0.908	0.1816	ppb	24.91	2000.	
68 Zn	0.599	0.1198	ppb	96.58	#VALUE!	
75 As	0.0205	0.0041	ppb	2920.20	1000.	
82 Se	0.6565	0.1313	ppb	233.82	1000.	
88 Sr	0.2948	0.059	ppb	10.67	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0956	0.0191	ppb	30.57	1000.	
107 Ag	0.009	0.0018	ppb	47.51	100.	
109 Ag	0.0064	0.0013	ppb	68.54	#VALUE!	
111 Cd	-0.1608	-0.0322	ppb	44.01	#VALUE!	
114 Cd	-0.0483	-0.0097	ppb	79.98	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.675	8.935	ppb	3.74	1000.	
120 Sn	44.965	8.993	ppb	3.60	#VALUE!	
121 Sb	0.0376	0.0075	ppb	34.60	#VALUE!	
123 Sb	0.0149	0.003	ppb	196.04	1000.	
135 Ba	0.618	0.1236	ppb	13.75	2000.	
137 Ba	0.588	0.1176	ppb	7.48	#VALUE!	
182 W	0.0286	0.0057	ppb	40.52	1000.	
203 Tl	-0.0186	-0.0037	ppb	93.14	1000.	
205 Tl	-0.0455	-0.0091	ppb	36.50	#VALUE!	
208 Pb	0.2136	0.0427	ppb	38.27	2000.	
232 Th	0.0143	0.0029	ppb	6.40	1000.	
238 U	0.0029	0.0006	ppb	79.43	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4666603.00	6.51	4492941.00	103.9	69.5 - 120	
45 Sc	3141422.50	1.40	3094960.50	101.5	69.5 - 120	
72 Ge	628539.63	1.47	631723.63	99.5	69.5 - 120	
159 Tb	6217767.00	2.22	6220065.50	100.0	69.5 - 120	
209 Bi	3298955.30	1.44	3318256.50	99.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000165

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\061SMPL.D\061SMPL.D#
Date Acquired: May 14 2018 06:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE09IMS1
Misc Info:
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	44.455	8.891	ppb	4.03	100.	
11 B	492.15	98.43	ppb	2.22	1000.	
23 Na	8,130.	1,626.	ppb	2.23	200000.	
25 Mg	5,555.	1,111.	ppb	3.25	200000.	
27 Al	2,175.5	435.1	ppb	0.84	200000.	
28 Si	1,034.	206.8	ppb	2.20	#VALUE!	
29 Si	922.5	184.5	ppb	2.21	10000.	
39 K	10,485.	2,097.	ppb	0.87	200000.	
43 Ca	3,031.	606.2	ppb	2.97	#VALUE!	
44 Ca	2,624.	524.8	ppb	1.19	200000.	
51 V	536.5	107.3	ppb	0.67	1000.	
52 Cr	208.5	41.7	ppb	1.06	2000.	
53 Cr	245.55	49.11	ppb	0.97	#VALUE!	
55 Mn	520.5	104.1	ppb	1.16	2000.	
56 Fe	1,104.	220.8	ppb	1.77	#VALUE!	
57 Fe	1,079.	215.8	ppb	0.28	100000.	
59 Co	537.5	107.5	ppb	0.84	1000.	
60 Ni	520.	104.	ppb	0.44	1000.	
63 Cu	259.4	51.88	ppb	0.02	#VALUE!	
65 Cu	265.5	53.1	ppb	0.68	2000.	
66 Zn	513.	102.6	ppb	1.01	2000.	
68 Zn	570.5	114.1	ppb	1.85	#VALUE!	
75 As	103.95	20.79	ppb	1.02	1000.	
82 Se	101.45	20.29	ppb	1.77	1000.	
88 Sr	516.	103.2	ppb	0.70	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	103.35	20.67	ppb	1.46	1000.	
107 Ag	53.	10.6	ppb	1.13	100.	
109 Ag	53.3	10.66	ppb	1.41	#VALUE!	
111 Cd	260.25	52.05	ppb	0.88	#VALUE!	
114 Cd	258.7	51.74	ppb	1.00	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	567.	113.4	ppb	1.55	1000.	
120 Sn	572.	114.4	ppb	1.50	#VALUE!	
121 Sb	105.4	21.08	ppb	1.66	#VALUE!	
123 Sb	106.3	21.26	ppb	0.99	1000.	
135 Ba	2,122.5	424.5	ppb	1.41	2000.	
137 Ba	2,127.	425.4	ppb	1.11	#VALUE!	
182 W	104.75	20.95	ppb	1.95	1000.	
203 Tl	106.1	21.22	ppb	0.35	1000.	
205 Tl	106.2	21.24	ppb	0.50	#VALUE!	
208 Pb	106.35	21.27	ppb	0.70	2000.	
232 Th	100.4	20.08	ppb	1.88	1000.	
238 U	100.6	20.12	ppb	0.78	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4745652.00	4.36	4492941.00	105.6	69.5 - 120	
45 Sc	3089190.50	0.56	3094960.50	99.8	69.5 - 120	
72 Ge	612543.19	0.49	631723.63	97.0	69.5 - 120	
159 Tb	6202784.50	1.40	6220065.50	99.7	69.5 - 120	
209 Bi	3247426.50	0.18	3318256.50	97.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000166

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\062SMPL.D\062SMPL.D#
Date Acquired: May 14 2018 06:04 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-048
Misc Info:
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.855	0.7855	ppb	9.47	100.	
11 B	166.1	16.61	ppb	8.33	1000.	
23 Na	5,834.	583.4	ppb	2.26	200000.	
25 Mg	129,100.	12,910.	ppb	2.48	200000.	
27 Al	169,600.	16,960.	ppb	2.18	200000.	
28 Si	2,586.	258.6	ppb	1.77	#VALUE!	
29 Si	2,224.	222.4	ppb	2.74	10000.	
39 K	45,950.	4,595.	ppb	1.36	200000.	
43 Ca	1,492,000.	149,200.	ppb	1.44	#VALUE!	
44 Ca	1,442,000.	144,200.	ppb	1.15	200000.	
51 V	371.6	37.16	ppb	1.36	1000.	
52 Cr	155.7	15.57	ppb	1.48	2000.	
53 Cr	162.3	16.23	ppb	1.24	#VALUE!	
55 Mn	5,608.	560.8	ppb	0.64	2000.	
56 Fe	151,700.	15,170.	ppb	1.46	#VALUE!	
57 Fe	150,800.	15,080.	ppb	2.06	100000.	
59 Co	88.08	8.808	ppb	2.29	1000.	
60 Ni	161.5	16.15	ppb	1.22	1000.	
63 Cu	111.5	11.15	ppb	1.19	#VALUE!	
65 Cu	118.9	11.89	ppb	1.30	2000.	
66 Zn	404.6	40.46	ppb	1.09	2000.	
68 Zn	822.	82.2	ppb	1.89	#VALUE!	
75 As	75.88	7.588	ppb	1.24	1000.	
82 Se	7.183	0.7183	ppb	16.92	1000.	
88 Sr	4,075.	407.5	ppb	1.22	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	9.298	0.9298	ppb	2.20	1000.	
107 Ag	0.73	0.073	ppb	3.76	100.	
109 Ag	0.5946	0.0595	ppb	6.47	#VALUE!	
111 Cd	4.202	0.4202	ppb	2.42	#VALUE!	
114 Cd	1.61	0.161	ppb	6.66	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.88	5.188	ppb	2.21	1000.	
120 Sn	51.17	5.117	ppb	0.63	#VALUE!	
121 Sb	2.083	0.2083	ppb	2.94	#VALUE!	
123 Sb	2.164	0.2164	ppb	1.78	1000.	
135 Ba	11,690.	1,169.	ppb	0.86	2000.	
137 Ba	11,340.	1,134.	ppb	0.52	#VALUE!	
182 W	1.43	0.143	ppb	5.20	1000.	
203 Tl	4.128	0.4128	ppb	5.05	1000.	
205 Tl	4.03	0.403	ppb	3.32	#VALUE!	
208 Pb	113.5	11.35	ppb	0.90	2000.	
232 Th	69.13	6.913	ppb	1.53	1000.	
238 U	17.63	1.763	ppb	1.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4436251.00	8.08	4492941.00	98.7	69.5 - 120	
45 Sc	3098032.30	1.83	3094960.50	100.1	69.5 - 120	
72 Ge	596840.63	0.78	631723.63	94.5	69.5 - 120	
159 Tb	6137460.50	0.68	6220065.50	98.7	69.5 - 120	
209 Bi	3113396.30	0.96	3318256.50	93.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000167

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\063SMPL.D\063SMPL.D#
Date Acquired: May 14 2018 06:08 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3951-001
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.96	1.396	ppb	3.80	100.	
11 B	49.62	4.962	ppb	6.18	1000.	
23 Na	1,061.	106.1	ppb	1.64	200000.	
25 Mg	19,040.	1,904.	ppb	2.32	200000.	
27 Al	321,400.	32,140.	ppb	4.58	200000.	
28 Si	4,160.	416.	ppb	3.40	#VALUE!	
29 Si	3,720.	372.	ppb	1.92	10000.	
39 K	5,540.	554.	ppb	2.95	200000.	
43 Ca	33,840.	3,384.	ppb	3.82	#VALUE!	
44 Ca	34,200.	3,420.	ppb	2.72	200000.	
51 V	943.7	94.37	ppb	3.42	1000.	
52 Cr	514.4	51.44	ppb	1.37	2000.	
53 Cr	539.4	53.94	ppb	1.53	#VALUE!	
55 Mn	2,567.	256.7	ppb	1.87	2000.	
56 Fe	481,900.	48,190.	ppb	1.86	#VALUE!	
57 Fe	463,700.	46,370.	ppb	1.02	100000.	
59 Co	72.86	7.286	ppb	1.24	1000.	
60 Ni	159.2	15.92	ppb	0.88	1000.	
63 Cu	117.8	11.78	ppb	1.94	#VALUE!	
65 Cu	121.5	12.15	ppb	1.23	2000.	
66 Zn	548.3	54.83	ppb	1.85	2000.	
68 Zn	579.5	57.95	ppb	2.50	#VALUE!	
75 As	170.7	17.07	ppb	1.01	1000.	
82 Se	7.333	0.7333	ppb	21.38	1000.	
88 Sr	368.9	36.89	ppb	1.61	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.466	0.5466	ppb	4.65	1000.	
107 Ag	0.4941	0.0494	ppb	3.53	100.	
109 Ag	0.3942	0.0394	ppb	12.06	#VALUE!	
111 Cd	2.573	0.2573	ppb	5.46	#VALUE!	
114 Cd	1.27	0.127	ppb	11.76	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	67.92	6.792	ppb	1.79	1000.	
120 Sn	69.08	6.908	ppb	0.91	#VALUE!	
121 Sb	4.047	0.4047	ppb	4.11	#VALUE!	
123 Sb	4.151	0.4151	ppb	12.34	1000.	
135 Ba	1,277.	127.7	ppb	1.09	2000.	
137 Ba	1,265.	126.5	ppb	1.13	#VALUE!	
182 W	45.79	4.579	ppb	1.39	1000.	
203 Tl	2.688	0.2688	ppb	8.29	1000.	
205 Tl	2.523	0.2523	ppb	1.83	#VALUE!	
208 Pb	200.3	20.03	ppb	0.47	2000.	
232 Th	73.62	7.362	ppb	1.71	1000.	
238 U	24.21	2.421	ppb	1.91	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4610228.00	1.68	4492941.00	102.6	69.5 - 120	
45 Sc	3233919.00	0.91	3094960.50	104.5	69.5 - 120	
72 Ge	618804.44	0.73	631723.63	98.0	69.5 - 120	
159 Tb	6119949.00	0.53	6220065.50	98.4	69.5 - 120	
209 Bi	3104354.00	1.42	3318256.50	93.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000168

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\064SMPL.D\064SMPL.D#
Date Acquired: May 14 2018 06:12 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3951-001L
Misc Info:
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 50.00
Autodil Factor: Undiluted
Final Dil Factor: 50.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	14.61	0.2922	ppb	9.09	100.	
11 B	91.25	1.825	ppb	10.00	1000.	
23 Na	1,100.	22.	ppb	1.14	200000.	
25 Mg	18,350.	367.	ppb	2.23	200000.	
27 Al	331,700.	6,634.	ppb	2.28	200000.	
28 Si	5,295.	105.9	ppb	5.67	#VALUE!	
29 Si	3,030.	60.6	ppb	10.38	10000.	
39 K	5,735.	114.7	ppb	1.12	200000.	
43 Ca	34,110.	682.2	ppb	4.02	#VALUE!	
44 Ca	33,915.	678.3	ppb	0.69	200000.	
51 V	901.5	18.03	ppb	2.36	1000.	
52 Cr	515.	10.3	ppb	1.40	2000.	
53 Cr	469.3	9.386	ppb	3.29	#VALUE!	
55 Mn	2,675.	53.5	ppb	0.93	2000.	
56 Fe	487,650.	9,753.	ppb	0.58	#VALUE!	
57 Fe	484,200.	9,684.	ppb	1.04	100000.	
59 Co	74.35	1.487	ppb	1.60	1000.	
60 Ni	160.05	3.201	ppb	2.38	1000.	
63 Cu	126.9	2.538	ppb	2.10	#VALUE!	
65 Cu	132.75	2.655	ppb	2.59	2000.	
66 Zn	583.	11.66	ppb	1.19	2000.	
68 Zn	600.	12.	ppb	0.32	#VALUE!	
75 As	175.7	3.514	ppb	3.75	1000.	
82 Se	9.815	0.1963	ppb	65.05	1000.	
88 Sr	369.8	7.396	ppb	0.70	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.93	0.1386	ppb	4.39	1000.	
107 Ag	0.4188	0.0084	ppb	40.66	100.	
109 Ag	0.4328	0.0087	ppb	20.76	#VALUE!	
111 Cd	1.0755	0.0215	ppb	59.93	#VALUE!	
114 Cd	1.3265	0.0265	ppb	8.74	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	68.3	1.366	ppb	3.91	1000.	
120 Sn	69.7	1.394	ppb	2.20	#VALUE!	
121 Sb	4.0705	0.0814	ppb	1.96	#VALUE!	
123 Sb	4.1695	0.0834	ppb	5.94	1000.	
135 Ba	1,309.	26.18	ppb	1.71	2000.	
137 Ba	1,295.	25.9	ppb	1.47	#VALUE!	
182 W	46.33	0.9266	ppb	2.23	1000.	
203 Tl	2.1065	0.0421	ppb	22.10	1000.	
205 Tl	2.114	0.0423	ppb	19.87	#VALUE!	
208 Pb	199.2	3.984	ppb	0.56	2000.	
232 Th	67.65	1.353	ppb	1.55	1000.	
238 U	23.355	0.4671	ppb	2.87	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4549312.00	5.10	4492941.00	101.3	69.5 - 120	
45 Sc	3193412.80	0.93	3094960.50	103.2	69.5 - 120	
72 Ge	634414.69	0.54	631723.63	100.4	69.5 - 120	
159 Tb	6117158.00	0.48	6220065.50	98.3	69.5 - 120	
209 Bi	3185645.30	0.80	3318256.50	96.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000169

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\065SMPL.D\065SMPL.D#
Date Acquired: May 14 2018 06:16 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3951-001A
Misc Info:
Vial Number: 2306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	32.63	3.263	ppb	5.16	100.	
11 B	450.7	45.07	ppb	1.92	1000.	
23 Na	21,170.	2,117.	ppb	0.36	200000.	
25 Mg	20,010.	2,001.	ppb	1.85	200000.	
27 Al	325,300.	32,530.	ppb	2.34	200000.	
28 Si	14,550.	1,455.	ppb	1.38	#VALUE!	
29 Si	13,850.	1,385.	ppb	1.49	10000.	
39 K	25,080.	2,508.	ppb	1.60	200000.	
43 Ca	34,980.	3,498.	ppb	1.97	#VALUE!	
44 Ca	35,300.	3,530.	ppb	1.68	200000.	
51 V	1,016.	101.6	ppb	0.91	1000.	
52 Cr	597.9	59.79	ppb	0.90	2000.	
53 Cr	620.4	62.04	ppb	0.56	#VALUE!	
55 Mn	2,549.	254.9	ppb	0.22	2000.	
56 Fe	471,400.	47,140.	ppb	1.16	#VALUE!	
57 Fe	459,400.	45,940.	ppb	0.23	100000.	
59 Co	90.65	9.065	ppb	1.24	1000.	
60 Ni	189.9	18.99	ppb	0.27	1000.	
63 Cu	176.1	17.61	ppb	1.64	#VALUE!	
65 Cu	180.1	18.01	ppb	0.38	2000.	
66 Zn	734.8	73.48	ppb	0.45	2000.	
68 Zn	744.8	74.48	ppb	1.95	#VALUE!	
75 As	264.5	26.45	ppb	0.31	1000.	
82 Se	102.9	10.29	ppb	2.93	1000.	
88 Sr	459.2	45.92	ppb	1.24	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.8	10.18	ppb	1.56	1000.	
107 Ag	20.63	2.063	ppb	2.35	100.	
109 Ag	20.3	2.03	ppb	0.35	#VALUE!	
111 Cd	21.83	2.183	ppb	1.42	#VALUE!	
114 Cd	20.9	2.09	ppb	1.76	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	169.5	16.95	ppb	2.02	1000.	
120 Sn	170.7	17.07	ppb	1.63	#VALUE!	
121 Sb	24.91	2.491	ppb	2.84	#VALUE!	
123 Sb	25.05	2.505	ppb	1.46	1000.	
135 Ba	1,301.	130.1	ppb	2.62	2000.	
137 Ba	1,287.	128.7	ppb	1.96	#VALUE!	
182 W	147.	14.7	ppb	2.58	1000.	
203 Tl	23.29	2.329	ppb	2.84	1000.	
205 Tl	23.01	2.301	ppb	1.93	#VALUE!	
208 Pb	215.8	21.58	ppb	1.70	2000.	
232 Th	91.48	9.148	ppb	1.59	1000.	
238 U	42.64	4.264	ppb	1.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4639344.50	4.07	4492941.00	103.3	69.5 - 120	
45 Sc	3232229.80	1.90	3094960.50	104.4	69.5 - 120	
72 Ge	624590.00	0.70	631723.63	98.9	69.5 - 120	
159 Tb	6073507.00	1.39	6220065.50	97.6	69.5 - 120	
209 Bi	3054589.50	0.83	3318256.50	92.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000170

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\066_CCV.D\066_CCV.D#
Date Acquired: May 14 2018 06:20 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.38	ppb	2.95	25	89.52	
11 B	25.3	ppb	2.60	25	101.2	
23 Na	5,178.	ppb	2.02	5,000	103.56	
25 Mg	5,172.	ppb	0.65	5,000	103.44	
27 Al	494.3	ppb	2.47	500	98.86	
28 Si	523.3	ppb	2.47	500	104.66	
29 Si	474.7	ppb	2.73	500	94.94	
39 K	4,926.	ppb	0.91	5,000	98.52	
43 Ca	4,923.	ppb	1.50	5,000	98.46	
44 Ca	4,984.	ppb	2.35	5,000	99.68	
51 V	25.	ppb	0.84	25	100	
52 Cr	24.54	ppb	1.32	25	98.16	
53 Cr	24.54	ppb	2.23	25	98.16	
55 Mn	24.19	ppb	0.99	25	96.76	
56 Fe	4,872.	ppb	1.09	5,000	97.44	
57 Fe	4,996.	ppb	1.07	5,000	99.92	
59 Co	24.85	ppb	1.29	25	99.4	
60 Ni	24.28	ppb	0.51	25	97.12	
63 Cu	24.54	ppb	1.39	25	98.16	
65 Cu	25.29	ppb	1.45	25	101.16	
66 Zn	24.73	ppb	1.77	25	98.92	
68 Zn	24.22	ppb	0.48	25	96.88	
75 As	24.7	ppb	1.44	25	98.8	
82 Se	24.99	ppb	1.46	25	99.96	
88 Sr	24.34	ppb	0.85	25	97.36	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.03	ppb	0.26	25	96.12	
107 Ag	24.33	ppb	0.25	25	97.32	
109 Ag	24.52	ppb	0.72	25	98.08	
111 Cd	24.25	ppb	0.80	25	97	
114 Cd	24.39	ppb	0.42	25	97.56	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.71	ppb	0.55	25	98.84	
120 Sn	24.81	ppb	1.46	25	99.24	
121 Sb	25.52	ppb	0.97	25	102.08	
123 Sb	25.61	ppb	1.46	25	102.44	
135 Ba	25.53	ppb	0.77	25	102.12	
137 Ba	25.06	ppb	2.38	25	100.24	
182 W	23.98	ppb	0.43	25	95.92	
203 Tl	24.63	ppb	1.64	25	98.52	
205 Tl	24.72	ppb	1.07	25	98.88	
208 Pb	24.71	ppb	1.32	25	98.84	
232 Th	23.4	ppb	1.25	25	93.6	
238 U	22.53	ppb	1.53	25	90.12	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4650662.00	1.68	4492941.00	103.5	80 - 120.4	
45 Sc	3151690.00	1.10	3094960.50	101.8	80 - 120.4	
72 Ge	626580.44	1.11	631723.63	99.2	80 - 120.4	
159 Tb	6128292.00	0.18	6220065.50	98.5	80 - 120.4	
209 Bi	3098257.30	0.80	3318256.50	93.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000171

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\067_CCB.D\067_CCB.D#
Date Acquired: May 14 2018 06:24 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0012	ppb	18.17	1.00	
11 B	1.828	ppb	19.63	1.00	
23 Na	0.7569	ppb	50.96	1.00	
25 Mg	0.18	ppb	159.83	1.00	
27 Al	0.6479	ppb	109.03	1.00	
28 Si	15.47	ppb	71.04	1.00	
29 Si	-17.2	ppb	70.58	1.00	
39 K	-0.2356	ppb	1279.70	1.00	
43 Ca	-3.679	ppb	56.16	1.00	
44 Ca	1.689	ppb	69.98	1.00	
51 V	-0.0509	ppb	196.58	1.00	
52 Cr	-0.0528	ppb	0.39	1.00	
53 Cr	1.131	ppb	28.13	1.00	
55 Mn	0.0101	ppb	143.18	1.00	
56 Fe	5.933	ppb	45.29	1.00	
57 Fe	3.492	ppb	90.35	1.00	
59 Co	0.0002	ppb	893.49	1.00	
60 Ni	0.0063	ppb	38.71	1.00	
63 Cu	0.0063	ppb	70.16	1.00	
65 Cu	0.0057	ppb	174.97	1.00	
66 Zn	0.0457	ppb	86.77	1.00	
68 Zn	0.0084	ppb	729.37	1.00	
75 As	-0.038	ppb	233.83	1.00	
82 Se	0.0368	ppb	481.64	1.00	
88 Sr	0.0054	ppb	126.48	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0312	ppb	29.07	1.00	
107 Ag	0.0068	ppb	25.95	1.00	
109 Ag	0.0037	ppb	51.39	1.00	
111 Cd	-0.0766	ppb	27.67	1.00	
114 Cd	-0.0005	ppb	758.58	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0348	ppb	34.57	1.00	
120 Sn	0.0229	ppb	38.38	1.00	
121 Sb	0.0014	ppb	321.56	1.00	
123 Sb	-0.0012	ppb	312.91	1.00	
135 Ba	0.0122	ppb	114.64	1.00	
137 Ba	0.0109	ppb	116.59	1.00	
182 W	0.0483	ppb	45.46	1.00	
203 Tl	0.005	ppb	94.51	1.00	
205 Tl	-0.0052	ppb	22.91	1.00	
208 Pb	-0.0216	ppb	63.63	1.00	
232 Th	0.048	ppb	9.41	1.00	
238 U	0.0032	ppb	26.98	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4589229.00	1.22	4492941.00	102.1	79.5 - 120	
45 Sc	3167953.00	3.20	3094960.50	102.4	79.5 - 120	
72 Ge	631406.25	0.78	631723.63	99.9	79.5 - 120	
159 Tb	5984270.00	1.16	6220065.50	96.2	79.5 - 120	
209 Bi	3129493.50	1.11	3318256.50	94.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000172

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\068SMPL.D\068SMPL.D#
Date Acquired: May 14 2018 06:28 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3951-001S
Misc Info:
Vial Number: 2307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	63.36	6.336	ppb	0.83	100.	
11 B	398.2	39.82	ppb	1.67	1000.	
23 Na	9,040.	904.	ppb	1.11	200000.	
25 Mg	26,910.	2,691.	ppb	2.15	200000.	
27 Al	389,500.	38,950.	ppb	0.60	200000.	
28 Si	3,768.	376.8	ppb	1.03	#VALUE!	
29 Si	3,260.	326.	ppb	2.74	10000.	
39 K	16,140.	1,614.	ppb	1.53	200000.	
43 Ca	39,960.	3,996.	ppb	1.62	#VALUE!	
44 Ca	39,840.	3,984.	ppb	1.19	200000.	
51 V	1,715.	171.5	ppb	1.89	1000.	
52 Cr	821.8	82.18	ppb	2.35	2000.	
53 Cr	818.5	81.85	ppb	0.48	#VALUE!	
55 Mn	3,235.	323.5	ppb	0.43	2000.	
56 Fe	643,700.	64,370.	ppb	1.31	#VALUE!	
57 Fe	621,900.	62,190.	ppb	0.84	100000.	
59 Co	600.5	60.05	ppb	1.48	1000.	
60 Ni	690.1	69.01	ppb	0.71	1000.	
63 Cu	370.3	37.03	ppb	0.07	#VALUE!	
65 Cu	386.4	38.64	ppb	1.27	2000.	
66 Zn	1,106.	110.6	ppb	1.02	2000.	
68 Zn	1,179.	117.9	ppb	0.65	#VALUE!	
75 As	348.5	34.85	ppb	0.58	1000.	
82 Se	98.67	9.867	ppb	4.15	1000.	
88 Sr	903.7	90.37	ppb	0.62	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	100.9	10.09	ppb	0.99	1000.	
107 Ag	49.55	4.955	ppb	0.35	100.	
109 Ag	50.43	5.043	ppb	1.86	#VALUE!	
111 Cd	251.5	25.15	ppb	0.69	#VALUE!	
114 Cd	246.1	24.61	ppb	1.27	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	564.3	56.43	ppb	1.62	1000.	
120 Sn	563.4	56.34	ppb	2.28	#VALUE!	
121 Sb	59.31	5.931	ppb	2.59	#VALUE!	
123 Sb	60.03	6.003	ppb	0.90	1000.	
135 Ba	3,535.	353.5	ppb	2.26	2000.	
137 Ba	3,504.	350.4	ppb	1.81	#VALUE!	
182 W	102.2	10.22	ppb	1.91	1000.	
203 Tl	107.3	10.73	ppb	1.16	1000.	
205 Tl	108.	10.8	ppb	1.52	#VALUE!	
208 Pb	337.5	33.75	ppb	1.42	2000.	
232 Th	176.3	17.63	ppb	1.65	1000.	
238 U	120.7	12.07	ppb	2.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4810907.50	0.92	4492941.00	107.1	69.5 - 120	
45 Sc	3289377.30	0.88	3094960.50	106.3	69.5 - 120	
72 Ge	627645.81	1.05	631723.63	99.4	69.5 - 120	
159 Tb	6071033.50	1.18	6220065.50	97.6	69.5 - 120	
209 Bi	3025366.50	1.41	3318256.50	91.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000173

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\069SMPL.D\069SMPL.D#
Date Acquired: May 14 2018 06:32 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3951-001P
Misc Info:
Vial Number: 2308
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	59.05	5.905	ppb	5.66	100.	
11 B	443.6	44.36	ppb	6.53	1000.	
23 Na	8,701.	870.1	ppb	2.31	200000.	
25 Mg	25,030.	2,503.	ppb	0.84	200000.	
27 Al	361,900.	36,190.	ppb	2.55	200000.	
28 Si	3,577.	357.7	ppb	10.06	#VALUE!	
29 Si	2,956.	295.6	ppb	5.12	10000.	
39 K	15,650.	1,565.	ppb	0.41	200000.	
43 Ca	36,290.	3,629.	ppb	3.20	#VALUE!	
44 Ca	36,390.	3,639.	ppb	3.95	200000.	
51 V	1,466.	146.6	ppb	0.50	1000.	
52 Cr	718.6	71.86	ppb	0.58	2000.	
53 Cr	749.	74.9	ppb	1.83	#VALUE!	
55 Mn	2,640.	264.	ppb	1.79	2000.	
56 Fe	464,000.	46,400.	ppb	1.08	#VALUE!	
57 Fe	448,700.	44,870.	ppb	1.62	100000.	
59 Co	572.3	57.23	ppb	1.04	1000.	
60 Ni	661.8	66.18	ppb	1.63	1000.	
63 Cu	364.6	36.46	ppb	0.19	#VALUE!	
65 Cu	373.1	37.31	ppb	0.61	2000.	
66 Zn	1,015.	101.5	ppb	0.74	2000.	
68 Zn	1,090.	109.	ppb	0.97	#VALUE!	
75 As	266.1	26.61	ppb	2.33	1000.	
82 Se	100.3	10.03	ppb	0.82	1000.	
88 Sr	861.6	86.16	ppb	0.65	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	94.48	9.448	ppb	1.24	1000.	
107 Ag	49.37	4.937	ppb	0.67	100.	
109 Ag	49.78	4.978	ppb	0.40	#VALUE!	
111 Cd	246.	24.6	ppb	1.47	#VALUE!	
114 Cd	244.4	24.44	ppb	0.85	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	547.8	54.78	ppb	1.56	1000.	
120 Sn	551.8	55.18	ppb	1.57	#VALUE!	
121 Sb	54.63	5.463	ppb	2.04	#VALUE!	
123 Sb	55.05	5.505	ppb	0.86	1000.	
135 Ba	3,376.	337.6	ppb	1.28	2000.	
137 Ba	3,350.	335.	ppb	1.03	#VALUE!	
182 W	97.2	9.72	ppb	1.62	1000.	
203 Tl	106.7	10.67	ppb	2.04	1000.	
205 Tl	105.3	10.53	ppb	1.70	#VALUE!	
208 Pb	295.2	29.52	ppb	1.45	2000.	
232 Th	167.1	16.71	ppb	2.00	1000.	
238 U	114.5	11.45	ppb	1.27	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4794359.50	5.53	4492941.00	106.7	69.5 - 120	
45 Sc	3338444.80	2.01	3094960.50	107.9	69.5 - 120	
72 Ge	626923.31	0.85	631723.63	99.2	69.5 - 120	
159 Tb	6076492.00	1.03	6220065.50	97.7	69.5 - 120	
209 Bi	3021072.30	0.88	3318256.50	91.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000174

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\070SMPL.D\070SMPL.D#
Date Acquired: May 14 2018 06:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-020
Misc Info: LE07IMS1
Vial Number: 2309
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.945	0.8945	ppb	1.64	100.	
11 B	215.3	21.53	ppb	2.90	1000.	
23 Na	4,913.	491.3	ppb	0.94	200000.	
25 Mg	106,600.	10,660.	ppb	0.32	200000.	
27 Al	216,400.	21,640.	ppb	3.24	200000.	
28 Si	3,598.	359.8	ppb	5.09	#VALUE!	
29 Si	3,102.	310.2	ppb	4.92	10000.	
39 K	60,310.	6,031.	ppb	1.05	200000.	
43 Ca	1,202,000.	120,200.	ppb	1.20	#VALUE!	
44 Ca	1,168,000.	116,800.	ppb	0.56	200000.	
51 V	427.4	42.74	ppb	2.30	1000.	
52 Cr	180.3	18.03	ppb	0.38	2000.	
53 Cr	186.7	18.67	ppb	2.03	#VALUE!	
55 Mn	4,748.	474.8	ppb	0.46	2000.	
56 Fe	170,500.	17,050.	ppb	1.23	#VALUE!	
57 Fe	168,500.	16,850.	ppb	1.66	100000.	
59 Co	98.62	9.862	ppb	1.86	1000.	
60 Ni	165.9	16.59	ppb	0.87	1000.	
63 Cu	113.4	11.34	ppb	1.51	#VALUE!	
65 Cu	119.7	11.97	ppb	1.03	2000.	
66 Zn	450.	45.	ppb	0.79	2000.	
68 Zn	614.5	61.45	ppb	0.98	#VALUE!	
75 As	113.5	11.35	ppb	2.66	1000.	
82 Se	9.29	0.929	ppb	36.37	1000.	
88 Sr	2,898.	289.8	ppb	0.87	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.962	0.8962	ppb	1.40	1000.	
107 Ag	0.9791	0.0979	ppb	5.97	100.	
109 Ag	0.858	0.0858	ppb	3.49	#VALUE!	
111 Cd	4.628	0.4628	ppb	5.14	#VALUE!	
114 Cd	1.897	0.1897	ppb	4.54	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.46	4.946	ppb	1.11	1000.	
120 Sn	49.04	4.904	ppb	2.04	#VALUE!	
121 Sb	2.33	0.233	ppb	6.46	#VALUE!	
123 Sb	2.278	0.2278	ppb	6.23	1000.	
135 Ba	5,005.	500.5	ppb	0.55	2000.	
137 Ba	4,966.	496.6	ppb	0.34	#VALUE!	
182 W	1.368	0.1368	ppb	6.88	1000.	
203 Tl	4.148	0.4148	ppb	1.86	1000.	
205 Tl	3.976	0.3976	ppb	5.84	#VALUE!	
208 Pb	157.1	15.71	ppb	0.75	2000.	
232 Th	87.93	8.793	ppb	1.24	1000.	
238 U	18.51	1.851	ppb	0.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4494317.00	0.45	4492941.00	100.0	69.5 - 120	
45 Sc	3112446.50	1.09	3094960.50	100.6	69.5 - 120	
72 Ge	591221.44	1.04	631723.63	93.6	69.5 - 120	
159 Tb	6055446.00	0.17	6220065.50	97.4	69.5 - 120	
209 Bi	3034548.80	1.52	3318256.50	91.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000175

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\071SMPL.D\071SMPL.D#
Date Acquired: May 14 2018 06:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2310
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0144	0.0144	ppb	1.96	100.	
11 B	1.832	1.832	ppb	10.77	1000.	
23 Na	501.3	501.3	ppb	3.44	200000.	
25 Mg	169.7	169.7	ppb	2.59	200000.	
27 Al	5.938	5.938	ppb	5.84	200000.	
28 Si	35.27	35.27	ppb	49.42	#VALUE!	
29 Si	2.001	2.001	ppb	455.02	10000.	
39 K	10.14	10.14	ppb	26.31	200000.	
43 Ca	48.41	48.41	ppb	8.19	#VALUE!	
44 Ca	44.64	44.64	ppb	1.26	200000.	
51 V	-0.0184	-0.0184	ppb	306.14	1000.	
52 Cr	-0.0482	-0.0482	ppb	66.32	2000.	
53 Cr	-1.274	-1.274	ppb	15.63	#VALUE!	
55 Mn	0.2704	0.2704	ppb	6.34	2000.	
56 Fe	11.24	11.24	ppb	6.01	#VALUE!	
57 Fe	8.417	8.417	ppb	27.75	100000.	
59 Co	0.0323	0.0323	ppb	22.38	1000.	
60 Ni	0.1056	0.1056	ppb	16.79	1000.	
63 Cu	0.4101	0.4101	ppb	6.09	#VALUE!	
65 Cu	0.401	0.401	ppb	3.04	2000.	
66 Zn	1.058	1.058	ppb	7.17	2000.	
68 Zn	0.8155	0.8155	ppb	4.03	#VALUE!	
75 As	0.0515	0.0515	ppb	168.23	1000.	
82 Se	0.0305	0.0305	ppb	289.68	1000.	
88 Sr	0.1622	0.1622	ppb	2.71	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0146	0.0146	ppb	20.23	1000.	
107 Ag	0.0021	0.0021	ppb	132.82	100.	
109 Ag	0.0022	0.0022	ppb	82.51	#VALUE!	
111 Cd	-0.0834	-0.0834	ppb	25.90	#VALUE!	
114 Cd	-0.0005	-0.0005	ppb	462.05	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0468	0.0468	ppb	9.11	1000.	
120 Sn	0.0381	0.0381	ppb	49.95	#VALUE!	
121 Sb	0.0001	0.0001	ppb	4322.80	#VALUE!	
123 Sb	0.0003	0.0003	ppb	961.88	1000.	
135 Ba	0.5953	0.5953	ppb	8.61	2000.	
137 Ba	0.586	0.586	ppb	4.85	#VALUE!	
182 W	0.0105	0.0105	ppb	11.61	1000.	
203 Tl	-0.0005	-0.0005	ppb	272.53	1000.	
205 Tl	-0.0036	-0.0036	ppb	28.30	#VALUE!	
208 Pb	0.1593	0.1593	ppb	8.74	2000.	
232 Th	0.0139	0.0139	ppb	9.99	1000.	
238 U	0.0046	0.0046	ppb	18.42	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4505489.00	1.97	4492941.00	100.3	69.5 - 120	
45 Sc	3073679.00	2.05	3094960.50	99.3	69.5 - 120	
72 Ge	616712.63	0.46	631723.63	97.6	69.5 - 120	
159 Tb	5984129.00	0.44	6220065.50	96.2	69.5 - 120	
209 Bi	3161658.00	1.44	3318256.50	95.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000176

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\072SMPL.D\072SMPL.D#
Date Acquired: May 14 2018 06:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE14IMW1
Misc Info:
Vial Number: 2311
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0006	-0.0006	ppb	80.63	100.	
11 B	1.089	1.089	ppb	8.97	1000.	
23 Na	7.449	7.449	ppb	0.89	200000.	
25 Mg	8.002	8.002	ppb	0.32	200000.	
27 Al	4.314	4.314	ppb	1.51	200000.	
28 Si	23.17	23.17	ppb	27.13	#VALUE!	
29 Si	-2.478	-2.478	ppb	285.51	10000.	
39 K	-0.8603	-0.8603	ppb	143.44	200000.	
43 Ca	-2.495	-2.495	ppb	67.82	#VALUE!	
44 Ca	2.381	2.381	ppb	11.03	200000.	
51 V	-0.0959	-0.0959	ppb	80.54	1000.	
52 Cr	-0.0233	-0.0233	ppb	29.59	2000.	
53 Cr	0.0342	0.0342	ppb	428.15	#VALUE!	
55 Mn	0.0629	0.0629	ppb	9.64	2000.	
56 Fe	1.976	1.976	ppb	178.95	#VALUE!	
57 Fe	2.415	2.415	ppb	100.12	100000.	
59 Co	-0.0008	-0.0008	ppb	768.44	1000.	
60 Ni	0.0137	0.0137	ppb	11.61	1000.	
63 Cu	0.0273	0.0273	ppb	12.88	#VALUE!	
65 Cu	0.019	0.019	ppb	33.41	2000.	
66 Zn	0.0766	0.0766	ppb	40.59	2000.	
68 Zn	0.0994	0.0994	ppb	24.30	#VALUE!	
75 As	-0.0585	-0.0585	ppb	109.04	1000.	
82 Se	-0.0378	-0.0378	ppb	330.60	1000.	
88 Sr	0.0107	0.0107	ppb	22.28	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0055	0.0055	ppb	41.05	1000.	
107 Ag	0.0016	0.0016	ppb	217.73	100.	
109 Ag	-0.0002	-0.0002	ppb	623.73	#VALUE!	
111 Cd	-0.0528	-0.0528	ppb	21.71	#VALUE!	
114 Cd	-0.0051	-0.0051	ppb	18.20	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0136	0.0136	ppb	41.50	1000.	
120 Sn	-0.0031	-0.0031	ppb	38.35	#VALUE!	
121 Sb	-0.0034	-0.0034	ppb	29.88	#VALUE!	
123 Sb	-0.0004	-0.0004	ppb	368.58	1000.	
135 Ba	0.0065	0.0065	ppb	164.32	2000.	
137 Ba	0.012	0.012	ppb	18.70	#VALUE!	
182 W	0.0048	0.0048	ppb	62.68	1000.	
203 Tl	-0.0054	-0.0054	ppb	222.06	1000.	
205 Tl	-0.0069	-0.0069	ppb	79.90	#VALUE!	
208 Pb	-0.0143	-0.0143	ppb	19.60	2000.	
232 Th	0.0133	0.0133	ppb	36.79	1000.	
238 U	0.	0.	ppb	1530.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4728968.50	2.15	4492941.00	105.3	69.5 - 120	
45 Sc	3113878.80	0.67	3094960.50	100.6	69.5 - 120	
72 Ge	620768.13	0.61	631723.63	98.3	69.5 - 120	
159 Tb	6058288.00	0.29	6220065.50	97.4	69.5 - 120	
209 Bi	3187547.00	1.07	3318256.50	96.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000177

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\073SMPL.D\073SMPL.D#
Date Acquired: May 14 2018 06:49 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE14IMW1
Misc Info:
Vial Number: 2312
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	43.74	8.748	ppb	2.01	100.	
11 B	461.8	92.36	ppb	4.19	1000.	
23 Na	8,000.	1,600.	ppb	2.20	200000.	
25 Mg	5,405.	1,081.	ppb	2.32	200000.	
27 Al	2,085.	417.	ppb	3.02	200000.	
28 Si	1,127.5	225.5	ppb	5.06	#VALUE!	
29 Si	940.	188.	ppb	3.47	10000.	
39 K	9,965.	1,993.	ppb	0.79	200000.	
43 Ca	2,779.	555.8	ppb	6.08	#VALUE!	
44 Ca	2,467.	493.4	ppb	3.36	200000.	
51 V	518.5	103.7	ppb	1.52	1000.	
52 Cr	195.55	39.11	ppb	1.24	2000.	
53 Cr	194.75	38.95	ppb	1.52	#VALUE!	
55 Mn	500.5	100.1	ppb	1.96	2000.	
56 Fe	1,020.5	204.1	ppb	3.35	#VALUE!	
57 Fe	1,002.5	200.5	ppb	0.88	100000.	
59 Co	508.5	101.7	ppb	1.14	1000.	
60 Ni	497.25	99.45	ppb	1.37	1000.	
63 Cu	250.9	50.18	ppb	1.49	#VALUE!	
65 Cu	254.8	50.96	ppb	1.89	2000.	
66 Zn	519.5	103.9	ppb	2.26	2000.	
68 Zn	576.5	115.3	ppb	1.66	#VALUE!	
75 As	101.8	20.36	ppb	1.00	1000.	
82 Se	103.3	20.66	ppb	1.28	1000.	
88 Sr	494.4	98.88	ppb	1.48	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	98.55	19.71	ppb	2.83	1000.	
107 Ag	50.2	10.04	ppb	2.80	100.	
109 Ag	50.	10.	ppb	2.01	#VALUE!	
111 Cd	253.35	50.67	ppb	1.43	#VALUE!	
114 Cd	251.15	50.23	ppb	1.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	510.5	102.1	ppb	2.57	1000.	
120 Sn	512.5	102.5	ppb	3.06	#VALUE!	
121 Sb	105.1	21.02	ppb	3.64	#VALUE!	
123 Sb	104.85	20.97	ppb	2.14	1000.	
135 Ba	2,073.5	414.7	ppb	2.51	2000.	
137 Ba	2,087.	417.4	ppb	3.05	#VALUE!	
182 W	97.95	19.59	ppb	3.48	1000.	
203 Tl	99.85	19.97	ppb	2.80	1000.	
205 Tl	100.05	20.01	ppb	2.54	#VALUE!	
208 Pb	100.65	20.13	ppb	2.60	2000.	
232 Th	92.15	18.43	ppb	2.11	1000.	
238 U	89.05	17.81	ppb	1.87	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4797498.50	0.49	4492941.00	106.8	69.5 - 120	
45 Sc	3133794.00	2.91	3094960.50	101.3	69.5 - 120	
72 Ge	616491.44	1.29	631723.63	97.6	69.5 - 120	
159 Tb	6076067.00	1.74	6220065.50	97.7	69.5 - 120	
209 Bi	3165794.80	0.70	3318256.50	95.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000178

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\074SMPL.D\074SMPL.D#
Date Acquired: May 14 2018 06:53 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4085-001
Misc Info:
Vial Number: 2401
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0992	0.0992	ppb	5.88	100.	
11 B	15.51	15.51	ppb	5.23	1000.	
23 Na	42,830.	42,830.	ppb	2.27	200000.	
25 Mg	1,039.	1,039.	ppb	3.41	200000.	
27 Al	52.52	52.52	ppb	4.27	200000.	
28 Si	4,399.	4,399.	ppb	1.12	#VALUE!	
29 Si	4,628.	4,628.	ppb	1.40	10000.	
39 K	1,163.	1,163.	ppb	1.45	200000.	
43 Ca	6,598.	6,598.	ppb	2.16	#VALUE!	
44 Ca	6,609.	6,609.	ppb	3.17	200000.	
51 V	-0.0333	-0.0333	ppb	87.43	1000.	
52 Cr	0.2307	0.2307	ppb	6.05	2000.	
53 Cr	5.056	5.056	ppb	44.03	#VALUE!	
55 Mn	23.17	23.17	ppb	0.58	2000.	
56 Fe	442.9	442.9	ppb	2.91	#VALUE!	
57 Fe	459.1	459.1	ppb	2.12	100000.	
59 Co	0.0655	0.0655	ppb	17.49	1000.	
60 Ni	0.6381	0.6381	ppb	8.41	1000.	
63 Cu	72.2	72.2	ppb	1.33	#VALUE!	
65 Cu	73.01	73.01	ppb	1.88	2000.	
66 Zn	36.46	36.46	ppb	1.50	2000.	
68 Zn	35.57	35.57	ppb	1.52	#VALUE!	
75 As	0.1034	0.1034	ppb	192.65	1000.	
82 Se	0.054	0.054	ppb	658.22	1000.	
88 Sr	75.43	75.43	ppb	0.47	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1201	0.1201	ppb	17.04	1000.	
107 Ag	0.0149	0.0149	ppb	16.03	100.	
109 Ag	0.0199	0.0199	ppb	13.38	#VALUE!	
111 Cd	0.0082	0.0082	ppb	221.08	#VALUE!	
114 Cd	0.0708	0.0708	ppb	10.97	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3673	0.3673	ppb	6.17	1000.	
120 Sn	0.3496	0.3496	ppb	15.02	#VALUE!	
121 Sb	0.0151	0.0151	ppb	19.55	#VALUE!	
123 Sb	0.0142	0.0142	ppb	28.89	1000.	
135 Ba	7.08	7.08	ppb	2.18	2000.	
137 Ba	6.99	6.99	ppb	1.72	#VALUE!	
182 W	0.0492	0.0492	ppb	22.32	1000.	
203 Tl	0.0181	0.0181	ppb	8.55	1000.	
205 Tl	0.014	0.014	ppb	19.54	#VALUE!	
208 Pb	0.9994	0.9994	ppb	1.53	2000.	
232 Th	0.1044	0.1044	ppb	36.30	1000.	
238 U	4.711	4.711	ppb	1.26	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4613041.50	4.17	4492941.00	102.7	69.5 - 120	
45 Sc	3083742.50	2.42	3094960.50	99.6	69.5 - 120	
72 Ge	619889.88	1.45	631723.63	98.1	69.5 - 120	
159 Tb	6009094.50	2.41	6220065.50	96.6	69.5 - 120	
209 Bi	3013064.50	1.62	3318256.50	90.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000179

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\075SMPL.D\075SMPL.D#
Date Acquired: May 14 2018 06:57 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4085-002
Misc Info:
Vial Number: 2402
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.1067	0.1067	ppb	1.57	100.	
11 B	15.12	15.12	ppb	2.51	1000.	
23 Na	40,090.	40,090.	ppb	3.12	200000.	
25 Mg	1,008.	1,008.	ppb	1.44	200000.	
27 Al	65.41	65.41	ppb	1.56	200000.	
28 Si	4,304.	4,304.	ppb	0.74	#VALUE!	
29 Si	4,536.	4,536.	ppb	0.04	10000.	
39 K	1,118.	1,118.	ppb	2.20	200000.	
43 Ca	6,336.	6,336.	ppb	1.69	#VALUE!	
44 Ca	6,397.	6,397.	ppb	1.11	200000.	
51 V	-0.0396	-0.0396	ppb	175.78	1000.	
52 Cr	0.2006	0.2006	ppb	6.81	2000.	
53 Cr	9.198	9.198	ppb	12.06	#VALUE!	
55 Mn	22.21	22.21	ppb	0.37	2000.	
56 Fe	285.7	285.7	ppb	0.94	#VALUE!	
57 Fe	289.8	289.8	ppb	1.58	100000.	
59 Co	0.0524	0.0524	ppb	7.33	1000.	
60 Ni	1.371	1.371	ppb	2.09	1000.	
63 Cu	60.25	60.25	ppb	0.85	#VALUE!	
65 Cu	60.71	60.71	ppb	0.20	2000.	
66 Zn	62.62	62.62	ppb	0.51	2000.	
68 Zn	59.54	59.54	ppb	0.92	#VALUE!	
75 As	0.1816	0.1816	ppb	110.85	1000.	
82 Se	0.1242	0.1242	ppb	202.58	1000.	
88 Sr	75.48	75.48	ppb	1.09	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0955	0.0955	ppb	9.79	1000.	
107 Ag	0.0104	0.0104	ppb	28.97	100.	
109 Ag	0.0145	0.0145	ppb	26.17	#VALUE!	
111 Cd	0.0116	0.0116	ppb	124.27	#VALUE!	
114 Cd	0.0673	0.0673	ppb	10.16	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1007	0.1007	ppb	2.50	1000.	
120 Sn	0.1024	0.1024	ppb	10.85	#VALUE!	
121 Sb	0.0076	0.0076	ppb	27.81	#VALUE!	
123 Sb	0.011	0.011	ppb	9.33	1000.	
135 Ba	6.689	6.689	ppb	2.53	2000.	
137 Ba	6.611	6.611	ppb	0.07	#VALUE!	
182 W	0.0119	0.0119	ppb	42.45	1000.	
203 Tl	0.0217	0.0217	ppb	22.24	1000.	
205 Tl	0.0133	0.0133	ppb	43.96	#VALUE!	
208 Pb	0.7667	0.7667	ppb	2.60	2000.	
232 Th	0.037	0.037	ppb	24.40	1000.	
238 U	4.583	4.583	ppb	0.40	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4488597.00	5.04	4492941.00	99.9	69.5 - 120	
45 Sc	3149376.30	0.40	3094960.50	101.8	69.5 - 120	
72 Ge	625313.38	0.39	631723.63	99.0	69.5 - 120	
159 Tb	6060413.00	0.67	6220065.50	97.4	69.5 - 120	
209 Bi	3037660.30	0.51	3318256.50	91.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000180

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\076SMPL.D\076SMPL.D#
Date Acquired: May 14 2018 07:01 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4096-002
Misc Info:
Vial Number: 2403
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0092	0.0092	ppb	19.35	100.	
11 B	17.48	17.48	ppb	3.63	1000.	
23 Na	24,640.	24,640.	ppb	4.55	200000.	
25 Mg	4,191.	4,191.	ppb	4.10	200000.	
27 Al	10.96	10.96	ppb	6.09	200000.	
28 Si	3,323.	3,323.	ppb	5.97	#VALUE!	
29 Si	3,467.	3,467.	ppb	6.48	10000.	
39 K	857.9	857.9	ppb	4.65	200000.	
43 Ca	32,380.	32,380.	ppb	2.67	#VALUE!	
44 Ca	31,650.	31,650.	ppb	1.06	200000.	
51 V	-0.0262	-0.0262	ppb	252.33	1000.	
52 Cr	0.3836	0.3836	ppb	11.55	2000.	
53 Cr	3.082	3.082	ppb	9.18	#VALUE!	
55 Mn	9.288	9.288	ppb	1.17	2000.	
56 Fe	71.04	71.04	ppb	6.80	#VALUE!	
57 Fe	87.48	87.48	ppb	3.97	100000.	
59 Co	0.4114	0.4114	ppb	5.79	1000.	
60 Ni	4.069	4.069	ppb	2.66	1000.	
63 Cu	140.	140.	ppb	1.90	#VALUE!	
65 Cu	144.9	144.9	ppb	0.45	2000.	
66 Zn	1,434.	1,434.	ppb	1.38	2000.	
68 Zn	1,369.	1,369.	ppb	1.49	#VALUE!	
75 As	0.2318	0.2318	ppb	28.16	1000.	
82 Se	0.1683	0.1683	ppb	27.55	1000.	
88 Sr	215.3	215.3	ppb	0.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0383	0.0383	ppb	17.24	1000.	
107 Ag	0.0328	0.0328	ppb	18.57	100.	
109 Ag	0.027	0.027	ppb	11.33	#VALUE!	
111 Cd	0.0447	0.0447	ppb	140.17	#VALUE!	
114 Cd	0.0471	0.0471	ppb	27.16	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.06	0.06	ppb	36.95	1000.	
120 Sn	0.0397	0.0397	ppb	25.62	#VALUE!	
121 Sb	0.055	0.055	ppb	20.07	#VALUE!	
123 Sb	0.0613	0.0613	ppb	2.27	1000.	
135 Ba	5.154	5.154	ppb	2.89	2000.	
137 Ba	5.002	5.002	ppb	2.04	#VALUE!	
182 W	0.0071	0.0071	ppb	21.30	1000.	
203 Tl	0.0064	0.0064	ppb	142.14	1000.	
205 Tl	-0.003	-0.003	ppb	223.21	#VALUE!	
208 Pb	4.027	4.027	ppb	1.90	2000.	
232 Th	0.0107	0.0107	ppb	38.36	1000.	
238 U	0.0302	0.0302	ppb	3.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4335981.50	1.63	4492941.00	96.5	69.5 - 120	
45 Sc	3113030.30	3.40	3094960.50	100.6	69.5 - 120	
72 Ge	613751.31	0.55	631723.63	97.2	69.5 - 120	
159 Tb	6036798.00	1.67	6220065.50	97.1	69.5 - 120	
209 Bi	3029982.80	1.15	3318256.50	91.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000181

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\077SMPL.D\077SMPL.D#
Date Acquired: May 14 2018 07:05 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4105-001
Misc Info:
Vial Number: 2404
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0981	0.0981	ppb	6.66	100.	
11 B	81.85	81.85	ppb	2.64	1000.	
23 Na	148,200.	148,200.	ppb	3.48	200000.	
25 Mg	9,823.	9,823.	ppb	4.07	200000.	
27 Al	794.5	794.5	ppb	1.38	200000.	
28 Si	4,950.	4,950.	ppb	1.60	#VALUE!	
29 Si	5,201.	5,201.	ppb	1.77	10000.	
39 K	8,935.	8,935.	ppb	0.96	200000.	
43 Ca	51,840.	51,840.	ppb	1.53	#VALUE!	
44 Ca	49,730.	49,730.	ppb	0.93	200000.	
51 V	1.724	1.724	ppb	3.91	1000.	
52 Cr	3.937	3.937	ppb	0.83	2000.	
53 Cr	7.452	7.452	ppb	11.31	#VALUE!	
55 Mn	195.8	195.8	ppb	1.22	2000.	
56 Fe	1,895.	1,895.	ppb	2.04	#VALUE!	
57 Fe	1,949.	1,949.	ppb	1.16	100000.	
59 Co	0.8396	0.8396	ppb	1.88	1000.	
60 Ni	4.555	4.555	ppb	24.61	1000.	
63 Cu	41.75	41.75	ppb	1.26	#VALUE!	
65 Cu	37.37	37.37	ppb	0.76	2000.	
66 Zn	112.9	112.9	ppb	0.22	2000.	
68 Zn	107.2	107.2	ppb	1.66	#VALUE!	
75 As	1.893	1.893	ppb	7.71	1000.	
82 Se	0.7692	0.7692	ppb	9.17	1000.	
88 Sr	297.9	297.9	ppb	0.74	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.371	1.371	ppb	5.11	1000.	
107 Ag	0.1328	0.1328	ppb	3.08	100.	
109 Ag	0.1358	0.1358	ppb	3.42	#VALUE!	
111 Cd	0.1317	0.1317	ppb	20.74	#VALUE!	
114 Cd	0.157	0.157	ppb	5.72	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.803	1.803	ppb	2.95	1000.	
120 Sn	1.824	1.824	ppb	1.22	#VALUE!	
121 Sb	0.688	0.688	ppb	5.91	#VALUE!	
123 Sb	0.7054	0.7054	ppb	5.11	1000.	
135 Ba	30.22	30.22	ppb	2.82	2000.	
137 Ba	30.1	30.1	ppb	2.02	#VALUE!	
182 W	0.426	0.426	ppb	0.50	1000.	
203 Tl	0.0158	0.0158	ppb	30.34	1000.	
205 Tl	0.0095	0.0095	ppb	47.65	#VALUE!	
208 Pb	4.783	4.783	ppb	1.80	2000.	
232 Th	0.0536	0.0536	ppb	30.05	1000.	
238 U	0.9769	0.9769	ppb	0.97	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4067831.30	2.20	4492941.00	90.5	69.5 - 120	
45 Sc	3080052.80	0.99	3094960.50	99.5	69.5 - 120	
72 Ge	612254.50	0.99	631723.63	96.9	69.5 - 120	
159 Tb	5980093.00	1.93	6220065.50	96.1	69.5 - 120	
209 Bi	2849963.50	0.53	3318256.50	85.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000182

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\078_CCV.D\078_CCV.D#
Date Acquired: May 14 2018 07:09 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.43	ppb	2.59	25	89.72	
11 B	26.32	ppb	2.12	25	105.28	
23 Na	5,316.	ppb	1.74	5,000	106.32	
25 Mg	5,289.	ppb	1.16	5,000	105.78	
27 Al	510.5	ppb	1.99	500	102.1	
28 Si	507.4	ppb	1.93	500	101.48	
29 Si	487.4	ppb	3.57	500	97.48	
39 K	4,923.	ppb	3.09	5,000	98.46	
43 Ca	4,938.	ppb	1.89	5,000	98.76	
44 Ca	5,012.	ppb	0.77	5,000	100.24	
51 V	25.7	ppb	1.10	25	102.8	
52 Cr	24.73	ppb	1.16	25	98.92	
53 Cr	24.12	ppb	4.71	25	96.48	
55 Mn	24.55	ppb	0.82	25	98.2	
56 Fe	4,891.	ppb	1.22	5,000	97.82	
57 Fe	4,965.	ppb	1.44	5,000	99.3	
59 Co	24.72	ppb	0.73	25	98.88	
60 Ni	24.43	ppb	0.41	25	97.72	
63 Cu	24.53	ppb	0.89	25	98.12	
65 Cu	25.06	ppb	0.32	25	100.24	
66 Zn	24.98	ppb	0.22	25	99.92	
68 Zn	24.17	ppb	1.55	25	96.68	
75 As	24.83	ppb	0.40	25	99.32	
82 Se	25.02	ppb	1.75	25	100.08	
88 Sr	24.05	ppb	0.78	25	96.2	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.71	ppb	0.82	25	94.84	
107 Ag	24.03	ppb	0.72	25	96.12	
109 Ag	24.26	ppb	1.10	25	97.04	
111 Cd	24.06	ppb	0.93	25	96.24	
114 Cd	24.24	ppb	0.94	25	96.96	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.7	ppb	0.48	25	98.8	
120 Sn	25.14	ppb	0.87	25	100.56	
121 Sb	25.39	ppb	0.53	25	101.56	
123 Sb	25.5	ppb	0.08	25	102	
135 Ba	25.5	ppb	0.72	25	102	
137 Ba	25.22	ppb	0.32	25	100.88	
182 W	24.33	ppb	0.47	25	97.32	
203 Tl	24.93	ppb	1.68	25	99.72	
205 Tl	24.79	ppb	0.93	25	99.16	
208 Pb	24.89	ppb	1.00	25	99.56	
232 Th	23.34	ppb	0.38	25	93.36	
238 U	22.16	ppb	1.11	25	88.64	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	5214757.50	2.26	4492941.00	116.1	80 - 120.4	
45 Sc	3361544.50	1.57	3094960.50	108.6	80 - 120.4	
72 Ge	650007.19	1.26	631723.63	102.9	80 - 120.4	
159 Tb	6287265.50	1.06	6220065.50	101.1	80 - 120.4	
209 Bi	3227602.80	0.31	3318256.50	97.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000183

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\079_CCB.D\079_CCB.D#
Date Acquired: May 14 2018 07:13 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0007	ppb	163.59	1.00	
11 B	2.69	ppb	14.57	1.00	
23 Na	2.162	ppb	9.08	1.00	
25 Mg	0.0253	ppb	140.02	1.00	
27 Al	0.0768	ppb	64.40	1.00	
28 Si	45.98	ppb	52.70	1.00	
29 Si	3.041	ppb	546.53	1.00	
39 K	0.7882	ppb	266.30	1.00	
43 Ca	-1.904	ppb	119.38	1.00	
44 Ca	0.4627	ppb	96.15	1.00	
51 V	-0.1033	ppb	47.14	1.00	
52 Cr	0.0829	ppb	40.59	1.00	
53 Cr	-1.199	ppb	18.19	1.00	
55 Mn	0.0107	ppb	69.19	1.00	
56 Fe	2.337	ppb	97.52	1.00	
57 Fe	0.6332	ppb	224.10	1.00	
59 Co	-0.0009	ppb	180.19	1.00	
60 Ni	-0.0038	ppb	16.60	1.00	
63 Cu	0.0082	ppb	27.79	1.00	
65 Cu	0.007	ppb	181.66	1.00	
66 Zn	0.0473	ppb	93.65	1.00	
68 Zn	0.0874	ppb	76.59	1.00	
75 As	-0.0688	ppb	214.02	1.00	
82 Se	-0.0393	ppb	606.66	1.00	
88 Sr	0.0008	ppb	425.00	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0314	ppb	24.29	1.00	
107 Ag	0.0039	ppb	31.29	1.00	
109 Ag	0.0039	ppb	55.70	1.00	
111 Cd	-0.0651	ppb	4.01	1.00	
114 Cd	-0.0026	ppb	84.17	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0746	ppb	11.27	1.00	
120 Sn	0.0563	ppb	19.47	1.00	
121 Sb	0.0055	ppb	48.48	1.00	
123 Sb	0.006	ppb	17.73	1.00	
135 Ba	0.0025	ppb	330.80	1.00	
137 Ba	0.003	ppb	79.71	1.00	
182 W	0.0508	ppb	32.86	1.00	
203 Tl	0.0081	ppb	111.74	1.00	
205 Tl	0.0057	ppb	155.96	1.00	
208 Pb	0.1162	ppb	19.37	1.00	
232 Th	0.0579	ppb	4.46	1.00	
238 U	0.0031	ppb	40.82	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3329280.30	9.86	4492941.00	74.1	79.5 - 120	ISFail
45 Sc	2675130.80	7.22	3094960.50	86.4	79.5 - 120	
72 Ge	549782.13	5.82	631723.63	87.0	79.5 - 120	
159 Tb	5891358.00	1.43	6220065.50	94.7	79.5 - 120	
209 Bi	3287457.30	2.27	3318256.50	99.1	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\080SMPL.D\080SMPL.D#
Date Acquired: May 14 2018 07:17 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4105-003
Misc Info:
Vial Number: 2405
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0211	0.0211	ppb	18.18	100.	
11 B	104.5	104.5	ppb	3.98	1000.	
23 Na	133,100.	133,100.	ppb	2.31	200000.	
25 Mg	8,573.	8,573.	ppb	0.50	200000.	
27 Al	49.16	49.16	ppb	2.58	200000.	
28 Si	3,952.	3,952.	ppb	2.47	#VALUE!	
29 Si	4,176.	4,176.	ppb	3.01	10000.	
39 K	9,927.	9,927.	ppb	1.43	200000.	
43 Ca	49,790.	49,790.	ppb	2.15	#VALUE!	
44 Ca	47,130.	47,130.	ppb	1.19	200000.	
51 V	0.4432	0.4432	ppb	2.40	1000.	
52 Cr	0.7493	0.7493	ppb	0.99	2000.	
53 Cr	1.186	1.186	ppb	76.80	#VALUE!	
55 Mn	138.	138.	ppb	1.23	2000.	
56 Fe	158.	158.	ppb	3.20	#VALUE!	
57 Fe	177.9	177.9	ppb	1.37	100000.	
59 Co	0.4672	0.4672	ppb	6.52	1000.	
60 Ni	2.016	2.016	ppb	2.73	1000.	
63 Cu	10.75	10.75	ppb	1.67	#VALUE!	
65 Cu	5.93	5.93	ppb	0.63	2000.	
66 Zn	36.59	36.59	ppb	0.48	2000.	
68 Zn	35.7	35.7	ppb	1.35	#VALUE!	
75 As	1.859	1.859	ppb	10.21	1000.	
82 Se	0.841	0.841	ppb	14.79	1000.	
88 Sr	290.9	290.9	ppb	0.92	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.9564	0.9564	ppb	4.44	1000.	
107 Ag	0.0116	0.0116	ppb	23.57	100.	
109 Ag	0.0092	0.0092	ppb	2.59	#VALUE!	
111 Cd	-0.0342	-0.0342	ppb	18.47	#VALUE!	
114 Cd	0.0219	0.0219	ppb	19.05	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2814	0.2814	ppb	1.77	1000.	
120 Sn	0.2528	0.2528	ppb	8.49	#VALUE!	
121 Sb	0.4791	0.4791	ppb	3.58	#VALUE!	
123 Sb	0.4888	0.4888	ppb	4.72	1000.	
135 Ba	13.78	13.78	ppb	1.20	2000.	
137 Ba	13.51	13.51	ppb	1.25	#VALUE!	
182 W	0.1405	0.1405	ppb	7.55	1000.	
203 Tl	0.0378	0.0378	ppb	30.72	1000.	
205 Tl	0.0228	0.0228	ppb	15.74	#VALUE!	
208 Pb	0.7772	0.7772	ppb	3.15	2000.	
232 Th	0.0633	0.0633	ppb	7.18	1000.	
238 U	0.5376	0.5376	ppb	4.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3389023.00	3.88	4492941.00	75.4	69.5 - 120	
45 Sc	2719890.30	1.28	3094960.50	87.9	69.5 - 120	
72 Ge	554804.38	1.08	631723.63	87.8	69.5 - 120	
159 Tb	5912811.00	0.46	6220065.50	95.1	69.5 - 120	
209 Bi	2900397.50	0.72	3318256.50	87.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000185

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\081SMPL.D\081SMPL.D#
Date Acquired: May 14 2018 07:22 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4096-001
Misc Info:
Vial Number: 2406
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0084	0.0084	ppb	26.85	100.	
11 B	19.92	19.92	ppb	1.86	1000.	
23 Na	23,610.	23,610.	ppb	3.47	200000.	
25 Mg	4,056.	4,056.	ppb	3.12	200000.	
27 Al	14.62	14.62	ppb	3.55	200000.	
28 Si	3,159.	3,159.	ppb	7.03	#VALUE!	
29 Si	3,176.	3,176.	ppb	4.36	10000.	
39 K	855.7	855.7	ppb	2.09	200000.	
43 Ca	32,620.	32,620.	ppb	0.81	#VALUE!	
44 Ca	32,040.	32,040.	ppb	1.97	200000.	
51 V	-0.024	-0.024	ppb	333.11	1000.	
52 Cr	0.501	0.501	ppb	2.21	2000.	
53 Cr	3.003	3.003	ppb	7.61	#VALUE!	
55 Mn	9.733	9.733	ppb	3.20	2000.	
56 Fe	96.17	96.17	ppb	9.04	#VALUE!	
57 Fe	109.7	109.7	ppb	2.66	100000.	
59 Co	0.3784	0.3784	ppb	5.49	1000.	
60 Ni	1.566	1.566	ppb	2.63	1000.	
63 Cu	21.01	21.01	ppb	3.73	#VALUE!	
65 Cu	20.73	20.73	ppb	2.54	2000.	
66 Zn	10.37	10.37	ppb	1.14	2000.	
68 Zn	10.08	10.08	ppb	2.73	#VALUE!	
75 As	0.0054	0.0054	ppb	3615.50	1000.	
82 Se	0.1153	0.1153	ppb	142.32	1000.	
88 Sr	217.8	217.8	ppb	2.62	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0374	0.0374	ppb	4.47	1000.	
107 Ag	0.0167	0.0167	ppb	14.58	100.	
109 Ag	0.0154	0.0154	ppb	21.01	#VALUE!	
111 Cd	-0.0189	-0.0189	ppb	164.29	#VALUE!	
114 Cd	0.0383	0.0383	ppb	26.94	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.92	1.92	ppb	3.98	1000.	
120 Sn	1.875	1.875	ppb	3.14	#VALUE!	
121 Sb	0.0398	0.0398	ppb	3.82	#VALUE!	
123 Sb	0.0415	0.0415	ppb	36.70	1000.	
135 Ba	4.92	4.92	ppb	5.22	2000.	
137 Ba	4.926	4.926	ppb	3.20	#VALUE!	
182 W	0.0085	0.0085	ppb	30.40	1000.	
203 Tl	0.0235	0.0235	ppb	22.84	1000.	
205 Tl	0.0173	0.0173	ppb	15.47	#VALUE!	
208 Pb	0.8884	0.8884	ppb	4.54	2000.	
232 Th	0.0231	0.0231	ppb	35.77	1000.	
238 U	0.0287	0.0287	ppb	8.12	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3657597.50	4.70	4492941.00	81.4	69.5 - 120	
45 Sc	2701940.50	3.16	3094960.50	87.3	69.5 - 120	
72 Ge	553168.13	2.44	631723.63	87.6	69.5 - 120	
159 Tb	5817492.00	2.49	6220065.50	93.5	69.5 - 120	
209 Bi	3050229.30	2.22	3318256.50	91.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000186

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\082SMPL.D\082SMPL.D#
Date Acquired: May 14 2018 07:26 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE07IMW1
Misc Info:
Vial Number: 2407
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0081	0.0016	ppb	158.36	100.	
11 B	13.14	2.628	ppb	8.34	1000.	
23 Na	40.59	8.118	ppb	13.88	200000.	
25 Mg	10.64	2.128	ppb	6.82	200000.	
27 Al	7.005	1.401	ppb	6.85	200000.	
28 Si	195.5	39.1	ppb	34.27	#VALUE!	
29 Si	111.1	22.22	ppb	97.57	10000.	
39 K	39.2	7.84	ppb	71.31	200000.	
43 Ca	-9.33	-1.866	ppb	236.01	#VALUE!	
44 Ca	17.46	3.492	ppb	29.50	200000.	
51 V	0.2981	0.0596	ppb	52.73	1000.	
52 Cr	2.733	0.5466	ppb	19.34	2000.	
53 Cr	47.185	9.437	ppb	5.48	#VALUE!	
55 Mn	0.1945	0.0389	ppb	21.09	2000.	
56 Fe	47.13	9.426	ppb	39.90	#VALUE!	
57 Fe	5.	1.	ppb	212.70	100000.	
59 Co	0.006	0.0012	ppb	137.64	1000.	
60 Ni	0.1112	0.0222	ppb	28.92	1000.	
63 Cu	0.0914	0.0183	ppb	42.61	#VALUE!	
65 Cu	0.0769	0.0154	ppb	12.53	2000.	
66 Zn	-0.0387	-0.0077	ppb	296.71	2000.	
68 Zn	0.0602	0.012	ppb	333.80	#VALUE!	
75 As	0.884	0.1768	ppb	29.23	1000.	
82 Se	0.732	0.1464	ppb	85.11	1000.	
88 Sr	0.0553	0.0111	ppb	57.49	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0225	0.0045	ppb	22.11	1000.	
107 Ag	0.0091	0.0018	ppb	89.60	100.	
109 Ag	0.0037	0.0007	ppb	163.68	#VALUE!	
111 Cd	-0.129	-0.0258	ppb	93.84	#VALUE!	
114 Cd	-0.032	-0.0064	ppb	51.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.579	0.3158	ppb	6.41	1000.	
120 Sn	1.538	0.3076	ppb	8.04	#VALUE!	
121 Sb	0.0723	0.0145	ppb	41.18	#VALUE!	
123 Sb	0.0466	0.0093	ppb	49.76	1000.	
135 Ba	0.041	0.0082	ppb	219.46	2000.	
137 Ba	0.0239	0.0048	ppb	91.23	#VALUE!	
182 W	0.0529	0.0106	ppb	10.27	1000.	
203 Tl	0.0627	0.0125	ppb	40.43	1000.	
205 Tl	0.0453	0.0091	ppb	119.34	#VALUE!	
208 Pb	0.239	0.0478	ppb	46.43	2000.	
232 Th	0.1211	0.0242	ppb	22.88	1000.	
238 U	0.0001	0.	ppb	3165.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3308219.80	2.71	4492941.00	73.6	69.5 - 120	
45 Sc	2456814.30	4.66	3094960.50	79.4	69.5 - 120	
72 Ge	521848.59	1.86	631723.63	82.6	69.5 - 120	
159 Tb	5813783.00	1.39	6220065.50	93.5	69.5 - 120	
209 Bi	3252740.80	1.65	3318256.50	98.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000187

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\083SMPL.D\083SMPL.D#
Date Acquired: May 14 2018 07:30 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE07IMW1
Misc Info:
Vial Number: 2408
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	45.875	9.175	ppb	1.07	100.	
11 B	449.45	89.89	ppb	6.40	1000.	
23 Na	7,300.	1,460.	ppb	0.98	200000.	
25 Mg	4,862.5	972.5	ppb	0.59	200000.	
27 Al	2,061.	412.2	ppb	0.67	200000.	
28 Si	1,208.5	241.7	ppb	1.84	#VALUE!	
29 Si	1,047.	209.4	ppb	5.98	10000.	
39 K	10,105.	2,021.	ppb	0.75	200000.	
43 Ca	2,899.	579.8	ppb	0.98	#VALUE!	
44 Ca	2,558.5	511.7	ppb	2.13	200000.	
51 V	527.5	105.5	ppb	3.68	1000.	
52 Cr	204.2	40.84	ppb	2.77	2000.	
53 Cr	248.7	49.74	ppb	1.96	#VALUE!	
55 Mn	522.5	104.5	ppb	3.45	2000.	
56 Fe	1,092.5	218.5	ppb	6.27	#VALUE!	
57 Fe	1,054.5	210.9	ppb	2.76	100000.	
59 Co	525.	105.	ppb	3.47	1000.	
60 Ni	507.	101.4	ppb	1.93	1000.	
63 Cu	249.35	49.87	ppb	2.42	#VALUE!	
65 Cu	258.	51.6	ppb	2.49	2000.	
66 Zn	518.	103.6	ppb	1.40	2000.	
68 Zn	567.	113.4	ppb	3.12	#VALUE!	
75 As	104.65	20.93	ppb	2.25	1000.	
82 Se	104.	20.8	ppb	2.97	1000.	
88 Sr	529.	105.8	ppb	3.46	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	106.75	21.35	ppb	2.72	1000.	
107 Ag	54.6	10.92	ppb	2.68	100.	
109 Ag	54.9	10.98	ppb	2.81	#VALUE!	
111 Cd	270.85	54.17	ppb	2.70	#VALUE!	
114 Cd	270.35	54.07	ppb	2.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	485.85	97.17	ppb	1.67	1000.	
120 Sn	489.2	97.84	ppb	1.89	#VALUE!	
121 Sb	100.25	20.05	ppb	2.36	#VALUE!	
123 Sb	101.35	20.27	ppb	1.79	1000.	
135 Ba	2,028.5	405.7	ppb	2.28	2000.	
137 Ba	2,041.	408.2	ppb	2.84	#VALUE!	
182 W	108.3	21.66	ppb	2.44	1000.	
203 Tl	104.45	20.89	ppb	1.96	1000.	
205 Tl	105.15	21.03	ppb	2.33	#VALUE!	
208 Pb	106.05	21.21	ppb	2.34	2000.	
232 Th	105.55	21.11	ppb	2.70	1000.	
238 U	110.05	22.01	ppb	3.30	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3430846.80	0.82	4492941.00	76.4	69.5 - 120	
45 Sc	2430781.30	1.53	3094960.50	78.5	69.5 - 120	
72 Ge	503465.00	2.29	631723.63	79.7	69.5 - 120	
159 Tb	5713001.00	1.67	6220065.50	91.8	69.5 - 120	
209 Bi	3214687.80	1.29	3318256.50	96.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000188

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\084SMPL.D\084SMPL.D#
Date Acquired: May 14 2018 07:34 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-002
Misc Info:
Vial Number: 2409
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.56	0.112	ppb	3.43	100.	
11 B	271.1	54.22	ppb	7.73	1000.	
23 Na	273,250.	54,650.	ppb	5.45	200000.	
25 Mg	67,900.	13,580.	ppb	3.17	200000.	
27 Al	10,470.	2,094.	ppb	1.68	200000.	
28 Si	35,130.	7,026.	ppb	1.83	#VALUE!	
29 Si	36,755.	7,351.	ppb	1.75	10000.	
39 K	20,370.	4,074.	ppb	0.48	200000.	
43 Ca	363,650.	72,730.	ppb	1.69	#VALUE!	
44 Ca	345,250.	69,050.	ppb	2.15	200000.	
51 V	34.88	6.976	ppb	2.35	1000.	
52 Cr	42.2	8.44	ppb	1.21	2000.	
53 Cr	79.1	15.82	ppb	1.93	#VALUE!	
55 Mn	1,485.	297.	ppb	0.73	2000.	
56 Fe	15,275.	3,055.	ppb	0.56	#VALUE!	
57 Fe	15,615.	3,123.	ppb	0.55	100000.	
59 Co	6.26	1.252	ppb	0.46	1000.	
60 Ni	20.185	4.037	ppb	1.84	1000.	
63 Cu	24.87	4.974	ppb	0.67	#VALUE!	
65 Cu	15.415	3.083	ppb	2.37	2000.	
66 Zn	141.85	28.37	ppb	1.31	2000.	
68 Zn	142.1	28.42	ppb	2.31	#VALUE!	
75 As	19.88	3.976	ppb	4.28	1000.	
82 Se	1.354	0.2708	ppb	128.40	1000.	
88 Sr	1,551.	310.2	ppb	1.47	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	23.035	4.607	ppb	3.86	1000.	
107 Ag	0.048	0.0096	ppb	11.33	100.	
109 Ag	0.041	0.0082	ppb	32.83	#VALUE!	
111 Cd	-0.165	-0.033	ppb	66.79	#VALUE!	
114 Cd	0.0058	0.0012	ppb	360.26	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.8415	0.5683	ppb	5.70	1000.	
120 Sn	2.758	0.5516	ppb	6.82	#VALUE!	
121 Sb	0.933	0.1866	ppb	2.89	#VALUE!	
123 Sb	0.9735	0.1947	ppb	6.78	1000.	
135 Ba	245.5	49.1	ppb	1.27	2000.	
137 Ba	245.1	49.02	ppb	1.80	#VALUE!	
182 W	0.485	0.097	ppb	7.65	1000.	
203 Tl	0.2482	0.0496	ppb	16.91	1000.	
205 Tl	0.1614	0.0323	ppb	12.68	#VALUE!	
208 Pb	11.585	2.317	ppb	0.60	2000.	
232 Th	7.915	1.583	ppb	3.38	1000.	
238 U	5.495	1.099	ppb	1.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3257057.50	10.47	4492941.00	72.5	69.5 - 120	
45 Sc	2527017.80	2.83	3094960.50	81.6	69.5 - 120	
72 Ge	524791.88	1.81	631723.63	83.1	69.5 - 120	
159 Tb	5863706.50	1.05	6220065.50	94.3	69.5 - 120	
209 Bi	3167876.80	1.47	3318256.50	95.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000189

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\085SMPL.D\085SMPL.D#
Date Acquired: May 14 2018 07:38 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-003
Misc Info:
Vial Number: 2410
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0066	0.0013	ppb	52.88	100.	
11 B	253.05	50.61	ppb	8.36	1000.	
23 Na	301,700.	60,340.	ppb	3.97	200000.	
25 Mg	71,150.	14,230.	ppb	1.38	200000.	
27 Al	9.425	1.885	ppb	1.07	200000.	
28 Si	14,245.	2,849.	ppb	5.62	#VALUE!	
29 Si	14,030.	2,806.	ppb	5.94	10000.	
39 K	18,755.	3,751.	ppb	1.82	200000.	
43 Ca	350,700.	70,140.	ppb	2.47	#VALUE!	
44 Ca	339,000.	67,800.	ppb	2.08	200000.	
51 V	1.418	0.2836	ppb	18.00	1000.	
52 Cr	2.402	0.4804	ppb	12.37	2000.	
53 Cr	64.7	12.94	ppb	16.74	#VALUE!	
55 Mn	1,407.5	281.5	ppb	1.32	2000.	
56 Fe	1,531.5	306.3	ppb	1.60	#VALUE!	
57 Fe	1,777.	355.4	ppb	1.24	100000.	
59 Co	1.553	0.3106	ppb	5.21	1000.	
60 Ni	5.685	1.137	ppb	5.03	1000.	
63 Cu	14.675	2.935	ppb	1.16	#VALUE!	
65 Cu	5.285	1.057	ppb	3.67	2000.	
66 Zn	27.3	5.46	ppb	5.10	2000.	
68 Zn	26.435	5.287	ppb	2.31	#VALUE!	
75 As	12.61	2.522	ppb	1.96	1000.	
82 Se	1.4435	0.2887	ppb	71.60	1000.	
88 Sr	1,471.	294.2	ppb	0.81	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	14.4	2.88	ppb	1.01	1000.	
107 Ag	0.0043	0.0009	ppb	162.24	100.	
109 Ag	0.0143	0.0029	ppb	8.98	#VALUE!	
111 Cd	-0.1218	-0.0244	ppb	34.86	#VALUE!	
114 Cd	-0.0177	-0.0035	ppb	136.66	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.699	0.3398	ppb	1.72	1000.	
120 Sn	1.7725	0.3545	ppb	3.81	#VALUE!	
121 Sb	0.8315	0.1663	ppb	3.18	#VALUE!	
123 Sb	0.764	0.1528	ppb	2.72	1000.	
135 Ba	38.31	7.662	ppb	2.28	2000.	
137 Ba	38.305	7.661	ppb	0.94	#VALUE!	
182 W	0.1975	0.0395	ppb	2.55	1000.	
203 Tl	0.0765	0.0153	ppb	35.46	1000.	
205 Tl	0.0427	0.0085	ppb	94.95	#VALUE!	
208 Pb	0.2731	0.0546	ppb	29.65	2000.	
232 Th	0.2892	0.0578	ppb	9.94	1000.	
238 U	4.3405	0.8681	ppb	1.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4195414.00	6.25	4492941.00	93.4	69.5 - 120	
45 Sc	2891243.00	2.38	3094960.50	93.4	69.5 - 120	
72 Ge	580090.50	0.91	631723.63	91.8	69.5 - 120	
159 Tb	6038897.50	1.62	6220065.50	97.1	69.5 - 120	
209 Bi	3144354.50	2.27	3318256.50	94.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000190

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\086SMPL.D\086SMPL.D#
Date Acquired: May 14 2018 07:42 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004
Misc Info:
Vial Number: 2411
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.1348	0.027	ppb	7.50	100.	
11 B	216.2	43.24	ppb	4.64	1000.	
23 Na	302,850.	60,570.	ppb	2.27	200000.	
25 Mg	77,150.	15,430.	ppb	3.25	200000.	
27 Al	3,024.	604.8	ppb	2.26	200000.	
28 Si	23,080.	4,616.	ppb	2.15	#VALUE!	
29 Si	24,520.	4,904.	ppb	2.00	10000.	
39 K	18,870.	3,774.	ppb	2.78	200000.	
43 Ca	389,300.	77,860.	ppb	0.39	#VALUE!	
44 Ca	370,450.	74,090.	ppb	0.24	200000.	
51 V	7.285	1.457	ppb	9.44	1000.	
52 Cr	28.495	5.699	ppb	1.10	2000.	
53 Cr	80.05	16.01	ppb	1.17	#VALUE!	
55 Mn	1,373.	274.6	ppb	1.91	2000.	
56 Fe	10,930.	2,186.	ppb	1.75	#VALUE!	
57 Fe	11,245.	2,249.	ppb	0.64	100000.	
59 Co	1.961	0.3922	ppb	6.18	1000.	
60 Ni	10.865	2.173	ppb	0.58	1000.	
63 Cu	22.9	4.58	ppb	1.19	#VALUE!	
65 Cu	12.595	2.519	ppb	1.31	2000.	
66 Zn	142.3	28.46	ppb	0.10	2000.	
68 Zn	141.1	28.22	ppb	1.05	#VALUE!	
75 As	11.945	2.389	ppb	10.39	1000.	
82 Se	2.122	0.4244	ppb	40.58	1000.	
88 Sr	1,745.5	349.1	ppb	0.59	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.67	3.534	ppb	0.67	1000.	
107 Ag	0.0258	0.0052	ppb	54.72	100.	
109 Ag	0.0161	0.0032	ppb	85.79	#VALUE!	
111 Cd	-0.2778	-0.0556	ppb	19.46	#VALUE!	
114 Cd	-0.0065	-0.0013	ppb	305.56	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.3375	0.6675	ppb	7.15	1000.	
120 Sn	3.2035	0.6407	ppb	6.07	#VALUE!	
121 Sb	0.3801	0.076	ppb	9.25	#VALUE!	
123 Sb	0.3059	0.0612	ppb	1.93	1000.	
135 Ba	96.8	19.36	ppb	1.70	2000.	
137 Ba	95.5	19.1	ppb	2.01	#VALUE!	
182 W	0.3847	0.0769	ppb	12.52	1000.	
203 Tl	0.1113	0.0223	ppb	19.95	1000.	
205 Tl	0.1347	0.0269	ppb	38.32	#VALUE!	
208 Pb	3.8995	0.7799	ppb	0.84	2000.	
232 Th	2.572	0.5144	ppb	2.62	1000.	
238 U	2.278	0.4556	ppb	3.11	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3266187.30	3.04	4492941.00	72.7	69.5 - 120	
45 Sc	2539251.50	2.33	3094960.50	82.0	69.5 - 120	
72 Ge	516386.19	1.15	631723.63	81.7	69.5 - 120	
159 Tb	5788549.00	0.23	6220065.50	93.1	69.5 - 120	
209 Bi	3100065.30	0.73	3318256.50	93.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000191

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\087SMPL.D\087SMPL.D#
Date Acquired: May 14 2018 07:47 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004L
Misc Info:
Vial Number: 2412
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.1436	0.0057	ppb	19.12	100.	
11 B	266.25	10.65	ppb	5.20	1000.	
23 Na	303,500.	12,140.	ppb	1.28	200000.	
25 Mg	80,125.	3,205.	ppb	3.36	200000.	
27 Al	3,267.5	130.7	ppb	1.54	200000.	
28 Si	24,240.	969.6	ppb	3.04	#VALUE!	
29 Si	23,727.5	949.1	ppb	1.99	10000.	
39 K	19,567.5	782.7	ppb	0.90	200000.	
43 Ca	384,250.	15,370.	ppb	2.90	#VALUE!	
44 Ca	383,250.	15,330.	ppb	1.56	200000.	
51 V	5.5275	0.2211	ppb	43.40	1000.	
52 Cr	31.325	1.253	ppb	2.72	2000.	
53 Cr	108.475	4.339	ppb	2.76	#VALUE!	
55 Mn	1,476.5	59.06	ppb	1.14	2000.	
56 Fe	11,157.5	446.3	ppb	2.51	#VALUE!	
57 Fe	11,475.	459.	ppb	0.95	100000.	
59 Co	2.0993	0.084	ppb	4.86	1000.	
60 Ni	10.9925	0.4397	ppb	15.55	1000.	
63 Cu	24.1825	0.9673	ppb	5.59	#VALUE!	
65 Cu	13.6825	0.5473	ppb	2.20	2000.	
66 Zn	163.025	6.521	ppb	3.06	2000.	
68 Zn	156.825	6.273	ppb	3.41	#VALUE!	
75 As	10.17	0.4068	ppb	24.78	1000.	
82 Se	0.3218	0.0129	ppb	1006.20	1000.	
88 Sr	1,882.25	75.29	ppb	0.78	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	18.295	0.7318	ppb	0.65	1000.	
107 Ag	-0.0091	-0.0004	ppb	168.70	100.	
109 Ag	0.008	0.0003	ppb	214.29	#VALUE!	
111 Cd	-1.6083	-0.0643	ppb	60.36	#VALUE!	
114 Cd	-0.102	-0.0041	ppb	34.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	4.335	0.1734	ppb	9.58	1000.	
120 Sn	4.37	0.1748	ppb	8.26	#VALUE!	
121 Sb	0.3135	0.0125	ppb	48.07	#VALUE!	
123 Sb	0.397	0.0159	ppb	32.09	1000.	
135 Ba	99.9	3.996	ppb	4.57	2000.	
137 Ba	97.6	3.904	ppb	1.71	#VALUE!	
182 W	0.4753	0.019	ppb	39.58	1000.	
203 Tl	0.3613	0.0145	ppb	4.85	1000.	
205 Tl	0.1717	0.0069	ppb	90.01	#VALUE!	
208 Pb	6.2925	0.2517	ppb	6.55	2000.	
232 Th	2.1993	0.088	ppb	7.83	1000.	
238 U	2.2473	0.0899	ppb	4.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3240715.30	4.36	4492941.00	72.1	69.5 - 120	
45 Sc	2574308.00	1.01	3094960.50	83.2	69.5 - 120	
72 Ge	526949.31	1.03	631723.63	83.4	69.5 - 120	
159 Tb	5876490.50	1.02	6220065.50	94.5	69.5 - 120	
209 Bi	3325495.30	1.47	3318256.50	100.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000192

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\088SMPL.D\088SMPL.D#
Date Acquired: May 14 2018 07:51 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004A
Misc Info:
Vial Number: 2501
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.925	1.985	ppb	5.20	100.	
11 B	409.75	81.95	ppb	5.43	1000.	
23 Na	294,600.	58,920.	ppb	3.03	200000.	
25 Mg	74,500.	14,900.	ppb	4.54	200000.	
27 Al	3,842.	768.4	ppb	0.92	200000.	
28 Si	27,230.	5,446.	ppb	2.31	#VALUE!	
29 Si	29,175.	5,835.	ppb	6.20	10000.	
39 K	28,980.	5,796.	ppb	5.33	200000.	
43 Ca	402,100.	80,420.	ppb	6.44	#VALUE!	
44 Ca	376,800.	75,360.	ppb	2.66	200000.	
51 V	57.1	11.42	ppb	3.29	1000.	
52 Cr	77.4	15.48	ppb	3.65	2000.	
53 Cr	122.25	24.45	ppb	0.86	#VALUE!	
55 Mn	1,376.5	275.3	ppb	2.11	2000.	
56 Fe	11,890.	2,378.	ppb	2.87	#VALUE!	
57 Fe	12,160.	2,432.	ppb	4.60	100000.	
59 Co	11.78	2.356	ppb	1.33	1000.	
60 Ni	28.72	5.744	ppb	1.62	1000.	
63 Cu	52.05	10.41	ppb	1.73	#VALUE!	
65 Cu	42.125	8.425	ppb	3.13	2000.	
66 Zn	235.65	47.13	ppb	1.61	2000.	
68 Zn	226.7	45.34	ppb	2.93	#VALUE!	
75 As	63.75	12.75	ppb	1.52	1000.	
82 Se	51.35	10.27	ppb	0.42	1000.	
88 Sr	1,809.5	361.9	ppb	2.15	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	71.25	14.25	ppb	2.77	1000.	
107 Ag	10.15	2.03	ppb	5.21	100.	
109 Ag	10.385	2.077	ppb	2.99	#VALUE!	
111 Cd	10.02	2.004	ppb	3.98	#VALUE!	
114 Cd	10.29	2.058	ppb	1.12	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.8	10.16	ppb	3.18	1000.	
120 Sn	50.7	10.14	ppb	3.68	#VALUE!	
121 Sb	10.07	2.014	ppb	4.87	#VALUE!	
123 Sb	10.2	2.04	ppb	2.62	1000.	
135 Ba	114.5	22.9	ppb	2.21	2000.	
137 Ba	115.45	23.09	ppb	3.96	#VALUE!	
182 W	55.7	11.14	ppb	2.95	1000.	
203 Tl	10.625	2.125	ppb	4.49	1000.	
205 Tl	10.505	2.101	ppb	2.08	#VALUE!	
208 Pb	14.11	2.822	ppb	3.14	2000.	
232 Th	13.815	2.763	ppb	1.08	1000.	
238 U	13.935	2.787	ppb	1.32	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2965903.30	6.62	4492941.00	66.0	69.5 - 120	IS Fai
45 Sc	2391856.80	3.67	3094960.50	77.3	69.5 - 120	
72 Ge	497286.34	2.16	631723.63	78.7	69.5 - 120	
159 Tb	5686794.00	2.21	6220065.50	91.4	69.5 - 120	
209 Bi	3079620.00	2.28	3318256.50	92.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000193

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\089SMPL.D\089SMPL.D#
Date Acquired: May 14 2018 07:55 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004S
Misc Info:
Vial Number: 2502
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	49.28	9.856	ppb	0.88	100.	
11 B	711.5	142.3	ppb	2.05	1000.	
23 Na	319,850.	63,970.	ppb	8.15	200000.	
25 Mg	81,050.	16,210.	ppb	4.05	200000.	
27 Al	5,025.	1,005.	ppb	4.65	200000.	
28 Si	25,930.	5,186.	ppb	5.04	#VALUE!	
29 Si	28,520.	5,704.	ppb	5.89	10000.	
39 K	30,475.	6,095.	ppb	3.60	200000.	
43 Ca	414,350.	82,870.	ppb	2.75	#VALUE!	
44 Ca	391,500.	78,300.	ppb	2.61	200000.	
51 V	553.5	110.7	ppb	1.22	1000.	
52 Cr	230.8	46.16	ppb	3.89	2000.	
53 Cr	270.4	54.08	ppb	3.38	#VALUE!	
55 Mn	1,946.	389.2	ppb	2.23	2000.	
56 Fe	12,485.	2,497.	ppb	1.90	#VALUE!	
57 Fe	12,610.	2,522.	ppb	2.21	100000.	
59 Co	533.	106.6	ppb	3.21	1000.	
60 Ni	505.5	101.1	ppb	3.55	1000.	
63 Cu	267.5	53.5	ppb	2.91	#VALUE!	
65 Cu	264.75	52.95	ppb	2.59	2000.	
66 Zn	638.	127.6	ppb	3.15	2000.	
68 Zn	685.	137.	ppb	2.84	#VALUE!	
75 As	120.3	24.06	ppb	3.72	1000.	
82 Se	106.95	21.39	ppb	5.54	1000.	
88 Sr	2,437.5	487.5	ppb	3.26	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	134.8	26.96	ppb	2.77	1000.	
107 Ag	53.9	10.78	ppb	2.06	100.	
109 Ag	54.15	10.83	ppb	2.56	#VALUE!	
111 Cd	271.35	54.27	ppb	2.85	#VALUE!	
114 Cd	270.3	54.06	ppb	2.88	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	492.15	98.43	ppb	4.75	1000.	
120 Sn	502.5	100.5	ppb	3.84	#VALUE!	
121 Sb	99.45	19.89	ppb	3.78	#VALUE!	
123 Sb	101.05	20.21	ppb	3.76	1000.	
135 Ba	2,166.	433.2	ppb	3.46	2000.	
137 Ba	2,184.5	436.9	ppb	3.95	#VALUE!	
182 W	113.65	22.73	ppb	4.35	1000.	
203 Tl	109.7	21.94	ppb	4.17	1000.	
205 Tl	110.	22.	ppb	4.31	#VALUE!	
208 Pb	114.95	22.99	ppb	3.93	2000.	
232 Th	121.4	24.28	ppb	4.51	1000.	
238 U	125.	25.	ppb	3.70	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2876826.50	1.33	4492941.00	64.0	69.5 - 120	IS Fai
45 Sc	2271124.00	5.22	3094960.50	73.4	69.5 - 120	
72 Ge	473315.34	2.95	631723.63	74.9	69.5 - 120	
159 Tb	5570517.50	3.90	6220065.50	89.6	69.5 - 120	
209 Bi	3000176.30	4.02	3318256.50	90.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000194

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\090_CCV.D\090_CCV.D#
Date Acquired: May 14 2018 07:59 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.05	ppb	3.19	25	96.2	
11 B	28.75	ppb	2.98	25	115	Fail
23 Na	4,536.	ppb	4.16	5,000	90.72	
25 Mg	4,572.	ppb	3.66	5,000	91.44	
27 Al	454.7	ppb	2.39	500	90.94	
28 Si	506.9	ppb	3.94	500	101.38	
29 Si	455.7	ppb	6.25	500	91.14	
39 K	4,776.	ppb	1.22	5,000	95.52	
43 Ca	4,869.	ppb	1.56	5,000	97.38	
44 Ca	5,001.	ppb	1.89	5,000	100.02	
51 V	24.41	ppb	1.91	25	97.64	
52 Cr	24.3	ppb	1.46	25	97.2	
53 Cr	24.13	ppb	5.40	25	96.52	
55 Mn	24.81	ppb	1.22	25	99.24	
56 Fe	4,874.	ppb	1.17	5,000	97.48	
57 Fe	5,021.	ppb	0.81	5,000	100.42	
59 Co	24.42	ppb	2.53	25	97.68	
60 Ni	23.77	ppb	0.58	25	95.08	
63 Cu	24.27	ppb	0.97	25	97.08	
65 Cu	24.68	ppb	1.85	25	98.72	
66 Zn	25.44	ppb	0.83	25	101.76	
68 Zn	25.25	ppb	0.95	25	101	
75 As	24.8	ppb	1.11	25	99.2	
82 Se	25.8	ppb	0.78	25	103.2	
88 Sr	25.77	ppb	0.30	25	103.08	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.79	ppb	0.18	25	103.16	
107 Ag	26.14	ppb	0.18	25	104.56	
109 Ag	26.14	ppb	0.61	25	104.56	
111 Cd	26.46	ppb	1.06	25	105.84	
114 Cd	26.34	ppb	0.42	25	105.36	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.29	ppb	0.78	25	93.16	
120 Sn	23.32	ppb	0.99	25	93.28	
121 Sb	24.08	ppb	1.00	25	96.32	
123 Sb	24.19	ppb	0.94	25	96.76	
135 Ba	24.39	ppb	2.14	25	97.56	
137 Ba	24.36	ppb	1.09	25	97.44	
182 W	25.32	ppb	1.37	25	101.28	
203 Tl	24.49	ppb	1.10	25	97.96	
205 Tl	24.66	ppb	0.68	25	98.64	
208 Pb	24.89	ppb	0.67	25	99.56	
232 Th	25.13	ppb	0.59	25	100.52	
238 U	26.37	ppb	1.24	25	105.48	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3070284.50	2.74	4492941.00	68.3	80 - 120.4	ISFail
45 Sc	2462531.80	2.13	3094960.50	79.6	80 - 120.4	
72 Ge	503741.63	1.12	631723.63	79.7	80 - 120.4	
159 Tb	5766978.00	0.37	6220065.50	92.7	80 - 120.4	
209 Bi	3227761.50	0.53	3318256.50	97.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000195

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\091_CCB.D\091_CCB.D#
Date Acquired: May 14 2018 08:03 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0014	ppb	31.45	1.00	
11 B	3.56	ppb	15.02	1.00	
23 Na	3.125	ppb	3.40	1.00	
25 Mg	-0.0525	ppb	106.81	1.00	
27 Al	-0.0765	ppb	52.86	1.00	
28 Si	51.91	ppb	14.00	1.00	
29 Si	5.611	ppb	175.83	1.00	
39 K	3.597	ppb	75.12	1.00	
43 Ca	-2.959	ppb	73.47	1.00	
44 Ca	0.7479	ppb	115.46	1.00	
51 V	-0.1144	ppb	34.41	1.00	
52 Cr	0.0629	ppb	63.75	1.00	
53 Cr	-0.9009	ppb	20.68	1.00	
55 Mn	0.015	ppb	24.27	1.00	
56 Fe	1.425	ppb	129.96	1.00	
57 Fe	1.948	ppb	62.12	1.00	
59 Co	0.004	ppb	26.29	1.00	
60 Ni	0.0075	ppb	45.16	1.00	
63 Cu	0.0045	ppb	229.58	1.00	
65 Cu	0.0087	ppb	243.02	1.00	
66 Zn	0.0307	ppb	144.55	1.00	
68 Zn	0.048	ppb	58.37	1.00	
75 As	-0.1013	ppb	107.01	1.00	
82 Se	0.0316	ppb	590.89	1.00	
88 Sr	0.0023	ppb	99.47	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0391	ppb	38.60	1.00	
107 Ag	0.0037	ppb	31.22	1.00	
109 Ag	0.0032	ppb	25.59	1.00	
111 Cd	-0.0561	ppb	39.97	1.00	
114 Cd	-0.0039	ppb	16.39	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0623	ppb	15.41	1.00	
120 Sn	0.0551	ppb	5.72	1.00	
121 Sb	0.0051	ppb	35.17	1.00	
123 Sb	0.0074	ppb	32.32	1.00	
135 Ba	0.0076	ppb	127.40	1.00	
137 Ba	-0.0002	ppb	2198.10	1.00	
182 W	0.0514	ppb	19.38	1.00	
203 Tl	0.0072	ppb	62.37	1.00	
205 Tl	0.0018	ppb	127.41	1.00	
208 Pb	0.0803	ppb	1.18	1.00	
232 Th	0.0679	ppb	4.29	1.00	
238 U	0.0036	ppb	54.00	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3067449.30	1.67	4492941.00	68.3	79.5 - 120	ISFail
45 Sc	2424041.50	1.97	3094960.50	78.3	79.5 - 120	ISFail
72 Ge	505036.53	1.08	631723.63	79.9	79.5 - 120	
159 Tb	5727870.00	0.72	6220065.50	92.1	79.5 - 120	
209 Bi	3269967.30	0.60	3318256.50	98.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
2 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000196

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\092SMPL.D\092SMPL.D#
Date Acquired: May 14 2018 08:07 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004P
Misc Info:
Vial Number: 2503
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	48.02	9.604	ppb	2.75	100.	
11 B	700.	140.	ppb	3.16	1000.	
23 Na	299,500.	59,900.	ppb	0.53	200000.	
25 Mg	79,100.	15,820.	ppb	1.12	200000.	
27 Al	5,060.	1,012.	ppb	0.78	200000.	
28 Si	24,935.	4,987.	ppb	2.30	#VALUE!	
29 Si	26,560.	5,312.	ppb	2.41	10000.	
39 K	29,175.	5,835.	ppb	1.95	200000.	
43 Ca	404,250.	80,850.	ppb	2.11	#VALUE!	
44 Ca	380,400.	76,080.	ppb	2.20	200000.	
51 V	538.	107.6	ppb	1.62	1000.	
52 Cr	221.25	44.25	ppb	0.26	2000.	
53 Cr	255.1	51.02	ppb	3.29	#VALUE!	
55 Mn	1,892.	378.4	ppb	1.67	2000.	
56 Fe	12,305.	2,461.	ppb	1.37	#VALUE!	
57 Fe	12,175.	2,435.	ppb	1.13	100000.	
59 Co	505.	101.	ppb	1.27	1000.	
60 Ni	480.55	96.11	ppb	1.17	1000.	
63 Cu	257.6	51.52	ppb	0.54	#VALUE!	
65 Cu	253.	50.6	ppb	0.76	2000.	
66 Zn	609.5	121.9	ppb	1.28	2000.	
68 Zn	652.	130.4	ppb	0.65	#VALUE!	
75 As	113.4	22.68	ppb	1.99	1000.	
82 Se	100.35	20.07	ppb	0.78	1000.	
88 Sr	2,327.5	465.5	ppb	0.98	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	126.75	25.35	ppb	0.45	1000.	
107 Ag	51.45	10.29	ppb	0.61	100.	
109 Ag	51.05	10.21	ppb	0.55	#VALUE!	
111 Cd	258.55	51.71	ppb	1.10	#VALUE!	
114 Cd	257.75	51.55	ppb	0.41	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	471.4	94.28	ppb	0.95	1000.	
120 Sn	476.7	95.34	ppb	1.16	#VALUE!	
121 Sb	96.05	19.21	ppb	1.35	#VALUE!	
123 Sb	96.	19.2	ppb	0.74	1000.	
135 Ba	2,073.	414.6	ppb	0.90	2000.	
137 Ba	2,070.	414.	ppb	1.49	#VALUE!	
182 W	107.95	21.59	ppb	1.45	1000.	
203 Tl	104.4	20.88	ppb	1.18	1000.	
205 Tl	104.15	20.83	ppb	0.35	#VALUE!	
208 Pb	108.15	21.63	ppb	0.25	2000.	
232 Th	113.25	22.65	ppb	1.09	1000.	
238 U	117.3	23.46	ppb	0.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2872195.30	2.00	4492941.00	63.9	69.5 - 120	IS Fai
45 Sc	2295654.30	1.58	3094960.50	74.2	69.5 - 120	
72 Ge	477851.72	0.49	631723.63	75.6	69.5 - 120	
159 Tb	5582497.00	0.63	6220065.50	89.7	69.5 - 120	
209 Bi	3027193.30	0.98	3318256.50	91.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000197

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\093SMPL.D\093SMPL.D#
Date Acquired: May 14 2018 08:11 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005
Misc Info:
Vial Number: 2504
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0121	0.0024	ppb	29.33	100.	
11 B	227.15	45.43	ppb	3.92	1000.	
23 Na	300,350.	60,070.	ppb	3.93	200000.	
25 Mg	74,700.	14,940.	ppb	2.97	200000.	
27 Al	8.13	1.626	ppb	7.58	200000.	
28 Si	16,435.	3,287.	ppb	1.06	#VALUE!	
29 Si	16,515.	3,303.	ppb	0.51	10000.	
39 K	18,030.	3,606.	ppb	1.98	200000.	
43 Ca	400,550.	80,110.	ppb	2.32	#VALUE!	
44 Ca	379,500.	75,900.	ppb	0.80	200000.	
51 V	-0.3629	-0.0726	ppb	78.60	1000.	
52 Cr	2.071	0.4142	ppb	8.69	2000.	
53 Cr	53.35	10.67	ppb	10.33	#VALUE!	
55 Mn	1,366.	273.2	ppb	0.50	2000.	
56 Fe	6,785.	1,357.	ppb	1.00	#VALUE!	
57 Fe	6,940.	1,388.	ppb	1.09	100000.	
59 Co	0.639	0.1278	ppb	4.67	1000.	
60 Ni	3.404	0.6808	ppb	3.96	1000.	
63 Cu	12.	2.4	ppb	2.25	#VALUE!	
65 Cu	1.105	0.221	ppb	6.83	2000.	
66 Zn	48.645	9.729	ppb	0.27	2000.	
68 Zn	47.28	9.456	ppb	1.95	#VALUE!	
75 As	10.86	2.172	ppb	17.09	1000.	
82 Se	1.892	0.3784	ppb	28.54	1000.	
88 Sr	1,785.	357.	ppb	0.53	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	13.725	2.745	ppb	2.11	1000.	
107 Ag	0.0214	0.0043	ppb	54.72	100.	
109 Ag	0.0158	0.0032	ppb	74.55	#VALUE!	
111 Cd	-0.347	-0.0694	ppb	19.73	#VALUE!	
114 Cd	-0.0071	-0.0014	ppb	174.91	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.3655	0.2731	ppb	4.78	1000.	
120 Sn	1.2715	0.2543	ppb	8.42	#VALUE!	
121 Sb	0.2729	0.0546	ppb	5.43	#VALUE!	
123 Sb	0.2575	0.0515	ppb	17.50	1000.	
135 Ba	30.585	6.117	ppb	1.58	2000.	
137 Ba	30.055	6.011	ppb	2.21	#VALUE!	
182 W	0.3893	0.0779	ppb	2.64	1000.	
203 Tl	0.0092	0.0018	ppb	95.76	1000.	
205 Tl	-0.0016	-0.0003	ppb	799.20	#VALUE!	
208 Pb	0.0339	0.0068	ppb	240.67	2000.	
232 Th	0.711	0.1422	ppb	25.71	1000.	
238 U	1.876	0.3752	ppb	5.35	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2983989.80	2.11	4492941.00	66.4	69.5 - 120	IS Fai
45 Sc	2385113.50	0.61	3094960.50	77.1	69.5 - 120	
72 Ge	492744.22	0.60	631723.63	78.0	69.5 - 120	
159 Tb	5578590.50	1.12	6220065.50	89.7	69.5 - 120	
209 Bi	3009941.30	2.45	3318256.50	90.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000198

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\094SMPL.D\094SMPL.D#
Date Acquired: May 14 2018 08:16 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005L
Misc Info:
Vial Number: 2505
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0044	0.0002	ppb	321.08	100.	
11 B	289.75	11.59	ppb	6.54	1000.	
23 Na	317,000.	12,680.	ppb	2.61	200000.	
25 Mg	80,800.	3,232.	ppb	1.27	200000.	
27 Al	19.145	0.7658	ppb	10.09	200000.	
28 Si	18,152.5	726.1	ppb	2.26	#VALUE!	
29 Si	17,527.5	701.1	ppb	3.46	10000.	
39 K	19,130.	765.2	ppb	2.17	200000.	
43 Ca	395,250.	15,810.	ppb	1.14	#VALUE!	
44 Ca	385,000.	15,400.	ppb	1.32	200000.	
51 V	-2.5825	-0.1033	ppb	40.72	1000.	
52 Cr	2.354	0.0942	ppb	28.43	2000.	
53 Cr	91.425	3.657	ppb	15.84	#VALUE!	
55 Mn	1,416.75	56.67	ppb	1.82	2000.	
56 Fe	6,702.5	268.1	ppb	1.15	#VALUE!	
57 Fe	7,080.	283.2	ppb	2.89	100000.	
59 Co	0.633	0.0253	ppb	7.17	1000.	
60 Ni	4.0925	0.1637	ppb	10.02	1000.	
63 Cu	12.075	0.483	ppb	2.97	#VALUE!	
65 Cu	0.874	0.035	ppb	47.74	2000.	
66 Zn	53.675	2.147	ppb	1.63	2000.	
68 Zn	48.75	1.95	ppb	6.97	#VALUE!	
75 As	9.7675	0.3907	ppb	35.94	1000.	
82 Se	0.9163	0.0367	ppb	66.00	1000.	
88 Sr	1,875.5	75.02	ppb	1.53	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	14.0075	0.5603	ppb	1.58	1000.	
107 Ag	-0.0246	-0.001	ppb	134.28	100.	
109 Ag	0.0442	0.0018	ppb	116.36	#VALUE!	
111 Cd	-1.198	-0.0479	ppb	26.36	#VALUE!	
114 Cd	-0.1225	-0.0049	ppb	75.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.1695	0.0868	ppb	14.08	1000.	
120 Sn	1.866	0.0746	ppb	11.06	#VALUE!	
121 Sb	0.2145	0.0086	ppb	47.15	#VALUE!	
123 Sb	0.3448	0.0138	ppb	31.76	1000.	
135 Ba	30.325	1.213	ppb	4.15	2000.	
137 Ba	29.95	1.198	ppb	3.49	#VALUE!	
182 W	0.5633	0.0225	ppb	44.61	1000.	
203 Tl	0.2435	0.0097	ppb	97.56	1000.	
205 Tl	-0.0725	-0.0029	ppb	100.14	#VALUE!	
208 Pb	1.0898	0.0436	ppb	8.90	2000.	
232 Th	0.457	0.0183	ppb	32.94	1000.	
238 U	1.7798	0.0712	ppb	5.03	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3118443.30	2.43	4492941.00	69.4	69.5 - 120	IS Fai
45 Sc	2399691.00	2.09	3094960.50	77.5	69.5 - 120	
72 Ge	511254.66	1.72	631723.63	80.9	69.5 - 120	
159 Tb	5701737.00	0.60	6220065.50	91.7	69.5 - 120	
209 Bi	3201827.00	1.28	3318256.50	96.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000199

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\095SMPL.D\095SMPL.D#
Date Acquired: May 14 2018 08:20 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005A
Misc Info:
Vial Number: 2506
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.48	1.896	ppb	4.66	100.	
11 B	417.1	83.42	ppb	7.33	1000.	
23 Na	305,450.	61,090.	ppb	7.33	200000.	
25 Mg	78,600.	15,720.	ppb	4.23	200000.	
27 Al	924.5	184.9	ppb	1.85	200000.	
28 Si	21,485.	4,297.	ppb	2.14	#VALUE!	
29 Si	22,560.	4,512.	ppb	3.35	10000.	
39 K	28,075.	5,615.	ppb	3.46	200000.	
43 Ca	406,500.	81,300.	ppb	4.14	#VALUE!	
44 Ca	387,900.	77,580.	ppb	3.14	200000.	
51 V	48.555	9.711	ppb	1.68	1000.	
52 Cr	48.105	9.621	ppb	2.12	2000.	
53 Cr	95.15	19.03	ppb	3.44	#VALUE!	
55 Mn	1,407.	281.4	ppb	2.39	2000.	
56 Fe	7,690.	1,538.	ppb	3.23	#VALUE!	
57 Fe	7,975.	1,595.	ppb	3.10	100000.	
59 Co	9.795	1.959	ppb	2.14	1000.	
60 Ni	20.95	4.19	ppb	1.43	1000.	
63 Cu	38.79	7.758	ppb	2.74	#VALUE!	
65 Cu	28.21	5.642	ppb	3.01	2000.	
66 Zn	139.55	27.91	ppb	1.95	2000.	
68 Zn	130.8	26.16	ppb	2.30	#VALUE!	
75 As	57.3	11.46	ppb	4.65	1000.	
82 Se	47.055	9.411	ppb	4.02	1000.	
88 Sr	1,876.	375.2	ppb	3.33	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	63.25	12.65	ppb	1.64	1000.	
107 Ag	9.63	1.926	ppb	2.93	100.	
109 Ag	9.425	1.885	ppb	2.66	#VALUE!	
111 Cd	8.94	1.788	ppb	1.04	#VALUE!	
114 Cd	9.085	1.817	ppb	1.55	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.835	8.967	ppb	0.32	1000.	
120 Sn	45.6	9.12	ppb	0.93	#VALUE!	
121 Sb	9.26	1.852	ppb	3.36	#VALUE!	
123 Sb	9.13	1.826	ppb	0.42	1000.	
135 Ba	49.515	9.903	ppb	2.65	2000.	
137 Ba	48.885	9.777	ppb	2.36	#VALUE!	
182 W	50.95	10.19	ppb	2.16	1000.	
203 Tl	9.665	1.933	ppb	0.53	1000.	
205 Tl	9.615	1.923	ppb	0.86	#VALUE!	
208 Pb	9.725	1.945	ppb	1.94	2000.	
232 Th	10.595	2.119	ppb	1.40	1000.	
238 U	12.705	2.541	ppb	0.79	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2833683.00	6.44	4492941.00	63.1	69.5 - 120	IS Fai
45 Sc	2344565.50	2.60	3094960.50	75.8	69.5 - 120	
72 Ge	486333.63	1.99	631723.63	77.0	69.5 - 120	
159 Tb	5579703.00	0.88	6220065.50	89.7	69.5 - 120	
209 Bi	3003866.00	1.00	3318256.50	90.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000200

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\096SMPL.D\096SMPL.D#
Date Acquired: May 14 2018 08:24 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005S
Misc Info:
Vial Number: 2507
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	48.155	9.631	ppb	1.11	100.	
11 B	723.	144.6	ppb	6.12	1000.	
23 Na	309,700.	61,940.	ppb	5.65	200000.	
25 Mg	80,500.	16,100.	ppb	1.70	200000.	
27 Al	1,988.5	397.7	ppb	3.93	200000.	
28 Si	18,540.	3,708.	ppb	2.25	#VALUE!	
29 Si	19,350.	3,870.	ppb	7.73	10000.	
39 K	28,985.	5,797.	ppb	2.78	200000.	
43 Ca	417,500.	83,500.	ppb	3.09	#VALUE!	
44 Ca	392,750.	78,550.	ppb	2.13	200000.	
51 V	529.5	105.9	ppb	1.09	1000.	
52 Cr	196.95	39.39	ppb	0.80	2000.	
53 Cr	249.55	49.91	ppb	1.56	#VALUE!	
55 Mn	1,896.	379.2	ppb	0.79	2000.	
56 Fe	8,015.	1,603.	ppb	1.19	#VALUE!	
57 Fe	8,210.	1,642.	ppb	0.67	100000.	
59 Co	513.	102.6	ppb	1.25	1000.	
60 Ni	477.	95.4	ppb	0.57	1000.	
63 Cu	245.55	49.11	ppb	0.84	#VALUE!	
65 Cu	243.75	48.75	ppb	0.51	2000.	
66 Zn	518.	103.6	ppb	1.57	2000.	
68 Zn	563.5	112.7	ppb	0.90	#VALUE!	
75 As	112.8	22.56	ppb	0.42	1000.	
82 Se	96.6	19.32	ppb	1.64	1000.	
88 Sr	2,357.5	471.5	ppb	1.91	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	122.2	24.44	ppb	1.68	1000.	
107 Ag	51.15	10.23	ppb	0.69	100.	
109 Ag	50.25	10.05	ppb	1.75	#VALUE!	
111 Cd	256.15	51.23	ppb	1.05	#VALUE!	
114 Cd	253.65	50.73	ppb	1.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	477.25	95.45	ppb	1.31	1000.	
120 Sn	483.05	96.61	ppb	1.13	#VALUE!	
121 Sb	97.35	19.47	ppb	1.43	#VALUE!	
123 Sb	98.4	19.68	ppb	1.23	1000.	
135 Ba	2,020.5	404.1	ppb	0.34	2000.	
137 Ba	2,005.5	401.1	ppb	0.90	#VALUE!	
182 W	108.75	21.75	ppb	0.59	1000.	
203 Tl	102.4	20.48	ppb	1.02	1000.	
205 Tl	102.8	20.56	ppb	1.02	#VALUE!	
208 Pb	103.	20.6	ppb	1.04	2000.	
232 Th	109.3	21.86	ppb	1.26	1000.	
238 U	115.95	23.19	ppb	0.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2922913.80	4.11	4492941.00	65.1	69.5 - 120	IS Fai
45 Sc	2350122.30	4.35	3094960.50	75.9	69.5 - 120	
72 Ge	488471.63	1.88	631723.63	77.3	69.5 - 120	
159 Tb	5649850.50	0.20	6220065.50	90.8	69.5 - 120	
209 Bi	3053947.30	1.47	3318256.50	92.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000201

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\097SMPL.D\097SMPL.D#
Date Acquired: May 14 2018 08:28 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005P
Misc Info:
Vial Number: 2508
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	47.96	9.592	ppb	5.00	100.	
11 B	715.	143.	ppb	5.97	1000.	
23 Na	302,750.	60,550.	ppb	4.09	200000.	
25 Mg	80,000.	16,000.	ppb	2.80	200000.	
27 Al	1,910.	382.	ppb	3.41	200000.	
28 Si	17,785.	3,557.	ppb	2.62	#VALUE!	
29 Si	17,445.	3,489.	ppb	1.82	10000.	
39 K	28,030.	5,606.	ppb	3.54	200000.	
43 Ca	395,850.	79,170.	ppb	2.92	#VALUE!	
44 Ca	378,950.	75,790.	ppb	0.93	200000.	
51 V	523.	104.6	ppb	1.92	1000.	
52 Cr	194.15	38.83	ppb	0.46	2000.	
53 Cr	242.25	48.45	ppb	1.37	#VALUE!	
55 Mn	1,866.5	373.3	ppb	0.41	2000.	
56 Fe	7,865.	1,573.	ppb	0.22	#VALUE!	
57 Fe	7,925.	1,585.	ppb	1.09	100000.	
59 Co	498.9	99.78	ppb	1.31	1000.	
60 Ni	465.15	93.03	ppb	0.14	1000.	
63 Cu	243.	48.6	ppb	1.68	#VALUE!	
65 Cu	239.1	47.82	ppb	1.51	2000.	
66 Zn	510.5	102.1	ppb	0.44	2000.	
68 Zn	558.5	111.7	ppb	0.69	#VALUE!	
75 As	111.05	22.21	ppb	0.38	1000.	
82 Se	97.85	19.57	ppb	2.02	1000.	
88 Sr	2,308.5	461.7	ppb	1.34	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	121.9	24.38	ppb	0.94	1000.	
107 Ag	50.55	10.11	ppb	1.26	100.	
109 Ag	50.4	10.08	ppb	1.37	#VALUE!	
111 Cd	252.3	50.46	ppb	0.76	#VALUE!	
114 Cd	251.3	50.26	ppb	0.08	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	463.15	92.63	ppb	0.78	1000.	
120 Sn	467.15	93.43	ppb	1.03	#VALUE!	
121 Sb	95.5	19.1	ppb	1.16	#VALUE!	
123 Sb	95.4	19.08	ppb	0.74	1000.	
135 Ba	1,967.5	393.5	ppb	1.24	2000.	
137 Ba	1,959.5	391.9	ppb	0.69	#VALUE!	
182 W	106.65	21.33	ppb	1.75	1000.	
203 Tl	101.75	20.35	ppb	1.13	1000.	
205 Tl	101.85	20.37	ppb	0.87	#VALUE!	
208 Pb	101.9	20.38	ppb	1.30	2000.	
232 Th	109.25	21.85	ppb	1.75	1000.	
238 U	114.8	22.96	ppb	0.82	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2846462.80	6.76	4492941.00	63.4	69.5 - 120	IS Fai
45 Sc	2325001.80	1.11	3094960.50	75.1	69.5 - 120	
72 Ge	475063.66	0.35	631723.63	75.2	69.5 - 120	
159 Tb	5590576.50	0.76	6220065.50	89.9	69.5 - 120	
209 Bi	3033688.50	1.01	3318256.50	91.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000202

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\098SMPL.D\098SMPL.D#
Date Acquired: May 14 2018 08:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-006
Misc Info:
Vial Number: 2509
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	1.658	0.3316	ppb	5.53	100.	
11 B	247.85	49.57	ppb	5.19	1000.	
23 Na	264,200.	52,840.	ppb	0.65	200000.	
25 Mg	70,750.	14,150.	ppb	1.77	200000.	
27 Al	30,625.	6,125.	ppb	3.62	200000.	
28 Si	61,500.	12,300.	ppb	2.20	#VALUE!	
29 Si	65,650.	13,130.	ppb	1.10	10000.	>LDR
39 K	24,105.	4,821.	ppb	1.80	200000.	
43 Ca	401,650.	80,330.	ppb	2.19	#VALUE!	
44 Ca	379,250.	75,850.	ppb	1.60	200000.	
51 V	79.85	15.97	ppb	1.24	1000.	
52 Cr	114.25	22.85	ppb	0.96	2000.	
53 Cr	135.4	27.08	ppb	2.44	#VALUE!	
55 Mn	1,774.5	354.9	ppb	1.75	2000.	
56 Fe	44,445.	8,889.	ppb	1.02	#VALUE!	
57 Fe	44,770.	8,954.	ppb	0.99	100000.	
59 Co	17.71	3.542	ppb	1.47	1000.	
60 Ni	52.8	10.56	ppb	1.37	1000.	
63 Cu	56.45	11.29	ppb	0.26	#VALUE!	
65 Cu	47.41	9.482	ppb	1.77	2000.	
66 Zn	198.6	39.72	ppb	1.22	2000.	
68 Zn	202.8	40.56	ppb	1.32	#VALUE!	
75 As	14.97	2.994	ppb	4.84	1000.	
82 Se	2.441	0.4882	ppb	35.42	1000.	
88 Sr	1,809.5	361.9	ppb	0.75	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	26.62	5.324	ppb	0.95	1000.	
107 Ag	0.1235	0.0247	ppb	16.03	100.	
109 Ag	0.1052	0.021	ppb	11.38	#VALUE!	
111 Cd	0.1766	0.0353	ppb	37.40	#VALUE!	
114 Cd	0.3444	0.0689	ppb	29.63	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.3275	0.6655	ppb	4.61	1000.	
120 Sn	3.149	0.6298	ppb	4.36	#VALUE!	
121 Sb	0.676	0.1352	ppb	7.59	#VALUE!	
123 Sb	0.6675	0.1335	ppb	10.80	1000.	
135 Ba	364.35	72.87	ppb	1.52	2000.	
137 Ba	365.05	73.01	ppb	0.52	#VALUE!	
182 W	0.4975	0.0995	ppb	9.04	1000.	
203 Tl	0.5025	0.1005	ppb	11.17	1000.	
205 Tl	0.4493	0.0899	ppb	4.55	#VALUE!	
208 Pb	35.47	7.094	ppb	0.93	2000.	
232 Th	24.56	4.912	ppb	0.61	1000.	
238 U	11.66	2.332	ppb	0.56	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2717256.50	2.02	4492941.00	60.5	69.5 - 120	IS Fai
45 Sc	2283744.30	0.76	3094960.50	73.8	69.5 - 120	
72 Ge	474062.66	0.37	631723.63	75.0	69.5 - 120	
159 Tb	5613869.00	0.99	6220065.50	90.3	69.5 - 120	
209 Bi	3052770.50	0.99	3318256.50	92.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000203

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\099SMPL.D\099SMPL.D#
Date Acquired: May 14 2018 08:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-007
Misc Info:
Vial Number: 2510
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0131	0.0026	ppb	11.99	100.	
11 B	206.55	41.31	ppb	2.04	1000.	
23 Na	253,650.	50,730.	ppb	2.37	200000.	
25 Mg	63,500.	12,700.	ppb	1.72	200000.	
27 Al	8.175	1.635	ppb	2.42	200000.	
28 Si	17,320.	3,464.	ppb	0.72	#VALUE!	
29 Si	17,390.	3,478.	ppb	1.10	10000.	
39 K	16,860.	3,372.	ppb	2.90	200000.	
43 Ca	366,100.	73,220.	ppb	1.64	#VALUE!	
44 Ca	347,900.	69,580.	ppb	1.66	200000.	
51 V	0.1382	0.0276	ppb	63.63	1000.	
52 Cr	2.259	0.4518	ppb	8.12	2000.	
53 Cr	45.92	9.184	ppb	22.90	#VALUE!	
55 Mn	1,368.5	273.7	ppb	0.70	2000.	
56 Fe	6,445.	1,289.	ppb	1.96	#VALUE!	
57 Fe	6,560.	1,312.	ppb	0.14	100000.	
59 Co	0.595	0.119	ppb	7.98	1000.	
60 Ni	3.908	0.7816	ppb	9.70	1000.	
63 Cu	10.66	2.132	ppb	1.82	#VALUE!	
65 Cu	1.095	0.219	ppb	7.34	2000.	
66 Zn	17.88	3.576	ppb	4.02	2000.	
68 Zn	16.15	3.23	ppb	2.87	#VALUE!	
75 As	9.685	1.937	ppb	14.47	1000.	
82 Se	1.8455	0.3691	ppb	47.44	1000.	
88 Sr	1,562.	312.4	ppb	1.04	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	13.465	2.693	ppb	1.35	1000.	
107 Ag	0.0037	0.0007	ppb	212.43	100.	
109 Ag	0.0041	0.0008	ppb	191.95	#VALUE!	
111 Cd	-0.3227	-0.0645	ppb	35.50	#VALUE!	
114 Cd	-0.0238	-0.0048	ppb	35.25	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.1675	0.2335	ppb	4.78	1000.	
120 Sn	1.185	0.237	ppb	8.63	#VALUE!	
121 Sb	0.1293	0.0259	ppb	22.42	#VALUE!	
123 Sb	0.1003	0.0201	ppb	45.86	1000.	
135 Ba	32.44	6.488	ppb	3.29	2000.	
137 Ba	32.505	6.501	ppb	3.50	#VALUE!	
182 W	0.262	0.0524	ppb	10.04	1000.	
203 Tl	0.0074	0.0015	ppb	191.69	1000.	
205 Tl	-0.0215	-0.0043	ppb	111.07	#VALUE!	
208 Pb	-0.0125	-0.0025	ppb	755.88	2000.	
232 Th	0.3238	0.0648	ppb	25.22	1000.	
238 U	0.82	0.164	ppb	10.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2863333.50	0.75	4492941.00	63.7	69.5 - 120	IS Fai
45 Sc	2343089.80	1.32	3094960.50	75.7	69.5 - 120	
72 Ge	487270.88	1.16	631723.63	77.1	69.5 - 120	
159 Tb	5628208.00	2.60	6220065.50	90.5	69.5 - 120	
209 Bi	3054094.50	1.06	3318256.50	92.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000204

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\100SMPL.D\100SMPL.D#
Date Acquired: May 14 2018 08:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-008
Misc Info:
Vial Number: 2511
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	1.6335	0.3267	ppb	5.79	100.	
11 B	187.35	37.47	ppb	5.48	1000.	
23 Na	246,850.	49,370.	ppb	0.55	200000.	
25 Mg	71,500.	14,300.	ppb	2.21	200000.	
27 Al	24,320.	4,864.	ppb	4.79	200000.	
28 Si	56,450.	11,290.	ppb	5.78	#VALUE!	
29 Si	60,150.	12,030.	ppb	4.46	10000.	>LDR
39 K	23,460.	4,692.	ppb	5.28	200000.	
43 Ca	436,750.	87,350.	ppb	2.45	#VALUE!	
44 Ca	421,750.	84,350.	ppb	0.85	200000.	
51 V	77.5	15.5	ppb	1.99	1000.	
52 Cr	93.5	18.7	ppb	1.91	2000.	
53 Cr	116.3	23.26	ppb	1.50	#VALUE!	
55 Mn	1,971.	394.2	ppb	1.84	2000.	
56 Fe	44,465.	8,893.	ppb	1.58	#VALUE!	
57 Fe	44,625.	8,925.	ppb	1.76	100000.	
59 Co	10.63	2.126	ppb	0.75	1000.	
60 Ni	47.06	9.412	ppb	1.58	1000.	
63 Cu	51.05	10.21	ppb	1.79	#VALUE!	
65 Cu	43.48	8.696	ppb	2.82	2000.	
66 Zn	216.85	43.37	ppb	0.35	2000.	
68 Zn	230.05	46.01	ppb	0.84	#VALUE!	
75 As	47.51	9.502	ppb	2.52	1000.	
82 Se	5.56	1.112	ppb	12.70	1000.	
88 Sr	1,916.5	383.3	ppb	1.88	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	23.945	4.789	ppb	1.57	1000.	
107 Ag	0.1253	0.0251	ppb	19.39	100.	
109 Ag	0.0741	0.0148	ppb	29.37	#VALUE!	
111 Cd	0.0105	0.0021	ppb	192.36	#VALUE!	
114 Cd	0.1987	0.0397	ppb	8.66	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.9005	0.5801	ppb	4.91	1000.	
120 Sn	2.841	0.5682	ppb	5.81	#VALUE!	
121 Sb	0.4948	0.099	ppb	8.15	#VALUE!	
123 Sb	0.487	0.0974	ppb	5.34	1000.	
135 Ba	704.5	140.9	ppb	1.29	2000.	
137 Ba	702.5	140.5	ppb	1.13	#VALUE!	
182 W	0.524	0.1048	ppb	8.43	1000.	
203 Tl	0.3834	0.0767	ppb	29.13	1000.	
205 Tl	0.3875	0.0775	ppb	3.39	#VALUE!	
208 Pb	24.875	4.975	ppb	0.70	2000.	
232 Th	20.77	4.154	ppb	0.53	1000.	
238 U	6.425	1.285	ppb	2.70	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2752984.00	0.94	4492941.00	61.3	69.5 - 120	IS Fai
45 Sc	2279668.00	2.53	3094960.50	73.7	69.5 - 120	
72 Ge	468598.22	0.64	631723.63	74.2	69.5 - 120	
159 Tb	5566950.50	1.03	6220065.50	89.5	69.5 - 120	
209 Bi	3056277.50	1.02	3318256.50	92.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000205

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\101SMPL.D\101SMPL.D#
Date Acquired: May 14 2018 08:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-009
Misc Info:
Vial Number: 2512
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0158	0.0032	ppb	46.81	100.	
11 B	181.95	36.39	ppb	3.93	1000.	
23 Na	259,950.	51,990.	ppb	3.63	200000.	
25 Mg	66,850.	13,370.	ppb	2.18	200000.	
27 Al	12.995	2.599	ppb	5.33	200000.	
28 Si	16,260.	3,252.	ppb	2.25	#VALUE!	
29 Si	16,235.	3,247.	ppb	1.72	10000.	
39 K	18,995.	3,799.	ppb	2.42	200000.	
43 Ca	410,350.	82,070.	ppb	3.39	#VALUE!	
44 Ca	389,650.	77,930.	ppb	1.49	200000.	
51 V	0.0646	0.0129	ppb	784.83	1000.	
52 Cr	2.2385	0.4477	ppb	12.35	2000.	
53 Cr	53.	10.6	ppb	22.06	#VALUE!	
55 Mn	1,334.	266.8	ppb	2.62	2000.	
56 Fe	3,899.	779.8	ppb	0.41	#VALUE!	
57 Fe	4,105.	821.	ppb	0.10	100000.	
59 Co	0.974	0.1948	ppb	6.81	1000.	
60 Ni	20.755	4.151	ppb	0.88	1000.	
63 Cu	10.635	2.127	ppb	2.67	#VALUE!	
65 Cu	1.1985	0.2397	ppb	10.45	2000.	
66 Zn	54.65	10.93	ppb	2.83	2000.	
68 Zn	51.5	10.3	ppb	1.92	#VALUE!	
75 As	27.46	5.492	ppb	3.02	1000.	
82 Se	0.797	0.1594	ppb	73.09	1000.	
88 Sr	1,738.	347.6	ppb	0.29	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	13.47	2.694	ppb	2.31	1000.	
107 Ag	0.013	0.0026	ppb	27.58	100.	
109 Ag	0.0002	0.	ppb	5437.90	#VALUE!	
111 Cd	-0.3245	-0.0649	ppb	16.10	#VALUE!	
114 Cd	-0.0024	-0.0005	ppb	656.76	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.247	0.2494	ppb	5.24	1000.	
120 Sn	1.2855	0.2571	ppb	7.12	#VALUE!	
121 Sb	0.173	0.0346	ppb	14.08	#VALUE!	
123 Sb	0.1528	0.0306	ppb	32.95	1000.	
135 Ba	40.73	8.146	ppb	3.78	2000.	
137 Ba	40.45	8.09	ppb	1.52	#VALUE!	
182 W	0.325	0.065	ppb	8.32	1000.	
203 Tl	0.0146	0.0029	ppb	159.99	1000.	
205 Tl	-0.0126	-0.0025	ppb	253.06	#VALUE!	
208 Pb	0.0679	0.0136	ppb	99.93	2000.	
232 Th	0.2153	0.0431	ppb	18.59	1000.	
238 U	2.594	0.5188	ppb	3.26	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2752526.30	5.14	4492941.00	61.3	69.5 - 120	IS Fai
45 Sc	2242063.50	1.67	3094960.50	72.4	69.5 - 120	
72 Ge	478063.31	2.15	631723.63	75.7	69.5 - 120	
159 Tb	5588661.50	2.49	6220065.50	89.8	69.5 - 120	
209 Bi	3018627.00	2.84	3318256.50	91.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000206

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\102_CCV.D\102_CCV.D#
Date Acquired: May 14 2018 08:49 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.22	ppb	4.82	25	96.88	
11 B	24.96	ppb	3.10	25	99.84	
23 Na	4,412.	ppb	0.57	5,000	88.24	Fail
25 Mg	4,604.	ppb	3.20	5,000	92.08	
27 Al	462.6	ppb	2.07	500	92.52	
28 Si	511.9	ppb	4.20	500	102.38	
29 Si	442.5	ppb	2.24	500	88.5	Fail
39 K	4,649.	ppb	0.87	5,000	92.98	
43 Ca	4,852.	ppb	1.62	5,000	97.04	
44 Ca	5,012.	ppb	1.06	5,000	100.24	
51 V	24.3	ppb	0.77	25	97.2	
52 Cr	24.5	ppb	1.44	25	98	
53 Cr	24.1	ppb	2.07	25	96.4	
55 Mn	24.57	ppb	0.78	25	98.28	
56 Fe	4,868.	ppb	1.08	5,000	97.36	
57 Fe	4,952.	ppb	1.73	5,000	99.04	
59 Co	24.29	ppb	1.58	25	97.16	
60 Ni	23.99	ppb	1.72	25	95.96	
63 Cu	24.29	ppb	1.82	25	97.16	
65 Cu	24.69	ppb	0.58	25	98.76	
66 Zn	25.25	ppb	1.78	25	101	
68 Zn	25.2	ppb	0.96	25	100.8	
75 As	25.07	ppb	0.50	25	100.28	
82 Se	26.09	ppb	0.55	25	104.36	
88 Sr	25.71	ppb	0.35	25	102.84	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	26.1	ppb	0.63	25	104.4	
107 Ag	26.37	ppb	1.07	25	105.48	
109 Ag	26.27	ppb	1.23	25	105.08	
111 Cd	26.83	ppb	1.17	25	107.32	
114 Cd	26.62	ppb	0.59	25	106.48	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	22.71	ppb	1.11	25	90.84	
120 Sn	23.	ppb	1.46	25	92	
121 Sb	23.42	ppb	1.28	25	93.68	
123 Sb	23.87	ppb	1.62	25	95.48	
135 Ba	24.17	ppb	1.09	25	96.68	
137 Ba	24.01	ppb	0.92	25	96.04	
182 W	25.44	ppb	1.15	25	101.76	
203 Tl	24.81	ppb	1.83	25	99.24	
205 Tl	24.83	ppb	1.45	25	99.32	
208 Pb	25.06	ppb	1.63	25	100.24	
232 Th	25.46	ppb	1.23	25	101.84	
238 U	26.91	ppb	1.86	25	107.64	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2895494.30	5.86	4492941.00	64.4	80 - 120.4	ISFail
45 Sc	2374235.00	0.19	3094960.50	76.7	80 - 120.4	ISFail
72 Ge	481094.22	0.37	631723.63	76.2	80 - 120.4	ISFail
159 Tb	5658302.00	0.37	6220065.50	91.0	80 - 120.4	
209 Bi	3203317.80	1.38	3318256.50	96.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\103_CCB.D\103_CCB.D#
Date Acquired: May 14 2018 08:53 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0012	ppb	207.25	1.00	
11 B	3.039	ppb	5.53	1.00	
23 Na	8.908	ppb	93.13	1.00	
25 Mg	1.509	ppb	161.96	1.00	
27 Al	0.2536	ppb	117.63	1.00	
28 Si	56.94	ppb	10.32	1.00	
29 Si	7.246	ppb	55.51	1.00	
39 K	4.4	ppb	6.47	1.00	
43 Ca	3.049	ppb	179.01	1.00	
44 Ca	7.151	ppb	147.25	1.00	
51 V	-0.0336	ppb	291.29	1.00	
52 Cr	0.0654	ppb	74.61	1.00	
53 Cr	-1.271	ppb	8.25	1.00	
55 Mn	0.0434	ppb	89.64	1.00	
56 Fe	-2.588	ppb	93.47	1.00	
57 Fe	-0.3323	ppb	640.08	1.00	
59 Co	0.0051	ppb	100.88	1.00	
60 Ni	0.0053	ppb	184.30	1.00	
63 Cu	0.0045	ppb	82.12	1.00	
65 Cu	0.0033	ppb	362.16	1.00	
66 Zn	0.0684	ppb	24.60	1.00	
68 Zn	0.1134	ppb	48.97	1.00	
75 As	-0.089	ppb	188.09	1.00	
82 Se	-0.1771	ppb	114.06	1.00	
88 Sr	0.0332	ppb	147.24	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0361	ppb	17.97	1.00	
107 Ag	0.0044	ppb	89.70	1.00	
109 Ag	0.0043	ppb	107.45	1.00	
111 Cd	-0.0635	ppb	50.42	1.00	
114 Cd	-0.0037	ppb	79.15	1.00	
115 In	--------	---	--------	---	
118 Sn	0.054	ppb	12.86	1.00	
120 Sn	0.0514	ppb	18.86	1.00	
121 Sb	0.0094	ppb	12.26	1.00	
123 Sb	0.0104	ppb	50.10	1.00	
135 Ba	0.0182	ppb	45.39	1.00	
137 Ba	0.0129	ppb	110.03	1.00	
182 W	0.047	ppb	34.77	1.00	
203 Tl	0.0069	ppb	110.97	1.00	
205 Tl	0.0049	ppb	91.49	1.00	
208 Pb	0.0936	ppb	8.56	1.00	
232 Th	0.0578	ppb	6.04	1.00	
238 U	0.006	ppb	46.68	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3001778.00	2.77	4492941.00	66.8	79.5 - 120	ISFail
45 Sc	2361159.50	0.56	3094960.50	76.3	79.5 - 120	ISFail
72 Ge	494357.59	0.12	631723.63	78.3	79.5 - 120	ISFail
159 Tb	5665034.50	0.74	6220065.50	91.1	79.5 - 120	
209 Bi	3238481.00	0.48	3318256.50	97.6	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000208

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\104SMPL.D\104SMPL.D#
Date Acquired: May 14 2018 08:58 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-010
Misc Info:
Vial Number: 3101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	2.007	0.4014	ppb	5.24	100.	
11 B	217.4	43.48	ppb	5.03	1000.	
23 Na	269,100.	53,820.	ppb	3.15	200000.	
25 Mg	73,450.	14,690.	ppb	4.55	200000.	
27 Al	39,620.	7,924.	ppb	6.51	200000.	
28 Si	62,100.	12,420.	ppb	4.51	#VALUE!	
29 Si	65,200.	13,040.	ppb	4.78	10000.	>LDR
39 K	25,510.	5,102.	ppb	1.92	200000.	
43 Ca	393,600.	78,720.	ppb	2.70	#VALUE!	
44 Ca	375,950.	75,190.	ppb	1.87	200000.	
51 V	106.15	21.23	ppb	5.66	1000.	
52 Cr	150.75	30.15	ppb	4.01	2000.	
53 Cr	166.65	33.33	ppb	4.25	#VALUE!	
55 Mn	1,842.	368.4	ppb	5.40	2000.	
56 Fe	55,150.	11,030.	ppb	5.75	#VALUE!	
57 Fe	54,800.	10,960.	ppb	5.38	100000.	
59 Co	22.685	4.537	ppb	3.54	1000.	
60 Ni	71.3	14.26	ppb	2.19	1000.	
63 Cu	64.75	12.95	ppb	3.93	#VALUE!	
65 Cu	56.4	11.28	ppb	5.48	2000.	
66 Zn	236.75	47.35	ppb	2.64	2000.	
68 Zn	243.55	48.71	ppb	4.69	#VALUE!	
75 As	16.745	3.349	ppb	1.01	1000.	
82 Se	2.369	0.4738	ppb	48.35	1000.	
88 Sr	1,776.	355.2	ppb	4.18	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	29.645	5.929	ppb	3.50	1000.	
107 Ag	0.1462	0.0292	ppb	16.04	100.	
109 Ag	0.1059	0.0212	ppb	9.47	#VALUE!	
111 Cd	0.2865	0.0573	ppb	70.47	#VALUE!	
114 Cd	0.4147	0.0829	ppb	19.98	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.749	0.7498	ppb	3.54	1000.	
120 Sn	3.835	0.767	ppb	5.35	#VALUE!	
121 Sb	0.674	0.1348	ppb	1.73	#VALUE!	
123 Sb	0.779	0.1558	ppb	7.42	1000.	
135 Ba	448.4	89.68	ppb	2.73	2000.	
137 Ba	449.1	89.82	ppb	3.48	#VALUE!	
182 W	0.5285	0.1057	ppb	5.61	1000.	
203 Tl	0.587	0.1174	ppb	4.76	1000.	
205 Tl	0.5685	0.1137	ppb	5.72	#VALUE!	
208 Pb	43.935	8.787	ppb	3.39	2000.	
232 Th	33.645	6.729	ppb	3.82	1000.	
238 U	15.195	3.039	ppb	4.80	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2825346.00	3.68	4492941.00	62.9	69.5 - 120	IS Fai
45 Sc	2268363.00	3.45	3094960.50	73.3	69.5 - 120	
72 Ge	466447.44	3.21	631723.63	73.8	69.5 - 120	
159 Tb	5456861.50	2.43	6220065.50	87.7	69.5 - 120	
209 Bi	2958361.50	2.34	3318256.50	89.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000209

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\105SMPL.D\105SMPL.D#
Date Acquired: May 14 2018 09:02 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-011
Misc Info:
Vial Number: 3102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.011	0.0022	ppb	72.75	100.	
11 B	193.05	38.61	ppb	4.23	1000.	
23 Na	248,900.	49,780.	ppb	0.75	200000.	
25 Mg	60,550.	12,110.	ppb	0.22	200000.	
27 Al	156.6	31.32	ppb	3.02	200000.	
28 Si	16,670.	3,334.	ppb	1.83	#VALUE!	
29 Si	16,335.	3,267.	ppb	1.15	10000.	
39 K	15,790.	3,158.	ppb	1.38	200000.	
43 Ca	351,850.	70,370.	ppb	3.02	#VALUE!	
44 Ca	335,200.	67,040.	ppb	2.02	200000.	
51 V	0.7265	0.1453	ppb	80.11	1000.	
52 Cr	2.623	0.5246	ppb	8.07	2000.	
53 Cr	45.625	9.125	ppb	21.15	#VALUE!	
55 Mn	1,290.	258.	ppb	0.66	2000.	
56 Fe	5,970.	1,194.	ppb	2.29	#VALUE!	
57 Fe	6,190.	1,238.	ppb	2.08	100000.	
59 Co	0.4976	0.0995	ppb	14.18	1000.	
60 Ni	3.465	0.693	ppb	8.64	1000.	
63 Cu	11.155	2.231	ppb	3.04	#VALUE!	
65 Cu	1.7825	0.3565	ppb	1.11	2000.	
66 Zn	18.43	3.686	ppb	2.23	2000.	
68 Zn	16.915	3.383	ppb	1.94	#VALUE!	
75 As	9.705	1.941	ppb	12.37	1000.	
82 Se	1.4855	0.2971	ppb	62.30	1000.	
88 Sr	1,492.5	298.5	ppb	1.00	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.86	2.572	ppb	1.78	1000.	
107 Ag	0.0084	0.0017	ppb	50.42	100.	
109 Ag	0.0151	0.003	ppb	29.50	#VALUE!	
111 Cd	-0.4082	-0.0816	ppb	20.47	#VALUE!	
114 Cd	-0.0082	-0.0016	ppb	107.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.129	0.2258	ppb	13.33	1000.	
120 Sn	1.2055	0.2411	ppb	11.43	#VALUE!	
121 Sb	0.1347	0.0269	ppb	9.50	#VALUE!	
123 Sb	0.1414	0.0283	ppb	13.62	1000.	
135 Ba	32.265	6.453	ppb	2.58	2000.	
137 Ba	32.67	6.534	ppb	2.14	#VALUE!	
182 W	0.2645	0.0529	ppb	16.23	1000.	
203 Tl	0.0021	0.0004	ppb	737.83	1000.	
205 Tl	-0.0329	-0.0066	ppb	55.23	#VALUE!	
208 Pb	0.5105	0.1021	ppb	22.74	2000.	
232 Th	0.2811	0.0562	ppb	23.70	1000.	
238 U	0.791	0.1582	ppb	4.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2901192.00	2.69	4492941.00	64.6	69.5 - 120	IS Fai
45 Sc	2351906.50	0.86	3094960.50	76.0	69.5 - 120	
72 Ge	487884.25	1.30	631723.63	77.2	69.5 - 120	
159 Tb	5606830.50	2.26	6220065.50	90.1	69.5 - 120	
209 Bi	3098214.80	2.02	3318256.50	93.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000210

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\106SMPL.D\106SMPL.D#
Date Acquired: May 14 2018 09:06 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-012
Misc Info:
Vial Number: 3103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	1.3445	0.2689	ppb	2.28	100.	
11 B	187.25	37.45	ppb	4.55	1000.	
23 Na	266,400.	53,280.	ppb	2.56	200000.	
25 Mg	73,550.	14,710.	ppb	1.25	200000.	
27 Al	21,875.	4,375.	ppb	1.46	200000.	
28 Si	44,555.	8,911.	ppb	1.59	#VALUE!	
29 Si	47,510.	9,502.	ppb	1.05	10000.	
39 K	22,635.	4,527.	ppb	0.85	200000.	
43 Ca	424,450.	84,890.	ppb	1.17	#VALUE!	
44 Ca	409,550.	81,910.	ppb	2.59	200000.	
51 V	61.05	12.21	ppb	3.24	1000.	
52 Cr	107.65	21.53	ppb	0.84	2000.	
53 Cr	132.6	26.52	ppb	1.11	#VALUE!	
55 Mn	2,044.	408.8	ppb	1.41	2000.	
56 Fe	35,545.	7,109.	ppb	1.36	#VALUE!	
57 Fe	36,050.	7,210.	ppb	2.20	100000.	
59 Co	12.27	2.454	ppb	1.32	1000.	
60 Ni	61.3	12.26	ppb	2.30	1000.	
63 Cu	40.755	8.151	ppb	0.97	#VALUE!	
65 Cu	31.585	6.317	ppb	1.05	2000.	
66 Zn	145.2	29.04	ppb	1.26	2000.	
68 Zn	150.95	30.19	ppb	1.40	#VALUE!	
75 As	30.745	6.149	ppb	1.24	1000.	
82 Se	6.38	1.276	ppb	7.64	1000.	
88 Sr	1,869.5	373.9	ppb	1.68	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	24.235	4.847	ppb	1.20	1000.	
107 Ag	0.1217	0.0243	ppb	11.19	100.	
109 Ag	0.0951	0.019	ppb	9.73	#VALUE!	
111 Cd	0.3825	0.0765	ppb	6.99	#VALUE!	
114 Cd	0.4604	0.0921	ppb	7.40	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.502	0.5004	ppb	2.79	1000.	
120 Sn	2.3615	0.4723	ppb	3.67	#VALUE!	
121 Sb	0.4246	0.0849	ppb	9.47	#VALUE!	
123 Sb	0.4129	0.0826	ppb	7.46	1000.	
135 Ba	330.15	66.03	ppb	0.70	2000.	
137 Ba	327.35	65.47	ppb	1.00	#VALUE!	
182 W	0.4644	0.0929	ppb	12.79	1000.	
203 Tl	0.4346	0.0869	ppb	6.91	1000.	
205 Tl	0.3887	0.0777	ppb	4.83	#VALUE!	
208 Pb	23.3	4.66	ppb	0.90	2000.	
232 Th	15.405	3.081	ppb	1.37	1000.	
238 U	6.8	1.36	ppb	2.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2900531.00	3.99	4492941.00	64.6	69.5 - 120	IS Fai
45 Sc	2361496.00	0.87	3094960.50	76.3	69.5 - 120	
72 Ge	476924.66	0.74	631723.63	75.5	69.5 - 120	
159 Tb	5600110.00	0.69	6220065.50	90.0	69.5 - 120	
209 Bi	3071349.80	1.10	3318256.50	92.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000211

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\107SMPL.D\107SMPL.D#
Date Acquired: May 14 2018 09:10 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-013
Misc Info:
Vial Number: 3104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0125	0.0025	ppb	129.36	100.	
11 B	185.9	37.18	ppb	4.60	1000.	
23 Na	278,550.	55,710.	ppb	2.95	200000.	
25 Mg	71,350.	14,270.	ppb	1.30	200000.	
27 Al	11.36	2.272	ppb	33.05	200000.	
28 Si	18,755.	3,751.	ppb	1.04	#VALUE!	
29 Si	18,900.	3,780.	ppb	3.90	10000.	
39 K	19,130.	3,826.	ppb	2.67	200000.	
43 Ca	415,800.	83,160.	ppb	3.44	#VALUE!	
44 Ca	395,500.	79,100.	ppb	2.54	200000.	
51 V	0.1922	0.0384	ppb	396.30	1000.	
52 Cr	1.9035	0.3807	ppb	1.48	2000.	
53 Cr	53.75	10.75	ppb	16.47	#VALUE!	
55 Mn	1,393.5	278.7	ppb	1.62	2000.	
56 Fe	4,764.	952.8	ppb	3.55	#VALUE!	
57 Fe	4,970.	994.	ppb	3.51	100000.	
59 Co	0.4955	0.0991	ppb	16.49	1000.	
60 Ni	1.58	0.316	ppb	8.47	1000.	
63 Cu	11.61	2.322	ppb	1.99	#VALUE!	
65 Cu	1.147	0.2294	ppb	29.14	2000.	
66 Zn	21.065	4.213	ppb	7.71	2000.	
68 Zn	20.815	4.163	ppb	4.03	#VALUE!	
75 As	7.84	1.568	ppb	3.61	1000.	
82 Se	1.247	0.2494	ppb	113.39	1000.	
88 Sr	1,794.5	358.9	ppb	2.16	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.645	2.329	ppb	3.84	1000.	
107 Ag	0.0017	0.0003	ppb	126.31	100.	
109 Ag	0.005	0.001	ppb	99.31	#VALUE!	
111 Cd	-0.3119	-0.0624	ppb	27.29	#VALUE!	
114 Cd	-0.0221	-0.0044	ppb	102.87	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.2665	0.2533	ppb	10.91	1000.	
120 Sn	1.148	0.2296	ppb	12.25	#VALUE!	
121 Sb	0.0871	0.0174	ppb	33.79	#VALUE!	
123 Sb	0.0954	0.0191	ppb	31.87	1000.	
135 Ba	41.76	8.352	ppb	4.64	2000.	
137 Ba	41.735	8.347	ppb	1.08	#VALUE!	
182 W	0.2363	0.0473	ppb	7.38	1000.	
203 Tl	-0.0477	-0.0095	ppb	83.02	1000.	
205 Tl	-0.0436	-0.0087	ppb	107.53	#VALUE!	
208 Pb	-0.0393	-0.0079	ppb	199.31	2000.	
232 Th	0.1719	0.0344	ppb	20.42	1000.	
238 U	0.881	0.1762	ppb	0.99	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2922627.80	1.37	4492941.00	65.0	69.5 - 120	IS Fai
45 Sc	2319177.30	2.92	3094960.50	74.9	69.5 - 120	
72 Ge	489974.25	1.76	631723.63	77.6	69.5 - 120	
159 Tb	5598735.50	1.93	6220065.50	90.0	69.5 - 120	
209 Bi	3036808.30	1.13	3318256.50	91.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000212

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\108SMPL.D\108SMPL.D#
Date Acquired: May 14 2018 09:14 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-014
Misc Info:
Vial Number: 3105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0026	0.0005	ppb	253.43	100.	
11 B	16.11	3.222	ppb	14.94	1000.	
23 Na	45.295	9.059	ppb	10.50	200000.	
25 Mg	15.22	3.044	ppb	13.16	200000.	
27 Al	8.255	1.651	ppb	5.50	200000.	
28 Si	316.2	63.24	ppb	7.22	#VALUE!	
29 Si	133.35	26.67	ppb	6.99	10000.	
39 K	24.725	4.945	ppb	53.04	200000.	
43 Ca	40.	8.	ppb	77.76	#VALUE!	
44 Ca	41.065	8.213	ppb	14.88	200000.	
51 V	0.2932	0.0586	ppb	108.37	1000.	
52 Cr	1.2995	0.2599	ppb	31.02	2000.	
53 Cr	42.895	8.579	ppb	1.62	#VALUE!	
55 Mn	0.6155	0.1231	ppb	12.68	2000.	
56 Fe	47.535	9.507	ppb	21.09	#VALUE!	
57 Fe	32.	6.4	ppb	25.50	100000.	
59 Co	0.0028	0.0006	ppb	346.35	1000.	
60 Ni	0.08	0.016	ppb	89.13	1000.	
63 Cu	0.6575	0.1315	ppb	4.69	#VALUE!	
65 Cu	0.7345	0.1469	ppb	13.53	2000.	
66 Zn	0.671	0.1342	ppb	32.56	2000.	
68 Zn	0.2537	0.0507	ppb	88.17	#VALUE!	
75 As	-0.87	-0.174	ppb	31.83	1000.	
82 Se	0.4069	0.0814	ppb	163.31	1000.	
88 Sr	0.2354	0.0471	ppb	8.23	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1909	0.0382	ppb	7.83	1000.	
107 Ag	0.0041	0.0008	ppb	338.38	100.	
109 Ag	0.0076	0.0015	ppb	135.35	#VALUE!	
111 Cd	-0.1414	-0.0283	ppb	112.62	#VALUE!	
114 Cd	-0.0106	-0.0021	ppb	44.42	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.127	0.2254	ppb	11.22	1000.	
120 Sn	1.1705	0.2341	ppb	7.10	#VALUE!	
121 Sb	0.0358	0.0072	ppb	29.25	#VALUE!	
123 Sb	0.0392	0.0078	ppb	39.54	1000.	
135 Ba	0.2175	0.0435	ppb	11.60	2000.	
137 Ba	0.2119	0.0424	ppb	31.56	#VALUE!	
182 W	0.0331	0.0066	ppb	20.49	1000.	
203 Tl	-0.0039	-0.0008	ppb	699.85	1000.	
205 Tl	-0.0623	-0.0125	ppb	28.84	#VALUE!	
208 Pb	0.0047	0.0009	ppb	1278.70	2000.	
232 Th	0.0719	0.0144	ppb	36.32	1000.	
238 U	0.0007	0.0001	ppb	164.39	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3121443.50	1.85	4492941.00	69.5	69.5 - 120	IS Fai
45 Sc	2356889.00	1.44	3094960.50	76.2	69.5 - 120	
72 Ge	497181.50	0.52	631723.63	78.7	69.5 - 120	
159 Tb	5685343.00	1.84	6220065.50	91.4	69.5 - 120	
209 Bi	3285800.50	1.42	3318256.50	99.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000213

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\109SMPL.D\109SMPL.D#
Date Acquired: May 14 2018 09:19 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-015
Misc Info:
Vial Number: 3106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.4859	0.0972	ppb	7.80	100.	
11 B	190.8	38.16	ppb	9.86	1000.	
23 Na	254,850.	50,970.	ppb	2.54	200000.	
25 Mg	60,400.	12,080.	ppb	6.41	200000.	
27 Al	9,435.	1,887.	ppb	7.97	200000.	
28 Si	37,915.	7,583.	ppb	6.01	#VALUE!	
29 Si	40,470.	8,094.	ppb	2.99	10000.	
39 K	20,315.	4,063.	ppb	5.08	200000.	
43 Ca	393,200.	78,640.	ppb	4.84	#VALUE!	
44 Ca	368,700.	73,740.	ppb	4.39	200000.	
51 V	33.525	6.705	ppb	2.61	1000.	
52 Cr	55.7	11.14	ppb	2.19	2000.	
53 Cr	84.95	16.99	ppb	3.37	#VALUE!	
55 Mn	1,429.	285.8	ppb	1.33	2000.	
56 Fe	20,790.	4,158.	ppb	1.76	#VALUE!	
57 Fe	21,425.	4,285.	ppb	2.16	100000.	
59 Co	5.36	1.072	ppb	3.14	1000.	
60 Ni	27.21	5.442	ppb	1.17	1000.	
63 Cu	33.92	6.784	ppb	1.03	#VALUE!	
65 Cu	25.855	5.171	ppb	1.07	2000.	
66 Zn	90.85	18.17	ppb	1.92	2000.	
68 Zn	95.2	19.04	ppb	3.39	#VALUE!	
75 As	10.3	2.06	ppb	11.27	1000.	
82 Se	2.04	0.408	ppb	48.43	1000.	
88 Sr	1,645.	329.	ppb	2.55	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	21.695	4.339	ppb	3.66	1000.	
107 Ag	0.0617	0.0123	ppb	4.13	100.	
109 Ag	0.0568	0.0114	ppb	23.21	#VALUE!	
111 Cd	-0.3199	-0.064	ppb	29.87	#VALUE!	
114 Cd	0.0051	0.001	ppb	548.07	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.891	0.3782	ppb	4.27	1000.	
120 Sn	1.9055	0.3811	ppb	8.54	#VALUE!	
121 Sb	0.3154	0.0631	ppb	2.36	#VALUE!	
123 Sb	0.3198	0.064	ppb	22.81	1000.	
135 Ba	223.7	44.74	ppb	1.04	2000.	
137 Ba	224.2	44.84	ppb	2.23	#VALUE!	
182 W	0.582	0.1164	ppb	14.05	1000.	
203 Tl	0.1591	0.0318	ppb	14.95	1000.	
205 Tl	0.126	0.0252	ppb	20.79	#VALUE!	
208 Pb	11.015	2.203	ppb	1.78	2000.	
232 Th	8.7	1.74	ppb	2.85	1000.	
238 U	2.263	0.4526	ppb	4.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2842781.50	8.02	4492941.00	63.3	69.5 - 120	IS Fai
45 Sc	2281118.00	5.35	3094960.50	73.7	69.5 - 120	
72 Ge	478900.16	2.05	631723.63	75.8	69.5 - 120	
159 Tb	5586951.00	1.36	6220065.50	89.8	69.5 - 120	
209 Bi	3050850.00	1.57	3318256.50	91.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\110SMPL.D\110SMPL.D#
Date Acquired: May 14 2018 09:23 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-016
Misc Info:
Vial Number: 3107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0172	0.0034	ppb	60.78	100.	
11 B	206.	41.2	ppb	2.39	1000.	
23 Na	271,450.	54,290.	ppb	0.85	200000.	
25 Mg	63,650.	12,730.	ppb	2.18	200000.	
27 Al	9.735	1.947	ppb	7.10	200000.	
28 Si	18,675.	3,735.	ppb	1.53	#VALUE!	
29 Si	19,040.	3,808.	ppb	2.12	10000.	
39 K	18,645.	3,729.	ppb	2.55	200000.	
43 Ca	407,100.	81,420.	ppb	1.43	#VALUE!	
44 Ca	385,200.	77,040.	ppb	0.80	200000.	
51 V	0.3304	0.0661	ppb	179.20	1000.	
52 Cr	2.487	0.4974	ppb	6.90	2000.	
53 Cr	44.49	8.898	ppb	12.72	#VALUE!	
55 Mn	1,423.5	284.7	ppb	1.00	2000.	
56 Fe	6,410.	1,282.	ppb	1.09	#VALUE!	
57 Fe	6,640.	1,328.	ppb	0.82	100000.	
59 Co	0.778	0.1556	ppb	2.34	1000.	
60 Ni	7.385	1.477	ppb	8.90	1000.	
63 Cu	11.635	2.327	ppb	1.52	#VALUE!	
65 Cu	1.5225	0.3045	ppb	3.33	2000.	
66 Zn	28.41	5.682	ppb	1.65	2000.	
68 Zn	27.335	5.467	ppb	4.28	#VALUE!	
75 As	9.925	1.985	ppb	16.81	1000.	
82 Se	1.8335	0.3667	ppb	28.17	1000.	
88 Sr	1,683.5	336.7	ppb	1.61	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	14.65	2.93	ppb	1.61	1000.	
107 Ag	0.0054	0.0011	ppb	80.88	100.	
109 Ag	0.0047	0.0009	ppb	131.03	#VALUE!	
111 Cd	-0.3411	-0.0682	ppb	36.67	#VALUE!	
114 Cd	-0.0226	-0.0045	ppb	63.85	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.32	0.264	ppb	9.69	1000.	
120 Sn	1.3285	0.2657	ppb	14.28	#VALUE!	
121 Sb	0.1189	0.0238	ppb	23.61	#VALUE!	
123 Sb	0.1155	0.0231	ppb	9.97	1000.	
135 Ba	36.595	7.319	ppb	1.07	2000.	
137 Ba	36.32	7.264	ppb	1.71	#VALUE!	
182 W	0.3252	0.065	ppb	23.48	1000.	
203 Tl	-0.0107	-0.0021	ppb	636.62	1000.	
205 Tl	-0.0356	-0.0071	ppb	22.69	#VALUE!	
208 Pb	0.0133	0.0027	ppb	282.30	2000.	
232 Th	0.1028	0.0206	ppb	16.11	1000.	
238 U	1.1215	0.2243	ppb	5.16	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2827935.30	1.97	4492941.00	62.9	69.5 - 120	IS Fai
45 Sc	2268252.00	1.26	3094960.50	73.3	69.5 - 120	
72 Ge	474097.34	0.61	631723.63	75.0	69.5 - 120	
159 Tb	5507047.00	0.55	6220065.50	88.5	69.5 - 120	
209 Bi	3067445.30	0.66	3318256.50	92.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000215

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\111SMPL.D\111SMPL.D#
Date Acquired: May 14 2018 09:27 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-017
Misc Info:
Vial Number: 3108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.5035	0.1007	ppb	7.03	100.	
11 B	190.9	38.18	ppb	5.92	1000.	
23 Na	209,350.	41,870.	ppb	2.25	200000.	
25 Mg	54,550.	10,910.	ppb	0.56	200000.	
27 Al	7,700.	1,540.	ppb	3.20	200000.	
28 Si	33,225.	6,645.	ppb	2.58	#VALUE!	
29 Si	35,390.	7,078.	ppb	0.35	10000.	
39 K	19,440.	3,888.	ppb	1.56	200000.	
43 Ca	383,550.	76,710.	ppb	2.08	#VALUE!	
44 Ca	365,400.	73,080.	ppb	0.94	200000.	
51 V	24.735	4.947	ppb	3.35	1000.	
52 Cr	33.895	6.779	ppb	0.47	2000.	
53 Cr	62.4	12.48	ppb	3.51	#VALUE!	
55 Mn	1,426.	285.2	ppb	2.81	2000.	
56 Fe	15,930.	3,186.	ppb	0.91	#VALUE!	
57 Fe	16,160.	3,232.	ppb	0.69	100000.	
59 Co	3.9695	0.7939	ppb	3.52	1000.	
60 Ni	13.385	2.677	ppb	3.87	1000.	
63 Cu	25.255	5.051	ppb	2.20	#VALUE!	
65 Cu	17.485	3.497	ppb	2.56	2000.	
66 Zn	60.35	12.07	ppb	1.07	2000.	
68 Zn	64.65	12.93	ppb	4.28	#VALUE!	
75 As	29.36	5.872	ppb	2.64	1000.	
82 Se	2.385	0.477	ppb	38.03	1000.	
88 Sr	1,545.	309.	ppb	0.36	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	16.185	3.237	ppb	3.78	1000.	
107 Ag	0.0417	0.0083	ppb	46.74	100.	
109 Ag	0.0449	0.009	ppb	42.84	#VALUE!	
111 Cd	-0.1313	-0.0263	ppb	182.83	#VALUE!	
114 Cd	0.1494	0.0299	ppb	8.66	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.6405	0.3281	ppb	8.80	1000.	
120 Sn	1.569	0.3138	ppb	10.73	#VALUE!	
121 Sb	0.4128	0.0826	ppb	15.76	#VALUE!	
123 Sb	0.4299	0.086	ppb	4.77	1000.	
135 Ba	198.55	39.71	ppb	1.41	2000.	
137 Ba	198.95	39.79	ppb	2.17	#VALUE!	
182 W	0.3648	0.073	ppb	7.61	1000.	
203 Tl	0.1118	0.0224	ppb	31.67	1000.	
205 Tl	0.1015	0.0203	ppb	13.48	#VALUE!	
208 Pb	12.94	2.588	ppb	0.99	2000.	
232 Th	6.06	1.212	ppb	1.32	1000.	
238 U	3.906	0.7812	ppb	0.81	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2738996.30	2.20	4492941.00	61.0	69.5 - 120	IS Fai
45 Sc	2295861.80	1.56	3094960.50	74.2	69.5 - 120	
72 Ge	475625.13	0.56	631723.63	75.3	69.5 - 120	
159 Tb	5570014.50	1.44	6220065.50	89.5	69.5 - 120	
209 Bi	3066523.50	1.05	3318256.50	92.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000216

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\112SMPL.D\112SMPL.D#
Date Acquired: May 14 2018 09:31 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-018
Misc Info:
Vial Number: 3109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0058	0.0012	ppb	74.50	100.	
11 B	185.1	37.02	ppb	7.07	1000.	
23 Na	225,100.	45,020.	ppb	3.36	200000.	
25 Mg	55,150.	11,030.	ppb	0.22	200000.	
27 Al	8.735	1.747	ppb	6.93	200000.	
28 Si	16,660.	3,332.	ppb	2.75	#VALUE!	
29 Si	16,450.	3,290.	ppb	1.37	10000.	
39 K	17,695.	3,539.	ppb	1.76	200000.	
43 Ca	368,550.	73,710.	ppb	0.53	#VALUE!	
44 Ca	355,900.	71,180.	ppb	0.18	200000.	
51 V	-0.3855	-0.0771	ppb	108.46	1000.	
52 Cr	1.769	0.3538	ppb	21.83	2000.	
53 Cr	41.825	8.365	ppb	14.47	#VALUE!	
55 Mn	1,322.5	264.5	ppb	3.28	2000.	
56 Fe	2,023.	404.6	ppb	1.63	#VALUE!	
57 Fe	2,210.5	442.1	ppb	3.24	100000.	
59 Co	0.4202	0.084	ppb	18.78	1000.	
60 Ni	1.2205	0.2441	ppb	15.34	1000.	
63 Cu	9.655	1.931	ppb	1.90	#VALUE!	
65 Cu	1.0855	0.2171	ppb	5.56	2000.	
66 Zn	13.265	2.653	ppb	3.47	2000.	
68 Zn	13.29	2.658	ppb	3.45	#VALUE!	
75 As	21.65	4.33	ppb	2.44	1000.	
82 Se	2.1935	0.4387	ppb	34.22	1000.	
88 Sr	1,546.	309.2	ppb	0.80	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.185	2.437	ppb	2.86	1000.	
107 Ag	0.0044	0.0009	ppb	174.78	100.	
109 Ag	-0.0004	-0.0001	ppb	421.90	#VALUE!	
111 Cd	-0.3109	-0.0622	ppb	25.65	#VALUE!	
114 Cd	0.0112	0.0022	ppb	101.48	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.2755	0.2551	ppb	8.00	1000.	
120 Sn	1.3015	0.2603	ppb	6.04	#VALUE!	
121 Sb	0.1872	0.0374	ppb	2.70	#VALUE!	
123 Sb	0.1911	0.0382	ppb	25.62	1000.	
135 Ba	30.05	6.01	ppb	2.46	2000.	
137 Ba	30.63	6.126	ppb	2.27	#VALUE!	
182 W	0.2333	0.0467	ppb	4.77	1000.	
203 Tl	0.0102	0.002	ppb	381.16	1000.	
205 Tl	-0.0132	-0.0026	ppb	323.34	#VALUE!	
208 Pb	0.0504	0.0101	ppb	169.64	2000.	
232 Th	0.0902	0.018	ppb	19.64	1000.	
238 U	2.7535	0.5507	ppb	1.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2861321.50	2.19	4492941.00	63.7	69.5 - 120	IS Fai
45 Sc	2308340.50	0.74	3094960.50	74.6	69.5 - 120	
72 Ge	472902.38	0.58	631723.63	74.9	69.5 - 120	
159 Tb	5543571.50	0.63	6220065.50	89.1	69.5 - 120	
209 Bi	3037423.00	1.55	3318256.50	91.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000217

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\113SMPL.D\113SMPL.D#
Date Acquired: May 14 2018 09:36 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 3110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0007	0.0007	ppb	295.98	100.	
11 B	2.672	2.672	ppb	4.26	1000.	
23 Na	15.99	15.99	ppb	3.98	200000.	
25 Mg	4.985	4.985	ppb	8.15	200000.	
27 Al	2.911	2.911	ppb	2.48	200000.	
28 Si	56.38	56.38	ppb	14.83	#VALUE!	
29 Si	8.835	8.835	ppb	76.40	10000.	
39 K	3.143	3.143	ppb	91.54	200000.	
43 Ca	10.09	10.09	ppb	11.11	#VALUE!	
44 Ca	15.27	15.27	ppb	14.45	200000.	
51 V	-0.0981	-0.0981	ppb	66.92	1000.	
52 Cr	0.0124	0.0124	ppb	219.95	2000.	
53 Cr	0.3402	0.3402	ppb	96.09	#VALUE!	
55 Mn	0.1256	0.1256	ppb	5.99	2000.	
56 Fe	0.2315	0.2315	ppb	355.38	#VALUE!	
57 Fe	5.182	5.182	ppb	16.91	100000.	
59 Co	0.0091	0.0091	ppb	91.43	1000.	
60 Ni	0.0266	0.0266	ppb	18.62	1000.	
63 Cu	0.1714	0.1714	ppb	6.14	#VALUE!	
65 Cu	0.2093	0.2093	ppb	12.50	2000.	
66 Zn	0.2832	0.2832	ppb	23.57	2000.	
68 Zn	0.3136	0.3136	ppb	28.78	#VALUE!	
75 As	0.0414	0.0414	ppb	255.56	1000.	
82 Se	0.0033	0.0033	ppb	1410.50	1000.	
88 Sr	0.0218	0.0218	ppb	29.15	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.3179	0.3179	ppb	7.82	1000.	
107 Ag	0.0005	0.0005	ppb	65.16	100.	
109 Ag	0.0022	0.0022	ppb	31.31	#VALUE!	
111 Cd	-0.0358	-0.0358	ppb	40.46	#VALUE!	
114 Cd	-0.003	-0.003	ppb	100.17	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0485	0.0485	ppb	25.07	1000.	
120 Sn	0.0387	0.0387	ppb	18.21	#VALUE!	
121 Sb	0.0029	0.0029	ppb	140.66	#VALUE!	
123 Sb	0.0009	0.0009	ppb	495.37	1000.	
135 Ba	0.0804	0.0804	ppb	22.48	2000.	
137 Ba	0.0646	0.0646	ppb	12.62	#VALUE!	
182 W	0.0042	0.0042	ppb	33.57	1000.	
203 Tl	-0.0041	-0.0041	ppb	278.88	1000.	
205 Tl	-0.005	-0.005	ppb	69.89	#VALUE!	
208 Pb	0.2903	0.2903	ppb	7.34	2000.	
232 Th	0.0018	0.0018	ppb	50.75	1000.	
238 U	0.0004	0.0004	ppb	138.67	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2962880.00	2.41	4492941.00	65.9	69.5 - 120	IS Fai
45 Sc	2380699.30	2.94	3094960.50	76.9	69.5 - 120	
72 Ge	492739.19	0.84	631723.63	78.0	69.5 - 120	
159 Tb	5681238.00	0.96	6220065.50	91.3	69.5 - 120	
209 Bi	3324629.80	0.53	3318256.50	100.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000218

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\114_CCV.D\114_CCV.D#
Date Acquired: May 14 2018 09:40 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.99	ppb	1.77	25	95.96	
11 B	23.91	ppb	4.04	25	95.64	
23 Na	4,447.	ppb	4.88	5,000	88.94	Fail
25 Mg	4,663.	ppb	1.81	5,000	93.26	
27 Al	469.4	ppb	0.91	500	93.88	
28 Si	532.4	ppb	3.96	500	106.48	
29 Si	471.2	ppb	5.98	500	94.24	
39 K	4,803.	ppb	0.64	5,000	96.06	
43 Ca	4,869.	ppb	3.69	5,000	97.38	
44 Ca	5,035.	ppb	4.04	5,000	100.7	
51 V	24.57	ppb	1.10	25	98.28	
52 Cr	24.5	ppb	1.70	25	98	
53 Cr	24.09	ppb	3.01	25	96.36	
55 Mn	24.53	ppb	1.70	25	98.12	
56 Fe	4,890.	ppb	1.65	5,000	97.8	
57 Fe	5,023.	ppb	1.86	5,000	100.46	
59 Co	24.31	ppb	0.55	25	97.24	
60 Ni	23.97	ppb	2.09	25	95.88	
63 Cu	23.81	ppb	2.73	25	95.24	
65 Cu	24.54	ppb	2.15	25	98.16	
66 Zn	25.03	ppb	2.06	25	100.12	
68 Zn	24.64	ppb	1.22	25	98.56	
75 As	24.63	ppb	1.20	25	98.52	
82 Se	25.43	ppb	3.18	25	101.72	
88 Sr	25.49	ppb	1.62	25	101.96	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.76	ppb	2.19	25	103.04	
107 Ag	26.04	ppb	1.32	25	104.16	
109 Ag	26.31	ppb	1.06	25	105.24	
111 Cd	26.38	ppb	1.39	25	105.52	
114 Cd	26.24	ppb	1.50	25	104.96	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	22.9	ppb	3.44	25	91.6	
120 Sn	22.88	ppb	2.74	25	91.52	
121 Sb	23.55	ppb	2.61	25	94.2	
123 Sb	23.62	ppb	3.01	25	94.48	
135 Ba	24.17	ppb	3.27	25	96.68	
137 Ba	23.97	ppb	4.10	25	95.88	
182 W	25.4	ppb	3.51	25	101.6	
203 Tl	24.53	ppb	2.91	25	98.12	
205 Tl	24.59	ppb	2.47	25	98.36	
208 Pb	24.99	ppb	2.26	25	99.96	
232 Th	25.22	ppb	3.29	25	100.88	
238 U	26.52	ppb	3.02	25	106.08	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2975111.50	0.77	4492941.00	66.2	80 - 120.4	ISFail
45 Sc	2326776.50	1.98	3094960.50	75.2	80 - 120.4	ISFail
72 Ge	480648.19	1.28	631723.63	76.1	80 - 120.4	ISFail
159 Tb	5598800.50	2.73	6220065.50	90.0	80 - 120.4	
209 Bi	3198996.50	2.23	3318256.50	96.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\115_CCB.D\115_CCB.D#
Date Acquired: May 14 2018 09:44 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0017	ppb	266.14	1.00	
11 B	2.329	ppb	5.50	1.00	
23 Na	3.414	ppb	9.49	1.00	
25 Mg	0.1114	ppb	81.74	1.00	
27 Al	0.1035	ppb	66.22	1.00	
28 Si	46.81	ppb	7.58	1.00	
29 Si	-1.526	ppb	430.21	1.00	
39 K	-0.539	ppb	780.15	1.00	
43 Ca	0.5856	ppb	327.36	1.00	
44 Ca	0.5789	ppb	217.83	1.00	
51 V	-0.1327	ppb	86.89	1.00	
52 Cr	0.0123	ppb	148.73	1.00	
53 Cr	-0.7921	ppb	40.07	1.00	
55 Mn	0.0249	ppb	30.00	1.00	
56 Fe	-4.969	ppb	50.92	1.00	
57 Fe	2.461	ppb	27.01	1.00	
59 Co	0.0025	ppb	183.40	1.00	
60 Ni	0.	ppb	47872.00	1.00	
63 Cu	0.0117	ppb	72.34	1.00	
65 Cu	0.0109	ppb	80.17	1.00	
66 Zn	0.0412	ppb	57.31	1.00	
68 Zn	0.1187	ppb	62.32	1.00	
75 As	-0.0984	ppb	16.67	1.00	
82 Se	0.0406	ppb	388.67	1.00	
88 Sr	0.0029	ppb	106.73	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0325	ppb	35.28	1.00	
107 Ag	0.0046	ppb	50.15	1.00	
109 Ag	0.0043	ppb	80.09	1.00	
111 Cd	-0.0468	ppb	24.02	1.00	
114 Cd	-0.0009	ppb	209.91	1.00	
115 In	--------	---	--------	---	
118 Sn	0.057	ppb	9.38	1.00	
120 Sn	0.0707	ppb	55.22	1.00	
121 Sb	0.008	ppb	19.92	1.00	
123 Sb	0.0085	ppb	16.52	1.00	
135 Ba	0.0083	ppb	82.71	1.00	
137 Ba	-0.0008	ppb	322.87	1.00	
182 W	0.0404	ppb	36.73	1.00	
203 Tl	0.0019	ppb	395.46	1.00	
205 Tl	-0.0015	ppb	284.52	1.00	
208 Pb	0.0819	ppb	13.78	1.00	
232 Th	0.0555	ppb	3.94	1.00	
238 U	0.0032	ppb	36.48	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3031881.50	2.82	4492941.00	67.5	79.5 - 120	ISFail
45 Sc	2391291.50	1.64	3094960.50	77.3	79.5 - 120	ISFail
72 Ge	484841.84	0.55	631723.63	76.7	79.5 - 120	ISFail
159 Tb	5564623.50	0.87	6220065.50	89.5	79.5 - 120	
209 Bi	3272420.50	0.26	3318256.50	98.6	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\116SMPL.D\116SMPL.D#
Date Acquired: May 14 2018 09:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE08IMS2
Misc Info:
Vial Number: 3111
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0035	0.0007	ppb	89.88	100.	
11 B	8.765	1.753	ppb	6.04	1000.	
23 Na	41.795	8.359	ppb	6.98	200000.	
25 Mg	14.335	2.867	ppb	6.43	200000.	
27 Al	5.125	1.025	ppb	3.41	200000.	
28 Si	259.95	51.99	ppb	16.84	#VALUE!	
29 Si	108.15	21.63	ppb	41.98	10000.	
39 K	56.95	11.39	ppb	46.81	200000.	
43 Ca	9.385	1.877	ppb	70.59	#VALUE!	
44 Ca	48.72	9.744	ppb	11.09	200000.	
51 V	-0.2095	-0.0419	ppb	85.77	1000.	
52 Cr	2.322	0.4644	ppb	21.73	2000.	
53 Cr	29.2	5.84	ppb	9.12	#VALUE!	
55 Mn	0.4251	0.085	ppb	15.08	2000.	
56 Fe	37.815	7.563	ppb	53.26	#VALUE!	
57 Fe	19.015	3.803	ppb	45.28	100000.	
59 Co	0.0202	0.004	ppb	74.38	1000.	
60 Ni	0.3601	0.072	ppb	10.68	1000.	
63 Cu	0.5275	0.1055	ppb	9.34	#VALUE!	
65 Cu	0.493	0.0986	ppb	33.23	2000.	
66 Zn	0.938	0.1876	ppb	19.07	2000.	
68 Zn	1.025	0.205	ppb	20.86	#VALUE!	
75 As	0.4203	0.0841	ppb	37.74	1000.	
82 Se	-0.1936	-0.0387	ppb	435.18	1000.	
88 Sr	0.2079	0.0416	ppb	13.06	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1076	0.0215	ppb	14.56	1000.	
107 Ag	0.0176	0.0035	ppb	29.27	100.	
109 Ag	0.0007	0.0001	ppb	1278.60	#VALUE!	
111 Cd	-0.2004	-0.0401	ppb	79.74	#VALUE!	
114 Cd	-0.0867	-0.0173	ppb	54.65	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	41.57	8.314	ppb	2.73	1000.	
120 Sn	41.395	8.279	ppb	0.75	#VALUE!	
121 Sb	0.0313	0.0063	ppb	133.47	#VALUE!	
123 Sb	0.0277	0.0055	ppb	81.05	1000.	
135 Ba	0.1776	0.0355	ppb	60.88	2000.	
137 Ba	0.1411	0.0282	ppb	21.01	#VALUE!	
182 W	0.0671	0.0134	ppb	50.45	1000.	
203 Tl	-0.012	-0.0024	ppb	66.13	1000.	
205 Tl	-0.0483	-0.0097	ppb	55.66	#VALUE!	
208 Pb	0.178	0.0356	ppb	40.24	2000.	
232 Th	0.3155	0.0631	ppb	9.22	1000.	
238 U	0.0013	0.0003	ppb	138.02	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2953606.50	5.40	4492941.00	65.7	69.5 - 120	IS Fai
45 Sc	2256055.50	3.85	3094960.50	72.9	69.5 - 120	
72 Ge	469523.59	1.75	631723.63	74.3	69.5 - 120	
159 Tb	5446766.00	2.23	6220065.50	87.6	69.5 - 120	
209 Bi	3174551.00	2.05	3318256.50	95.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000221

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\117SMPL.D\117SMPL.D#
Date Acquired: May 14 2018 09:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE08IMS2
Misc Info:
Vial Number: 3112
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	45.505	9.101	ppb	4.04	100.	
11 B	460.55	92.11	ppb	2.64	1000.	
23 Na	6,980.	1,396.	ppb	0.95	200000.	
25 Mg	4,541.	908.2	ppb	3.11	200000.	
27 Al	1,919.	383.8	ppb	4.50	200000.	
28 Si	1,215.	243.	ppb	6.72	#VALUE!	
29 Si	1,048.	209.6	ppb	8.38	10000.	
39 K	9,850.	1,970.	ppb	2.60	200000.	
43 Ca	2,779.	555.8	ppb	6.04	#VALUE!	
44 Ca	2,470.5	494.1	ppb	2.46	200000.	
51 V	496.5	99.3	ppb	1.10	1000.	
52 Cr	192.25	38.45	ppb	0.15	2000.	
53 Cr	227.	45.4	ppb	0.56	#VALUE!	
55 Mn	489.8	97.96	ppb	0.71	2000.	
56 Fe	1,029.5	205.9	ppb	2.15	#VALUE!	
57 Fe	1,003.5	200.7	ppb	0.69	100000.	
59 Co	485.8	97.16	ppb	1.95	1000.	
60 Ni	465.35	93.07	ppb	1.30	1000.	
63 Cu	234.95	46.99	ppb	0.75	#VALUE!	
65 Cu	240.4	48.08	ppb	1.00	2000.	
66 Zn	468.8	93.76	ppb	0.69	2000.	
68 Zn	517.5	103.5	ppb	0.98	#VALUE!	
75 As	96.85	19.37	ppb	1.69	1000.	
82 Se	92.95	18.59	ppb	2.09	1000.	
88 Sr	508.	101.6	ppb	1.01	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.7	20.34	ppb	0.66	1000.	
107 Ag	51.8	10.36	ppb	0.22	100.	
109 Ag	52.15	10.43	ppb	1.22	#VALUE!	
111 Cd	255.	51.	ppb	0.92	#VALUE!	
114 Cd	253.25	50.65	ppb	0.91	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	494.55	98.91	ppb	1.51	1000.	
120 Sn	499.15	99.83	ppb	1.56	#VALUE!	
121 Sb	93.05	18.61	ppb	1.70	#VALUE!	
123 Sb	94.7	18.94	ppb	2.62	1000.	
135 Ba	1,915.5	383.1	ppb	1.08	2000.	
137 Ba	1,900.	380.	ppb	1.74	#VALUE!	
182 W	105.2	21.04	ppb	0.11	1000.	
203 Tl	99.8	19.96	ppb	0.79	1000.	
205 Tl	99.9	19.98	ppb	1.07	#VALUE!	
208 Pb	101.05	20.21	ppb	0.79	2000.	
232 Th	104.05	20.81	ppb	1.25	1000.	
238 U	108.4	21.68	ppb	0.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2957434.80	2.49	4492941.00	65.8	69.5 - 120	IS Fai
45 Sc	2234648.80	2.80	3094960.50	72.2	69.5 - 120	
72 Ge	473249.78	0.42	631723.63	74.9	69.5 - 120	
159 Tb	5449637.00	0.93	6220065.50	87.6	69.5 - 120	
209 Bi	3160926.00	1.44	3318256.50	95.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000222

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\118SMPL.D\118SMPL.D#
Date Acquired: May 14 2018 09:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-024
Misc Info:
Vial Number: 3201
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.37	1.274	ppb	5.90	100.	
11 B	130.	26.	ppb	5.04	1000.	
23 Na	4,748.	949.6	ppb	5.01	200000.	
25 Mg	79,450.	15,890.	ppb	2.06	200000.	
27 Al	126,100.	25,220.	ppb	2.63	200000.	
28 Si	2,532.5	506.5	ppb	3.39	#VALUE!	
29 Si	2,236.5	447.3	ppb	0.86	10000.	
39 K	33,655.	6,731.	ppb	0.36	200000.	
43 Ca	915,500.	183,100.	ppb	1.22	#VALUE!	
44 Ca	888,000.	177,600.	ppb	0.33	200000.	
51 V	262.2	52.44	ppb	1.28	1000.	
52 Cr	124.1	24.82	ppb	1.68	2000.	
53 Cr	139.2	27.84	ppb	1.84	#VALUE!	
55 Mn	2,897.5	579.5	ppb	1.72	2000.	
56 Fe	124,150.	24,830.	ppb	1.92	#VALUE!	
57 Fe	122,650.	24,530.	ppb	1.64	100000.	
59 Co	38.09	7.618	ppb	2.17	1000.	
60 Ni	88.5	17.7	ppb	0.70	1000.	
63 Cu	69.65	13.93	ppb	0.96	#VALUE!	
65 Cu	72.45	14.49	ppb	1.50	2000.	
66 Zn	311.35	62.27	ppb	2.28	2000.	
68 Zn	391.6	78.32	ppb	0.48	#VALUE!	
75 As	33.67	6.734	ppb	2.15	1000.	
82 Se	5.06	1.012	ppb	17.93	1000.	
88 Sr	2,426.	485.2	ppb	1.87	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.49	0.698	ppb	4.06	1000.	
107 Ag	0.7015	0.1403	ppb	3.43	100.	
109 Ag	0.4993	0.0999	ppb	9.16	#VALUE!	
111 Cd	3.2105	0.6421	ppb	3.88	#VALUE!	
114 Cd	0.9615	0.1923	ppb	6.23	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.715	9.143	ppb	1.59	1000.	
120 Sn	45.3	9.06	ppb	0.73	#VALUE!	
121 Sb	1.095	0.219	ppb	6.07	#VALUE!	
123 Sb	1.0845	0.2169	ppb	9.38	1000.	
135 Ba	2,843.5	568.7	ppb	1.29	2000.	
137 Ba	2,844.	568.8	ppb	0.84	#VALUE!	
182 W	0.6325	0.1265	ppb	3.77	1000.	
203 Tl	2.5435	0.5087	ppb	2.57	1000.	
205 Tl	2.525	0.505	ppb	1.66	#VALUE!	
208 Pb	88.75	17.75	ppb	0.26	2000.	
232 Th	65.35	13.07	ppb	0.77	1000.	
238 U	13.21	2.642	ppb	0.61	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2679675.50	6.67	4492941.00	59.6	69.5 - 120	IS Fai
45 Sc	2234235.80	0.61	3094960.50	72.2	69.5 - 120	
72 Ge	449727.56	0.51	631723.63	71.2	69.5 - 120	
159 Tb	5459986.00	0.41	6220065.50	87.8	69.5 - 120	
209 Bi	3018003.50	1.42	3318256.50	91.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000223

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\119SMPL.D\119SMPL.D#
Date Acquired: May 14 2018 10:01 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-024L
Misc Info:
Vial Number: 3202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.1425	0.2457	ppb	4.71	100.	
11 B	170.125	6.805	ppb	4.70	1000.	
23 Na	5,297.5	211.9	ppb	4.63	200000.	
25 Mg	86,000.	3,440.	ppb	1.61	200000.	
27 Al	126,675.	5,067.	ppb	3.32	200000.	
28 Si	3,360.	134.4	ppb	6.70	#VALUE!	
29 Si	1,804.25	72.17	ppb	12.21	10000.	
39 K	34,200.	1,368.	ppb	1.11	200000.	
43 Ca	923,750.	36,950.	ppb	1.61	#VALUE!	
44 Ca	916,000.	36,640.	ppb	0.53	200000.	
51 V	255.5	10.22	ppb	2.92	1000.	
52 Cr	125.275	5.011	ppb	1.62	2000.	
53 Cr	110.925	4.437	ppb	4.45	#VALUE!	
55 Mn	3,030.	121.2	ppb	1.19	2000.	
56 Fe	126,200.	5,048.	ppb	1.94	#VALUE!	
57 Fe	129,550.	5,182.	ppb	2.03	100000.	
59 Co	39.425	1.577	ppb	2.71	1000.	
60 Ni	93.925	3.757	ppb	2.31	1000.	
63 Cu	75.575	3.023	ppb	1.31	#VALUE!	
65 Cu	76.65	3.066	ppb	1.02	2000.	
66 Zn	349.75	13.99	ppb	3.03	2000.	
68 Zn	435.5	17.42	ppb	2.70	#VALUE!	
75 As	35.95	1.438	ppb	3.39	1000.	
82 Se	7.0725	0.2829	ppb	28.05	1000.	
88 Sr	2,515.	100.6	ppb	1.17	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.51	0.1404	ppb	8.87	1000.	
107 Ag	0.745	0.0298	ppb	13.62	100.	
109 Ag	0.478	0.0191	ppb	11.45	#VALUE!	
111 Cd	1.8788	0.0752	ppb	52.63	#VALUE!	
114 Cd	1.0973	0.0439	ppb	17.98	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.9	1.916	ppb	1.52	1000.	
120 Sn	47.625	1.905	ppb	2.11	#VALUE!	
121 Sb	1.2273	0.0491	ppb	6.39	#VALUE!	
123 Sb	1.1713	0.0469	ppb	23.14	1000.	
135 Ba	2,877.5	115.1	ppb	1.18	2000.	
137 Ba	2,885.	115.4	ppb	1.48	#VALUE!	
182 W	0.7633	0.0305	ppb	2.03	1000.	
203 Tl	2.4083	0.0963	ppb	11.77	1000.	
205 Tl	2.204	0.0882	ppb	7.64	#VALUE!	
208 Pb	88.75	3.55	ppb	1.50	2000.	
232 Th	61.125	2.445	ppb	1.40	1000.	
238 U	12.425	0.497	ppb	1.44	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2923081.50	2.10	4492941.00	65.1	69.5 - 120	IS Fai
45 Sc	2295543.30	1.98	3094960.50	74.2	69.5 - 120	
72 Ge	466331.09	0.58	631723.63	73.8	69.5 - 120	
159 Tb	5565533.00	0.91	6220065.50	89.5	69.5 - 120	
209 Bi	3218805.30	1.00	3318256.50	97.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000224

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\120SMPL.D\120SMPL.D#
Date Acquired: May 14 2018 10:05 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-024A
Misc Info:
Vial Number: 3203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	16.08	3.216	ppb	2.53	100.	
11 B	319.35	63.87	ppb	5.11	1000.	
23 Na	14,200.	2,840.	ppb	2.25	200000.	
25 Mg	80,100.	16,020.	ppb	2.77	200000.	
27 Al	126,050.	25,210.	ppb	4.55	200000.	
28 Si	7,435.	1,487.	ppb	1.90	#VALUE!	
29 Si	7,070.	1,414.	ppb	3.45	10000.	
39 K	42,930.	8,586.	ppb	0.70	200000.	
43 Ca	900,500.	180,100.	ppb	2.61	#VALUE!	
44 Ca	889,500.	177,900.	ppb	1.33	200000.	
51 V	316.	63.2	ppb	2.16	1000.	
52 Cr	176.75	35.35	ppb	1.10	2000.	
53 Cr	193.95	38.79	ppb	0.39	#VALUE!	
55 Mn	2,885.5	577.1	ppb	1.57	2000.	
56 Fe	123,950.	24,790.	ppb	0.23	#VALUE!	
57 Fe	121,500.	24,300.	ppb	1.67	100000.	
59 Co	49.135	9.827	ppb	1.61	1000.	
60 Ni	107.8	21.56	ppb	2.12	1000.	
63 Cu	99.9	19.98	ppb	2.14	#VALUE!	
65 Cu	104.4	20.88	ppb	1.69	2000.	
66 Zn	409.9	81.98	ppb	1.54	2000.	
68 Zn	483.95	96.79	ppb	1.25	#VALUE!	
75 As	87.8	17.56	ppb	1.60	1000.	
82 Se	58.35	11.67	ppb	1.74	1000.	
88 Sr	2,444.	488.8	ppb	0.93	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	63.05	12.61	ppb	1.03	1000.	
107 Ag	12.	2.4	ppb	1.18	100.	
109 Ag	12.13	2.426	ppb	2.13	#VALUE!	
111 Cd	14.545	2.909	ppb	1.21	#VALUE!	
114 Cd	12.39	2.478	ppb	0.93	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	95.45	19.09	ppb	1.56	1000.	
120 Sn	96.8	19.36	ppb	1.56	#VALUE!	
121 Sb	11.54	2.308	ppb	2.66	#VALUE!	
123 Sb	11.405	2.281	ppb	2.94	1000.	
135 Ba	2,863.	572.6	ppb	1.86	2000.	
137 Ba	2,856.	571.2	ppb	1.21	#VALUE!	
182 W	61.3	12.26	ppb	1.04	1000.	
203 Tl	14.245	2.849	ppb	1.32	1000.	
205 Tl	14.285	2.857	ppb	0.16	#VALUE!	
208 Pb	100.05	20.01	ppb	0.72	2000.	
232 Th	78.2	15.64	ppb	0.98	1000.	
238 U	26.145	5.229	ppb	0.43	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2853926.80	2.39	4492941.00	63.5	69.5 - 120	IS Fai
45 Sc	2307148.80	2.69	3094960.50	74.5	69.5 - 120	
72 Ge	457660.75	0.67	631723.63	72.4	69.5 - 120	
159 Tb	5445450.50	1.45	6220065.50	87.5	69.5 - 120	
209 Bi	2982670.00	1.16	3318256.50	89.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000225

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\121SMPL.D\121SMPL.D#
Date Acquired: May 14 2018 10:09 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-024S
Misc Info:
Vial Number: 3204
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	49.9	9.98	ppb	5.13	100.	
11 B	586.	117.2	ppb	2.77	1000.	
23 Na	12,025.	2,405.	ppb	2.04	200000.	
25 Mg	93,100.	18,620.	ppb	3.44	200000.	
27 Al	155,050.	31,010.	ppb	4.07	200000.	
28 Si	3,733.	746.6	ppb	2.46	#VALUE!	
29 Si	3,477.5	695.5	ppb	3.03	10000.	
39 K	47,505.	9,501.	ppb	0.99	200000.	
43 Ca	1,011,500.	202,300.	ppb	2.17	#VALUE!	
44 Ca	994,000.	198,800.	ppb	1.49	200000.	
51 V	847.	169.4	ppb	0.95	1000.	
52 Cr	338.75	67.75	ppb	1.13	2000.	
53 Cr	364.75	72.95	ppb	1.07	#VALUE!	
55 Mn	3,312.	662.4	ppb	1.44	2000.	
56 Fe	137,100.	27,420.	ppb	1.54	#VALUE!	
57 Fe	133,850.	26,770.	ppb	1.11	100000.	
59 Co	522.5	104.5	ppb	1.56	1000.	
60 Ni	541.	108.2	ppb	1.21	1000.	
63 Cu	296.9	59.38	ppb	1.17	#VALUE!	
65 Cu	305.6	61.12	ppb	1.59	2000.	
66 Zn	766.	153.2	ppb	1.48	2000.	
68 Zn	962.5	192.5	ppb	1.25	#VALUE!	
75 As	133.05	26.61	ppb	0.74	1000.	
82 Se	93.2	18.64	ppb	1.30	1000.	
88 Sr	3,374.	674.8	ppb	0.96	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	102.95	20.59	ppb	0.75	1000.	
107 Ag	50.75	10.15	ppb	1.89	100.	
109 Ag	50.5	10.1	ppb	1.27	#VALUE!	
111 Cd	250.35	50.07	ppb	0.45	#VALUE!	
114 Cd	246.8	49.36	ppb	0.69	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	486.1	97.22	ppb	0.96	1000.	
120 Sn	490.75	98.15	ppb	0.98	#VALUE!	
121 Sb	29.54	5.908	ppb	1.64	#VALUE!	
123 Sb	29.375	5.875	ppb	0.43	1000.	
135 Ba	6,585.	1,317.	ppb	0.33	2000.	
137 Ba	6,425.	1,285.	ppb	0.47	#VALUE!	
182 W	53.65	10.73	ppb	0.62	1000.	
203 Tl	105.6	21.12	ppb	1.21	1000.	
205 Tl	106.2	21.24	ppb	0.75	#VALUE!	
208 Pb	203.35	40.67	ppb	0.33	2000.	
232 Th	182.8	36.56	ppb	0.91	1000.	
238 U	131.4	26.28	ppb	0.93	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2863784.00	4.74	4492941.00	63.7	69.5 - 120	IS Fai
45 Sc	2261753.00	2.47	3094960.50	73.1	69.5 - 120	
72 Ge	452315.25	0.79	631723.63	71.6	69.5 - 120	
159 Tb	5427753.00	0.71	6220065.50	87.3	69.5 - 120	
209 Bi	2933763.50	1.31	3318256.50	88.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000226

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\122SMPL.D\122SMPL.D#
Date Acquired: May 14 2018 10:13 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-024P
Misc Info:
Vial Number: 3205
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	48.685	9.737	ppb	3.75	100.	
11 B	570.5	114.1	ppb	5.16	1000.	
23 Na	14,150.	2,830.	ppb	2.41	200000.	
25 Mg	88,600.	17,720.	ppb	2.61	200000.	
27 Al	162,100.	32,420.	ppb	3.07	200000.	
28 Si	3,275.	655.	ppb	5.97	#VALUE!	
29 Si	2,964.	592.8	ppb	2.56	10000.	
39 K	48,945.	9,789.	ppb	4.18	200000.	
43 Ca	880,000.	176,000.	ppb	2.43	#VALUE!	
44 Ca	848,500.	169,700.	ppb	2.54	200000.	
51 V	823.5	164.7	ppb	1.40	1000.	
52 Cr	339.2	67.84	ppb	1.03	2000.	
53 Cr	354.45	70.89	ppb	1.98	#VALUE!	
55 Mn	3,352.	670.4	ppb	1.12	2000.	
56 Fe	142,950.	28,590.	ppb	1.67	#VALUE!	
57 Fe	142,100.	28,420.	ppb	0.98	100000.	
59 Co	526.	105.2	ppb	0.21	1000.	
60 Ni	533.5	106.7	ppb	0.77	1000.	
63 Cu	292.25	58.45	ppb	1.17	#VALUE!	
65 Cu	303.65	60.73	ppb	0.99	2000.	
66 Zn	776.5	155.3	ppb	1.09	2000.	
68 Zn	1,122.	224.4	ppb	0.66	#VALUE!	
75 As	129.8	25.96	ppb	0.79	1000.	
82 Se	91.	18.2	ppb	0.93	1000.	
88 Sr	3,017.5	603.5	ppb	2.02	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	97.4	19.48	ppb	1.32	1000.	
107 Ag	48.495	9.699	ppb	2.04	100.	
109 Ag	48.84	9.768	ppb	1.83	#VALUE!	
111 Cd	244.	48.8	ppb	0.97	#VALUE!	
114 Cd	241.55	48.31	ppb	1.31	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	456.95	91.39	ppb	1.01	1000.	
120 Sn	465.1	93.02	ppb	0.76	#VALUE!	
121 Sb	27.515	5.503	ppb	0.45	#VALUE!	
123 Sb	27.67	5.534	ppb	2.58	1000.	
135 Ba	10,605.	2,121.	ppb	1.56	2000.	>LDR
137 Ba	10,385.	2,077.	ppb	1.37	#VALUE!	
182 W	47.135	9.427	ppb	2.33	1000.	
203 Tl	100.45	20.09	ppb	1.17	1000.	
205 Tl	101.1	20.22	ppb	1.35	#VALUE!	
208 Pb	200.95	40.19	ppb	1.27	2000.	
232 Th	179.6	35.92	ppb	1.07	1000.	
238 U	123.5	24.7	ppb	1.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2895739.80	5.28	4492941.00	64.5	69.5 - 120	IS Fai
45 Sc	2275151.00	1.80	3094960.50	73.5	69.5 - 120	
72 Ge	455179.22	1.10	631723.63	72.1	69.5 - 120	
159 Tb	5463439.00	0.83	6220065.50	87.8	69.5 - 120	
209 Bi	2936934.30	1.13	3318256.50	88.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000227

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\123SMPL.D\123SMPL.D#
Date Acquired: May 14 2018 10:18 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-041
Misc Info:
Vial Number: 3206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.59	1.718	ppb	8.46	100.	
11 B	168.	33.6	ppb	5.88	1000.	
23 Na	7,580.	1,516.	ppb	1.81	200000.	
25 Mg	94,600.	18,920.	ppb	1.25	200000.	
27 Al	194,950.	38,990.	ppb	1.60	200000.	
28 Si	3,280.5	656.1	ppb	2.86	#VALUE!	
29 Si	2,945.	589.	ppb	4.60	10000.	
39 K	50,650.	10,130.	ppb	1.52	200000.	
43 Ca	688,000.	137,600.	ppb	0.89	#VALUE!	
44 Ca	673,000.	134,600.	ppb	1.39	200000.	
51 V	420.2	84.04	ppb	2.50	1000.	
52 Cr	194.4	38.88	ppb	1.70	2000.	
53 Cr	208.7	41.74	ppb	1.47	#VALUE!	
55 Mn	5,755.	1,151.	ppb	2.34	2000.	
56 Fe	193,150.	38,630.	ppb	2.24	#VALUE!	
57 Fe	189,000.	37,800.	ppb	2.69	100000.	
59 Co	115.9	23.18	ppb	0.92	1000.	
60 Ni	165.35	33.07	ppb	0.70	1000.	
63 Cu	105.05	21.01	ppb	1.02	#VALUE!	
65 Cu	109.	21.8	ppb	1.17	2000.	
66 Zn	456.3	91.26	ppb	0.24	2000.	
68 Zn	524.	104.8	ppb	2.96	#VALUE!	
75 As	58.55	11.71	ppb	2.79	1000.	
82 Se	5.175	1.035	ppb	22.68	1000.	
88 Sr	1,705.	341.	ppb	0.85	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.015	1.403	ppb	3.10	1000.	
107 Ag	0.88	0.176	ppb	6.05	100.	
109 Ag	0.6995	0.1399	ppb	5.70	#VALUE!	
111 Cd	4.7405	0.9481	ppb	3.76	#VALUE!	
114 Cd	2.2635	0.4527	ppb	5.03	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.48	9.496	ppb	1.54	1000.	
120 Sn	48.35	9.67	ppb	1.41	#VALUE!	
121 Sb	1.663	0.3326	ppb	6.73	#VALUE!	
123 Sb	1.6625	0.3325	ppb	4.52	1000.	
135 Ba	2,761.	552.2	ppb	0.95	2000.	
137 Ba	2,766.	553.2	ppb	0.89	#VALUE!	
182 W	0.862	0.1724	ppb	8.56	1000.	
203 Tl	3.714	0.7428	ppb	3.19	1000.	
205 Tl	3.652	0.7304	ppb	1.20	#VALUE!	
208 Pb	157.1	31.42	ppb	0.92	2000.	
232 Th	99.	19.8	ppb	0.98	1000.	
238 U	17.725	3.545	ppb	1.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2925910.50	6.91	4492941.00	65.1	69.5 - 120	IS Fai
45 Sc	2272499.00	2.25	3094960.50	73.4	69.5 - 120	
72 Ge	455013.69	1.18	631723.63	72.0	69.5 - 120	
159 Tb	5429275.00	0.83	6220065.50	87.3	69.5 - 120	
209 Bi	2970837.80	1.38	3318256.50	89.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000228

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\124SMPL.D\124SMPL.D#
Date Acquired: May 14 2018 10:22 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-042
Misc Info:
Vial Number: 3207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.675	1.335	ppb	2.59	100.	
11 B	137.75	27.55	ppb	0.70	1000.	
23 Na	2,821.5	564.3	ppb	2.64	200000.	
25 Mg	84,650.	16,930.	ppb	2.11	200000.	
27 Al	147,950.	29,590.	ppb	2.20	200000.	
28 Si	3,226.5	645.3	ppb	4.99	#VALUE!	
29 Si	2,768.	553.6	ppb	3.61	10000.	
39 K	42,865.	8,573.	ppb	2.21	200000.	
43 Ca	735,500.	147,100.	ppb	2.73	#VALUE!	
44 Ca	723,500.	144,700.	ppb	2.10	200000.	
51 V	387.65	77.53	ppb	1.07	1000.	
52 Cr	154.35	30.87	ppb	0.25	2000.	
53 Cr	163.45	32.69	ppb	1.87	#VALUE!	
55 Mn	4,730.	946.	ppb	0.78	2000.	
56 Fe	148,200.	29,640.	ppb	0.47	#VALUE!	
57 Fe	145,000.	29,000.	ppb	0.20	100000.	
59 Co	153.65	30.73	ppb	0.59	1000.	
60 Ni	162.95	32.59	ppb	0.54	1000.	
63 Cu	102.85	20.57	ppb	0.42	#VALUE!	
65 Cu	107.	21.4	ppb	1.09	2000.	
66 Zn	379.3	75.86	ppb	0.91	2000.	
68 Zn	451.3	90.26	ppb	1.12	#VALUE!	
75 As	88.2	17.64	ppb	1.66	1000.	
82 Se	4.856	0.9712	ppb	37.73	1000.	
88 Sr	2,353.5	470.7	ppb	1.49	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.895	1.179	ppb	4.61	1000.	
107 Ag	0.6885	0.1377	ppb	3.37	100.	
109 Ag	0.5665	0.1133	ppb	4.52	#VALUE!	
111 Cd	3.2	0.64	ppb	5.46	#VALUE!	
114 Cd	1.4085	0.2817	ppb	3.49	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.48	8.896	ppb	1.34	1000.	
120 Sn	45.02	9.004	ppb	0.48	#VALUE!	
121 Sb	1.614	0.3228	ppb	2.40	#VALUE!	
123 Sb	1.6205	0.3241	ppb	5.09	1000.	
135 Ba	2,678.	535.6	ppb	0.36	2000.	
137 Ba	2,678.	535.6	ppb	0.87	#VALUE!	
182 W	1.2	0.24	ppb	1.76	1000.	
203 Tl	2.836	0.5672	ppb	1.59	1000.	
205 Tl	2.899	0.5798	ppb	2.28	#VALUE!	
208 Pb	120.6	24.12	ppb	0.53	2000.	
232 Th	75.95	15.19	ppb	0.26	1000.	
238 U	14.82	2.964	ppb	1.21	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2962298.80	0.53	4492941.00	65.9	69.5 - 120	IS Fai
45 Sc	2326251.50	0.57	3094960.50	75.2	69.5 - 120	
72 Ge	458472.75	0.10	631723.63	72.6	69.5 - 120	
159 Tb	5431963.00	0.90	6220065.50	87.3	69.5 - 120	
209 Bi	2995761.50	0.88	3318256.50	90.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000229

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\125SMPL.D\125SMPL.D#
Date Acquired: May 14 2018 10:26 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 3208
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0008	0.0008	ppb	187.65	100.	
11 B	3.01	3.01	ppb	5.74	1000.	
23 Na	19.99	19.99	ppb	6.84	200000.	
25 Mg	1.969	1.969	ppb	36.81	200000.	
27 Al	2.43	2.43	ppb	40.73	200000.	
28 Si	73.04	73.04	ppb	18.95	#VALUE!	
29 Si	-10.39	-10.39	ppb	156.88	10000.	
39 K	0.3708	0.3708	ppb	662.35	200000.	
43 Ca	5.933	5.933	ppb	158.42	#VALUE!	
44 Ca	8.347	8.347	ppb	56.69	200000.	
51 V	-0.0785	-0.0785	ppb	95.37	1000.	
52 Cr	-0.0221	-0.0221	ppb	148.58	2000.	
53 Cr	-2.588	-2.588	ppb	6.62	#VALUE!	
55 Mn	0.0912	0.0912	ppb	47.74	2000.	
56 Fe	8.403	8.403	ppb	18.08	#VALUE!	
57 Fe	7.196	7.196	ppb	34.85	100000.	
59 Co	0.0097	0.0097	ppb	107.38	1000.	
60 Ni	0.0338	0.0338	ppb	35.20	1000.	
63 Cu	0.2355	0.2355	ppb	9.43	#VALUE!	
65 Cu	0.2368	0.2368	ppb	3.56	2000.	
66 Zn	0.4774	0.4774	ppb	13.55	2000.	
68 Zn	0.4693	0.4693	ppb	14.50	#VALUE!	
75 As	0.0828	0.0828	ppb	211.16	1000.	
82 Se	0.2635	0.2635	ppb	25.64	1000.	
88 Sr	0.0266	0.0266	ppb	81.00	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.011	0.011	ppb	29.47	1000.	
107 Ag	0.0004	0.0004	ppb	749.36	100.	
109 Ag	0.0013	0.0013	ppb	152.94	#VALUE!	
111 Cd	-0.1169	-0.1169	ppb	14.14	#VALUE!	
114 Cd	0.0015	0.0015	ppb	97.55	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0615	0.0615	ppb	18.98	1000.	
120 Sn	0.0281	0.0281	ppb	45.99	#VALUE!	
121 Sb	0.0005	0.0005	ppb	472.41	#VALUE!	
123 Sb	-0.0001	-0.0001	ppb	648.16	1000.	
135 Ba	0.1684	0.1684	ppb	13.73	2000.	
137 Ba	0.162	0.162	ppb	12.33	#VALUE!	
182 W	0.0056	0.0056	ppb	25.45	1000.	
203 Tl	0.0039	0.0039	ppb	172.17	1000.	
205 Tl	-0.0011	-0.0011	ppb	308.23	#VALUE!	
208 Pb	0.2842	0.2842	ppb	1.19	2000.	
232 Th	0.0119	0.0119	ppb	21.38	1000.	
238 U	0.0008	0.0008	ppb	32.65	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3009887.30	0.21	4492941.00	67.0	69.5 - 120	IS Fai
45 Sc	2314055.80	4.78	3094960.50	74.8	69.5 - 120	
72 Ge	480699.34	1.80	631723.63	76.1	69.5 - 120	
159 Tb	5459927.50	1.35	6220065.50	87.8	69.5 - 120	
209 Bi	3149687.00	2.37	3318256.50	94.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000230

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\126_CCV.D\126_CCV.D#
Date Acquired: May 14 2018 10:31 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.49	ppb	5.71	25	89.96	
11 B	23.17	ppb	8.12	25	92.68	
23 Na	4,250.	ppb	4.96	5,000	85	Fail
25 Mg	4,466.	ppb	3.05	5,000	89.32	Fail
27 Al	455.9	ppb	1.04	500	91.18	
28 Si	514.2	ppb	1.65	500	102.84	
29 Si	430.4	ppb	1.55	500	86.08	Fail
39 K	4,736.	ppb	3.69	5,000	94.72	
43 Ca	4,878.	ppb	4.02	5,000	97.56	
44 Ca	5,011.	ppb	2.95	5,000	100.22	
51 V	24.39	ppb	1.68	25	97.56	
52 Cr	24.59	ppb	1.10	25	98.36	
53 Cr	22.26	ppb	1.57	25	89.04	
55 Mn	24.27	ppb	0.89	25	97.08	
56 Fe	4,838.	ppb	0.69	5,000	96.76	
57 Fe	4,988.	ppb	1.95	5,000	99.76	
59 Co	24.44	ppb	2.38	25	97.76	
60 Ni	23.75	ppb	0.39	25	95	
63 Cu	24.08	ppb	2.55	25	96.32	
65 Cu	24.51	ppb	0.72	25	98.04	
66 Zn	24.9	ppb	1.32	25	99.6	
68 Zn	24.63	ppb	1.04	25	98.52	
75 As	24.7	ppb	2.39	25	98.8	
82 Se	25.59	ppb	0.83	25	102.36	
88 Sr	25.43	ppb	1.63	25	101.72	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.8	ppb	0.98	25	103.2	
107 Ag	25.97	ppb	1.10	25	103.88	
109 Ag	26.24	ppb	1.78	25	104.96	
111 Cd	26.07	ppb	0.83	25	104.28	
114 Cd	26.18	ppb	0.53	25	104.72	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	22.75	ppb	2.43	25	91	
120 Sn	22.97	ppb	2.25	25	91.88	
121 Sb	23.56	ppb	2.18	25	94.24	
123 Sb	23.84	ppb	2.18	25	95.36	
135 Ba	24.07	ppb	1.59	25	96.28	
137 Ba	24.09	ppb	2.40	25	96.36	
182 W	24.88	ppb	1.90	25	99.52	
203 Tl	24.29	ppb	3.06	25	97.16	
205 Tl	24.39	ppb	1.96	25	97.56	
208 Pb	24.49	ppb	1.86	25	97.96	
232 Th	24.89	ppb	2.34	25	99.56	
238 U	25.81	ppb	2.01	25	103.24	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3046256.50	4.01	4492941.00	67.8	80 - 120.4	ISFail
45 Sc	2366580.50	1.38	3094960.50	76.5	80 - 120.4	ISFail
72 Ge	480820.69	0.70	631723.63	76.1	80 - 120.4	ISFail
159 Tb	5593808.00	0.93	6220065.50	89.9	80 - 120.4	
209 Bi	3157561.80	1.23	3318256.50	95.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

3 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000231

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\127_CCB.D\127_CCB.D#
Date Acquired: May 14 2018 10:35 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0011	ppb	159.03	1.00	
11 B	2.575	ppb	6.89	1.00	
23 Na	1.032	ppb	27.53	1.00	
25 Mg	0.1165	ppb	15.26	1.00	
27 Al	0.0628	ppb	61.38	1.00	
28 Si	58.71	ppb	15.59	1.00	
29 Si	-18.85	ppb	58.67	1.00	
39 K	-2.77	ppb	80.14	1.00	
43 Ca	-3.89	ppb	35.32	1.00	
44 Ca	0.0125	ppb	5115.80	1.00	
51 V	-0.1418	ppb	33.54	1.00	
52 Cr	0.0038	ppb	240.99	1.00	
53 Cr	-1.704	ppb	9.03	1.00	
55 Mn	0.0188	ppb	49.24	1.00	
56 Fe	1.794	ppb	288.91	1.00	
57 Fe	2.313	ppb	98.70	1.00	
59 Co	0.0007	ppb	446.31	1.00	
60 Ni	0.0062	ppb	71.18	1.00	
63 Cu	0.0338	ppb	14.12	1.00	
65 Cu	0.0092	ppb	102.70	1.00	
66 Zn	0.0143	ppb	477.39	1.00	
68 Zn	0.0202	ppb	128.87	1.00	
75 As	-0.0963	ppb	152.89	1.00	
82 Se	0.1445	ppb	64.80	1.00	
88 Sr	-0.0002	ppb	495.07	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0303	ppb	23.64	1.00	
107 Ag	0.0063	ppb	13.12	1.00	
109 Ag	0.0033	ppb	50.00	1.00	
111 Cd	-0.0803	ppb	5.69	1.00	
114 Cd	-0.0004	ppb	900.49	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0512	ppb	14.58	1.00	
120 Sn	0.0516	ppb	23.37	1.00	
121 Sb	0.0089	ppb	27.67	1.00	
123 Sb	0.009	ppb	23.16	1.00	
135 Ba	0.0084	ppb	70.64	1.00	
137 Ba	0.0037	ppb	245.98	1.00	
182 W	0.0449	ppb	17.20	1.00	
203 Tl	0.0067	ppb	35.16	1.00	
205 Tl	-0.0015	ppb	133.48	1.00	
208 Pb	0.0962	ppb	5.95	1.00	
232 Th	0.0476	ppb	4.99	1.00	
238 U	0.0034	ppb	23.34	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3018464.30	2.38	4492941.00	67.2	79.5 - 120	ISFail
45 Sc	2358158.00	2.20	3094960.50	76.2	79.5 - 120	ISFail
72 Ge	479924.88	0.68	631723.63	76.0	79.5 - 120	ISFail
159 Tb	5514657.00	0.78	6220065.50	88.7	79.5 - 120	
209 Bi	3191219.00	1.26	3318256.50	96.2	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\128SMPL.D\128SMPL.D#
Date Acquired: May 14 2018 10:39 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-043
Misc Info:
Vial Number: 3209
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.475	1.295	ppb	2.93	100.	
11 B	135.8	27.16	ppb	5.81	1000.	
23 Na	2,925.	585.	ppb	4.57	200000.	
25 Mg	78,350.	15,670.	ppb	0.46	200000.	
27 Al	149,300.	29,860.	ppb	2.08	200000.	
28 Si	3,052.5	610.5	ppb	2.38	#VALUE!	
29 Si	2,758.5	551.7	ppb	2.00	10000.	
39 K	42,415.	8,483.	ppb	2.17	200000.	
43 Ca	772,000.	154,400.	ppb	2.47	#VALUE!	
44 Ca	744,500.	148,900.	ppb	1.46	200000.	
51 V	354.6	70.92	ppb	1.26	1000.	
52 Cr	140.95	28.19	ppb	0.58	2000.	
53 Cr	152.95	30.59	ppb	2.82	#VALUE!	
55 Mn	3,859.5	771.9	ppb	1.57	2000.	
56 Fe	171,750.	34,350.	ppb	0.88	#VALUE!	
57 Fe	168,000.	33,600.	ppb	0.36	100000.	
59 Co	56.55	11.31	ppb	1.35	1000.	
60 Ni	114.3	22.86	ppb	1.71	1000.	
63 Cu	86.25	17.25	ppb	0.12	#VALUE!	
65 Cu	89.6	17.92	ppb	1.22	2000.	
66 Zn	337.9	67.58	ppb	1.40	2000.	
68 Zn	410.25	82.05	ppb	2.33	#VALUE!	
75 As	91.65	18.33	ppb	0.41	1000.	
82 Se	4.7135	0.9427	ppb	26.19	1000.	
88 Sr	2,216.	443.2	ppb	0.70	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.57	1.714	ppb	1.20	1000.	
107 Ag	0.7285	0.1457	ppb	10.58	100.	
109 Ag	0.609	0.1218	ppb	7.17	#VALUE!	
111 Cd	3.0105	0.6021	ppb	3.70	#VALUE!	
114 Cd	0.911	0.1822	ppb	5.57	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.63	9.126	ppb	0.60	1000.	
120 Sn	46.47	9.294	ppb	1.64	#VALUE!	
121 Sb	1.3985	0.2797	ppb	8.93	#VALUE!	
123 Sb	1.411	0.2822	ppb	1.84	1000.	
135 Ba	2,646.5	529.3	ppb	1.17	2000.	
137 Ba	2,650.	530.	ppb	1.13	#VALUE!	
182 W	0.9805	0.1961	ppb	2.24	1000.	
203 Tl	2.613	0.5226	ppb	3.24	1000.	
205 Tl	2.565	0.513	ppb	2.99	#VALUE!	
208 Pb	99.95	19.99	ppb	0.88	2000.	
232 Th	72.35	14.47	ppb	1.85	1000.	
238 U	14.73	2.946	ppb	0.96	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2931820.50	6.50	4492941.00	65.3	69.5 - 120	IS Fai
45 Sc	2244741.00	0.24	3094960.50	72.5	69.5 - 120	
72 Ge	449398.50	0.14	631723.63	71.1	69.5 - 120	
159 Tb	5363989.00	1.19	6220065.50	86.2	69.5 - 120	
209 Bi	2943252.50	2.25	3318256.50	88.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000233

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\129SMPL.D\129SMPL.D#
Date Acquired: May 14 2018 10:43 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-044
Misc Info:
Vial Number: 3210
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.93	1.586	ppb	6.46	100.	
11 B	137.3	27.46	ppb	4.01	1000.	
23 Na	4,062.	812.4	ppb	4.21	200000.	
25 Mg	86,000.	17,200.	ppb	1.76	200000.	
27 Al	181,100.	36,220.	ppb	3.24	200000.	
28 Si	2,912.	582.4	ppb	3.05	#VALUE!	
29 Si	2,556.5	511.3	ppb	4.43	10000.	
39 K	44,090.	8,818.	ppb	1.16	200000.	
43 Ca	513,500.	102,700.	ppb	2.53	#VALUE!	
44 Ca	493,850.	98,770.	ppb	3.79	200000.	
51 V	361.7	72.34	ppb	0.85	1000.	
52 Cr	181.5	36.3	ppb	0.49	2000.	
53 Cr	193.	38.6	ppb	2.35	#VALUE!	
55 Mn	3,678.5	735.7	ppb	1.58	2000.	
56 Fe	189,550.	37,910.	ppb	0.04	#VALUE!	
57 Fe	183,650.	36,730.	ppb	1.40	100000.	
59 Co	57.9	11.58	ppb	2.08	1000.	
60 Ni	120.	24.	ppb	0.34	1000.	
63 Cu	99.35	19.87	ppb	1.06	#VALUE!	
65 Cu	102.85	20.57	ppb	1.15	2000.	
66 Zn	425.75	85.15	ppb	0.40	2000.	
68 Zn	472.65	94.53	ppb	3.36	#VALUE!	
75 As	21.645	4.329	ppb	5.87	1000.	
82 Se	4.284	0.8568	ppb	40.20	1000.	
88 Sr	1,333.5	266.7	ppb	1.65	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.776	0.7552	ppb	5.90	1000.	
107 Ag	0.844	0.1688	ppb	5.49	100.	
109 Ag	0.708	0.1416	ppb	3.08	#VALUE!	
111 Cd	2.941	0.5882	ppb	8.24	#VALUE!	
114 Cd	0.544	0.1088	ppb	27.85	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.7	9.34	ppb	0.83	1000.	
120 Sn	47.155	9.431	ppb	0.75	#VALUE!	
121 Sb	1.357	0.2714	ppb	5.38	#VALUE!	
123 Sb	1.479	0.2958	ppb	1.39	1000.	
135 Ba	2,056.5	411.3	ppb	0.80	2000.	
137 Ba	2,051.5	410.3	ppb	0.65	#VALUE!	
182 W	0.53	0.106	ppb	2.57	1000.	
203 Tl	3.0115	0.6023	ppb	2.61	1000.	
205 Tl	3.0065	0.6013	ppb	3.39	#VALUE!	
208 Pb	114.35	22.87	ppb	1.62	2000.	
232 Th	91.1	18.22	ppb	1.64	1000.	
238 U	12.91	2.582	ppb	2.09	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2970225.50	3.63	4492941.00	66.1	69.5 - 120	IS Fai
45 Sc	2297898.50	1.25	3094960.50	74.2	69.5 - 120	
72 Ge	457991.03	0.84	631723.63	72.5	69.5 - 120	
159 Tb	5438582.50	1.06	6220065.50	87.4	69.5 - 120	
209 Bi	3011828.30	1.13	3318256.50	90.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000234

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\130SMPL.D\130SMPL.D#
Date Acquired: May 14 2018 10:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-046
Misc Info:
Vial Number: 3211
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.415	1.483	ppb	5.19	100.	
11 B	148.2	29.64	ppb	2.04	1000.	
23 Na	7,575.	1,515.	ppb	2.49	200000.	
25 Mg	90,050.	18,010.	ppb	1.21	200000.	
27 Al	171,900.	34,380.	ppb	3.35	200000.	
28 Si	3,189.	637.8	ppb	1.18	#VALUE!	
29 Si	2,840.5	568.1	ppb	3.49	10000.	
39 K	46,405.	9,281.	ppb	0.90	200000.	
43 Ca	599,500.	119,900.	ppb	0.60	#VALUE!	
44 Ca	581,500.	116,300.	ppb	1.36	200000.	
51 V	367.95	73.59	ppb	0.54	1000.	
52 Cr	171.6	34.32	ppb	1.78	2000.	
53 Cr	184.9	36.98	ppb	1.10	#VALUE!	
55 Mn	3,999.	799.8	ppb	0.63	2000.	
56 Fe	165,400.	33,080.	ppb	1.45	#VALUE!	
57 Fe	160,150.	32,030.	ppb	1.37	100000.	
59 Co	70.7	14.14	ppb	2.34	1000.	
60 Ni	139.25	27.85	ppb	2.64	1000.	
63 Cu	101.25	20.25	ppb	2.00	#VALUE!	
65 Cu	103.6	20.72	ppb	2.75	2000.	
66 Zn	395.95	79.19	ppb	0.60	2000.	
68 Zn	461.8	92.36	ppb	2.52	#VALUE!	
75 As	56.15	11.23	ppb	0.63	1000.	
82 Se	3.4245	0.6849	ppb	14.26	1000.	
88 Sr	1,831.	366.2	ppb	1.22	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.74	1.548	ppb	4.01	1000.	
107 Ag	0.8155	0.1631	ppb	3.83	100.	
109 Ag	0.6225	0.1245	ppb	4.14	#VALUE!	
111 Cd	2.6015	0.5203	ppb	8.55	#VALUE!	
114 Cd	0.251	0.0502	ppb	69.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.435	9.487	ppb	0.73	1000.	
120 Sn	47.51	9.502	ppb	0.73	#VALUE!	
121 Sb	1.4615	0.2923	ppb	11.15	#VALUE!	
123 Sb	1.417	0.2834	ppb	5.56	1000.	
135 Ba	2,464.5	492.9	ppb	1.45	2000.	
137 Ba	2,469.	493.8	ppb	1.90	#VALUE!	
182 W	0.767	0.1534	ppb	2.72	1000.	
203 Tl	2.8835	0.5767	ppb	2.39	1000.	
205 Tl	3.01	0.602	ppb	5.58	#VALUE!	
208 Pb	122.65	24.53	ppb	1.05	2000.	
232 Th	83.25	16.65	ppb	1.31	1000.	
238 U	14.84	2.968	ppb	0.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2900100.00	5.88	4492941.00	64.5	69.5 - 120	IS Fai
45 Sc	2245934.80	1.74	3094960.50	72.6	69.5 - 120	
72 Ge	453727.91	0.56	631723.63	71.8	69.5 - 120	
159 Tb	5390436.50	1.19	6220065.50	86.7	69.5 - 120	
209 Bi	2972557.30	1.42	3318256.50	89.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000235

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\131SMPL.D\131SMPL.D#
Date Acquired: May 14 2018 10:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-047
Misc Info:
Vial Number: 3212
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.555	1.511	ppb	3.20	100.	
11 B	139.3	27.86	ppb	3.11	1000.	
23 Na	4,899.	979.8	ppb	5.89	200000.	
25 Mg	88,100.	17,620.	ppb	3.58	200000.	
27 Al	172,750.	34,550.	ppb	1.63	200000.	
28 Si	3,578.5	715.7	ppb	2.19	#VALUE!	
29 Si	3,150.5	630.1	ppb	1.52	10000.	
39 K	47,110.	9,422.	ppb	4.54	200000.	
43 Ca	640,000.	128,000.	ppb	3.54	#VALUE!	
44 Ca	619,000.	123,800.	ppb	4.74	200000.	
51 V	391.35	78.27	ppb	2.98	1000.	
52 Cr	170.4	34.08	ppb	3.14	2000.	
53 Cr	182.55	36.51	ppb	3.74	#VALUE!	
55 Mn	4,872.	974.4	ppb	2.23	2000.	
56 Fe	165,850.	33,170.	ppb	1.42	#VALUE!	
57 Fe	161,850.	32,370.	ppb	2.04	100000.	
59 Co	61.45	12.29	ppb	3.37	1000.	
60 Ni	145.35	29.07	ppb	3.42	1000.	
63 Cu	107.6	21.52	ppb	3.96	#VALUE!	
65 Cu	112.55	22.51	ppb	3.85	2000.	
66 Zn	417.45	83.49	ppb	3.92	2000.	
68 Zn	559.5	111.9	ppb	4.33	#VALUE!	
75 As	60.65	12.13	ppb	3.29	1000.	
82 Se	5.49	1.098	ppb	5.78	1000.	
88 Sr	2,138.	427.6	ppb	2.00	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.285	1.657	ppb	2.50	1000.	
107 Ag	0.85	0.17	ppb	2.99	100.	
109 Ag	0.683	0.1366	ppb	6.58	#VALUE!	
111 Cd	3.2565	0.6513	ppb	6.03	#VALUE!	
114 Cd	0.9815	0.1963	ppb	11.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.52	9.304	ppb	4.69	1000.	
120 Sn	47.63	9.526	ppb	3.70	#VALUE!	
121 Sb	1.7945	0.3589	ppb	5.62	#VALUE!	
123 Sb	1.8505	0.3701	ppb	2.26	1000.	
135 Ba	4,639.	927.8	ppb	3.40	2000.	
137 Ba	4,572.5	914.5	ppb	3.49	#VALUE!	
182 W	0.7665	0.1533	ppb	7.03	1000.	
203 Tl	3.412	0.6824	ppb	2.20	1000.	
205 Tl	3.328	0.6656	ppb	4.15	#VALUE!	
208 Pb	112.4	22.48	ppb	3.86	2000.	
232 Th	86.3	17.26	ppb	3.71	1000.	
238 U	15.835	3.167	ppb	3.41	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2961545.80	3.55	4492941.00	65.9	69.5 - 120	IS Fai
45 Sc	2239742.30	0.66	3094960.50	72.4	69.5 - 120	
72 Ge	450586.19	2.31	631723.63	71.3	69.5 - 120	
159 Tb	5332180.50	2.85	6220065.50	85.7	69.5 - 120	
209 Bi	2904780.30	3.71	3318256.50	87.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000236

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\132SMPL.D\132SMPL.D#
Date Acquired: May 14 2018 10:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 3301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0013	0.0013	ppb	34.35	100.	
11 B	2.098	2.098	ppb	10.18	1000.	
23 Na	7.494	7.494	ppb	8.59	200000.	
25 Mg	1.931	1.931	ppb	79.54	200000.	
27 Al	4.009	4.009	ppb	86.08	200000.	
28 Si	65.49	65.49	ppb	14.45	#VALUE!	
29 Si	-19.45	-19.45	ppb	44.37	10000.	
39 K	-1.635	-1.635	ppb	351.93	200000.	
43 Ca	67.84	67.84	ppb	22.88	#VALUE!	
44 Ca	74.76	74.76	ppb	18.94	200000.	
51 V	-0.1034	-0.1034	ppb	61.20	1000.	
52 Cr	-0.0503	-0.0503	ppb	30.73	2000.	
53 Cr	-2.986	-2.986	ppb	5.87	#VALUE!	
55 Mn	0.1033	0.1033	ppb	93.80	2000.	
56 Fe	8.602	8.602	ppb	111.37	#VALUE!	
57 Fe	9.271	9.271	ppb	49.65	100000.	
59 Co	0.0069	0.0069	ppb	104.32	1000.	
60 Ni	0.0264	0.0264	ppb	14.62	1000.	
63 Cu	0.2304	0.2304	ppb	4.06	#VALUE!	
65 Cu	0.2459	0.2459	ppb	12.13	2000.	
66 Zn	0.341	0.341	ppb	14.84	2000.	
68 Zn	0.2869	0.2869	ppb	34.93	#VALUE!	
75 As	-0.0019	-0.0019	ppb	4314.50	1000.	
82 Se	0.0016	0.0016	ppb	8766.10	1000.	
88 Sr	0.0671	0.0671	ppb	40.01	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0066	0.0066	ppb	23.90	1000.	
107 Ag	-0.0001	-0.0001	ppb	992.37	100.	
109 Ag	0.0021	0.0021	ppb	123.33	#VALUE!	
111 Cd	-0.134	-0.134	ppb	20.06	#VALUE!	
114 Cd	-0.0023	-0.0023	ppb	181.40	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0404	0.0404	ppb	9.79	1000.	
120 Sn	0.0171	0.0171	ppb	26.03	#VALUE!	
121 Sb	0.0009	0.0009	ppb	127.73	#VALUE!	
123 Sb	0.0002	0.0002	ppb	1162.30	1000.	
135 Ba	0.1533	0.1533	ppb	27.79	2000.	
137 Ba	0.1475	0.1475	ppb	54.56	#VALUE!	
182 W	0.0032	0.0032	ppb	77.25	1000.	
203 Tl	0.0046	0.0046	ppb	152.36	1000.	
205 Tl	-0.0023	-0.0023	ppb	186.16	#VALUE!	
208 Pb	0.2753	0.2753	ppb	13.79	2000.	
232 Th	0.01	0.01	ppb	31.04	1000.	
238 U	0.0009	0.0009	ppb	62.13	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3165552.50	1.55	4492941.00	70.5	69.5 - 120	
45 Sc	2382331.80	3.03	3094960.50	77.0	69.5 - 120	
72 Ge	494926.25	1.14	631723.63	78.3	69.5 - 120	
159 Tb	5665718.50	1.66	6220065.50	91.1	69.5 - 120	
209 Bi	3187316.80	1.66	3318256.50	96.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000237

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\133SMPL.D\133SMPL.D#
Date Acquired: May 14 2018 11:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE07IMW2
Misc Info:
Vial Number: 3302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0024	-0.0005	ppb	55.92	100.	
11 B	7.915	1.583	ppb	2.04	1000.	
23 Na	15.28	3.056	ppb	6.83	200000.	
25 Mg	9.145	1.829	ppb	11.92	200000.	
27 Al	10.	2.	ppb	1.71	200000.	
28 Si	282.25	56.45	ppb	3.66	#VALUE!	
29 Si	-34.43	-6.886	ppb	103.08	10000.	
39 K	-5.46	-1.092	ppb	213.00	200000.	
43 Ca	4.902	0.9804	ppb	540.80	#VALUE!	
44 Ca	11.005	2.201	ppb	25.87	200000.	
51 V	-0.5645	-0.1129	ppb	92.03	1000.	
52 Cr	1.2175	0.2435	ppb	54.09	2000.	
53 Cr	16.385	3.277	ppb	14.38	#VALUE!	
55 Mn	0.2617	0.0523	ppb	19.00	2000.	
56 Fe	40.885	8.177	ppb	40.59	#VALUE!	
57 Fe	20.455	4.091	ppb	37.64	100000.	
59 Co	0.0169	0.0034	ppb	47.89	1000.	
60 Ni	0.0866	0.0173	ppb	31.33	1000.	
63 Cu	0.344	0.0688	ppb	4.82	#VALUE!	
65 Cu	0.3477	0.0695	ppb	37.01	2000.	
66 Zn	0.1183	0.0237	ppb	282.63	2000.	
68 Zn	-0.0314	-0.0063	ppb	684.06	#VALUE!	
75 As	-0.9025	-0.1805	ppb	210.03	1000.	
82 Se	-0.0346	-0.0069	ppb	3170.40	1000.	
88 Sr	0.0458	0.0092	ppb	9.62	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0353	0.0071	ppb	28.19	1000.	
107 Ag	0.0098	0.002	ppb	100.67	100.	
109 Ag	0.0106	0.0021	ppb	153.56	#VALUE!	
111 Cd	-0.4855	-0.0971	ppb	22.32	#VALUE!	
114 Cd	-0.0339	-0.0068	ppb	19.94	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.081	0.2162	ppb	2.91	1000.	
120 Sn	1.094	0.2188	ppb	6.94	#VALUE!	
121 Sb	0.0431	0.0086	ppb	71.28	#VALUE!	
123 Sb	0.0165	0.0033	ppb	118.33	1000.	
135 Ba	0.0548	0.011	ppb	114.98	2000.	
137 Ba	0.0505	0.0101	ppb	83.71	#VALUE!	
182 W	0.0146	0.0029	ppb	88.92	1000.	
203 Tl	-0.0386	-0.0077	ppb	65.11	1000.	
205 Tl	-0.052	-0.0104	ppb	56.53	#VALUE!	
208 Pb	-0.0152	-0.003	ppb	468.77	2000.	
232 Th	0.0869	0.0174	ppb	42.50	1000.	
238 U	-0.001	-0.0002	ppb	62.65	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3094511.50	4.71	4492941.00	68.9	69.5 - 120	IS Fai
45 Sc	2319256.30	1.32	3094960.50	74.9	69.5 - 120	
72 Ge	481242.50	1.04	631723.63	76.2	69.5 - 120	
159 Tb	5567942.50	1.99	6220065.50	89.5	69.5 - 120	
209 Bi	3187150.80	1.29	3318256.50	96.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000238

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\134SMPL.D\134SMPL.D#
Date Acquired: May 14 2018 11:04 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE07IMW2
Misc Info:
Vial Number: 3303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	43.615	8.723	ppb	4.82	100.	
11 B	438.85	87.77	ppb	8.54	1000.	
23 Na	6,670.	1,334.	ppb	4.99	200000.	
25 Mg	4,467.5	893.5	ppb	2.67	200000.	
27 Al	1,935.	387.	ppb	1.16	200000.	
28 Si	1,227.	245.4	ppb	5.27	#VALUE!	
29 Si	870.	174.	ppb	5.19	10000.	
39 K	9,600.	1,920.	ppb	2.47	200000.	
43 Ca	2,750.	550.	ppb	1.59	#VALUE!	
44 Ca	2,469.	493.8	ppb	1.12	200000.	
51 V	532.	106.4	ppb	2.07	1000.	
52 Cr	203.	40.6	ppb	1.13	2000.	
53 Cr	218.9	43.78	ppb	1.98	#VALUE!	
55 Mn	515.5	103.1	ppb	0.78	2000.	
56 Fe	1,067.5	213.5	ppb	1.18	#VALUE!	
57 Fe	1,066.5	213.3	ppb	3.42	100000.	
59 Co	527.	105.4	ppb	1.10	1000.	
60 Ni	503.	100.6	ppb	1.75	1000.	
63 Cu	246.1	49.22	ppb	0.57	#VALUE!	
65 Cu	255.6	51.12	ppb	0.59	2000.	
66 Zn	503.5	100.7	ppb	0.54	2000.	
68 Zn	549.5	109.9	ppb	0.60	#VALUE!	
75 As	101.9	20.38	ppb	1.77	1000.	
82 Se	101.7	20.34	ppb	0.74	1000.	
88 Sr	540.	108.	ppb	1.51	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	108.8	21.76	ppb	0.12	1000.	
107 Ag	54.75	10.95	ppb	0.43	100.	
109 Ag	55.05	11.01	ppb	0.74	#VALUE!	
111 Cd	270.65	54.13	ppb	0.21	#VALUE!	
114 Cd	267.4	53.48	ppb	0.49	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	469.65	93.93	ppb	1.63	1000.	
120 Sn	473.3	94.66	ppb	0.95	#VALUE!	
121 Sb	96.2	19.24	ppb	1.67	#VALUE!	
123 Sb	97.4	19.48	ppb	1.87	1000.	
135 Ba	1,996.5	399.3	ppb	1.14	2000.	
137 Ba	1,978.	395.6	ppb	0.70	#VALUE!	
182 W	107.1	21.42	ppb	1.05	1000.	
203 Tl	103.45	20.69	ppb	2.20	1000.	
205 Tl	103.05	20.61	ppb	0.91	#VALUE!	
208 Pb	103.9	20.78	ppb	1.09	2000.	
232 Th	106.1	21.22	ppb	1.28	1000.	
238 U	110.6	22.12	ppb	0.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3180511.50	4.00	4492941.00	70.8	69.5 - 120	
45 Sc	2310263.80	0.84	3094960.50	74.6	69.5 - 120	
72 Ge	467382.00	0.20	631723.63	74.0	69.5 - 120	
159 Tb	5516389.50	1.27	6220065.50	88.7	69.5 - 120	
209 Bi	3161684.00	1.57	3318256.50	95.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000239

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\135SMPL.D\135SMPL.D#
Date Acquired: May 14 2018 11:09 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-002
Misc Info:
Vial Number: 3304
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.4277	0.0855	ppb	5.42	100.	
11 B	490.55	98.11	ppb	8.80	1000.	
23 Na	175,050.	35,010.	ppb	2.15	200000.	
25 Mg	38,165.	7,633.	ppb	1.57	200000.	
27 Al	6,845.	1,369.	ppb	3.29	200000.	
28 Si	30,505.	6,101.	ppb	1.88	#VALUE!	
29 Si	31,845.	6,369.	ppb	2.36	10000.	
39 K	16,265.	3,253.	ppb	3.05	200000.	
43 Ca	266,800.	53,360.	ppb	4.99	#VALUE!	
44 Ca	258,400.	51,680.	ppb	1.38	200000.	
51 V	19.31	3.862	ppb	2.37	1000.	
52 Cr	45.025	9.005	ppb	1.17	2000.	
53 Cr	60.7	12.14	ppb	5.04	#VALUE!	
55 Mn	1,189.5	237.9	ppb	0.91	2000.	
56 Fe	15,160.	3,032.	ppb	1.36	#VALUE!	
57 Fe	15,320.	3,064.	ppb	1.03	100000.	
59 Co	3.453	0.6906	ppb	1.34	1000.	
60 Ni	17.045	3.409	ppb	1.71	1000.	
63 Cu	39.085	7.817	ppb	0.38	#VALUE!	
65 Cu	33.27	6.654	ppb	1.03	2000.	
66 Zn	84.3	16.86	ppb	1.81	2000.	
68 Zn	88.95	17.79	ppb	3.43	#VALUE!	
75 As	23.8	4.76	ppb	5.91	1000.	
82 Se	1.2225	0.2445	ppb	82.13	1000.	
88 Sr	1,111.5	222.3	ppb	1.30	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	21.155	4.231	ppb	0.33	1000.	
107 Ag	0.0636	0.0127	ppb	22.86	100.	
109 Ag	0.0605	0.0121	ppb	17.04	#VALUE!	
111 Cd	0.1138	0.0228	ppb	43.20	#VALUE!	
114 Cd	0.55	0.11	ppb	9.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.6865	0.3373	ppb	2.48	1000.	
120 Sn	1.587	0.3174	ppb	7.60	#VALUE!	
121 Sb	0.563	0.1126	ppb	12.32	#VALUE!	
123 Sb	0.631	0.1262	ppb	11.01	1000.	
135 Ba	272.3	54.46	ppb	1.90	2000.	
137 Ba	270.55	54.11	ppb	1.03	#VALUE!	
182 W	0.4793	0.0959	ppb	10.16	1000.	
203 Tl	0.0989	0.0198	ppb	44.12	1000.	
205 Tl	0.1216	0.0243	ppb	4.24	#VALUE!	
208 Pb	27.785	5.557	ppb	0.87	2000.	
232 Th	10.335	2.067	ppb	1.01	1000.	
238 U	4.2795	0.8559	ppb	1.11	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3004264.80	7.33	4492941.00	66.9	69.5 - 120	IS Fai
45 Sc	2256310.50	1.41	3094960.50	72.9	69.5 - 120	
72 Ge	468200.97	1.15	631723.63	74.1	69.5 - 120	
159 Tb	5448454.00	0.47	6220065.50	87.6	69.5 - 120	
209 Bi	3043605.30	1.37	3318256.50	91.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000240

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\136SMPL.D\136SMPL.D#
Date Acquired: May 14 2018 11:13 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-003
Misc Info:
Vial Number: 3305
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0018	0.0004	ppb	208.39	100.	
11 B	460.3	92.06	ppb	5.32	1000.	
23 Na	156,750.	31,350.	ppb	2.65	200000.	
25 Mg	33,220.	6,644.	ppb	2.95	200000.	
27 Al	11.765	2.353	ppb	8.19	200000.	
28 Si	17,045.	3,409.	ppb	3.44	#VALUE!	
29 Si	17,005.	3,401.	ppb	2.19	10000.	
39 K	13,070.	2,614.	ppb	3.53	200000.	
43 Ca	206,150.	41,230.	ppb	2.80	#VALUE!	
44 Ca	206,600.	41,320.	ppb	1.85	200000.	
51 V	0.0628	0.0126	ppb	557.21	1000.	
52 Cr	2.288	0.4576	ppb	9.24	2000.	
53 Cr	36.51	7.302	ppb	15.86	#VALUE!	
55 Mn	788.5	157.7	ppb	1.03	2000.	
56 Fe	2,893.5	578.7	ppb	1.01	#VALUE!	
57 Fe	3,028.5	605.7	ppb	1.45	100000.	
59 Co	0.3496	0.0699	ppb	12.45	1000.	
60 Ni	5.015	1.003	ppb	5.01	1000.	
63 Cu	7.145	1.429	ppb	4.37	#VALUE!	
65 Cu	0.6565	0.1313	ppb	5.58	2000.	
66 Zn	15.66	3.132	ppb	2.35	2000.	
68 Zn	15.68	3.136	ppb	4.65	#VALUE!	
75 As	18.05	3.61	ppb	6.53	1000.	
82 Se	1.	0.2	ppb	110.80	1000.	
88 Sr	959.	191.8	ppb	0.77	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	13.69	2.738	ppb	2.65	1000.	
107 Ag	0.0017	0.0003	ppb	320.51	100.	
109 Ag	-0.0035	-0.0007	ppb	184.30	#VALUE!	
111 Cd	-0.533	-0.1066	ppb	17.20	#VALUE!	
114 Cd	-0.0387	-0.0077	ppb	19.03	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.2705	0.2541	ppb	5.86	1000.	
120 Sn	1.21	0.242	ppb	7.76	#VALUE!	
121 Sb	0.1337	0.0267	ppb	26.32	#VALUE!	
123 Sb	0.126	0.0252	ppb	17.22	1000.	
135 Ba	35.51	7.102	ppb	3.73	2000.	
137 Ba	35.765	7.153	ppb	1.95	#VALUE!	
182 W	0.3089	0.0618	ppb	5.57	1000.	
203 Tl	-0.0125	-0.0025	ppb	93.28	1000.	
205 Tl	-0.0294	-0.0059	ppb	19.08	#VALUE!	
208 Pb	0.0309	0.0062	ppb	57.08	2000.	
232 Th	0.1895	0.0379	ppb	12.02	1000.	
238 U	1.5425	0.3085	ppb	3.53	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3080451.50	3.65	4492941.00	68.6	69.5 - 120	IS Fai
45 Sc	2301078.80	1.70	3094960.50	74.3	69.5 - 120	
72 Ge	470338.66	0.50	631723.63	74.5	69.5 - 120	
159 Tb	5431976.00	0.18	6220065.50	87.3	69.5 - 120	
209 Bi	3084037.50	0.49	3318256.50	92.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000241

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\137SMPL.D\137SMPL.D#
Date Acquired: May 14 2018 11:17 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-004
Misc Info:
Vial Number: 3306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.5615	0.1123	ppb	7.98	100.	
11 B	222.7	44.54	ppb	1.09	1000.	
23 Na	274,300.	54,860.	ppb	3.47	200000.	
25 Mg	69,150.	13,830.	ppb	1.67	200000.	
27 Al	13,540.	2,708.	ppb	3.91	200000.	
28 Si	42,780.	8,556.	ppb	2.09	#VALUE!	
29 Si	45,360.	9,072.	ppb	3.28	10000.	
39 K	20,480.	4,096.	ppb	3.25	200000.	
43 Ca	375,700.	75,140.	ppb	4.03	#VALUE!	
44 Ca	365,200.	73,040.	ppb	2.77	200000.	
51 V	36.72	7.344	ppb	3.07	1000.	
52 Cr	58.05	11.61	ppb	4.66	2000.	
53 Cr	84.45	16.89	ppb	3.07	#VALUE!	
55 Mn	1,497.5	299.5	ppb	1.84	2000.	
56 Fe	24,415.	4,883.	ppb	2.92	#VALUE!	
57 Fe	24,935.	4,987.	ppb	2.31	100000.	
59 Co	7.5	1.5	ppb	4.72	1000.	
60 Ni	26.355	5.271	ppb	1.98	1000.	
63 Cu	41.065	8.213	ppb	1.34	#VALUE!	
65 Cu	32.035	6.407	ppb	2.58	2000.	
66 Zn	171.6	34.32	ppb	1.30	2000.	
68 Zn	175.35	35.07	ppb	2.32	#VALUE!	
75 As	10.945	2.189	ppb	9.52	1000.	
82 Se	1.982	0.3964	ppb	69.75	1000.	
88 Sr	1,741.5	348.3	ppb	1.56	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	25.67	5.134	ppb	1.12	1000.	
107 Ag	0.0836	0.0167	ppb	17.07	100.	
109 Ag	0.0493	0.0099	ppb	18.71	#VALUE!	
111 Cd	-0.4537	-0.0907	ppb	24.83	#VALUE!	
114 Cd	0.0606	0.0121	ppb	51.33	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.3515	0.4703	ppb	3.56	1000.	
120 Sn	2.3075	0.4615	ppb	2.68	#VALUE!	
121 Sb	0.556	0.1112	ppb	1.73	#VALUE!	
123 Sb	0.58	0.116	ppb	14.42	1000.	
135 Ba	261.05	52.21	ppb	3.64	2000.	
137 Ba	258.1	51.62	ppb	3.91	#VALUE!	
182 W	0.699	0.1398	ppb	7.70	1000.	
203 Tl	0.2153	0.0431	ppb	3.49	1000.	
205 Tl	0.1877	0.0375	ppb	5.50	#VALUE!	
208 Pb	23.9	4.78	ppb	3.92	2000.	
232 Th	13.07	2.614	ppb	2.51	1000.	
238 U	3.2905	0.6581	ppb	3.84	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2848300.50	1.57	4492941.00	63.4	69.5 - 120	IS Fai
45 Sc	2245314.30	1.70	3094960.50	72.5	69.5 - 120	
72 Ge	458691.50	1.02	631723.63	72.6	69.5 - 120	
159 Tb	5341076.00	2.68	6220065.50	85.9	69.5 - 120	
209 Bi	2962281.50	2.98	3318256.50	89.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000242

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\138_CCV.D\138_CCV.D#
Date Acquired: May 14 2018 11:21 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.19	ppb	5.70	25	92.76	
11 B	24.58	ppb	8.83	25	98.32	
23 Na	4,486.	ppb	7.87	5,000	89.72	
25 Mg	4,626.	ppb	6.13	5,000	92.52	
27 Al	468.6	ppb	1.82	500	93.72	
28 Si	519.3	ppb	4.30	500	103.86	
29 Si	444.9	ppb	7.37	500	88.98	Fail
39 K	4,809.	ppb	4.67	5,000	96.18	
43 Ca	4,738.	ppb	6.31	5,000	94.76	
44 Ca	4,966.	ppb	3.20	5,000	99.32	
51 V	24.85	ppb	1.50	25	99.4	
52 Cr	24.38	ppb	2.22	25	97.52	
53 Cr	22.74	ppb	3.76	25	90.96	
55 Mn	24.7	ppb	2.70	25	98.8	
56 Fe	4,906.	ppb	2.58	5,000	98.12	
57 Fe	4,954.	ppb	2.43	5,000	99.08	
59 Co	24.33	ppb	2.50	25	97.32	
60 Ni	23.91	ppb	1.20	25	95.64	
63 Cu	24.16	ppb	1.28	25	96.64	
65 Cu	24.43	ppb	1.06	25	97.72	
66 Zn	24.84	ppb	1.45	25	99.36	
68 Zn	24.52	ppb	2.70	25	98.08	
75 As	24.96	ppb	1.62	25	99.84	
82 Se	25.43	ppb	2.04	25	101.72	
88 Sr	25.57	ppb	1.31	25	102.28	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.55	ppb	0.31	25	102.2	
107 Ag	25.98	ppb	0.66	25	103.92	
109 Ag	26.08	ppb	1.15	25	104.32	
111 Cd	26.09	ppb	1.59	25	104.36	
114 Cd	26.08	ppb	0.39	25	104.32	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	22.62	ppb	2.23	25	90.48	
120 Sn	22.68	ppb	1.37	25	90.72	
121 Sb	23.6	ppb	0.89	25	94.4	
123 Sb	23.94	ppb	1.83	25	95.76	
135 Ba	24.18	ppb	0.81	25	96.72	
137 Ba	24.13	ppb	1.92	25	96.52	
182 W	25.06	ppb	0.91	25	100.24	
203 Tl	24.14	ppb	2.86	25	96.56	
205 Tl	24.24	ppb	2.54	25	96.96	
208 Pb	24.47	ppb	2.30	25	97.88	
232 Th	24.95	ppb	3.36	25	99.8	
238 U	26.12	ppb	2.54	25	104.48	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3121493.50	5.51	4492941.00	69.5	80 - 120.4	ISFail
45 Sc	2385537.80	4.09	3094960.50	77.1	80 - 120.4	ISFail
72 Ge	481299.88	0.67	631723.63	76.2	80 - 120.4	ISFail
159 Tb	5565435.00	0.78	6220065.50	89.5	80 - 120.4	
209 Bi	3181131.50	1.69	3318256.50	95.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000243

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\139_CCB.D\139_CCB.D#
Date Acquired: May 14 2018 11:25 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0013	ppb	20.80	1.00	
11 B	3.02	ppb	10.80	1.00	
23 Na	1.946	ppb	4.78	1.00	
25 Mg	0.0889	ppb	136.69	1.00	
27 Al	0.1412	ppb	60.98	1.00	
28 Si	59.66	ppb	2.89	1.00	
29 Si	1.653	ppb	282.76	1.00	
39 K	0.9617	ppb	304.25	1.00	
43 Ca	-2.141	ppb	194.44	1.00	
44 Ca	0.8499	ppb	66.73	1.00	
51 V	-0.0864	ppb	23.35	1.00	
52 Cr	-0.0194	ppb	66.80	1.00	
53 Cr	-1.617	ppb	14.68	1.00	
55 Mn	0.0179	ppb	19.41	1.00	
56 Fe	-0.5958	ppb	340.72	1.00	
57 Fe	2.548	ppb	59.81	1.00	
59 Co	0.003	ppb	184.84	1.00	
60 Ni	0.0064	ppb	192.96	1.00	
63 Cu	0.0103	ppb	29.72	1.00	
65 Cu	0.0206	ppb	148.08	1.00	
66 Zn	0.0319	ppb	226.38	1.00	
68 Zn	0.078	ppb	52.18	1.00	
75 As	-0.1282	ppb	65.65	1.00	
82 Se	-0.2249	ppb	69.28	1.00	
88 Sr	0.0032	ppb	154.63	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0265	ppb	40.85	1.00	
107 Ag	0.0012	ppb	268.96	1.00	
109 Ag	0.0014	ppb	66.14	1.00	
111 Cd	-0.0406	ppb	19.13	1.00	
114 Cd	0.	ppb	15775.00	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0935	ppb	38.72	1.00	
120 Sn	0.0527	ppb	19.72	1.00	
121 Sb	0.0111	ppb	34.93	1.00	
123 Sb	0.0095	ppb	53.23	1.00	
135 Ba	0.0107	ppb	2.11	1.00	
137 Ba	0.0028	ppb	130.27	1.00	
182 W	0.0454	ppb	35.58	1.00	
203 Tl	0.0003	ppb	3211.50	1.00	
205 Tl	0.0001	ppb	7898.70	1.00	
208 Pb	0.0977	ppb	2.80	1.00	
232 Th	0.0537	ppb	2.72	1.00	
238 U	0.0028	ppb	22.43	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3012196.80	2.57	4492941.00	67.0	79.5 - 120	ISFail
45 Sc	2281771.50	0.62	3094960.50	73.7	79.5 - 120	ISFail
72 Ge	468168.78	0.83	631723.63	74.1	79.5 - 120	ISFail
159 Tb	5447280.50	0.96	6220065.50	87.6	79.5 - 120	
209 Bi	3186365.30	1.43	3318256.50	96.0	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000244

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\140SMPL.D\140SMPL.D#
Date Acquired: May 14 2018 11:30 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-005
Misc Info:
Vial Number: 3307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0081	0.0016	ppb	183.97	100.	
11 B	195.65	39.13	ppb	2.52	1000.	
23 Na	267,950.	53,590.	ppb	2.48	200000.	
25 Mg	65,600.	13,120.	ppb	1.53	200000.	
27 Al	9.96	1.992	ppb	16.63	200000.	
28 Si	18,200.	3,640.	ppb	0.71	#VALUE!	
29 Si	17,685.	3,537.	ppb	3.62	10000.	
39 K	16,930.	3,386.	ppb	3.56	200000.	
43 Ca	370,300.	74,060.	ppb	3.30	#VALUE!	
44 Ca	357,950.	71,590.	ppb	2.40	200000.	
51 V	0.1291	0.0258	ppb	568.16	1000.	
52 Cr	2.2195	0.4439	ppb	13.16	2000.	
53 Cr	39.325	7.865	ppb	26.01	#VALUE!	
55 Mn	1,354.5	270.9	ppb	1.15	2000.	
56 Fe	7,185.	1,437.	ppb	1.97	#VALUE!	
57 Fe	7,365.	1,473.	ppb	1.94	100000.	
59 Co	0.546	0.1092	ppb	14.56	1000.	
60 Ni	3.301	0.6602	ppb	12.32	1000.	
63 Cu	11.51	2.302	ppb	1.85	#VALUE!	
65 Cu	1.0875	0.2175	ppb	16.95	2000.	
66 Zn	24.915	4.983	ppb	0.82	2000.	
68 Zn	24.735	4.947	ppb	3.45	#VALUE!	
75 As	8.575	1.715	ppb	2.37	1000.	
82 Se	2.613	0.5226	ppb	23.46	1000.	
88 Sr	1,654.	330.8	ppb	1.98	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	13.505	2.701	ppb	0.91	1000.	
107 Ag	0.011	0.0022	ppb	43.27	100.	
109 Ag	0.0157	0.0031	ppb	47.87	#VALUE!	
111 Cd	-0.315	-0.063	ppb	66.03	#VALUE!	
114 Cd	-0.0204	-0.0041	ppb	80.72	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.1525	0.2305	ppb	9.82	1000.	
120 Sn	1.119	0.2238	ppb	7.34	#VALUE!	
121 Sb	0.1359	0.0272	ppb	19.51	#VALUE!	
123 Sb	0.1218	0.0244	ppb	13.61	1000.	
135 Ba	32.72	6.544	ppb	2.38	2000.	
137 Ba	32.55	6.51	ppb	0.86	#VALUE!	
182 W	0.3108	0.0622	ppb	14.48	1000.	
203 Tl	-0.0322	-0.0064	ppb	45.28	1000.	
205 Tl	-0.0321	-0.0064	ppb	26.37	#VALUE!	
208 Pb	-0.0427	-0.0085	ppb	98.74	2000.	
232 Th	0.3493	0.0699	ppb	17.75	1000.	
238 U	0.904	0.1808	ppb	3.87	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2913779.30	0.94	4492941.00	64.9	69.5 - 120	IS Fai
45 Sc	2305092.30	2.54	3094960.50	74.5	69.5 - 120	
72 Ge	463470.91	1.39	631723.63	73.4	69.5 - 120	
159 Tb	5404708.00	0.58	6220065.50	86.9	69.5 - 120	
209 Bi	2954119.50	0.55	3318256.50	89.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000245

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\141SMPL.D\141SMPL.D#
Date Acquired: May 14 2018 11:34 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-006
Misc Info:
Vial Number: 3308
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.1772	0.0354	ppb	9.65	100.	
11 B	199.1	39.82	ppb	6.47	1000.	
23 Na	256,400.	51,280.	ppb	1.57	200000.	
25 Mg	60,450.	12,090.	ppb	0.61	200000.	
27 Al	2,984.5	596.9	ppb	5.82	200000.	
28 Si	25,050.	5,010.	ppb	4.90	#VALUE!	
29 Si	27,305.	5,461.	ppb	3.87	10000.	
39 K	17,550.	3,510.	ppb	4.19	200000.	
43 Ca	383,750.	76,750.	ppb	4.81	#VALUE!	
44 Ca	359,850.	71,970.	ppb	1.87	200000.	
51 V	8.975	1.795	ppb	7.52	1000.	
52 Cr	29.82	5.964	ppb	2.17	2000.	
53 Cr	63.75	12.75	ppb	1.01	#VALUE!	
55 Mn	1,392.5	278.5	ppb	1.27	2000.	
56 Fe	10,265.	2,053.	ppb	1.44	#VALUE!	
57 Fe	10,510.	2,102.	ppb	1.95	100000.	
59 Co	1.995	0.399	ppb	6.08	1000.	
60 Ni	13.025	2.605	ppb	2.87	1000.	
63 Cu	18.22	3.644	ppb	1.09	#VALUE!	
65 Cu	9.035	1.807	ppb	4.71	2000.	
66 Zn	47.585	9.517	ppb	0.30	2000.	
68 Zn	46.585	9.317	ppb	2.51	#VALUE!	
75 As	9.835	1.967	ppb	8.81	1000.	
82 Se	1.616	0.3232	ppb	31.93	1000.	
88 Sr	1,625.	325.	ppb	1.45	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	15.63	3.126	ppb	3.15	1000.	
107 Ag	0.0174	0.0035	ppb	76.64	100.	
109 Ag	0.0149	0.003	ppb	22.40	#VALUE!	
111 Cd	-0.3363	-0.0673	ppb	21.68	#VALUE!	
114 Cd	-0.0288	-0.0058	ppb	136.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.585	0.317	ppb	11.13	1000.	
120 Sn	1.3845	0.2769	ppb	0.35	#VALUE!	
121 Sb	0.2386	0.0477	ppb	28.46	#VALUE!	
123 Sb	0.2294	0.0459	ppb	16.18	1000.	
135 Ba	82.4	16.48	ppb	2.82	2000.	
137 Ba	80.65	16.13	ppb	0.88	#VALUE!	
182 W	0.386	0.0772	ppb	9.09	1000.	
203 Tl	0.0473	0.0095	ppb	149.79	1000.	
205 Tl	0.0169	0.0034	ppb	150.84	#VALUE!	
208 Pb	6.095	1.219	ppb	0.21	2000.	
232 Th	2.87	0.574	ppb	1.89	1000.	
238 U	1.4625	0.2925	ppb	5.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2885607.80	4.15	4492941.00	64.2	69.5 - 120	IS Fai
45 Sc	2211875.50	3.13	3094960.50	71.5	69.5 - 120	
72 Ge	460463.84	0.46	631723.63	72.9	69.5 - 120	
159 Tb	5325681.00	0.43	6220065.50	85.6	69.5 - 120	
209 Bi	2984466.30	1.58	3318256.50	89.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000246

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\142SMPL.D\142SMPL.D#
Date Acquired: May 14 2018 11:38 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-010
Misc Info:
Vial Number: 3309
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.2406	0.0481	ppb	13.82	100.	
11 B	222.75	44.55	ppb	2.92	1000.	
23 Na	323,100.	64,620.	ppb	3.65	200000.	
25 Mg	83,550.	16,710.	ppb	1.69	200000.	
27 Al	2,799.	559.8	ppb	3.23	200000.	
28 Si	24,105.	4,821.	ppb	2.72	#VALUE!	
29 Si	25,255.	5,051.	ppb	1.68	10000.	
39 K	21,545.	4,309.	ppb	0.42	200000.	
43 Ca	416,050.	83,210.	ppb	1.30	#VALUE!	
44 Ca	395,300.	79,060.	ppb	0.99	200000.	
51 V	9.77	1.954	ppb	3.02	1000.	
52 Cr	34.985	6.997	ppb	1.64	2000.	
53 Cr	74.3	14.86	ppb	1.83	#VALUE!	
55 Mn	1,371.	274.2	ppb	1.08	2000.	
56 Fe	13,560.	2,712.	ppb	0.64	#VALUE!	
57 Fe	13,965.	2,793.	ppb	0.64	100000.	
59 Co	2.6785	0.5357	ppb	3.38	1000.	
60 Ni	12.52	2.504	ppb	3.02	1000.	
63 Cu	29.335	5.867	ppb	1.14	#VALUE!	
65 Cu	17.375	3.475	ppb	1.18	2000.	
66 Zn	77.95	15.59	ppb	0.43	2000.	
68 Zn	75.5	15.1	ppb	1.73	#VALUE!	
75 As	8.385	1.677	ppb	10.95	1000.	
82 Se	1.9335	0.3867	ppb	40.42	1000.	
88 Sr	1,864.	372.8	ppb	1.49	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.08	3.416	ppb	0.82	1000.	
107 Ag	0.0143	0.0029	ppb	38.69	100.	
109 Ag	0.0096	0.0019	ppb	118.43	#VALUE!	
111 Cd	-0.2189	-0.0438	ppb	42.11	#VALUE!	
114 Cd	0.0888	0.0178	ppb	27.75	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.559	0.3118	ppb	5.64	1000.	
120 Sn	1.4905	0.2981	ppb	4.81	#VALUE!	
121 Sb	0.1765	0.0353	ppb	17.51	#VALUE!	
123 Sb	0.2151	0.043	ppb	16.53	1000.	
135 Ba	73.95	14.79	ppb	3.08	2000.	
137 Ba	74.	14.8	ppb	1.52	#VALUE!	
182 W	0.3043	0.0609	ppb	4.49	1000.	
203 Tl	0.0109	0.0022	ppb	370.81	1000.	
205 Tl	0.021	0.0042	ppb	131.76	#VALUE!	
208 Pb	7.075	1.415	ppb	0.48	2000.	
232 Th	4.934	0.9868	ppb	2.73	1000.	
238 U	2.816	0.5632	ppb	0.47	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2804257.30	2.83	4492941.00	62.4	69.5 - 120	IS Fai
45 Sc	2217773.00	2.45	3094960.50	71.7	69.5 - 120	
72 Ge	461168.28	0.83	631723.63	73.0	69.5 - 120	
159 Tb	5342531.00	0.92	6220065.50	85.9	69.5 - 120	
209 Bi	2966040.50	0.55	3318256.50	89.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000247

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\143SMPL.D\143SMPL.D#
Date Acquired: May 14 2018 11:42 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-011
Misc Info:
Vial Number: 3310
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0122	0.0024	ppb	71.53	100.	
11 B	210.7	42.14	ppb	9.70	1000.	
23 Na	308,650.	61,730.	ppb	2.16	200000.	
25 Mg	78,150.	15,630.	ppb	3.17	200000.	
27 Al	8.69	1.738	ppb	3.11	200000.	
28 Si	17,295.	3,459.	ppb	3.88	#VALUE!	
29 Si	17,385.	3,477.	ppb	3.82	10000.	
39 K	19,975.	3,995.	ppb	3.13	200000.	
43 Ca	387,650.	77,530.	ppb	4.87	#VALUE!	
44 Ca	366,650.	73,330.	ppb	3.45	200000.	
51 V	0.1797	0.0359	ppb	69.39	1000.	
52 Cr	1.9585	0.3917	ppb	10.70	2000.	
53 Cr	49.03	9.806	ppb	11.07	#VALUE!	
55 Mn	1,265.	253.	ppb	1.30	2000.	
56 Fe	7,150.	1,430.	ppb	1.80	#VALUE!	
57 Fe	7,360.	1,472.	ppb	2.47	100000.	
59 Co	0.4743	0.0949	ppb	9.88	1000.	
60 Ni	2.1195	0.4239	ppb	18.25	1000.	
63 Cu	12.57	2.514	ppb	0.86	#VALUE!	
65 Cu	1.258	0.2516	ppb	4.42	2000.	
66 Zn	15.87	3.174	ppb	2.92	2000.	
68 Zn	14.83	2.966	ppb	8.48	#VALUE!	
75 As	8.795	1.759	ppb	13.42	1000.	
82 Se	2.274	0.4548	ppb	43.10	1000.	
88 Sr	1,764.5	352.9	ppb	2.82	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.53	2.306	ppb	0.63	1000.	
107 Ag	0.0094	0.0019	ppb	21.18	100.	
109 Ag	0.0001	0.	ppb	2828.50	#VALUE!	
111 Cd	-0.2925	-0.0585	ppb	73.98	#VALUE!	
114 Cd	-0.0065	-0.0013	ppb	244.37	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.133	0.2266	ppb	5.79	1000.	
120 Sn	1.0735	0.2147	ppb	6.39	#VALUE!	
121 Sb	0.0798	0.016	ppb	3.70	#VALUE!	
123 Sb	0.081	0.0162	ppb	36.41	1000.	
135 Ba	30.81	6.162	ppb	3.86	2000.	
137 Ba	30.095	6.019	ppb	3.40	#VALUE!	
182 W	0.2059	0.0412	ppb	12.75	1000.	
203 Tl	0.0122	0.0024	ppb	366.11	1000.	
205 Tl	-0.0497	-0.0099	ppb	58.18	#VALUE!	
208 Pb	0.0099	0.002	ppb	169.71	2000.	
232 Th	0.1221	0.0244	ppb	10.10	1000.	
238 U	1.8255	0.3651	ppb	0.97	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2836036.80	3.58	4492941.00	63.1	69.5 - 120	IS Fai
45 Sc	2205031.30	4.02	3094960.50	71.2	69.5 - 120	
72 Ge	458849.34	1.55	631723.63	72.6	69.5 - 120	
159 Tb	5359698.00	1.62	6220065.50	86.2	69.5 - 120	
209 Bi	2943359.30	1.28	3318256.50	88.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000248

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\144SMPL.D\144SMPL.D#
Date Acquired: May 14 2018 11:47 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-011L
Misc Info:
Vial Number: 3311
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0022	-0.0001	ppb	1231.50	100.	
11 B	276.75	11.07	ppb	4.36	1000.	
23 Na	337,750.	13,510.	ppb	3.70	200000.	
25 Mg	87,575.	3,503.	ppb	2.48	200000.	
27 Al	19.1675	0.7667	ppb	8.56	200000.	
28 Si	19,067.5	762.7	ppb	4.93	#VALUE!	
29 Si	17,707.5	708.3	ppb	5.61	10000.	
39 K	20,825.	833.	ppb	3.94	200000.	
43 Ca	385,250.	15,410.	ppb	3.20	#VALUE!	
44 Ca	379,250.	15,170.	ppb	3.55	200000.	
51 V	-1.9418	-0.0777	ppb	168.66	1000.	
52 Cr	2.2958	0.0918	ppb	26.35	2000.	
53 Cr	84.1	3.364	ppb	3.06	#VALUE!	
55 Mn	1,339.	53.56	ppb	2.29	2000.	
56 Fe	7,597.5	303.9	ppb	1.27	#VALUE!	
57 Fe	7,970.	318.8	ppb	1.08	100000.	
59 Co	0.415	0.0166	ppb	32.13	1000.	
60 Ni	1.6255	0.065	ppb	18.66	1000.	
63 Cu	12.765	0.5106	ppb	7.05	#VALUE!	
65 Cu	0.8595	0.0344	ppb	82.75	2000.	
66 Zn	17.9625	0.7185	ppb	7.58	2000.	
68 Zn	17.1825	0.6873	ppb	10.48	#VALUE!	
75 As	10.35	0.414	ppb	21.47	1000.	
82 Se	3.42	0.1368	ppb	104.75	1000.	
88 Sr	1,881.25	75.25	ppb	2.43	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	11.2125	0.4485	ppb	6.37	1000.	
107 Ag	-0.0148	-0.0006	ppb	96.19	100.	
109 Ag	0.0264	0.0011	ppb	135.48	#VALUE!	
111 Cd	-1.2663	-0.0507	ppb	64.09	#VALUE!	
114 Cd	-0.1489	-0.006	ppb	55.44	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	2.2418	0.0897	ppb	16.04	1000.	
120 Sn	1.741	0.0696	ppb	21.08	#VALUE!	
121 Sb	0.1129	0.0045	ppb	40.43	#VALUE!	
123 Sb	0.1052	0.0042	ppb	62.80	1000.	
135 Ba	31.925	1.277	ppb	2.20	2000.	
137 Ba	33.5	1.34	ppb	3.88	#VALUE!	
182 W	0.253	0.0101	ppb	33.55	1000.	
203 Tl	-0.1499	-0.006	ppb	140.06	1000.	
205 Tl	-0.1438	-0.0058	ppb	84.55	#VALUE!	
208 Pb	1.4385	0.0575	ppb	6.51	2000.	
232 Th	0.105	0.0042	ppb	31.68	1000.	
238 U	1.829	0.0732	ppb	4.12	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3190763.80	5.27	4492941.00	71.0	69.5 - 120	
45 Sc	2373005.50	4.40	3094960.50	76.7	69.5 - 120	
72 Ge	484345.56	2.56	631723.63	76.7	69.5 - 120	
159 Tb	5453668.50	2.13	6220065.50	87.7	69.5 - 120	
209 Bi	3129714.50	2.30	3318256.50	94.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000249

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\145SMPL.D\145SMPL.D#
Date Acquired: May 14 2018 11:51 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-011A
Misc Info:
Vial Number: 3312
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.21	1.842	ppb	3.08	100.	
11 B	400.75	80.15	ppb	5.49	1000.	
23 Na	324,250.	64,850.	ppb	3.53	200000.	
25 Mg	80,600.	16,120.	ppb	2.60	200000.	
27 Al	997.	199.4	ppb	0.18	200000.	
28 Si	22,540.	4,508.	ppb	0.60	#VALUE!	
29 Si	24,035.	4,807.	ppb	0.67	10000.	
39 K	29,800.	5,960.	ppb	1.48	200000.	
43 Ca	386,300.	77,260.	ppb	0.98	#VALUE!	
44 Ca	367,150.	73,430.	ppb	0.95	200000.	
51 V	51.95	10.39	ppb	2.52	1000.	
52 Cr	51.1	10.22	ppb	1.76	2000.	
53 Cr	97.1	19.42	ppb	3.59	#VALUE!	
55 Mn	1,295.5	259.1	ppb	1.29	2000.	
56 Fe	8,335.	1,667.	ppb	0.43	#VALUE!	
57 Fe	8,475.	1,695.	ppb	1.90	100000.	
59 Co	9.98	1.996	ppb	1.19	1000.	
60 Ni	20.69	4.138	ppb	2.93	1000.	
63 Cu	41.155	8.231	ppb	0.25	#VALUE!	
65 Cu	29.475	5.895	ppb	0.87	2000.	
66 Zn	110.7	22.14	ppb	1.98	2000.	
68 Zn	104.85	20.97	ppb	1.97	#VALUE!	
75 As	56.35	11.27	ppb	2.44	1000.	
82 Se	48.305	9.661	ppb	4.33	1000.	
88 Sr	1,826.5	365.3	ppb	0.79	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	64.25	12.85	ppb	2.25	1000.	
107 Ag	9.945	1.989	ppb	2.58	100.	
109 Ag	9.855	1.971	ppb	1.77	#VALUE!	
111 Cd	9.935	1.987	ppb	2.37	#VALUE!	
114 Cd	9.94	1.988	ppb	0.35	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.66	9.532	ppb	2.27	1000.	
120 Sn	48.4	9.68	ppb	1.79	#VALUE!	
121 Sb	9.43	1.886	ppb	1.64	#VALUE!	
123 Sb	9.695	1.939	ppb	1.21	1000.	
135 Ba	50.25	10.05	ppb	1.10	2000.	
137 Ba	51.15	10.23	ppb	1.58	#VALUE!	
182 W	54.95	10.99	ppb	0.70	1000.	
203 Tl	10.27	2.054	ppb	1.66	1000.	
205 Tl	10.27	2.054	ppb	1.23	#VALUE!	
208 Pb	10.245	2.049	ppb	1.79	2000.	
232 Th	11.075	2.215	ppb	1.47	1000.	
238 U	13.435	2.687	ppb	1.39	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3014738.50	1.25	4492941.00	67.1	69.5 - 120	IS Fai
45 Sc	2258167.80	1.06	3094960.50	73.0	69.5 - 120	
72 Ge	463294.53	1.06	631723.63	73.3	69.5 - 120	
159 Tb	5327950.50	0.92	6220065.50	85.7	69.5 - 120	
209 Bi	2944422.30	1.24	3318256.50	88.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000250

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\146SMPL.D\146SMPL.D#
Date Acquired: May 14 2018 11:55 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-011S
Misc Info:
Vial Number: 3401
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	47.23	9.446	ppb	5.06	100.	
11 B	692.	138.4	ppb	4.94	1000.	
23 Na	338,250.	67,650.	ppb	3.23	200000.	
25 Mg	89,600.	17,920.	ppb	1.44	200000.	
27 Al	1,990.5	398.1	ppb	1.60	200000.	
28 Si	19,380.	3,876.	ppb	3.12	#VALUE!	
29 Si	19,055.	3,811.	ppb	2.16	10000.	
39 K	30,840.	6,168.	ppb	0.91	200000.	
43 Ca	407,300.	81,460.	ppb	3.06	#VALUE!	
44 Ca	386,000.	77,200.	ppb	1.94	200000.	
51 V	537.	107.4	ppb	2.07	1000.	
52 Cr	203.15	40.63	ppb	2.47	2000.	
53 Cr	255.	51.	ppb	1.73	#VALUE!	
55 Mn	1,824.	364.8	ppb	2.79	2000.	
56 Fe	8,615.	1,723.	ppb	3.30	#VALUE!	
57 Fe	8,690.	1,738.	ppb	4.88	100000.	
59 Co	513.5	102.7	ppb	4.57	1000.	
60 Ni	486.3	97.26	ppb	1.38	1000.	
63 Cu	253.5	50.7	ppb	1.98	#VALUE!	
65 Cu	245.8	49.16	ppb	1.36	2000.	
66 Zn	494.25	98.85	ppb	2.13	2000.	
68 Zn	540.	108.	ppb	2.78	#VALUE!	
75 As	112.8	22.56	ppb	2.46	1000.	
82 Se	102.55	20.51	ppb	1.55	1000.	
88 Sr	2,361.	472.2	ppb	3.07	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	123.1	24.62	ppb	2.76	1000.	
107 Ag	50.9	10.18	ppb	2.97	100.	
109 Ag	51.25	10.25	ppb	2.89	#VALUE!	
111 Cd	261.25	52.25	ppb	2.54	#VALUE!	
114 Cd	259.6	51.92	ppb	2.88	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	483.45	96.69	ppb	1.39	1000.	
120 Sn	488.4	97.68	ppb	1.61	#VALUE!	
121 Sb	99.85	19.97	ppb	1.98	#VALUE!	
123 Sb	101.6	20.32	ppb	2.74	1000.	
135 Ba	2,043.5	408.7	ppb	2.00	2000.	
137 Ba	2,042.	408.4	ppb	2.07	#VALUE!	
182 W	113.2	22.64	ppb	1.33	1000.	
203 Tl	107.7	21.54	ppb	1.83	1000.	
205 Tl	107.6	21.52	ppb	2.03	#VALUE!	
208 Pb	107.55	21.51	ppb	2.02	2000.	
232 Th	115.2	23.04	ppb	1.90	1000.	
238 U	121.6	24.32	ppb	2.28	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3025382.50	4.25	4492941.00	67.3	69.5 - 120	IS Fai
45 Sc	2234562.30	2.55	3094960.50	72.2	69.5 - 120	
72 Ge	452832.22	1.97	631723.63	71.7	69.5 - 120	
159 Tb	5221606.50	1.36	6220065.50	83.9	69.5 - 120	
209 Bi	2892589.00	1.59	3318256.50	87.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000251

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\147SMPL.D\147SMPL.D#
Date Acquired: May 14 2018 11:59 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-011P
Misc Info:
Vial Number: 3402
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	46.925	9.385	ppb	2.42	100.	
11 B	714.	142.8	ppb	2.52	1000.	
23 Na	326,750.	65,350.	ppb	1.11	200000.	
25 Mg	86,850.	17,370.	ppb	3.53	200000.	
27 Al	1,960.	392.	ppb	2.18	200000.	
28 Si	18,515.	3,703.	ppb	1.42	#VALUE!	
29 Si	18,535.	3,707.	ppb	1.95	10000.	
39 K	29,690.	5,938.	ppb	0.99	200000.	
43 Ca	388,300.	77,660.	ppb	0.85	#VALUE!	
44 Ca	370,300.	74,060.	ppb	1.04	200000.	
51 V	536.	107.2	ppb	1.32	1000.	
52 Cr	197.45	39.49	ppb	0.70	2000.	
53 Cr	245.35	49.07	ppb	0.45	#VALUE!	
55 Mn	1,763.5	352.7	ppb	0.89	2000.	
56 Fe	8,525.	1,705.	ppb	1.46	#VALUE!	
57 Fe	8,625.	1,725.	ppb	0.17	100000.	
59 Co	495.75	99.15	ppb	0.89	1000.	
60 Ni	467.3	93.46	ppb	1.44	1000.	
63 Cu	246.15	49.23	ppb	0.53	#VALUE!	
65 Cu	238.3	47.66	ppb	0.12	2000.	
66 Zn	478.3	95.66	ppb	1.55	2000.	
68 Zn	525.	105.	ppb	0.32	#VALUE!	
75 As	105.6	21.12	ppb	0.85	1000.	
82 Se	98.05	19.61	ppb	0.18	1000.	
88 Sr	2,278.5	455.7	ppb	0.73	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	117.5	23.5	ppb	1.47	1000.	
107 Ag	49.775	9.955	ppb	1.12	100.	
109 Ag	49.425	9.885	ppb	0.42	#VALUE!	
111 Cd	248.7	49.74	ppb	0.91	#VALUE!	
114 Cd	245.15	49.03	ppb	1.15	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	468.3	93.66	ppb	1.18	1000.	
120 Sn	472.85	94.57	ppb	1.36	#VALUE!	
121 Sb	94.9	18.98	ppb	1.98	#VALUE!	
123 Sb	95.65	19.13	ppb	2.18	1000.	
135 Ba	1,984.5	396.9	ppb	1.43	2000.	
137 Ba	1,970.	394.	ppb	0.94	#VALUE!	
182 W	108.45	21.69	ppb	0.34	1000.	
203 Tl	100.8	20.16	ppb	0.66	1000.	
205 Tl	101.65	20.33	ppb	0.30	#VALUE!	
208 Pb	101.65	20.33	ppb	0.15	2000.	
232 Th	110.8	22.16	ppb	0.65	1000.	
238 U	117.25	23.45	ppb	0.76	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3088226.50	0.25	4492941.00	68.7	69.5 - 120	IS Fai
45 Sc	2330650.50	1.48	3094960.50	75.3	69.5 - 120	
72 Ge	463581.81	0.76	631723.63	73.4	69.5 - 120	
159 Tb	5337798.50	1.33	6220065.50	85.8	69.5 - 120	
209 Bi	2953689.50	0.85	3318256.50	89.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000252

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\148SMPL.D\148SMPL.D#
Date Acquired: May 15 2018 12:04 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-012
Misc Info:
Vial Number: 3403
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.3578	0.0716	ppb	13.28	100.	
11 B	243.65	48.73	ppb	5.54	1000.	
23 Na	346,350.	69,270.	ppb	2.11	200000.	
25 Mg	88,950.	17,790.	ppb	0.16	200000.	
27 Al	8,350.	1,670.	ppb	2.02	200000.	
28 Si	37,315.	7,463.	ppb	2.71	#VALUE!	
29 Si	39,690.	7,938.	ppb	0.74	10000.	
39 K	23,625.	4,725.	ppb	0.99	200000.	
43 Ca	418,100.	83,620.	ppb	0.58	#VALUE!	
44 Ca	403,400.	80,680.	ppb	0.69	200000.	
51 V	25.055	5.011	ppb	4.12	1000.	
52 Cr	50.8	10.16	ppb	1.50	2000.	
53 Cr	84.8	16.96	ppb	1.91	#VALUE!	
55 Mn	1,473.5	294.7	ppb	0.30	2000.	
56 Fe	18,795.	3,759.	ppb	0.43	#VALUE!	
57 Fe	19,560.	3,912.	ppb	0.93	100000.	
59 Co	4.8705	0.9741	ppb	2.71	1000.	
60 Ni	19.025	3.805	ppb	0.74	1000.	
63 Cu	33.155	6.631	ppb	0.66	#VALUE!	
65 Cu	21.435	4.287	ppb	1.13	2000.	
66 Zn	91.65	18.33	ppb	1.11	2000.	
68 Zn	95.25	19.05	ppb	1.90	#VALUE!	
75 As	10.135	2.027	ppb	19.74	1000.	
82 Se	2.4285	0.4857	ppb	17.19	1000.	
88 Sr	1,954.5	390.9	ppb	1.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	20.17	4.034	ppb	1.41	1000.	
107 Ag	0.0515	0.0103	ppb	56.40	100.	
109 Ag	0.0646	0.0129	ppb	52.86	#VALUE!	
111 Cd	-0.2867	-0.0573	ppb	8.13	#VALUE!	
114 Cd	0.0771	0.0154	ppb	105.52	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.997	0.3994	ppb	15.72	1000.	
120 Sn	2.041	0.4082	ppb	7.42	#VALUE!	
121 Sb	0.3533	0.0707	ppb	8.52	#VALUE!	
123 Sb	0.3216	0.0643	ppb	4.00	1000.	
135 Ba	187.95	37.59	ppb	1.31	2000.	
137 Ba	187.05	37.41	ppb	0.32	#VALUE!	
182 W	0.5505	0.1101	ppb	7.31	1000.	
203 Tl	0.1161	0.0232	ppb	23.05	1000.	
205 Tl	0.1198	0.024	ppb	13.21	#VALUE!	
208 Pb	9.3	1.86	ppb	1.38	2000.	
232 Th	8.775	1.755	ppb	1.46	1000.	
238 U	3.267	0.6534	ppb	3.95	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3031162.50	3.75	4492941.00	67.5	69.5 - 120	IS Fai
45 Sc	2282555.00	0.44	3094960.50	73.8	69.5 - 120	
72 Ge	463440.53	0.58	631723.63	73.4	69.5 - 120	
159 Tb	5342010.50	0.60	6220065.50	85.9	69.5 - 120	
209 Bi	2931355.30	0.97	3318256.50	88.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000253

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\149SMPL.D\149SMPL.D#
Date Acquired: May 15 2018 12:08 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-013
Misc Info:
Vial Number: 3404
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0097	0.0019	ppb	68.90	100.	
11 B	229.5	45.9	ppb	3.45	1000.	
23 Na	354,350.	70,870.	ppb	3.02	200000.	
25 Mg	87,200.	17,440.	ppb	1.50	200000.	
27 Al	9.68	1.936	ppb	3.47	200000.	
28 Si	18,805.	3,761.	ppb	1.04	#VALUE!	
29 Si	19,000.	3,800.	ppb	2.45	10000.	
39 K	21,275.	4,255.	ppb	1.68	200000.	
43 Ca	417,050.	83,410.	ppb	1.41	#VALUE!	
44 Ca	394,150.	78,830.	ppb	1.45	200000.	
51 V	0.2614	0.0523	ppb	73.87	1000.	
52 Cr	1.986	0.3972	ppb	8.09	2000.	
53 Cr	54.65	10.93	ppb	15.37	#VALUE!	
55 Mn	1,382.5	276.5	ppb	1.01	2000.	
56 Fe	7,825.	1,565.	ppb	1.48	#VALUE!	
57 Fe	7,965.	1,593.	ppb	0.66	100000.	
59 Co	0.5425	0.1085	ppb	1.90	1000.	
60 Ni	1.577	0.3154	ppb	22.49	1000.	
63 Cu	14.8	2.96	ppb	0.65	#VALUE!	
65 Cu	2.433	0.4866	ppb	4.22	2000.	
66 Zn	15.28	3.056	ppb	3.51	2000.	
68 Zn	15.13	3.026	ppb	4.98	#VALUE!	
75 As	8.69	1.738	ppb	16.95	1000.	
82 Se	2.075	0.415	ppb	23.23	1000.	
88 Sr	1,915.5	383.1	ppb	1.94	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.21	2.442	ppb	0.65	1000.	
107 Ag	0.0011	0.0002	ppb	565.83	100.	
109 Ag	0.0086	0.0017	ppb	100.76	#VALUE!	
111 Cd	-0.3796	-0.0759	ppb	19.88	#VALUE!	
114 Cd	-0.0083	-0.0017	ppb	70.83	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.3625	0.2725	ppb	11.93	1000.	
120 Sn	1.31	0.262	ppb	9.04	#VALUE!	
121 Sb	0.0947	0.0189	ppb	36.62	#VALUE!	
123 Sb	0.0868	0.0174	ppb	21.23	1000.	
135 Ba	32.615	6.523	ppb	1.40	2000.	
137 Ba	32.74	6.548	ppb	0.63	#VALUE!	
182 W	0.2761	0.0552	ppb	11.39	1000.	
203 Tl	-0.0414	-0.0083	ppb	71.04	1000.	
205 Tl	-0.0315	-0.0063	ppb	42.59	#VALUE!	
208 Pb	0.0203	0.0041	ppb	171.15	2000.	
232 Th	0.2962	0.0592	ppb	22.20	1000.	
238 U	2.0375	0.4075	ppb	4.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3051188.80	2.24	4492941.00	67.9	69.5 - 120	IS Fai
45 Sc	2270142.00	2.00	3094960.50	73.3	69.5 - 120	
72 Ge	460602.72	1.12	631723.63	72.9	69.5 - 120	
159 Tb	5266665.00	0.85	6220065.50	84.7	69.5 - 120	
209 Bi	2912557.30	1.06	3318256.50	87.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000254

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\150_CCV.D\150_CCV.D#
Date Acquired: May 15 2018 12:12 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.41	ppb	1.84	25	93.64	
11 B	25.56	ppb	8.12	25	102.24	
23 Na	4,576.	ppb	1.13	5,000	91.52	
25 Mg	4,725.	ppb	5.21	5,000	94.5	
27 Al	474.1	ppb	0.59	500	94.82	
28 Si	529.2	ppb	1.83	500	105.84	
29 Si	466.2	ppb	1.07	500	93.24	
39 K	4,811.	ppb	1.66	5,000	96.22	
43 Ca	4,786.	ppb	1.25	5,000	95.72	
44 Ca	5,021.	ppb	1.37	5,000	100.42	
51 V	25.28	ppb	3.44	25	101.12	
52 Cr	24.73	ppb	2.47	25	98.92	
53 Cr	23.82	ppb	1.71	25	95.28	
55 Mn	24.75	ppb	3.28	25	99	
56 Fe	4,986.	ppb	4.47	5,000	99.72	
57 Fe	5,090.	ppb	2.97	5,000	101.8	
59 Co	24.58	ppb	3.58	25	98.32	
60 Ni	23.93	ppb	1.94	25	95.72	
63 Cu	24.22	ppb	3.45	25	96.88	
65 Cu	25.03	ppb	3.37	25	100.12	
66 Zn	25.34	ppb	2.23	25	101.36	
68 Zn	24.82	ppb	4.71	25	99.28	
75 As	24.99	ppb	2.96	25	99.96	
82 Se	25.59	ppb	2.62	25	102.36	
88 Sr	25.71	ppb	1.67	25	102.84	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.61	ppb	3.02	25	102.44	
107 Ag	26.04	ppb	3.05	25	104.16	
109 Ag	26.1	ppb	3.19	25	104.4	
111 Cd	26.32	ppb	1.90	25	105.28	
114 Cd	26.23	ppb	2.62	25	104.92	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.07	ppb	3.12	25	92.28	
120 Sn	23.33	ppb	2.36	25	93.32	
121 Sb	23.85	ppb	2.41	25	95.4	
123 Sb	24.05	ppb	1.86	25	96.2	
135 Ba	24.32	ppb	3.27	25	97.28	
137 Ba	24.43	ppb	2.24	25	97.72	
182 W	25.67	ppb	2.55	25	102.68	
203 Tl	24.4	ppb	1.32	25	97.6	
205 Tl	24.47	ppb	1.09	25	97.88	
208 Pb	24.79	ppb	1.00	25	99.16	
232 Th	25.14	ppb	1.57	25	100.56	
238 U	26.38	ppb	1.10	25	105.52	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3138063.80	2.88	4492941.00	69.8	80 - 120.4	ISFail
45 Sc	2364347.00	0.51	3094960.50	76.4	80 - 120.4	ISFail
72 Ge	469164.03	3.12	631723.63	74.3	80 - 120.4	ISFail
159 Tb	5355869.00	2.65	6220065.50	86.1	80 - 120.4	
209 Bi	3111030.80	1.09	3318256.50	93.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\151_CCB.D\151_CCB.D#
Date Acquired: May 15 2018 12:16 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.	ppb	29309.00	1.00	
11 B	3.351	ppb	6.90	1.00	
23 Na	4.167	ppb	3.52	1.00	
25 Mg	0.1373	ppb	89.00	1.00	
27 Al	0.1248	ppb	27.61	1.00	
28 Si	55.82	ppb	19.71	1.00	
29 Si	-0.4959	ppb	2321.00	1.00	
39 K	3.225	ppb	121.27	1.00	
43 Ca	-4.409	ppb	52.87	1.00	
44 Ca	0.2333	ppb	539.22	1.00	
51 V	-0.0814	ppb	113.14	1.00	
52 Cr	-0.0457	ppb	27.24	1.00	
53 Cr	-1.175	ppb	21.61	1.00	
55 Mn	0.0277	ppb	31.08	1.00	
56 Fe	-0.8614	ppb	154.98	1.00	
57 Fe	1.498	ppb	8.03	1.00	
59 Co	0.0008	ppb	303.84	1.00	
60 Ni	0.0017	ppb	481.91	1.00	
63 Cu	0.016	ppb	33.58	1.00	
65 Cu	0.0069	ppb	124.79	1.00	
66 Zn	0.0189	ppb	334.16	1.00	
68 Zn	-0.0064	ppb	1843.30	1.00	
75 As	-0.1249	ppb	79.18	1.00	
82 Se	-0.1093	ppb	127.17	1.00	
88 Sr	0.0025	ppb	107.89	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0307	ppb	36.07	1.00	
107 Ag	0.0019	ppb	130.61	1.00	
109 Ag	0.0036	ppb	25.26	1.00	
111 Cd	-0.0235	ppb	57.25	1.00	
114 Cd	-0.0038	ppb	59.28	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0712	ppb	16.75	1.00	
120 Sn	0.0488	ppb	11.24	1.00	
121 Sb	0.0118	ppb	2.83	1.00	
123 Sb	0.0054	ppb	50.11	1.00	
135 Ba	0.01	ppb	120.40	1.00	
137 Ba	-0.002	ppb	135.89	1.00	
182 W	0.0488	ppb	23.92	1.00	
203 Tl	0.0013	ppb	457.89	1.00	
205 Tl	-0.0047	ppb	78.25	1.00	
208 Pb	0.0911	ppb	8.00	1.00	
232 Th	0.0635	ppb	12.03	1.00	
238 U	0.0025	ppb	31.96	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3115381.80	4.19	4492941.00	69.3	79.5 - 120	ISFail
45 Sc	2352557.30	1.85	3094960.50	76.0	79.5 - 120	ISFail
72 Ge	475059.13	0.74	631723.63	75.2	79.5 - 120	ISFail
159 Tb	5371076.00	0.58	6220065.50	86.4	79.5 - 120	
209 Bi	3180512.80	0.33	3318256.50	95.8	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\152SMPL.D\152SMPL.D#
Date Acquired: May 15 2018 12:21 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-014
Misc Info:
Vial Number: 3405
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	2.4825	0.4965	ppb	5.56	100.	
11 B	1,850.	370.	ppb	6.72	1000.	
23 Na	62,350.	12,470.	ppb	6.17	200000.	
25 Mg	39,335.	7,867.	ppb	2.75	200000.	
27 Al	44,150.	8,830.	ppb	2.95	200000.	
28 Si	66,050.	13,210.	ppb	3.32	#VALUE!	
29 Si	68,650.	13,730.	ppb	5.17	10000.	>LDR
39 K	28,565.	5,713.	ppb	3.96	200000.	
43 Ca	206,700.	41,340.	ppb	2.39	#VALUE!	
44 Ca	204,650.	40,930.	ppb	1.60	200000.	
51 V	113.4	22.68	ppb	2.52	1000.	
52 Cr	143.6	28.72	ppb	1.83	2000.	
53 Cr	156.85	31.37	ppb	1.31	#VALUE!	
55 Mn	2,586.	517.2	ppb	1.37	2000.	
56 Fe	60,350.	12,070.	ppb	1.36	#VALUE!	
57 Fe	59,800.	11,960.	ppb	0.77	100000.	
59 Co	21.11	4.222	ppb	2.49	1000.	
60 Ni	83.65	16.73	ppb	1.87	1000.	
63 Cu	52.15	10.43	ppb	0.74	#VALUE!	
65 Cu	51.1	10.22	ppb	2.93	2000.	
66 Zn	195.3	39.06	ppb	4.90	2000.	
68 Zn	209.3	41.86	ppb	2.86	#VALUE!	
75 As	40.275	8.055	ppb	2.35	1000.	
82 Se	3.8755	0.7751	ppb	28.37	1000.	
88 Sr	927.	185.4	ppb	0.88	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	29.15	5.83	ppb	0.93	1000.	
107 Ag	0.2083	0.0417	ppb	8.95	100.	
109 Ag	0.18	0.036	ppb	16.61	#VALUE!	
111 Cd	0.6355	0.1271	ppb	25.67	#VALUE!	
114 Cd	0.6805	0.1361	ppb	11.50	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.346	0.6692	ppb	1.93	1000.	
120 Sn	3.2995	0.6599	ppb	1.09	#VALUE!	
121 Sb	0.4919	0.0984	ppb	0.73	#VALUE!	
123 Sb	0.5355	0.1071	ppb	7.63	1000.	
135 Ba	598.	119.6	ppb	1.75	2000.	
137 Ba	600.5	120.1	ppb	2.88	#VALUE!	
182 W	0.3172	0.0634	ppb	8.37	1000.	
203 Tl	0.771	0.1542	ppb	9.15	1000.	
205 Tl	0.717	0.1434	ppb	5.77	#VALUE!	
208 Pb	38.325	7.665	ppb	2.07	2000.	
232 Th	30.295	6.059	ppb	2.83	1000.	
238 U	17.465	3.493	ppb	1.33	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3083325.30	4.49	4492941.00	68.6	69.5 - 120	IS Fai
45 Sc	2251544.30	2.49	3094960.50	72.7	69.5 - 120	
72 Ge	451444.75	0.86	631723.63	71.5	69.5 - 120	
159 Tb	5301185.00	2.13	6220065.50	85.2	69.5 - 120	
209 Bi	3049988.30	2.48	3318256.50	91.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000257

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\153SMPL.D\153SMPL.D#
Date Acquired: May 15 2018 12:25 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-015
Misc Info:
Vial Number: 3406
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0057	0.0011	ppb	118.69	100.	
11 B	1,961.	392.2	ppb	5.43	1000.	
23 Na	59,550.	11,910.	ppb	1.96	200000.	
25 Mg	22,570.	4,514.	ppb	2.87	200000.	
27 Al	13.135	2.627	ppb	45.15	200000.	
28 Si	13,425.	2,685.	ppb	2.53	#VALUE!	
29 Si	13,375.	2,675.	ppb	2.33	10000.	
39 K	18,230.	3,646.	ppb	1.12	200000.	
43 Ca	131,650.	26,330.	ppb	3.25	#VALUE!	
44 Ca	130,750.	26,150.	ppb	1.82	200000.	
51 V	0.2606	0.0521	ppb	310.25	1000.	
52 Cr	1.169	0.2338	ppb	18.60	2000.	
53 Cr	23.645	4.729	ppb	16.23	#VALUE!	
55 Mn	869.	173.8	ppb	1.66	2000.	
56 Fe	1,526.	305.2	ppb	2.72	#VALUE!	
57 Fe	1,576.5	315.3	ppb	2.53	100000.	
59 Co	0.2195	0.0439	ppb	11.50	1000.	
60 Ni	1.1065	0.2213	ppb	10.41	1000.	
63 Cu	3.143	0.6286	ppb	3.02	#VALUE!	
65 Cu	0.8825	0.1765	ppb	9.15	2000.	
66 Zn	8.28	1.656	ppb	5.88	2000.	
68 Zn	9.64	1.928	ppb	7.14	#VALUE!	
75 As	8.505	1.701	ppb	15.00	1000.	
82 Se	0.85	0.17	ppb	164.29	1000.	
88 Sr	689.5	137.9	ppb	1.23	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	19.305	3.861	ppb	1.99	1000.	
107 Ag	0.0064	0.0013	ppb	180.93	100.	
109 Ag	0.0119	0.0024	ppb	46.55	#VALUE!	
111 Cd	-0.3632	-0.0726	ppb	37.63	#VALUE!	
114 Cd	-0.0274	-0.0055	ppb	79.18	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.085	0.217	ppb	6.04	1000.	
120 Sn	1.0655	0.2131	ppb	5.57	#VALUE!	
121 Sb	0.1527	0.0305	ppb	10.58	#VALUE!	
123 Sb	0.1804	0.0361	ppb	16.91	1000.	
135 Ba	55.85	11.17	ppb	0.86	2000.	
137 Ba	55.55	11.11	ppb	3.16	#VALUE!	
182 W	0.1623	0.0325	ppb	25.27	1000.	
203 Tl	-0.0285	-0.0057	ppb	93.08	1000.	
205 Tl	-0.0521	-0.0104	ppb	31.05	#VALUE!	
208 Pb	0.0418	0.0084	ppb	72.51	2000.	
232 Th	0.2963	0.0593	ppb	10.85	1000.	
238 U	8.805	1.761	ppb	0.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3024452.80	3.05	4492941.00	67.3	69.5 - 120	IS Fai
45 Sc	2245673.00	1.67	3094960.50	72.6	69.5 - 120	
72 Ge	457012.16	0.14	631723.63	72.3	69.5 - 120	
159 Tb	5316990.50	1.38	6220065.50	85.5	69.5 - 120	
209 Bi	3074861.00	1.42	3318256.50	92.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000258

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\154SMPL.D\154SMPL.D#
Date Acquired: May 15 2018 12:29 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-016
Misc Info:
Vial Number: 3407
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.1594	0.0319	ppb	2.04	100.	
11 B	296.15	59.23	ppb	5.53	1000.	
23 Na	339,650.	67,930.	ppb	4.86	200000.	
25 Mg	86,550.	17,310.	ppb	1.75	200000.	
27 Al	3,134.	626.8	ppb	5.74	200000.	
28 Si	25,875.	5,175.	ppb	4.39	#VALUE!	
29 Si	27,510.	5,502.	ppb	2.75	10000.	
39 K	23,650.	4,730.	ppb	1.67	200000.	
43 Ca	399,550.	79,910.	ppb	2.20	#VALUE!	
44 Ca	381,450.	76,290.	ppb	0.42	200000.	
51 V	9.73	1.946	ppb	10.80	1000.	
52 Cr	40.14	8.028	ppb	1.62	2000.	
53 Cr	80.95	16.19	ppb	10.20	#VALUE!	
55 Mn	1,320.5	264.1	ppb	0.46	2000.	
56 Fe	12,505.	2,501.	ppb	0.41	#VALUE!	
57 Fe	12,665.	2,533.	ppb	1.07	100000.	
59 Co	1.676	0.3352	ppb	1.99	1000.	
60 Ni	13.485	2.697	ppb	3.12	1000.	
63 Cu	26.265	5.253	ppb	2.06	#VALUE!	
65 Cu	13.41	2.682	ppb	1.58	2000.	
66 Zn	59.85	11.97	ppb	0.12	2000.	
68 Zn	57.3	11.46	ppb	0.62	#VALUE!	
75 As	8.65	1.73	ppb	10.65	1000.	
82 Se	2.0885	0.4177	ppb	52.89	1000.	
88 Sr	1,904.5	380.9	ppb	0.55	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.04	3.408	ppb	0.88	1000.	
107 Ag	0.0247	0.0049	ppb	36.37	100.	
109 Ag	0.0152	0.003	ppb	107.51	#VALUE!	
111 Cd	-0.3059	-0.0612	ppb	54.93	#VALUE!	
114 Cd	-0.0004	-0.0001	ppb	4893.90	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.4755	0.2951	ppb	2.80	1000.	
120 Sn	1.441	0.2882	ppb	6.27	#VALUE!	
121 Sb	0.1724	0.0345	ppb	16.07	#VALUE!	
123 Sb	0.1488	0.0298	ppb	27.08	1000.	
135 Ba	71.1	14.22	ppb	1.29	2000.	
137 Ba	72.55	14.51	ppb	2.54	#VALUE!	
182 W	0.326	0.0652	ppb	10.28	1000.	
203 Tl	0.033	0.0066	ppb	79.45	1000.	
205 Tl	-0.0236	-0.0047	ppb	98.18	#VALUE!	
208 Pb	6.24	1.248	ppb	0.80	2000.	
232 Th	3.994	0.7988	ppb	1.42	1000.	
238 U	2.876	0.5752	ppb	2.58	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3009967.80	0.59	4492941.00	67.0	69.5 - 120	IS Fai
45 Sc	2249760.30	2.65	3094960.50	72.7	69.5 - 120	
72 Ge	457809.13	0.71	631723.63	72.5	69.5 - 120	
159 Tb	5304356.00	1.24	6220065.50	85.3	69.5 - 120	
209 Bi	2962002.00	1.41	3318256.50	89.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000259

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\155SMPL.D\155SMPL.D#
Date Acquired: May 15 2018 12:33 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-018
Misc Info:
Vial Number: 3408
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.874	0.1748	ppb	8.91	100.	
11 B	310.55	62.11	ppb	5.04	1000.	
23 Na	218,700.	43,740.	ppb	3.68	200000.	
25 Mg	60,950.	12,190.	ppb	3.44	200000.	
27 Al	16,655.	3,331.	ppb	2.28	200000.	
28 Si	48,075.	9,615.	ppb	0.96	#VALUE!	
29 Si	50,700.	10,140.	ppb	0.54	10000.	>LDR
39 K	24,870.	4,974.	ppb	0.96	200000.	
43 Ca	379,150.	75,830.	ppb	1.16	#VALUE!	
44 Ca	356,500.	71,300.	ppb	1.32	200000.	
51 V	45.025	9.005	ppb	3.55	1000.	
52 Cr	71.2	14.24	ppb	1.32	2000.	
53 Cr	91.35	18.27	ppb	2.73	#VALUE!	
55 Mn	2,003.	400.6	ppb	0.48	2000.	
56 Fe	31,640.	6,328.	ppb	1.36	#VALUE!	
57 Fe	32,400.	6,480.	ppb	1.88	100000.	
59 Co	21.525	4.305	ppb	3.62	1000.	
60 Ni	40.635	8.127	ppb	3.20	1000.	
63 Cu	43.91	8.782	ppb	0.36	#VALUE!	
65 Cu	36.795	7.359	ppb	1.34	2000.	
66 Zn	128.95	25.79	ppb	2.33	2000.	
68 Zn	135.45	27.09	ppb	1.70	#VALUE!	
75 As	36.37	7.274	ppb	0.56	1000.	
82 Se	3.7815	0.7563	ppb	19.86	1000.	
88 Sr	1,565.	313.	ppb	1.86	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	24.34	4.868	ppb	1.82	1000.	
107 Ag	0.0866	0.0173	ppb	24.66	100.	
109 Ag	0.081	0.0162	ppb	34.94	#VALUE!	
111 Cd	0.586	0.1172	ppb	29.25	#VALUE!	
114 Cd	0.792	0.1584	ppb	6.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.135	0.427	ppb	1.94	1000.	
120 Sn	2.02	0.404	ppb	3.65	#VALUE!	
121 Sb	0.7235	0.1447	ppb	15.65	#VALUE!	
123 Sb	0.798	0.1596	ppb	8.81	1000.	
135 Ba	430.1	86.02	ppb	1.48	2000.	
137 Ba	431.15	86.23	ppb	1.67	#VALUE!	
182 W	0.4429	0.0886	ppb	13.65	1000.	
203 Tl	0.4394	0.0879	ppb	11.13	1000.	
205 Tl	0.3801	0.076	ppb	13.19	#VALUE!	
208 Pb	33.765	6.753	ppb	2.64	2000.	
232 Th	14.3	2.86	ppb	0.92	1000.	
238 U	14.875	2.975	ppb	2.58	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2828444.30	5.15	4492941.00	63.0	69.5 - 120	IS Fai
45 Sc	2201288.30	1.59	3094960.50	71.1	69.5 - 120	
72 Ge	451152.94	1.44	631723.63	71.4	69.5 - 120	
159 Tb	5286628.50	0.96	6220065.50	85.0	69.5 - 120	
209 Bi	2958773.00	1.40	3318256.50	89.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000260

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\156SMPL.D\156SMPL.D#
Date Acquired: May 15 2018 12:38 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-019
Misc Info:
Vial Number: 3409
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0125	0.0025	ppb	74.84	100.	
11 B	280.65	56.13	ppb	5.02	1000.	
23 Na	214,400.	42,880.	ppb	5.23	200000.	
25 Mg	55,300.	11,060.	ppb	3.08	200000.	
27 Al	10.76	2.152	ppb	6.56	200000.	
28 Si	18,350.	3,670.	ppb	0.37	#VALUE!	
29 Si	19,005.	3,801.	ppb	2.02	10000.	
39 K	20,060.	4,012.	ppb	0.72	200000.	
43 Ca	326,100.	65,220.	ppb	2.70	#VALUE!	
44 Ca	309,400.	61,880.	ppb	1.39	200000.	
51 V	-0.4486	-0.0897	ppb	124.94	1000.	
52 Cr	1.316	0.2632	ppb	12.60	2000.	
53 Cr	39.51	7.902	ppb	14.83	#VALUE!	
55 Mn	1,350.	270.	ppb	0.85	2000.	
56 Fe	3,768.5	753.7	ppb	2.14	#VALUE!	
57 Fe	3,944.5	788.9	ppb	1.00	100000.	
59 Co	0.4741	0.0948	ppb	12.71	1000.	
60 Ni	1.099	0.2198	ppb	33.73	1000.	
63 Cu	8.56	1.712	ppb	3.96	#VALUE!	
65 Cu	1.042	0.2084	ppb	9.64	2000.	
66 Zn	9.535	1.907	ppb	4.28	2000.	
68 Zn	10.005	2.001	ppb	9.19	#VALUE!	
75 As	19.85	3.97	ppb	2.50	1000.	
82 Se	1.46	0.292	ppb	78.70	1000.	
88 Sr	1,370.	274.	ppb	2.14	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.21	2.442	ppb	1.61	1000.	
107 Ag	0.0084	0.0017	ppb	83.00	100.	
109 Ag	-0.0067	-0.0013	ppb	23.27	#VALUE!	
111 Cd	-0.39	-0.078	ppb	10.83	#VALUE!	
114 Cd	-0.0255	-0.0051	ppb	56.48	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.275	0.255	ppb	8.91	1000.	
120 Sn	1.184	0.2368	ppb	4.17	#VALUE!	
121 Sb	0.0899	0.018	ppb	23.92	#VALUE!	
123 Sb	0.0984	0.0197	ppb	37.92	1000.	
135 Ba	66.6	13.32	ppb	1.23	2000.	
137 Ba	65.25	13.05	ppb	1.36	#VALUE!	
182 W	0.1987	0.0397	ppb	26.28	1000.	
203 Tl	-0.0369	-0.0074	ppb	37.44	1000.	
205 Tl	-0.054	-0.0108	ppb	48.00	#VALUE!	
208 Pb	0.0627	0.0125	ppb	45.73	2000.	
232 Th	0.1627	0.0325	ppb	23.41	1000.	
238 U	6.585	1.317	ppb	2.06	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3128270.50	6.93	4492941.00	69.6	69.5 - 120	
45 Sc	2314324.30	6.09	3094960.50	74.8	69.5 - 120	
72 Ge	471780.66	3.18	631723.63	74.7	69.5 - 120	
159 Tb	5410497.50	1.25	6220065.50	87.0	69.5 - 120	
209 Bi	3025603.50	1.23	3318256.50	91.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000261

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\157SMPL.D\157SMPL.D#
Date Acquired: May 15 2018 12:42 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-020
Misc Info:
Vial Number: 3410
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0022	-0.0004	ppb	167.42	100.	
11 B	29.855	5.971	ppb	8.65	1000.	
23 Na	53.05	10.61	ppb	34.79	200000.	
25 Mg	17.73	3.546	ppb	35.56	200000.	
27 Al	9.41	1.882	ppb	5.67	200000.	
28 Si	293.8	58.76	ppb	6.83	#VALUE!	
29 Si	75.2	15.04	ppb	44.49	10000.	
39 K	8.44	1.688	ppb	83.71	200000.	
43 Ca	34.01	6.802	ppb	100.79	#VALUE!	
44 Ca	66.15	13.23	ppb	49.80	200000.	
51 V	0.0884	0.0177	ppb	240.75	1000.	
52 Cr	0.866	0.1732	ppb	31.76	2000.	
53 Cr	36.455	7.291	ppb	1.18	#VALUE!	
55 Mn	0.4639	0.0928	ppb	22.26	2000.	
56 Fe	70.15	14.03	ppb	38.44	#VALUE!	
57 Fe	31.59	6.318	ppb	50.98	100000.	
59 Co	-0.0043	-0.0009	ppb	154.71	1000.	
60 Ni	0.0759	0.0152	ppb	19.47	1000.	
63 Cu	0.2845	0.0569	ppb	24.27	#VALUE!	
65 Cu	0.2715	0.0543	ppb	13.19	2000.	
66 Zn	0.558	0.1116	ppb	88.54	2000.	
68 Zn	0.1971	0.0394	ppb	264.65	#VALUE!	
75 As	0.2653	0.0531	ppb	201.70	1000.	
82 Se	0.8605	0.1721	ppb	141.20	1000.	
88 Sr	0.3162	0.0632	ppb	39.09	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.2109	0.0422	ppb	17.35	1000.	
107 Ag	-0.0006	-0.0001	ppb	498.35	100.	
109 Ag	-0.002	-0.0004	ppb	252.98	#VALUE!	
111 Cd	-0.1924	-0.0385	ppb	27.71	#VALUE!	
114 Cd	-0.0232	-0.0046	ppb	90.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.0815	0.2163	ppb	22.28	1000.	
120 Sn	1.045	0.209	ppb	6.83	#VALUE!	
121 Sb	0.052	0.0104	ppb	46.47	#VALUE!	
123 Sb	0.0715	0.0143	ppb	29.93	1000.	
135 Ba	0.1489	0.0298	ppb	18.56	2000.	
137 Ba	0.1689	0.0338	ppb	22.35	#VALUE!	
182 W	0.0323	0.0065	ppb	41.63	1000.	
203 Tl	-0.0323	-0.0065	ppb	23.09	1000.	
205 Tl	-0.0602	-0.012	ppb	37.22	#VALUE!	
208 Pb	0.0122	0.0024	ppb	633.32	2000.	
232 Th	0.0599	0.012	ppb	53.13	1000.	
238 U	0.0006	0.0001	ppb	351.30	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3043686.50	2.32	4492941.00	67.7	69.5 - 120	IS Fai
45 Sc	2243964.80	1.25	3094960.50	72.5	69.5 - 120	
72 Ge	455018.41	0.41	631723.63	72.0	69.5 - 120	
159 Tb	5264018.50	0.74	6220065.50	84.6	69.5 - 120	
209 Bi	3120107.80	1.39	3318256.50	94.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000262

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\158SMPL.D\158SMPL.D#
Date Acquired: May 15 2018 12:46 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-008
Misc Info:
Vial Number: 3411
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	1.7245	0.3449	ppb	4.66	100.	
11 B	453.45	90.69	ppb	3.78	1000.	
23 Na	176,350.	35,270.	ppb	4.00	200000.	
25 Mg	37,335.	7,467.	ppb	4.57	200000.	
27 Al	31,370.	6,274.	ppb	0.31	200000.	
28 Si	69,150.	13,830.	ppb	2.59	#VALUE!	
29 Si	71,200.	14,240.	ppb	0.31	10000.	>LDR
39 K	20,570.	4,114.	ppb	3.61	200000.	
43 Ca	226,050.	45,210.	ppb	1.21	#VALUE!	
44 Ca	222,950.	44,590.	ppb	0.34	200000.	
51 V	115.15	23.03	ppb	2.18	1000.	
52 Cr	132.3	26.46	ppb	0.45	2000.	
53 Cr	148.9	29.78	ppb	0.81	#VALUE!	
55 Mn	1,095.5	219.1	ppb	3.37	2000.	
56 Fe	44,155.	8,831.	ppb	2.33	#VALUE!	
57 Fe	44,730.	8,946.	ppb	1.69	100000.	
59 Co	16.945	3.389	ppb	1.82	1000.	
60 Ni	56.85	11.37	ppb	2.14	1000.	
63 Cu	56.65	11.33	ppb	2.18	#VALUE!	
65 Cu	51.1	10.22	ppb	1.81	2000.	
66 Zn	153.45	30.69	ppb	1.10	2000.	
68 Zn	165.	33.	ppb	3.84	#VALUE!	
75 As	23.72	4.744	ppb	3.58	1000.	
82 Se	1.953	0.3906	ppb	21.59	1000.	
88 Sr	1,012.5	202.5	ppb	1.44	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	25.455	5.091	ppb	2.41	1000.	
107 Ag	0.1404	0.0281	ppb	8.40	100.	
109 Ag	0.1173	0.0235	ppb	22.67	#VALUE!	
111 Cd	0.2524	0.0505	ppb	12.07	#VALUE!	
114 Cd	0.324	0.0648	ppb	8.00	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.625	0.525	ppb	2.20	1000.	
120 Sn	2.6625	0.5325	ppb	3.86	#VALUE!	
121 Sb	0.95	0.19	ppb	5.22	#VALUE!	
123 Sb	0.9255	0.1851	ppb	6.28	1000.	
135 Ba	551.	110.2	ppb	1.40	2000.	
137 Ba	549.	109.8	ppb	1.92	#VALUE!	
182 W	0.401	0.0802	ppb	7.01	1000.	
203 Tl	0.5925	0.1185	ppb	10.57	1000.	
205 Tl	0.575	0.115	ppb	6.43	#VALUE!	
208 Pb	47.495	9.499	ppb	0.81	2000.	
232 Th	23.465	4.693	ppb	0.90	1000.	
238 U	5.24	1.048	ppb	0.88	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2885562.80	3.03	4492941.00	64.2	69.5 - 120	IS Fai
45 Sc	2240717.50	0.79	3094960.50	72.4	69.5 - 120	
72 Ge	453861.69	0.96	631723.63	71.8	69.5 - 120	
159 Tb	5280366.50	1.63	6220065.50	84.9	69.5 - 120	
209 Bi	3054814.00	1.23	3318256.50	92.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000263

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\159SMPL.D\159SMPL.D#
Date Acquired: May 15 2018 12:50 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-009
Misc Info:
Vial Number: 3412
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0036	0.0007	ppb	212.53	100.	
11 B	427.4	85.48	ppb	6.54	1000.	
23 Na	165,950.	33,190.	ppb	7.38	200000.	
25 Mg	28,600.	5,720.	ppb	5.89	200000.	
27 Al	12.685	2.537	ppb	14.66	200000.	
28 Si	16,905.	3,381.	ppb	3.01	#VALUE!	
29 Si	17,010.	3,402.	ppb	2.53	10000.	
39 K	12,705.	2,541.	ppb	6.81	200000.	
43 Ca	187,050.	37,410.	ppb	5.41	#VALUE!	
44 Ca	186,050.	37,210.	ppb	3.38	200000.	
51 V	-0.3447	-0.0689	ppb	134.48	1000.	
52 Cr	1.699	0.3398	ppb	14.60	2000.	
53 Cr	27.965	5.593	ppb	17.08	#VALUE!	
55 Mn	604.5	120.9	ppb	2.78	2000.	
56 Fe	2,684.5	536.9	ppb	4.19	#VALUE!	
57 Fe	2,784.5	556.9	ppb	4.99	100000.	
59 Co	0.2911	0.0582	ppb	16.69	1000.	
60 Ni	0.923	0.1846	ppb	13.56	1000.	
63 Cu	7.165	1.433	ppb	6.80	#VALUE!	
65 Cu	0.6635	0.1327	ppb	8.36	2000.	
66 Zn	6.21	1.242	ppb	13.32	2000.	
68 Zn	6.785	1.357	ppb	12.53	#VALUE!	
75 As	13.175	2.635	ppb	10.38	1000.	
82 Se	2.0545	0.4109	ppb	15.90	1000.	
88 Sr	834.5	166.9	ppb	2.57	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	13.765	2.753	ppb	2.88	1000.	
107 Ag	0.0007	0.0001	ppb	238.97	100.	
109 Ag	0.0015	0.0003	ppb	139.23	#VALUE!	
111 Cd	-0.498	-0.0996	ppb	13.56	#VALUE!	
114 Cd	-0.0239	-0.0048	ppb	69.37	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.129	0.2258	ppb	2.00	1000.	
120 Sn	1.1405	0.2281	ppb	1.34	#VALUE!	
121 Sb	0.0761	0.0152	ppb	14.58	#VALUE!	
123 Sb	0.1124	0.0225	ppb	37.69	1000.	
135 Ba	33.205	6.641	ppb	6.08	2000.	
137 Ba	33.935	6.787	ppb	2.46	#VALUE!	
182 W	0.2657	0.0531	ppb	22.93	1000.	
203 Tl	-0.0198	-0.004	ppb	111.56	1000.	
205 Tl	-0.0419	-0.0084	ppb	115.99	#VALUE!	
208 Pb	-0.0231	-0.0046	ppb	248.59	2000.	
232 Th	0.1417	0.0283	ppb	15.39	1000.	
238 U	1.2665	0.2533	ppb	3.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2875649.80	6.16	4492941.00	64.0	69.5 - 120	IS Fai
45 Sc	2214718.00	4.32	3094960.50	71.6	69.5 - 120	
72 Ge	449393.63	2.28	631723.63	71.1	69.5 - 120	
159 Tb	5161485.50	2.68	6220065.50	83.0	69.5 - 120	
209 Bi	3044712.00	3.20	3318256.50	91.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000264

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\160SMPL.D\160SMPL.D#
Date Acquired: May 15 2018 12:55 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-017
Misc Info:
Vial Number: 3501
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0128	0.0026	ppb	19.12	100.	
11 B	228.15	45.63	ppb	4.40	1000.	
23 Na	324,100.	64,820.	ppb	2.72	200000.	
25 Mg	84,850.	16,970.	ppb	1.45	200000.	
27 Al	10.55	2.11	ppb	12.24	200000.	
28 Si	17,370.	3,474.	ppb	1.69	#VALUE!	
29 Si	17,185.	3,437.	ppb	0.70	10000.	
39 K	22,310.	4,462.	ppb	1.19	200000.	
43 Ca	390,600.	78,120.	ppb	2.67	#VALUE!	
44 Ca	378,500.	75,700.	ppb	3.11	200000.	
51 V	0.4146	0.0829	ppb	123.87	1000.	
52 Cr	2.0325	0.4065	ppb	13.95	2000.	
53 Cr	53.85	10.77	ppb	14.25	#VALUE!	
55 Mn	1,281.	256.2	ppb	0.57	2000.	
56 Fe	7,365.	1,473.	ppb	1.85	#VALUE!	
57 Fe	7,575.	1,515.	ppb	1.63	100000.	
59 Co	0.4734	0.0947	ppb	2.86	1000.	
60 Ni	1.64	0.328	ppb	11.71	1000.	
63 Cu	27.69	5.538	ppb	2.16	#VALUE!	
65 Cu	15.085	3.017	ppb	3.71	2000.	
66 Zn	22.965	4.593	ppb	6.14	2000.	
68 Zn	21.97	4.394	ppb	2.80	#VALUE!	
75 As	8.59	1.718	ppb	17.66	1000.	
82 Se	1.7495	0.3499	ppb	30.24	1000.	
88 Sr	1,909.5	381.9	ppb	1.65	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.885	2.377	ppb	0.43	1000.	
107 Ag	-0.0034	-0.0007	ppb	335.72	100.	
109 Ag	0.0017	0.0003	ppb	305.40	#VALUE!	
111 Cd	-0.4284	-0.0857	ppb	22.39	#VALUE!	
114 Cd	-0.0337	-0.0067	ppb	65.47	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.259	0.2518	ppb	4.40	1000.	
120 Sn	1.323	0.2646	ppb	3.44	#VALUE!	
121 Sb	0.0934	0.0187	ppb	23.00	#VALUE!	
123 Sb	0.1056	0.0211	ppb	28.32	1000.	
135 Ba	32.585	6.517	ppb	2.06	2000.	
137 Ba	32.43	6.486	ppb	2.10	#VALUE!	
182 W	0.2199	0.044	ppb	11.01	1000.	
203 Tl	-0.0194	-0.0039	ppb	115.50	1000.	
205 Tl	-0.0328	-0.0066	ppb	21.39	#VALUE!	
208 Pb	0.751	0.1502	ppb	3.57	2000.	
232 Th	0.0906	0.0181	ppb	33.27	1000.	
238 U	2.1405	0.4281	ppb	1.30	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2787123.80	3.74	4492941.00	62.0	69.5 - 120	IS Fai
45 Sc	2188291.00	0.68	3094960.50	70.7	69.5 - 120	
72 Ge	446081.06	0.70	631723.63	70.6	69.5 - 120	
159 Tb	5271956.00	1.30	6220065.50	84.8	69.5 - 120	
209 Bi	2938679.80	1.09	3318256.50	88.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000265

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\161SMPL.D\161SMPL.D#
Date Acquired: May 15 2018 12:59 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 3502
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0005	-0.0005	ppb	310.60	100.	
11 B	4.54	4.54	ppb	12.07	1000.	
23 Na	48.6	48.6	ppb	24.40	200000.	
25 Mg	2.636	2.636	ppb	68.70	200000.	
27 Al	2.74	2.74	ppb	3.19	200000.	
28 Si	62.3	62.3	ppb	20.39	#VALUE!	
29 Si	0.3345	0.3345	ppb	3231.70	10000.	
39 K	2.712	2.712	ppb	106.56	200000.	
43 Ca	9.928	9.928	ppb	83.58	#VALUE!	
44 Ca	12.43	12.43	ppb	51.37	200000.	
51 V	-0.0611	-0.0611	ppb	121.59	1000.	
52 Cr	0.011	0.011	ppb	352.87	2000.	
53 Cr	1.011	1.011	ppb	42.54	#VALUE!	
55 Mn	0.3834	0.3834	ppb	3.30	2000.	
56 Fe	6.45	6.45	ppb	29.98	#VALUE!	
57 Fe	8.671	8.671	ppb	17.99	100000.	
59 Co	0.0101	0.0101	ppb	15.96	1000.	
60 Ni	0.0347	0.0347	ppb	23.71	1000.	
63 Cu	0.3562	0.3562	ppb	3.11	#VALUE!	
65 Cu	0.3678	0.3678	ppb	4.66	2000.	
66 Zn	9.501	9.501	ppb	1.28	2000.	
68 Zn	8.748	8.748	ppb	2.12	#VALUE!	
75 As	0.0279	0.0279	ppb	567.07	1000.	
82 Se	0.1007	0.1007	ppb	176.07	1000.	
88 Sr	0.0448	0.0448	ppb	99.82	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0089	0.0089	ppb	17.52	1000.	
107 Ag	-0.0004	-0.0004	ppb	693.13	100.	
109 Ag	-0.0001	-0.0001	ppb	1135.50	#VALUE!	
111 Cd	-0.0433	-0.0433	ppb	38.74	#VALUE!	
114 Cd	-0.0061	-0.0061	ppb	88.42	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.061	0.061	ppb	18.88	1000.	
120 Sn	0.0591	0.0591	ppb	12.62	#VALUE!	
121 Sb	-0.0009	-0.0009	ppb	2.37	#VALUE!	
123 Sb	0.0007	0.0007	ppb	498.95	1000.	
135 Ba	0.2221	0.2221	ppb	9.33	2000.	
137 Ba	0.2014	0.2014	ppb	2.05	#VALUE!	
182 W	0.0025	0.0025	ppb	102.79	1000.	
203 Tl	-0.0047	-0.0047	ppb	87.62	1000.	
205 Tl	-0.0088	-0.0088	ppb	48.67	#VALUE!	
208 Pb	0.2769	0.2769	ppb	10.11	2000.	
232 Th	0.001	0.001	ppb	84.61	1000.	
238 U	0.	0.	ppb	685.02	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3102618.50	0.95	4492941.00	69.1	69.5 - 120	IS Fai
45 Sc	2343768.80	1.87	3094960.50	75.7	69.5 - 120	
72 Ge	468949.13	0.96	631723.63	74.2	69.5 - 120	
159 Tb	5369181.50	0.36	6220065.50	86.3	69.5 - 120	
209 Bi	3212178.00	1.22	3318256.50	96.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000266

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\162_CCV.D\162_CCV.D#
Date Acquired: May 15 2018 01:03 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.41	ppb	1.84	25	89.64	
11 B	23.88	ppb	3.51	25	95.52	
23 Na	4,599.	ppb	5.20	5,000	91.98	
25 Mg	4,707.	ppb	2.69	5,000	94.14	
27 Al	463.8	ppb	0.64	500	92.76	
28 Si	533.3	ppb	2.74	500	106.66	
29 Si	465.3	ppb	5.97	500	93.06	
39 K	4,821.	ppb	3.90	5,000	96.42	
43 Ca	4,752.	ppb	2.50	5,000	95.04	
44 Ca	5,034.	ppb	2.25	5,000	100.68	
51 V	25.05	ppb	1.92	25	100.2	
52 Cr	24.76	ppb	1.98	25	99.04	
53 Cr	23.2	ppb	1.45	25	92.8	
55 Mn	24.65	ppb	0.92	25	98.6	
56 Fe	4,905.	ppb	0.81	5,000	98.1	
57 Fe	5,023.	ppb	0.79	5,000	100.46	
59 Co	24.42	ppb	1.07	25	97.68	
60 Ni	23.72	ppb	2.04	25	94.88	
63 Cu	23.88	ppb	0.87	25	95.52	
65 Cu	24.26	ppb	1.66	25	97.04	
66 Zn	24.8	ppb	1.12	25	99.2	
68 Zn	24.51	ppb	0.93	25	98.04	
75 As	24.38	ppb	0.97	25	97.52	
82 Se	25.79	ppb	1.42	25	103.16	
88 Sr	25.7	ppb	1.33	25	102.8	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.7	ppb	0.93	25	102.8	
107 Ag	25.79	ppb	1.56	25	103.16	
109 Ag	25.92	ppb	0.60	25	103.68	
111 Cd	26.11	ppb	0.71	25	104.44	
114 Cd	26.21	ppb	1.17	25	104.84	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	22.38	ppb	1.93	25	89.52	
120 Sn	22.63	ppb	2.28	25	90.52	
121 Sb	23.32	ppb	2.81	25	93.28	
123 Sb	23.61	ppb	1.90	25	94.44	
135 Ba	23.87	ppb	1.71	25	95.48	
137 Ba	23.78	ppb	2.35	25	95.12	
182 W	25.42	ppb	3.00	25	101.68	
203 Tl	24.24	ppb	1.29	25	96.96	
205 Tl	24.45	ppb	2.23	25	97.8	
208 Pb	24.63	ppb	1.88	25	98.52	
232 Th	25.14	ppb	1.69	25	100.56	
238 U	26.4	ppb	1.38	25	105.6	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3093110.50	0.77	4492941.00	68.8	80 - 120.4	ISFail
45 Sc	2264784.30	3.01	3094960.50	73.2	80 - 120.4	ISFail
72 Ge	453941.63	0.65	631723.63	71.9	80 - 120.4	ISFail
159 Tb	5332288.50	1.68	6220065.50	85.7	80 - 120.4	
209 Bi	3101776.30	1.01	3318256.50	93.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000267

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE14A.B\163_CCB.D\163_CCB.D#
Date Acquired: May 15 2018 01:07 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 14 2018 03:18 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0015	ppb	58.14	1.00	
11 B	3.582	ppb	8.69	1.00	
23 Na	3.506	ppb	9.12	1.00	
25 Mg	0.1451	ppb	222.88	1.00	
27 Al	0.1421	ppb	61.58	1.00	
28 Si	64.1	ppb	21.40	1.00	
29 Si	0.6628	ppb	2489.40	1.00	
39 K	0.2839	ppb	969.71	1.00	
43 Ca	-1.244	ppb	189.23	1.00	
44 Ca	0.2711	ppb	303.98	1.00	
51 V	-0.0608	ppb	116.55	1.00	
52 Cr	-0.0492	ppb	21.81	1.00	
53 Cr	-1.417	ppb	30.04	1.00	
55 Mn	0.0208	ppb	36.94	1.00	
56 Fe	-0.1392	ppb	1374.30	1.00	
57 Fe	3.946	ppb	37.68	1.00	
59 Co	0.0053	ppb	34.50	1.00	
60 Ni	-0.0054	ppb	46.07	1.00	
63 Cu	0.0221	ppb	54.58	1.00	
65 Cu	0.0166	ppb	60.36	1.00	
66 Zn	0.0218	ppb	78.02	1.00	
68 Zn	0.0698	ppb	60.36	1.00	
75 As	-0.024	ppb	544.13	1.00	
82 Se	0.0174	ppb	501.78	1.00	
88 Sr	0.0034	ppb	101.38	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0314	ppb	44.29	1.00	
107 Ag	0.0059	ppb	50.23	1.00	
109 Ag	0.0036	ppb	49.37	1.00	
111 Cd	-0.0519	ppb	60.10	1.00	
114 Cd	-0.0025	ppb	65.58	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0511	ppb	41.01	1.00	
120 Sn	0.0458	ppb	24.61	1.00	
121 Sb	0.0087	ppb	12.17	1.00	
123 Sb	0.0026	ppb	72.27	1.00	
135 Ba	0.0032	ppb	191.25	1.00	
137 Ba	0.0035	ppb	180.94	1.00	
182 W	0.053	ppb	44.97	1.00	
203 Tl	-0.0003	ppb	2413.90	1.00	
205 Tl	-0.0033	ppb	105.42	1.00	
208 Pb	0.0912	ppb	7.99	1.00	
232 Th	0.0552	ppb	4.94	1.00	
238 U	0.0038	ppb	31.22	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3020165.50	1.20	4492941.00	67.2	79.5 - 120	ISFail
45 Sc	2278732.30	2.90	3094960.50	73.6	79.5 - 120	ISFail
72 Ge	457770.25	2.23	631723.63	72.5	79.5 - 120	ISFail
159 Tb	5292511.00	1.11	6220065.50	85.1	79.5 - 120	
209 Bi	3129553.50	1.87	3318256.50	94.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE14A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500)

ANALYST: JS

ANALYSIS DATE: 05/15/2018

REVIEWED
MD 5/16/18
KATAHDIN ANALYTICAL
METALS SECTION

FILE NAME: JLE15C

METHOD: ICP-MS
- ☑ 200.8
- ☐ 6020
- ☑ DOD

The pHs of all samples that were tested by direct analysis in this analytical run were checked just prior to analysis and confirmed
to be <2. The time of preservation of these samples was checked in the "Measured Turbidity and Preservation of Incoming Samples" logbook to verify that they had been preserved at least 16 hours prior to analysis. These verifications were performed by
_____ (initals) on _____ (date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17761	05/14/2018	05/14/2019	0 ug/L
Standard 1	MW17738	05/11/2018	06/21/2018	Varies by Element
ICV	MW17701	04/24/2018	07/24/2018	Varies by Element
PQL	MW17755	05/10/2018	07/13/2018	Varies by Element
LRS1	MW17735	05/04/2018	08/04/2018	Varies by Element
LRS2	MW17704	04/25/2018	07/25/2018	Varies by Element
ICSA	MW17763	05/14/2018	05/20/2018	Varies by Element
ICSAB	MW17764	05/14/2018	05/20/2018	Varies by Element
CCV	MW17759	05/11/2018	06/21/2018	Varies by Element
Internal Standard	MW17762	05/14/2018	08/142018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

MD 5/16/18

Dilutions: Some samples were diluted based on history or due to interfering element concentrations. Dilution preparations are as follows:

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17761 (pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL of MW17761 (pipet M18)

Post Spike: 0.08mL of MW17698 (pipet M16) into 5x diln. of sample (pipet M18)

(Unless otherwise specified)

INSTRUMENT RUNLOG

Instrument: AGILENT 7500

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
6020 TUNE	1	JLE15C	5/15/2018	6:36:00 14:18	JS
200.8 TUNE	1	JLE15C	5/15/2018	6:36:00 14:21	JS
Cal Blank	1	JLE15C	5/15/2018	6:36:00 18:36	JS
Cal Std	1	JLE15C	5/15/2018	6:40:00 18:40	JS
ICV	1	JLE15C	5/15/2018	6:44:00 18:44	JS
ICB	1	JLE15C	5/15/2018	6:48:00 18:48	JS
PQL	1	JLE15C	5/15/2018	6:52:00 18:52	JS
RINSE	1	JLE15C	5/15/2018	6:56:00 18:56	JS
ICSA	1	JLE15C	5/15/2018	7:00:00 19:00	JS
ICSAB	1	JLE15C	5/15/2018	7:04:00 19:04	JS
RINSE	1	JLE15C	5/15/2018	7:08:00 19:08	JS
LRS1	1	JLE15C	5/15/2018	7:13:00 19:13	JS
LRS2	1	JLE15C	5/15/2018	7:16:00 19:16	JS
RINSE	1	JLE15C	5/15/2018	7:21:00 19:21	JS
RINSE	1	JLE15C	5/15/2018	7:25:00 19:25	JS
CCV	1	JLE15C	5/15/2018	7:29:00 19:29	JS
CCB	1	JLE15C	5/15/2018	7:33:00 19:33	JS
PBWLE14IMW1	1	JLE15C	5/15/2018	7:37:00 19:37	JS
LCSWLE14IMW1	5	JLE15C	5/15/2018	7:41:00 19:41	JS
SL4085-001	1	JLE15C	5/15/2018	7:45:00 19:45	JS
SL4096-001	1	JLE15C	5/15/2018	7:50:00 19:50	JS
SL3807-001	5	JLE15C	5/15/2018	7:54:00 19:54	JS
SL3807-002	5	JLE15C	5/15/2018	7:58:00 19:58	JS
RINSE	1	JLE15C	5/15/2018	8:02:00 20:02	JS
PBWLE07IMW1	5	JLE15C	5/15/2018	8:07:00 20:07	JS
LCSWLE07IMW1	5	JLE15C	5/15/2018	8:11:00 20:11	JS
SL3808-002	5	JLE15C	5/15/2018	8:15:00 20:15	JS
CCV	1	JLE15C	5/15/2018	8:19:00 20:19	JS
CCB	1	JLE15C	5/15/2018	8:23:00 20:23	JS
SL3808-003	5	JLE15C	5/15/2018	8:27:00 20:27	JS
SL3808-004	5	JLE15C	5/15/2018	8:31:00 20:31	JS
SL3808-004L	25	JLE15C	5/15/2018	8:36:00 20:36	JS
SL3808-004A	5	JLE15C	5/15/2018	8:40:00 20:40	JS
SL3808-004S	5	JLE15C	5/15/2018	8:44:00 20:44	JS
SL3808-004P	5	JLE15C	5/15/2018	8:48:00 20:48	JS
SL3808-005	5	JLE15C	5/15/2018	8:52:00 20:52	JS
SL3808-005L	25	JLE15C	5/15/2018	8:56:00 20:56	JS
SL3808-005A	5	JLE15C	5/15/2018	9:01:00 21:01	JS
RINSE	5	JLE15C	5/15/2018	9:05:00 21:05	JS
CCV	1	JLE15C	5/15/2018	9:09:00 21:09	JS
CCB	1	JLE15C	5/15/2018	9:13:00 21:13	JS
SL3808-005S	5	JLE15C	5/15/2018	9:17:00 21:17	JS
SL3808-005P	5	JLE15C	5/15/2018	9:21:00 21:21	JS
SL3808-006	5	JLE15C	5/15/2018	9:25:00 21:25	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3808-007	5	JLE15C	5/15/2018	9:30:00 21:30	JS
SL3808-008	5	JLE15C	5/15/2018	9:34:00 21:34	JS
SL3808-009	5	JLE15C	5/15/2018	9:38:00 21:38	JS
SL3808-010	5	JLE15C	5/15/2018	9:42:00 21:42	JS
SL3808-011	5	JLE15C	5/15/2018	9:47:00 21:47	JS
SL3808-012	5	JLE15C	5/15/2018	9:51:00 21:51	JS
RINSE	1	JLE15C	5/15/2018	9:55:00 21:55	JS
CCV	1	JLE15C	5/15/2018	9:59:00 21:59	JS
CCB	1	JLE15C	5/15/2018	10:03:0 22:03	JS
SL3808-013	5	JLE15C	5/15/2018	10:07:0 22:07	JS
SL3808-014	5	JLE15C	5/15/2018	10:12:0 22:12	JS
SL3808-015	5	JLE15C	5/15/2018	10:16:0 22:16	JS
SL3808-016	5	JLE15C	5/15/2018	10:20:0 22:20	JS
SL3808-017	5	JLE15C	5/15/2018	10:24:0 22:24	JS
SL3808-018	5	JLE15C	5/15/2018	10:28:0 22:28	JS
RINSE	1	JLE15C	5/15/2018	10:33:0 22:33	JS
RINSE	1	JLE15C	5/15/2018	10:37:0 22:37	JS
PBSLE08IMS2	5	JLE15C	5/15/2018	10:41:0 22:41	JS
LCSOLE08IMS2	5	JLE15C	5/15/2018	10:45:0 22:45	JS
CCV	1	JLE15C	5/15/2018	10:49:0 22:49	JS
CCB	1	JLE15C	5/15/2018	10:53:0 22:53	JS
SL3809-024	5	JLE15C	5/15/2018	10:58:0 22:58	JS
SL3809-024L	25	JLE15C	5/15/2018	11:02:0 23:02	JS
SL3809-024A	5	JLE15C	5/15/2018	11:06:0 23:06	JS
SL3809-024S	5	JLE15C	5/15/2018	11:10:0 23:10	JS
SL3809-024P	5	JLE15C	5/15/2018	11:15:0 23:15	JS
SL3809-041	5	JLE15C	5/15/2018	11:19:0 23:19	JS
SL3809-042	5	JLE15C	5/15/2018	11:23:0 23:23	JS
SL3809-043	5	JLE15C	5/15/2018	11:28:0 23:28	JS
SL3809-044	5	JLE15C	5/15/2018	11:32:0 23:32	JS
RINSE	5	JLE15C	5/15/2018	11:36:0 23:36	JS
CCV	1	JLE15C	5/15/2018	11:41:0 23:41	JS
CCB	1	JLE15C	5/15/2018	11:45:0 23:45	JS
SL3809-046	5	JLE15C	5/15/2018	11:49:0 23:49	JS
SL3809-047	5	JLE15C	5/15/2018	11:53:0 23:53	JS
RINSE	1	JLE15C	5/15/2018	11:57:0 23:57	JS
PBWLE07IMW2	5	JLE15C	5/16/2018	12:02:0 0:02	JS
LCSWLE07IMW2	5	JLE15C	5/16/2018	12:06:0 0:06	JS
SL3841-002	5	JLE15C	5/16/2018	12:10:0 0:10	JS
SL3841-003	5	JLE15C	5/16/2018	12:14:0 0:14	JS
SL3841-004	5	JLE15C	5/16/2018	12:18:0 0:18	JS
SL3841-005	5	JLE15C	5/16/2018	12:23:0 0:23	JS
RINSE	1	JLE15C	5/16/2018	12:27:0 0:27	JS
CCV	1	JLE15C	5/16/2018	12:31:0 0:31	JS
CCB	1	JLE15C	5/16/2018	12:35:0 0:35	JS
SL3841-006	5	JLE15C	5/16/2018	12:39:0 0:39	JS
SL3841-008	5	JLE15C	5/16/2018	12:43:0 0:43	JS

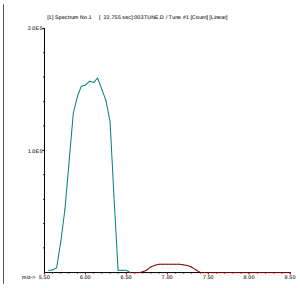
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL3841-009	5	JLE15C	5/16/2018	12:48:0 0:48	JS
SL3841-010	5	JLE15C	5/16/2018	12:52:0 0:52	JS
SL3841-011	5	JLE15C	5/16/2018	12:56:0 0:56	JS
SL3841-011L	25	JLE15C	5/16/2018	1:00:00 1:00	JS
SL3841-011A	5	JLE15C	5/16/2018	1:05:00 1:05	JS
SL3841-011S	5	JLE15C	5/16/2018	1:09:00 1:09	JS
SL3841-011P	5	JLE15C	5/16/2018	1:13:00 1:13	JS
RINSE	1	JLE15C	5/16/2018	1:17:00 1:17	JS
CCV	1	JLE15C	5/16/2018	1:21:00 1:21	JS
CCB	1	JLE15C	5/16/2018	1:25:00 1:25	JS
SL3841-012	5	JLE15C	5/16/2018	1:30:00 1:30	JS
SL3841-013	5	JLE15C	5/16/2018	1:34:00 1:34	JS
SL3841-014	5	JLE15C	5/16/2018	1:38:00 1:38	JS
SL3841-015	5	JLE15C	5/16/2018	1:42:00 1:42	JS
SL3841-016	5	JLE15C	5/16/2018	1:47:00 1:47	JS
SL3841-017	5	JLE15C	5/16/2018	1:51:00 1:51	JS
SL3841-018	5	JLE15C	5/16/2018	1:55:00 1:55	JS
SL3841-019	5	JLE15C	5/16/2018	1:59:00 1:59	JS
SL3841-020	5	JLE15C	5/16/2018	2:04:00 2:04	JS
RINSE	1	JLE15C	5/16/2018	2:08:00 2:08	JS
CCV	1	JLE15C	5/16/2018	2:12:00 2:12	JS
CCB	1	JLE15C	5/16/2018	2:16:00 2:16	JS
PQL	1	JLE15C	5/16/2018	2:20:00 2:20	JS
CCV	1	JLE15C	5/16/2018	2:25:00 2:25	JS
CCB	1	JLE15C	5/16/2018	2:29:00 2:29	JS

6020 QC Tune Report

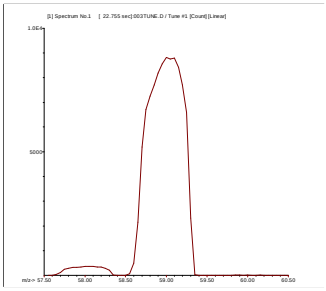
Data File: C:\ICPCHEM\1\DATA\JLE15A.B\003TUNE.D
Date Acquired: May 15 2018 02:18 pm
Acq. Method: TN6020E.M
Operator: JS
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

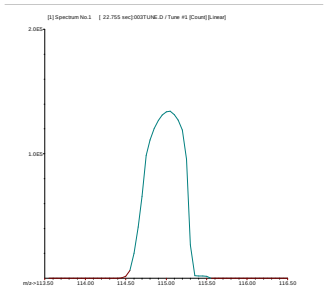
Element	Actual	Required	Flag
7 Li	2.80	5.00	
59 Co	3.05	5.00	
115 In	2.19	5.00	
205 Tl	2.14	5.00	



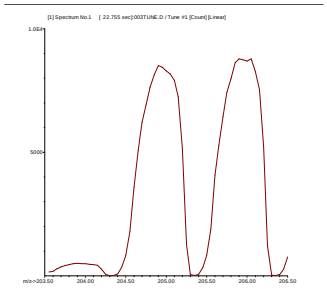
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



115 In
Mass Calib.
Actual: 115.05
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 0.90
Flag:



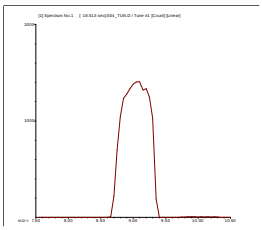
205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

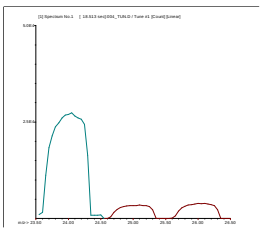
Data File: C:\ICPCHEM\1\DATA\JLE15A.B\004_TUN.D
Date Acquired: May 15 2018 02:21 pm
Acq. Method: TN200_8E.M
Operator: JS
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

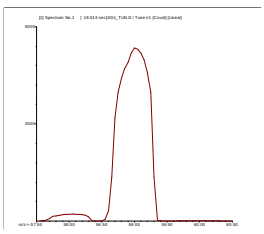
Element	Actual	Required	Flag
9 Be	3.38	5.00	
24 Mg	2.20	5.00	
59 Co	2.04	5.00	
115 In	0.74	5.00	
208 Pb	1.15	5.00	



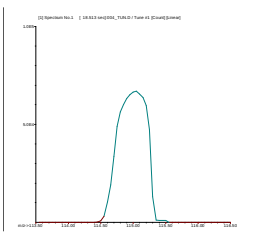
9 Be
Mass Calib.
Actual: 9.10
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



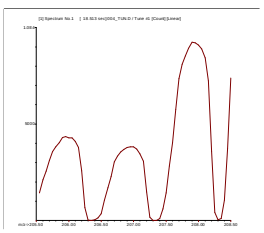
24 Mg
Mass Calib.
Actual: 24.05
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.05
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:

Tune Result: Pass

Katahdin Analytical Services 4000274

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.I
Date Acquired: May 15 2018 06:36 pm
Operator: JS
Sample Name: Cal Blank
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: May 15 2018 06:38 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	3927739.00	A	92700.00	2.36
9	Be	10.74	P	2.80	26.03
11	B	405.58	P	32.89	8.11
23	Na	30975.03	P	2124.00	6.86
25	Mg	184.46	P	33.56	18.19
27	Al	3168.05	P	290.60	9.17
28	Si	1223969.00	A	8813.00	0.72
29	Si	95690.43	P	1045.00	1.09
39	K	954149.81	A	8107.00	0.85
43	Ca	144.46	P	29.40	20.35
44	Ca	2918.57	P	257.80	8.83
45	Sc	2572659.00	A	24100.00	0.94
51	V	2300.28	P	462.20	20.09
52	Cr	7842.30	P	290.00	3.70
53	Cr	9658.94	P	273.70	2.83
55	Mn	1123.41	P	36.06	3.21
56	Fe	1591633.00	A	6934.00	0.44
57	Fe	10218.73	P	118.10	1.16
59	Co	100.01	P	17.64	17.64
60	Ni	50.77	P	16.76	33.01
63	Cu	604.48	P	90.34	14.95
65	Cu	272.23	P	41.14	15.11
66	Zn	694.48	P	35.64	5.13
68	Zn	1134.52	P	91.56	8.07
72	Ge	510197.59	P	9729.00	1.91
75	As	-130.50	P	112.20	85.98
82	Se	-13.96	P	5.73	41.03
88	Sr	77.79	P	22.22	28.57
89	Y	3568781.00	A	19720.00	0.55
98	Mo	33.96	P	12.62	37.16
107	Ag	28.89	P	10.71	37.07
109	Ag	18.89	P	5.09	26.96
111	Cd	732.00	P	25.56	3.49
114	Cd	-5.19	P	5.21	100.30
115	In	3455556.00	A	37390.00	1.08
118	Sn	375.57	P	38.49	10.25
120	Sn	544.47	P	40.74	7.48
121	Sb	34.45	P	13.47	39.11
123	Sb	17.78	P	8.39	47.19
135	Ba	16.67	P	6.67	40.00
137	Ba	33.33	P	12.02	36.06
159	Tb	4617151.00	A	98870.00	2.14
182	W	43.34	P	6.67	15.39
203	Tl	143.34	P	18.56	12.95
205	Tl	352.24	P	50.92	14.46
208	Pb	1785.67	P	28.35	1.59
209	Bi	2380666.00	A	19250.00	0.81
232	Th	30.00	P	3.33	11.11
238	U	14.44	P	5.09	35.25

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\014CALI.D\014CALI.D#
Date Acquired: May 15 2018 06:40 pm
Operator: JS
Sample Name: Cal Std
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: May 15 2018 06:38 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	4228799.00	A	216000.00	5.11
9 Be	152613.70	P	1257.00	0.82
11 B	78814.19	P	2795.00	3.55
23 Na	92552320.00	A	2234000.00	2.41
25 Mg	7688719.00	A	205000.00	2.67
27 Al	6962852.00	A	258300.00	3.71
28 Si	5154026.00	A	16410.00	0.32
29 Si	301817.31	P	4024.00	1.33
39 K	93881152.00	A	829600.00	0.88
43 Ca	164702.80	P	1280.00	0.78
44 Ca	2657397.00	A	32810.00	1.23
45 Sc	2724980.00	A	49510.00	1.82
51 V	532087.31	P	7822.00	1.47
52 Cr	449933.50	P	6031.00	1.34
53 Cr	58155.10	P	1043.00	1.79
55 Mn	560630.38	P	3608.00	0.64
56 Fe	93014160.00	A	539800.00	0.58
57 Fe	2275517.00	A	26380.00	1.16
59 Co	487875.50	P	4335.00	0.89
60 Ni	108787.00	P	970.10	0.89
63 Cu	264713.59	P	3171.00	1.20
65 Cu	124439.90	P	825.20	0.66
66 Zn	62862.39	P	434.80	0.69
68 Zn	46481.72	P	291.00	0.63
72 Ge	527192.69	P	2630.00	0.50
75 As	64053.79	P	208.10	0.32
82 Se	4956.27	P	61.62	1.24
88 Sr	692280.50	P	4563.00	0.66
89 Y	3815167.00	A	16830.00	0.44
98 Mo	205716.41	P	1796.00	0.87
107 Ag	326894.00	P	286.90	0.09
109 Ag	312567.50	P	646.30	0.21
111 Cd	66605.33	P	284.30	0.43
114 Cd	145799.09	P	1159.00	0.79
115 In	3594212.00	A	35680.00	0.99
118 Sn	199929.80	P	240.40	0.12
120 Sn	276795.50	P	2570.00	0.93
121 Sb	242972.80	P	1593.00	0.66
123 Sb	185082.41	P	671.20	0.36
135 Ba	60633.48	P	631.40	1.04
137 Ba	105096.90	P	686.10	0.65
159 Tb	4910357.00	A	33770.00	0.69
182 W	242783.30	P	1990.00	0.82
203 Tl	202711.30	P	1717.00	0.85
205 Tl	476911.81	P	5110.00	1.07
208 Pb	649529.81	P	7484.00	1.15
209 Bi	2415771.00	A	34190.00	1.42
232 Th	673026.19	P	5913.00	0.88
238 U	651473.31	P	9462.00	1.45

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4228798.50	5.11	3927738.80	107.7	79.5 - 120.4	
45 Sc	2724980.30	1.82	2572658.80	105.9	79.5 - 120.4	
72 Ge	527192.63	0.50	510197.59	103.3	79.5 - 120.4	
159 Tb	4910357.00	0.69	4617151.00	106.4	79.5 - 120.4	
209 Bi	2415771.30	1.42	2380666.00	101.5	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000276

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\015_ICV.D\015_ICV.D#
Date Acquired: May 15 2018 06:44 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: ICV
Misc Info:
Vial Number: 1202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	20.02	ppb	3.34	20	100.1	
11 B	21.56	ppb	2.89	20	107.8	
23 Na	3,902.	ppb	2.48	4,000	97.55	
25 Mg	3,846.	ppb	2.73	4,000	96.15	
27 Al	400.1	ppb	2.32	400	100.025	
28 Si	385.8	ppb	6.25	400	96.45	
29 Si	373.7	ppb	8.35	400	93.425	
39 K	3,913.	ppb	1.05	4,000	97.825	
43 Ca	3,960.	ppb	1.85	4,000	99	
44 Ca	4,046.	ppb	1.08	4,000	101.15	
51 V	19.62	ppb	1.68	20	98.1	
52 Cr	19.51	ppb	1.03	20	97.55	
53 Cr	15.59	ppb	2.14	20	77.95	
55 Mn	19.59	ppb	2.82	20	97.95	
56 Fe	3,904.	ppb	2.20	4,000	97.6	
57 Fe	3,993.	ppb	1.58	4,000	99.825	
59 Co	20.05	ppb	1.29	20	100.25	
60 Ni	20.07	ppb	1.29	20	100.35	
63 Cu	19.71	ppb	1.71	20	98.55	
65 Cu	19.96	ppb	1.52	20	99.8	
66 Zn	20.48	ppb	2.54	20	102.4	
68 Zn	20.45	ppb	1.29	20	102.25	
75 As	20.14	ppb	0.75	20	100.7	
82 Se	20.39	ppb	1.50	20	101.95	
88 Sr	19.31	ppb	1.65	20	96.55	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	38.8	ppb	1.31	40	97	
107 Ag	19.93	ppb	0.43	20	99.65	
109 Ag	19.91	ppb	1.21	20	99.55	
111 Cd	19.97	ppb	1.48	20	99.85	
114 Cd	20.08	ppb	0.60	20	100.4	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	20.24	ppb	1.13	20	101.2	
120 Sn	19.95	ppb	2.66	20	99.75	
121 Sb	20.33	ppb	1.38	20	101.65	
123 Sb	20.22	ppb	2.59	20	101.1	
135 Ba	20.41	ppb	2.42	20	102.05	
137 Ba	20.03	ppb	0.80	20	100.15	
182 W	19.59	ppb	0.89	20	97.95	
203 Tl	19.91	ppb	1.02	20	99.55	
205 Tl	20.23	ppb	0.59	20	101.15	
208 Pb	19.62	ppb	0.65	20	98.1	
232 Th	19.47	ppb	0.36	20	97.35	
238 U	19.29	ppb	0.67	20	96.45	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4194787.00	3.80	3927738.80	106.8	80 - 120.4	
45 Sc	2776944.30	1.30	2572658.80	107.9	80 - 120.4	
72 Ge	533205.75	0.34	510197.59	104.5	80 - 120.4	
159 Tb	4802040.00	1.02	4617151.00	104.0	80 - 120.4	
209 Bi	2413266.30	1.97	2380666.00	101.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000277

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\016_ICB.D\016_ICB.D#
Date Acquired: May 15 2018 06:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: ICB
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0019	ppb	93.34	1.00	
11 B	1.377	ppb	23.18	1.00	
23 Na	0.019	ppb	602.31	1.00	
25 Mg	0.1288	ppb	99.85	1.00	
27 Al	0.0246	ppb	271.67	1.00	
28 Si	-5.674	ppb	115.05	1.00	
29 Si	-6.3	ppb	53.00	1.00	
39 K	-2.315	ppb	21.32	1.00	
43 Ca	-1.577	ppb	90.36	1.00	
44 Ca	0.5523	ppb	115.14	1.00	
51 V	0.1102	ppb	35.61	1.00	
52 Cr	-0.037	ppb	48.53	1.00	
53 Cr	-3.395	ppb	5.08	1.00	
55 Mn	-0.0013	ppb	12.22	1.00	
56 Fe	-0.576	ppb	526.56	1.00	
57 Fe	0.0172	ppb	17237.00	1.00	
59 Co	-0.003	ppb	24.23	1.00	
60 Ni	0.0042	ppb	431.72	1.00	
63 Cu	-0.0026	ppb	423.66	1.00	
65 Cu	0.0091	ppb	63.27	1.00	
66 Zn	0.0665	ppb	100.05	1.00	
68 Zn	-0.1183	ppb	48.17	1.00	
75 As	-0.1336	ppb	22.11	1.00	
82 Se	0.2507	ppb	33.83	1.00	
88 Sr	0.0015	ppb	215.59	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0558	ppb	32.22	1.00	
107 Ag	0.0037	ppb	25.72	1.00	
109 Ag	0.005	ppb	51.07	1.00	
111 Cd	0.0229	ppb	64.04	1.00	
114 Cd	0.002	ppb	182.28	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0403	ppb	5.05	1.00	
120 Sn	0.0333	ppb	26.67	1.00	
121 Sb	0.0065	ppb	36.28	1.00	
123 Sb	0.0095	ppb	20.32	1.00	
135 Ba	0.0039	ppb	213.29	1.00	
137 Ba	-0.0039	ppb	101.64	1.00	
182 W	0.0542	ppb	33.09	1.00	
203 Tl	0.0069	ppb	134.58	1.00	
205 Tl	0.0053	ppb	41.78	1.00	
208 Pb	-0.0054	ppb	103.41	1.00	
232 Th	0.0438	ppb	18.17	1.00	
238 U	0.003	ppb	17.33	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4027835.80	6.79	3927738.80	102.5	79.5 - 120	
45 Sc	2697291.80	0.24	2572658.80	104.8	79.5 - 120	
72 Ge	521111.94	0.99	510197.59	102.1	79.5 - 120	
159 Tb	4620834.50	0.79	4617151.00	100.1	79.5 - 120	
209 Bi	2369894.50	0.72	2380666.00	99.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000278

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\017_PQL.D\017_PQL.D#
Date Acquired: May 15 2018 06:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PQL
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.2069	ppb	2.39	0.20	103.45	
11 B	4.574	ppb	1.07	4.00	114.35	
23 Na	194.1	ppb	3.70	200.00	97.05	
25 Mg	19.19	ppb	1.14	20.00	95.95	
27 Al	19.29	ppb	1.73	20.00	96.45	
28 Si	103.1	ppb	5.60	100.00	103.1	
29 Si	102.2	ppb	7.95	100.00	102.2	
39 K	191.1	ppb	2.61	200.00	95.55	
43 Ca	21.83	ppb	11.57	20.00	109.15	
44 Ca	19.83	ppb	6.17	20.00	99.15	
51 V	1.026	ppb	8.88	1.00	102.6	
52 Cr	0.9205	ppb	2.17	1.00	92.05	
53 Cr	-2.266	ppb	11.92	---	#VALUE!	
55 Mn	0.3835	ppb	3.89	0.40	95.875	
56 Fe	15.59	ppb	11.31	20.00	77.95	
57 Fe	19.56	ppb	3.58	20.00	97.8	
59 Co	0.1932	ppb	9.96	0.20	96.6	
60 Ni	0.3786	ppb	4.21	0.40	94.65	
63 Cu	0.592	ppb	6.70	0.60	98.6667	
65 Cu	0.6034	ppb	4.42	0.60	100.567	
66 Zn	2.125	ppb	4.44	2.00	106.25	
68 Zn	1.979	ppb	9.78	2.00	98.95	
75 As	0.9864	ppb	5.23	1.00	98.64	
82 Se	1.156	ppb	20.13	1.00	115.6	
88 Sr	0.961	ppb	0.93	1.00	96.1	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	0.9695	ppb	2.20	1.00	96.95	
107 Ag	0.1977	ppb	5.51	0.20	98.85	
109 Ag	0.206	ppb	7.78	0.20	103	
111 Cd	0.2027	ppb	15.68	0.20	101.35	
114 Cd	0.2031	ppb	2.72	0.20	101.55	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	1.041	ppb	3.72	1.00	104.1	
120 Sn	1.	ppb	3.13	1.00	100	
121 Sb	0.2042	ppb	7.95	0.20	102.1	
123 Sb	0.2088	ppb	1.39	0.20	104.4	
135 Ba	0.4338	ppb	1.64	0.40	108.45	
137 Ba	0.4102	ppb	10.54	0.40	102.55	
182 W	0.9796	ppb	1.14	1.00	97.96	
203 Tl	0.2056	ppb	8.81	0.20	102.8	
205 Tl	0.1977	ppb	5.54	0.20	98.85	
208 Pb	0.1988	ppb	3.89	0.20	99.4	
232 Th	0.2053	ppb	2.42	0.20	102.65	
238 U	0.1855	ppb	1.14	0.20	92.75	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4007850.30	2.47	3927738.80	102.0	80 - 120.4	
45 Sc	2636955.80	1.28	2572658.80	102.5	80 - 120.4	
72 Ge	518486.31	0.50	510197.59	101.6	80 - 120.4	
159 Tb	4636618.00	1.27	4617151.00	100.4	80 - 120.4	
209 Bi	2377560.50	1.27	2380666.00	99.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000279

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\018SMPL.D\018SMPL.D#
Date Acquired: May 15 2018 06:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0002	-0.0002	ppb	280.24	100.	
11 B	0.3801	0.3801	ppb	20.93	1000.	
23 Na	0.7564	0.7564	ppb	19.61	200000.	
25 Mg	0.0737	0.0737	ppb	83.74	200000.	
27 Al	0.4611	0.4611	ppb	16.48	200000.	
28 Si	7.501	7.501	ppb	101.99	#VALUE!	
29 Si	1.871	1.871	ppb	210.15	10000.	
39 K	0.0609	0.0609	ppb	1292.60	200000.	
43 Ca	2.427	2.427	ppb	95.01	#VALUE!	
44 Ca	0.755	0.755	ppb	78.12	200000.	
51 V	0.0287	0.0287	ppb	218.15	1000.	
52 Cr	-0.0265	-0.0265	ppb	64.66	2000.	
53 Cr	-3.643	-3.643	ppb	9.13	#VALUE!	
55 Mn	0.0029	0.0029	ppb	393.23	2000.	
56 Fe	0.8661	0.8661	ppb	242.47	#VALUE!	
57 Fe	3.266	3.266	ppb	23.52	100000.	
59 Co	0.0007	0.0007	ppb	250.22	1000.	
60 Ni	0.0139	0.0139	ppb	47.32	1000.	
63 Cu	0.1533	0.1533	ppb	11.58	#VALUE!	
65 Cu	0.1408	0.1408	ppb	10.03	2000.	
66 Zn	0.0623	0.0623	ppb	40.34	2000.	
68 Zn	-0.1005	-0.1005	ppb	78.43	#VALUE!	
75 As	0.2061	0.2061	ppb	45.43	1000.	
82 Se	0.3767	0.3767	ppb	30.21	1000.	
88 Sr	0.0023	0.0023	ppb	90.76	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0099	0.0099	ppb	23.56	1000.	
107 Ag	-0.0003	-0.0003	ppb	621.03	100.	
109 Ag	-0.0001	-0.0001	ppb	1862.70	#VALUE!	
111 Cd	0.0268	0.0268	ppb	30.56	#VALUE!	
114 Cd	0.0031	0.0031	ppb	94.74	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.022	0.022	ppb	32.72	1000.	
120 Sn	0.0057	0.0057	ppb	150.83	#VALUE!	
121 Sb	0.0001	0.0001	ppb	371.89	#VALUE!	
123 Sb	0.0002	0.0002	ppb	618.01	1000.	
135 Ba	-0.001	-0.001	ppb	1001.00	2000.	
137 Ba	0.006	0.006	ppb	130.28	#VALUE!	
182 W	0.0127	0.0127	ppb	31.93	1000.	
203 Tl	0.0016	0.0016	ppb	170.09	1000.	
205 Tl	0.004	0.004	ppb	59.74	#VALUE!	
208 Pb	0.1351	0.1351	ppb	9.65	2000.	
232 Th	0.0103	0.0103	ppb	29.53	1000.	
238 U	0.0002	0.0002	ppb	141.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4023215.00	0.34	3927738.80	102.4	69.5 - 120	
45 Sc	2616969.30	1.28	2572658.80	101.7	69.5 - 120	
72 Ge	521151.63	0.95	510197.59	102.1	69.5 - 120	
159 Tb	4666094.00	0.50	4617151.00	101.1	69.5 - 120	
209 Bi	2350265.50	0.59	2380666.00	98.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000280

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\019ICSA.D\019ICSA.D#
Date Acquired: May 15 2018 07:00 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: ICSA
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0013	ppb	27.91		
11 B	0.712	ppb	4.07		
23 Na	92,410.	ppb	1.45		
25 Mg	89,100.	ppb	1.78		
27 Al	91,500.	ppb	0.87		
28 Si	5.718	ppb	107.69		
29 Si	22.94	ppb	22.37		
39 K	95,450.	ppb	1.80		
43 Ca	100,400.	ppb	1.59		
44 Ca	95,500.	ppb	1.95		
51 V	0.2248	ppb	17.08		
52 Cr	0.9327	ppb	5.69		
53 Cr	-1.512	ppb	16.28		
55 Mn	0.3839	ppb	6.31		
56 Fe	93,270.	ppb	0.69		
57 Fe	90,640.	ppb	0.89		
59 Co	0.102	ppb	14.38		
60 Ni	-0.3109	ppb	10.65		
63 Cu	3.713	ppb	2.67		
65 Cu	1.001	ppb	6.41		
66 Zn	2.485	ppb	2.69		
68 Zn	0.3877	ppb	38.41		
75 As	0.2878	ppb	38.08		
82 Se	0.2531	ppb	39.71		
88 Sr	0.8955	ppb	2.13		
89 Y	--------	---	--------		
98 Mo	1,911.	ppb	1.33		
107 Ag	0.0211	ppb	18.21		
109 Ag	0.0217	ppb	8.03		
111 Cd	0.0629	ppb	50.54		
114 Cd	0.0374	ppb	59.40		
115 In	--------	---	--------		
118 Sn	0.0586	ppb	5.87		
120 Sn	0.0568	ppb	10.22		
121 Sb	0.0408	ppb	9.81		
123 Sb	0.0503	ppb	5.31		
135 Ba	0.0954	ppb	17.52		
137 Ba	0.0867	ppb	14.49		
182 W	0.2285	ppb	4.39		
203 Tl	0.0049	ppb	86.14		
205 Tl	0.0054	ppb	122.31		
208 Pb	0.0583	ppb	6.57		
232 Th	0.0589	ppb	16.21		
238 U	0.0002	ppb	287.77		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3656458.80	2.00	3927738.80	93.1	69.5 - 120.4	
45 Sc	2738870.50	0.42	2572658.80	106.5	69.5 - 120.4	
72 Ge	532628.50	1.10	510197.59	104.4	69.5 - 120.4	
159 Tb	4788053.50	1.01	4617151.00	103.7	69.5 - 120.4	
209 Bi	2163522.80	1.25	2380666.00	90.9	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000281

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\020ICSB.D\020ICSB.D#
Date Acquired: May 15 2018 07:04 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: ICSAB
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	21.05	ppb	1.21	20.00	79.5 - 120	
11 B	22.67	ppb	3.10	20.00	79.5 - 120	
23 Na	94,170.	ppb	3.08	#########	79.5 - 120	
25 Mg	91,850.	ppb	6.27	#########	79.5 - 120	
27 Al	93,940.	ppb	4.47	#########	79.5 - 120	
28 Si	491.5	ppb	6.43	---	##### - #####	
29 Si	513.3	ppb	6.89	---	##### - #####	
39 K	97,210.	ppb	3.26	#########	79.5 - 120	
43 Ca	102,000.	ppb	4.71	#########	79.5 - 120	
44 Ca	96,200.	ppb	2.57	#########	79.5 - 120	
51 V	19.81	ppb	2.04	20.00	79.5 - 120	
52 Cr	20.13	ppb	1.70	20.00	79.5 - 120	
53 Cr	19.85	ppb	1.44	---	##### - #####	
55 Mn	19.54	ppb	1.23	20.00	79.5 - 120	
56 Fe	94,150.	ppb	1.62	#########	79.5 - 120	
57 Fe	91,150.	ppb	1.14	#########	79.5 - 120	
59 Co	19.25	ppb	0.83	20.00	79.5 - 120	
60 Ni	18.31	ppb	1.12	20.00	79.5 - 120	
63 Cu	21.72	ppb	0.97	20.00	79.5 - 120	
65 Cu	19.39	ppb	1.38	20.00	79.5 - 120	
66 Zn	20.19	ppb	2.02	20.00	79.5 - 120	
68 Zn	18.2	ppb	0.81	20.00	79.5 - 120	
75 As	19.62	ppb	0.38	20.00	79.5 - 120	
82 Se	19.32	ppb	2.20	20.00	79.5 - 120	
88 Sr	20.65	ppb	1.44	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,960.	ppb	1.27	2000.00	79.5 - 120	
107 Ag	18.35	ppb	1.18	20.00	79.5 - 120	
109 Ag	18.31	ppb	1.37	20.00	79.5 - 120	
111 Cd	18.45	ppb	1.24	20.00	79.5 - 120	
114 Cd	18.49	ppb	1.43	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	20.3	ppb	2.74	20.00	79.5 - 120	
120 Sn	20.09	ppb	1.46	20.00	79.5 - 120	
121 Sb	20.11	ppb	1.32	20.00	79.5 - 120	
123 Sb	20.	ppb	2.28	20.00	79.5 - 120	
135 Ba	20.62	ppb	1.15	20.00	79.5 - 120	
137 Ba	20.31	ppb	1.83	20.00	79.5 - 120	
182 W	20.4	ppb	2.30	20.00	79.5 - 120	
203 Tl	20.88	ppb	2.29	20.00	79.5 - 120	
205 Tl	20.86	ppb	2.06	20.00	79.5 - 120	
208 Pb	20.8	ppb	2.40	20.00	79.5 - 120	
232 Th	22.	ppb	2.16	20.00	79.5 - 120	
238 U	21.27	ppb	3.12	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3673971.30	0.44	3927738.80	93.5	69.5 - 120	
45 Sc	2730908.80	2.94	2572658.80	106.2	69.5 - 120	
72 Ge	532965.44	0.39	510197.59	104.5	69.5 - 120	
159 Tb	4854034.00	1.28	4617151.00	105.1	69.5 - 120	
209 Bi	2181126.50	2.02	2380666.00	91.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000282

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\021SMPL.D\021SMPL.D#
Date Acquired: May 15 2018 07:08 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0007	0.0007	ppb	85.96	100.	
11 B	0.4679	0.4679	ppb	22.36	1000.	
23 Na	3.994	3.994	ppb	2.06	200000.	
25 Mg	0.5611	0.5611	ppb	27.62	200000.	
27 Al	0.8498	0.8498	ppb	8.44	200000.	
28 Si	8.632	8.632	ppb	167.28	#VALUE!	
29 Si	-13.32	-13.32	ppb	77.40	10000.	
39 K	-2.2	-2.2	ppb	150.73	200000.	
43 Ca	-0.4594	-0.4594	ppb	333.48	#VALUE!	
44 Ca	2.567	2.567	ppb	29.74	200000.	
51 V	-0.0025	-0.0025	ppb	1716.40	1000.	
52 Cr	0.0551	0.0551	ppb	46.79	2000.	
53 Cr	-0.5508	-0.5508	ppb	47.22	#VALUE!	
55 Mn	0.077	0.077	ppb	10.30	2000.	
56 Fe	2.44	2.44	ppb	137.05	#VALUE!	
57 Fe	4.926	4.926	ppb	20.52	100000.	
59 Co	-0.0004	-0.0004	ppb	886.64	1000.	
60 Ni	0.0084	0.0084	ppb	119.41	1000.	
63 Cu	0.1961	0.1961	ppb	8.80	#VALUE!	
65 Cu	0.2026	0.2026	ppb	7.52	2000.	
66 Zn	0.1233	0.1233	ppb	52.00	2000.	
68 Zn	0.0909	0.0909	ppb	73.82	#VALUE!	
75 As	0.1111	0.1111	ppb	146.44	1000.	
82 Se	0.0108	0.0108	ppb	157.47	1000.	
88 Sr	0.0007	0.0007	ppb	295.56	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	1.031	1.031	ppb	37.41	1000.	
107 Ag	0.0013	0.0013	ppb	133.48	100.	
109 Ag	0.0036	0.0036	ppb	38.21	#VALUE!	
111 Cd	-0.0179	-0.0179	ppb	246.88	#VALUE!	
114 Cd	0.0004	0.0004	ppb	701.98	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0158	0.0158	ppb	30.69	1000.	
120 Sn	0.0202	0.0202	ppb	21.01	#VALUE!	
121 Sb	-0.0007	-0.0007	ppb	70.86	#VALUE!	
123 Sb	0.0051	0.0051	ppb	95.87	1000.	
135 Ba	0.0573	0.0573	ppb	27.16	2000.	
137 Ba	0.0336	0.0336	ppb	41.79	#VALUE!	
182 W	0.0094	0.0094	ppb	48.14	1000.	
203 Tl	0.0072	0.0072	ppb	139.60	1000.	
205 Tl	0.0078	0.0078	ppb	15.42	#VALUE!	
208 Pb	0.115	0.115	ppb	3.95	2000.	
232 Th	0.0101	0.0101	ppb	10.39	1000.	
238 U	0.0014	0.0014	ppb	17.56	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3877507.00	2.57	3927738.80	98.7	69.5 - 120	
45 Sc	2636587.00	2.04	2572658.80	102.5	69.5 - 120	
72 Ge	517748.88	1.00	510197.59	101.5	69.5 - 120	
159 Tb	4583198.00	1.51	4617151.00	99.3	69.5 - 120	
209 Bi	2337929.80	2.18	2380666.00	98.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000283

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\022SMPL.D\022SMPL.D#
Date Acquired: May 15 2018 07:13 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LRS1
Misc Info:
Vial Number: 3511
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	100.8	100.8	ppb	2.27	100.	>LDR
11 B	0.2195	0.2195	ppb	6.38	1000.	
23 Na	11.36	11.36	ppb	123.94	200000.	
25 Mg	8.451	8.451	ppb	153.00	200000.	
27 Al	10.02	10.02	ppb	136.93	200000.	
28 Si	-11.74	-11.74	ppb	54.42	#VALUE!	
29 Si	-13.3	-13.3	ppb	103.38	10000.	
39 K	4.706	4.706	ppb	293.03	200000.	
43 Ca	1,468.	1,468.	ppb	1.49	#VALUE!	
44 Ca	117.1	117.1	ppb	6.56	200000.	
51 V	1,019.	1,019.	ppb	2.23	1000.	>LDR
52 Cr	2,021.	2,021.	ppb	1.74	2000.	>LDR
53 Cr	2,215.	2,215.	ppb	1.47	#VALUE!	
55 Mn	1,962.	1,962.	ppb	0.64	2000.	
56 Fe	2.243	2.243	ppb	638.88	#VALUE!	
57 Fe	2.776	2.776	ppb	381.48	100000.	
59 Co	1,010.	1,010.	ppb	2.67	1000.	>LDR
60 Ni	1,027.	1,027.	ppb	2.19	1000.	>LDR
63 Cu	1,964.	1,964.	ppb	1.28	#VALUE!	
65 Cu	2,002.	2,002.	ppb	1.62	2000.	>LDR
66 Zn	2,051.	2,051.	ppb	1.56	2000.	>LDR
68 Zn	2,058.	2,058.	ppb	1.76	#VALUE!	
75 As	1,042.	1,042.	ppb	2.49	1000.	>LDR
82 Se	1,071.	1,071.	ppb	0.85	1000.	>LDR
88 Sr	1,926.	1,926.	ppb	1.48	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1,004.	1,004.	ppb	1.27	1000.	>LDR
107 Ag	106.7	106.7	ppb	1.11	100.	>LDR
109 Ag	106.7	106.7	ppb	0.06	#VALUE!	
111 Cd	1,041.	1,041.	ppb	0.90	#VALUE!	
114 Cd	1,012.	1,012.	ppb	1.19	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,003.	1,003.	ppb	1.61	1000.	>LDR
120 Sn	992.	992.	ppb	1.09	#VALUE!	
121 Sb	1,011.	1,011.	ppb	0.93	#VALUE!	
123 Sb	1,023.	1,023.	ppb	0.45	1000.	>LDR
135 Ba	2,046.	2,046.	ppb	0.78	2000.	>LDR
137 Ba	2,011.	2,011.	ppb	1.67	#VALUE!	
182 W	987.7	987.7	ppb	0.62	1000.	
203 Tl	976.3	976.3	ppb	0.73	1000.	
205 Tl	971.6	971.6	ppb	0.44	#VALUE!	
208 Pb	1,925.	1,925.	ppb	0.33	2000.	
232 Th	954.	954.	ppb	0.37	1000.	
238 U	944.5	944.5	ppb	0.52	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4065653.30	1.26	3927738.80	103.5	69.5 - 120	
45 Sc	2626603.30	2.57	2572658.80	102.1	69.5 - 120	
72 Ge	504165.38	2.93	510197.59	98.8	69.5 - 120	
159 Tb	4681912.50	1.99	4617151.00	101.4	69.5 - 120	
209 Bi	2434879.30	1.09	2380666.00	102.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

15 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000284

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\023SMPL.D\023SMPL.D#
Date Acquired: May 15 2018 07:16 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LRS2
Misc Info:
Vial Number: 3512
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0078	0.0078	ppb	40.27	100.	
11 B	0.587	0.587	ppb	5.08	1000.	
23 Na	185,300.	185,300.	ppb	2.58	200000.	
25 Mg	180,600.	180,600.	ppb	1.22	200000.	
27 Al	188,400.	188,400.	ppb	1.12	200000.	
28 Si	9,750.	9,750.	ppb	0.61	#VALUE!	
29 Si	10,270.	10,270.	ppb	1.10	10000.	>LDR
39 K	185,900.	185,900.	ppb	1.19	200000.	
43 Ca	190,600.	190,600.	ppb	0.61	#VALUE!	
44 Ca	187,800.	187,800.	ppb	0.95	200000.	
51 V	0.2079	0.2079	ppb	27.21	1000.	
52 Cr	2.884	2.884	ppb	1.65	2000.	
53 Cr	-1.937	-1.937	ppb	23.20	#VALUE!	
55 Mn	7.344	7.344	ppb	1.21	2000.	
56 Fe	92,580.	92,580.	ppb	1.02	#VALUE!	
57 Fe	89,580.	89,580.	ppb	0.98	100000.	
59 Co	2.682	2.682	ppb	1.06	1000.	
60 Ni	2.983	2.983	ppb	3.88	1000.	
63 Cu	9.04	9.04	ppb	1.13	#VALUE!	
65 Cu	2.837	2.837	ppb	1.67	2000.	
66 Zn	3.443	3.443	ppb	2.33	2000.	
68 Zn	1.031	1.031	ppb	13.18	#VALUE!	
75 As	0.3915	0.3915	ppb	37.42	1000.	
82 Se	0.727	0.727	ppb	15.59	1000.	
88 Sr	6.685	6.685	ppb	1.52	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.423	1.423	ppb	30.59	1000.	
107 Ag	0.3459	0.3459	ppb	3.06	100.	
109 Ag	0.3428	0.3428	ppb	4.29	#VALUE!	
111 Cd	0.0489	0.0489	ppb	34.39	#VALUE!	
114 Cd	0.0038	0.0038	ppb	150.77	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.7044	0.7044	ppb	9.76	1000.	
120 Sn	0.7106	0.7106	ppb	6.46	#VALUE!	
121 Sb	0.2144	0.2144	ppb	7.82	#VALUE!	
123 Sb	0.2205	0.2205	ppb	11.74	1000.	
135 Ba	0.2637	0.2637	ppb	17.07	2000.	
137 Ba	0.2318	0.2318	ppb	10.24	#VALUE!	
182 W	1.383	1.383	ppb	31.83	1000.	
203 Tl	0.0382	0.0382	ppb	16.66	1000.	
205 Tl	0.0341	0.0341	ppb	16.80	#VALUE!	
208 Pb	0.4741	0.4741	ppb	4.05	2000.	
232 Th	1.481	1.481	ppb	35.79	1000.	
238 U	0.1043	0.1043	ppb	9.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3663938.30	4.80	3927738.80	93.3	69.5 - 120	
45 Sc	2800012.80	3.57	2572658.80	108.8	69.5 - 120	
72 Ge	521149.97	2.05	510197.59	102.1	69.5 - 120	
159 Tb	4434250.50	1.54	4617151.00	96.0	69.5 - 120	
209 Bi	1849094.40	1.90	2380666.00	77.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000285

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\024SMPL.D\024SMPL.D#
Date Acquired: May 15 2018 07:21 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0007	-0.0007	ppb	54.23	100.	
11 B	0.1518	0.1518	ppb	15.90	1000.	
23 Na	19.35	19.35	ppb	64.44	200000.	
25 Mg	10.08	10.08	ppb	111.11	200000.	
27 Al	10.01	10.01	ppb	107.59	200000.	
28 Si	23.15	23.15	ppb	45.01	#VALUE!	
29 Si	-0.6374	-0.6374	ppb	2414.50	10000.	
39 K	10.1	10.1	ppb	143.17	200000.	
43 Ca	6.926	6.926	ppb	117.46	#VALUE!	
44 Ca	10.81	10.81	ppb	110.64	200000.	
51 V	0.0198	0.0198	ppb	186.13	1000.	
52 Cr	0.0884	0.0884	ppb	42.14	2000.	
53 Cr	2.746	2.746	ppb	12.92	#VALUE!	
55 Mn	0.0814	0.0814	ppb	2.70	2000.	
56 Fe	14.01	14.01	ppb	63.31	#VALUE!	
57 Fe	11.27	11.27	ppb	62.43	100000.	
59 Co	0.0038	0.0038	ppb	21.45	1000.	
60 Ni	0.0237	0.0237	ppb	26.10	1000.	
63 Cu	0.238	0.238	ppb	11.23	#VALUE!	
65 Cu	0.2157	0.2157	ppb	8.17	2000.	
66 Zn	0.2182	0.2182	ppb	11.52	2000.	
68 Zn	0.12	0.12	ppb	101.58	#VALUE!	
75 As	0.0314	0.0314	ppb	219.20	1000.	
82 Se	0.0859	0.0859	ppb	157.36	1000.	
88 Sr	0.0073	0.0073	ppb	46.65	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.201	0.201	ppb	42.56	1000.	
107 Ag	0.0035	0.0035	ppb	71.72	100.	
109 Ag	0.0029	0.0029	ppb	24.36	#VALUE!	
111 Cd	-0.0076	-0.0076	ppb	255.91	#VALUE!	
114 Cd	0.0025	0.0025	ppb	148.82	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1086	0.1086	ppb	11.54	1000.	
120 Sn	0.109	0.109	ppb	14.85	#VALUE!	
121 Sb	0.0355	0.0355	ppb	17.18	#VALUE!	
123 Sb	0.0372	0.0372	ppb	13.32	1000.	
135 Ba	0.0459	0.0459	ppb	38.60	2000.	
137 Ba	0.0462	0.0462	ppb	17.98	#VALUE!	
182 W	0.237	0.237	ppb	34.55	1000.	
203 Tl	0.0151	0.0151	ppb	71.93	1000.	
205 Tl	0.0106	0.0106	ppb	28.20	#VALUE!	
208 Pb	0.1204	0.1204	ppb	10.76	2000.	
232 Th	0.067	0.067	ppb	41.51	1000.	
238 U	0.0056	0.0056	ppb	49.06	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4065809.50	3.56	3927738.80	103.5	69.5 - 120	
45 Sc	2737375.50	1.91	2572658.80	106.4	69.5 - 120	
72 Ge	531000.00	1.62	510197.59	104.1	69.5 - 120	
159 Tb	4532983.50	0.78	4617151.00	98.2	69.5 - 120	
209 Bi	2228511.50	1.56	2380666.00	93.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000286

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\025SMPL.D\025SMPL.D#
Date Acquired: May 15 2018 07:25 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0004	0.0004	ppb	385.86	100.	
11 B	0.1135	0.1135	ppb	22.78	1000.	
23 Na	5.058	5.058	ppb	12.95	200000.	
25 Mg	0.6796	0.6796	ppb	12.39	200000.	
27 Al	0.9582	0.9582	ppb	4.51	200000.	
28 Si	15.17	15.17	ppb	24.00	#VALUE!	
29 Si	-6.024	-6.024	ppb	181.94	10000.	
39 K	-1.02	-1.02	ppb	226.67	200000.	
43 Ca	0.4981	0.4981	ppb	498.49	#VALUE!	
44 Ca	2.123	2.123	ppb	41.75	200000.	
51 V	0.1367	0.1367	ppb	52.36	1000.	
52 Cr	0.0763	0.0763	ppb	15.89	2000.	
53 Cr	2.089	2.089	ppb	2.67	#VALUE!	
55 Mn	0.0763	0.0763	ppb	13.19	2000.	
56 Fe	2.257	2.257	ppb	186.00	#VALUE!	
57 Fe	2.905	2.905	ppb	71.02	100000.	
59 Co	0.005	0.005	ppb	8.91	1000.	
60 Ni	0.0173	0.0173	ppb	119.57	1000.	
63 Cu	0.1703	0.1703	ppb	2.40	#VALUE!	
65 Cu	0.2131	0.2131	ppb	10.14	2000.	
66 Zn	0.1996	0.1996	ppb	23.12	2000.	
68 Zn	0.0702	0.0702	ppb	98.66	#VALUE!	
75 As	0.1714	0.1714	ppb	112.37	1000.	
82 Se	0.1946	0.1946	ppb	134.02	1000.	
88 Sr	0.0007	0.0007	ppb	248.28	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0716	0.0716	ppb	27.42	1000.	
107 Ag	0.0025	0.0025	ppb	52.30	100.	
109 Ag	0.0017	0.0017	ppb	144.07	#VALUE!	
111 Cd	-0.0211	-0.0211	ppb	194.25	#VALUE!	
114 Cd	0.0032	0.0032	ppb	55.10	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.05	0.05	ppb	8.75	1000.	
120 Sn	0.0602	0.0602	ppb	22.18	#VALUE!	
121 Sb	0.0158	0.0158	ppb	48.58	#VALUE!	
123 Sb	0.0214	0.0214	ppb	20.04	1000.	
135 Ba	0.0476	0.0476	ppb	34.20	2000.	
137 Ba	0.0458	0.0458	ppb	18.78	#VALUE!	
182 W	0.0933	0.0933	ppb	29.06	1000.	
203 Tl	0.0117	0.0117	ppb	65.94	1000.	
205 Tl	0.0059	0.0059	ppb	87.85	#VALUE!	
208 Pb	0.1249	0.1249	ppb	4.24	2000.	
232 Th	0.0501	0.0501	ppb	27.72	1000.	
238 U	0.001	0.001	ppb	132.54	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4143091.50	2.40	3927738.80	105.5	69.5 - 120	
45 Sc	2683343.00	1.83	2572658.80	104.3	69.5 - 120	
72 Ge	524120.78	0.64	510197.59	102.7	69.5 - 120	
159 Tb	4561281.50	0.38	4617151.00	98.8	69.5 - 120	
209 Bi	2310591.30	0.90	2380666.00	97.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000287

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\026_CCV.D\026_CCV.D#
Date Acquired: May 15 2018 07:29 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.37	ppb	1.18	25	101.48	
11 B	24.91	ppb	3.35	25	99.64	
23 Na	4,828.	ppb	0.96	5,000	96.56	
25 Mg	4,845.	ppb	0.31	5,000	96.9	
27 Al	490.7	ppb	1.09	500	98.14	
28 Si	477.5	ppb	1.89	500	95.5	
29 Si	464.1	ppb	2.61	500	92.82	
39 K	4,833.	ppb	1.29	5,000	96.66	
43 Ca	4,876.	ppb	0.88	5,000	97.52	
44 Ca	4,941.	ppb	1.36	5,000	98.82	
51 V	24.51	ppb	0.52	25	98.04	
52 Cr	24.81	ppb	0.68	25	99.24	
53 Cr	24.81	ppb	4.33	25	99.24	
55 Mn	24.52	ppb	1.34	25	98.08	
56 Fe	4,816.	ppb	0.79	5,000	96.32	
57 Fe	4,942.	ppb	0.58	5,000	98.84	
59 Co	24.93	ppb	0.78	25	99.72	
60 Ni	24.56	ppb	0.81	25	98.24	
63 Cu	24.74	ppb	1.02	25	98.96	
65 Cu	24.93	ppb	2.15	25	99.72	
66 Zn	24.6	ppb	0.35	25	98.4	
68 Zn	24.54	ppb	2.24	25	98.16	
75 As	24.92	ppb	0.33	25	99.68	
82 Se	25.33	ppb	1.20	25	101.32	
88 Sr	24.37	ppb	0.89	25	97.48	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.72	ppb	0.29	25	98.88	
107 Ag	24.8	ppb	0.53	25	99.2	
109 Ag	24.88	ppb	0.74	25	99.52	
111 Cd	24.64	ppb	1.17	25	98.56	
114 Cd	24.93	ppb	0.57	25	99.72	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.89	ppb	1.35	25	99.56	
120 Sn	24.84	ppb	1.92	25	99.36	
121 Sb	25.27	ppb	1.81	25	101.08	
123 Sb	25.35	ppb	1.24	25	101.4	
135 Ba	25.44	ppb	0.99	25	101.76	
137 Ba	25.29	ppb	1.79	25	101.16	
182 W	24.44	ppb	2.32	25	97.76	
203 Tl	24.23	ppb	0.44	25	96.92	
205 Tl	24.26	ppb	0.78	25	97.04	
208 Pb	24.35	ppb	0.35	25	97.4	
232 Th	23.63	ppb	1.55	25	94.52	
238 U	23.69	ppb	0.66	25	94.76	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4096449.00	1.77	3927738.80	104.3	80 - 120.4	
45 Sc	2740937.00	1.28	2572658.80	106.5	80 - 120.4	
72 Ge	520514.56	0.41	510197.59	102.0	80 - 120.4	
159 Tb	4732701.50	0.56	4617151.00	102.5	80 - 120.4	
209 Bi	2416532.30	0.56	2380666.00	101.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000288

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\027_CCB.D\027_CCB.D#
Date Acquired: May 15 2018 07:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0011	ppb	213.05	1.00	
11 B	0.965	ppb	25.54	1.00	
23 Na	3.869	ppb	10.12	1.00	
25 Mg	0.5357	ppb	80.66	1.00	
27 Al	0.1798	ppb	74.53	1.00	
28 Si	7.003	ppb	32.63	1.00	
29 Si	-5.388	ppb	9.42	1.00	
39 K	-0.1349	ppb	1570.10	1.00	
43 Ca	-0.0073	ppb	21779.00	1.00	
44 Ca	2.206	ppb	8.73	1.00	
51 V	0.0672	ppb	74.14	1.00	
52 Cr	-0.036	ppb	14.04	1.00	
53 Cr	-1.145	ppb	18.93	1.00	
55 Mn	0.0044	ppb	81.19	1.00	
56 Fe	-3.265	ppb	40.06	1.00	
57 Fe	0.1393	ppb	1117.70	1.00	
59 Co	-0.0001	ppb	1988.70	1.00	
60 Ni	0.0061	ppb	188.86	1.00	
63 Cu	0.0201	ppb	49.32	1.00	
65 Cu	0.0245	ppb	36.03	1.00	
66 Zn	0.1076	ppb	51.39	1.00	
68 Zn	-0.0771	ppb	121.94	1.00	
75 As	0.2815	ppb	44.73	1.00	
82 Se	0.2666	ppb	101.76	1.00	
88 Sr	0.0019	ppb	165.64	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0513	ppb	37.49	1.00	
107 Ag	0.0033	ppb	27.01	1.00	
109 Ag	0.0032	ppb	107.70	1.00	
111 Cd	0.0092	ppb	105.82	1.00	
114 Cd	0.0002	ppb	1746.70	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0506	ppb	15.98	1.00	
120 Sn	0.0518	ppb	17.63	1.00	
121 Sb	0.0172	ppb	31.07	1.00	
123 Sb	0.0152	ppb	45.79	1.00	
135 Ba	0.0327	ppb	15.69	1.00	
137 Ba	0.0139	ppb	43.52	1.00	
182 W	0.0687	ppb	42.36	1.00	
203 Tl	0.0049	ppb	195.59	1.00	
205 Tl	0.0024	ppb	135.25	1.00	
208 Pb	-0.0218	ppb	10.92	1.00	
232 Th	0.0766	ppb	21.18	1.00	
238 U	0.0032	ppb	40.96	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4060173.80	1.80	3927738.80	103.4	79.5 - 120	
45 Sc	2641437.00	2.03	2572658.80	102.7	79.5 - 120	
72 Ge	514198.72	0.24	510197.59	100.8	79.5 - 120	
159 Tb	4567900.50	0.40	4617151.00	98.9	79.5 - 120	
209 Bi	2342393.50	0.69	2380666.00	98.4	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000289

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\028SMPL.D\028SMPL.D#
Date Acquired: May 15 2018 07:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE14IMW1
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0001	-0.0001	ppb	1063.80	100.	
11 B	0.452	0.452	ppb	7.04	1000.	
23 Na	9.306	9.306	ppb	1.40	200000.	
25 Mg	8.295	8.295	ppb	6.49	200000.	
27 Al	4.447	4.447	ppb	5.53	200000.	
28 Si	30.35	30.35	ppb	33.61	#VALUE!	
29 Si	20.66	20.66	ppb	30.06	10000.	
39 K	2.143	2.143	ppb	33.54	200000.	
43 Ca	1.724	1.724	ppb	82.48	#VALUE!	
44 Ca	3.39	3.39	ppb	31.24	200000.	
51 V	0.0761	0.0761	ppb	55.57	1000.	
52 Cr	0.0368	0.0368	ppb	29.17	2000.	
53 Cr	-0.747	-0.747	ppb	18.59	#VALUE!	
55 Mn	0.0414	0.0414	ppb	11.16	2000.	
56 Fe	-1.418	-1.418	ppb	120.59	#VALUE!	
57 Fe	1.524	1.524	ppb	106.50	100000.	
59 Co	0.0048	0.0048	ppb	19.23	1000.	
60 Ni	0.0151	0.0151	ppb	19.91	1000.	
63 Cu	0.0381	0.0381	ppb	11.59	#VALUE!	
65 Cu	0.0137	0.0137	ppb	119.02	2000.	
66 Zn	0.1297	0.1297	ppb	36.45	2000.	
68 Zn	-0.0711	-0.0711	ppb	79.76	#VALUE!	
75 As	-0.0295	-0.0295	ppb	26.44	1000.	
82 Se	0.0152	0.0152	ppb	938.61	1000.	
88 Sr	0.0076	0.0076	ppb	37.81	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0188	0.0188	ppb	34.51	1000.	
107 Ag	0.0008	0.0008	ppb	77.32	100.	
109 Ag	0.0015	0.0015	ppb	204.05	#VALUE!	
111 Cd	0.0148	0.0148	ppb	184.37	#VALUE!	
114 Cd	0.0014	0.0014	ppb	279.38	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0593	0.0593	ppb	25.67	1000.	
120 Sn	0.0526	0.0526	ppb	6.35	#VALUE!	
121 Sb	0.0081	0.0081	ppb	16.68	#VALUE!	
123 Sb	0.0106	0.0106	ppb	49.46	1000.	
135 Ba	0.0234	0.0234	ppb	36.24	2000.	
137 Ba	0.0172	0.0172	ppb	10.82	#VALUE!	
182 W	0.029	0.029	ppb	30.82	1000.	
203 Tl	0.0056	0.0056	ppb	117.96	1000.	
205 Tl	0.0053	0.0053	ppb	68.33	#VALUE!	
208 Pb	-0.0182	-0.0182	ppb	21.90	2000.	
232 Th	0.043	0.043	ppb	24.31	1000.	
238 U	0.0001	0.0001	ppb	462.49	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3923622.00	3.77	3927738.80	99.9	69.5 - 120	
45 Sc	2555535.30	1.18	2572658.80	99.3	69.5 - 120	
72 Ge	506190.56	1.49	510197.59	99.2	69.5 - 120	
159 Tb	4500283.50	0.45	4617151.00	97.5	69.5 - 120	
209 Bi	2313382.30	1.08	2380666.00	97.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000290

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\029SMPL.D\029SMPL.D#
Date Acquired: May 15 2018 07:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE14IMW1
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	49.775	9.955	ppb	0.97	100.	
11 B	522.	104.4	ppb	1.84	1000.	
23 Na	7,425.	1,485.	ppb	3.37	200000.	
25 Mg	5,065.	1,013.	ppb	2.19	200000.	
27 Al	2,055.5	411.1	ppb	3.21	200000.	
28 Si	1,060.	212.	ppb	2.40	#VALUE!	
29 Si	955.5	191.1	ppb	5.34	10000.	
39 K	10,020.	2,004.	ppb	2.00	200000.	
43 Ca	2,945.5	589.1	ppb	3.91	#VALUE!	
44 Ca	2,519.	503.8	ppb	2.02	200000.	
51 V	503.5	100.7	ppb	1.21	1000.	
52 Cr	196.65	39.33	ppb	0.68	2000.	
53 Cr	212.5	42.5	ppb	1.38	#VALUE!	
55 Mn	507.	101.4	ppb	1.50	2000.	
56 Fe	977.5	195.5	ppb	3.09	#VALUE!	
57 Fe	972.5	194.5	ppb	1.43	100000.	
59 Co	517.5	103.5	ppb	0.81	1000.	
60 Ni	512.5	102.5	ppb	0.71	1000.	
63 Cu	248.7	49.74	ppb	1.83	#VALUE!	
65 Cu	253.95	50.79	ppb	0.34	2000.	
66 Zn	522.	104.4	ppb	0.58	2000.	
68 Zn	577.5	115.5	ppb	0.98	#VALUE!	
75 As	104.35	20.87	ppb	0.44	1000.	
82 Se	104.3	20.86	ppb	2.96	1000.	
88 Sr	489.9	97.98	ppb	0.94	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	100.1	20.02	ppb	0.92	1000.	
107 Ag	50.95	10.19	ppb	0.31	100.	
109 Ag	51.2	10.24	ppb	1.58	#VALUE!	
111 Cd	254.1	50.82	ppb	0.54	#VALUE!	
114 Cd	255.2	51.04	ppb	1.23	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	506.	101.2	ppb	1.18	1000.	
120 Sn	508.5	101.7	ppb	1.33	#VALUE!	
121 Sb	104.65	20.93	ppb	1.65	#VALUE!	
123 Sb	103.2	20.64	ppb	1.69	1000.	
135 Ba	2,045.5	409.1	ppb	1.50	2000.	
137 Ba	2,049.5	409.9	ppb	1.20	#VALUE!	
182 W	98.8	19.76	ppb	1.41	1000.	
203 Tl	99.1	19.82	ppb	2.38	1000.	
205 Tl	99.6	19.92	ppb	1.74	#VALUE!	
208 Pb	100.15	20.03	ppb	1.44	2000.	
232 Th	93.4	18.68	ppb	1.90	1000.	
238 U	96.8	19.36	ppb	0.78	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4120364.50	3.12	3927738.80	104.9	69.5 - 120	
45 Sc	2650621.80	2.66	2572658.80	103.0	69.5 - 120	
72 Ge	509866.78	2.02	510197.59	99.9	69.5 - 120	
159 Tb	4653340.00	2.06	4617151.00	100.8	69.5 - 120	
209 Bi	2394147.80	1.71	2380666.00	100.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000291

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\030SMPL.D\030SMPL.D#
Date Acquired: May 15 2018 07:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4085-001
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.1175	0.1175	ppb	15.15	100.	
11 B	15.69	15.69	ppb	3.80	1000.	
23 Na	39,940.	39,940.	ppb	1.87	200000.	
25 Mg	962.9	962.9	ppb	0.60	200000.	
27 Al	49.07	49.07	ppb	2.78	200000.	
28 Si	4,228.	4,228.	ppb	2.80	#VALUE!	
29 Si	4,548.	4,548.	ppb	2.10	10000.	
39 K	1,113.	1,113.	ppb	1.45	200000.	
43 Ca	6,408.	6,408.	ppb	1.36	#VALUE!	
44 Ca	6,454.	6,454.	ppb	0.45	200000.	
51 V	0.1515	0.1515	ppb	34.49	1000.	
52 Cr	0.2455	0.2455	ppb	6.71	2000.	
53 Cr	2.601	2.601	ppb	99.92	#VALUE!	
55 Mn	23.02	23.02	ppb	0.51	2000.	
56 Fe	419.3	419.3	ppb	2.33	#VALUE!	
57 Fe	434.7	434.7	ppb	1.50	100000.	
59 Co	0.0608	0.0608	ppb	15.02	1000.	
60 Ni	0.6908	0.6908	ppb	3.18	1000.	
63 Cu	71.28	71.28	ppb	0.47	#VALUE!	
65 Cu	70.51	70.51	ppb	1.25	2000.	
66 Zn	36.63	36.63	ppb	0.64	2000.	
68 Zn	35.58	35.58	ppb	0.97	#VALUE!	
75 As	0.0923	0.0923	ppb	178.01	1000.	
82 Se	0.0632	0.0632	ppb	403.20	1000.	
88 Sr	73.15	73.15	ppb	1.26	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1159	0.1159	ppb	13.62	1000.	
107 Ag	0.0144	0.0144	ppb	14.83	100.	
109 Ag	0.0161	0.0161	ppb	10.08	#VALUE!	
111 Cd	0.0471	0.0471	ppb	35.95	#VALUE!	
114 Cd	0.0656	0.0656	ppb	6.08	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3867	0.3867	ppb	4.91	1000.	
120 Sn	0.3872	0.3872	ppb	4.50	#VALUE!	
121 Sb	0.0279	0.0279	ppb	17.94	#VALUE!	
123 Sb	0.0383	0.0383	ppb	15.61	1000.	
135 Ba	6.841	6.841	ppb	1.68	2000.	
137 Ba	6.941	6.941	ppb	0.31	#VALUE!	
182 W	0.0556	0.0556	ppb	17.32	1000.	
203 Tl	0.0221	0.0221	ppb	31.92	1000.	
205 Tl	0.0243	0.0243	ppb	12.24	#VALUE!	
208 Pb	0.9841	0.9841	ppb	3.95	2000.	
232 Th	0.2131	0.2131	ppb	14.67	1000.	
238 U	5.175	5.175	ppb	1.28	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3996066.30	1.24	3927738.80	101.7	69.5 - 120	
45 Sc	2687386.30	0.35	2572658.80	104.5	69.5 - 120	
72 Ge	521394.69	0.60	510197.59	102.2	69.5 - 120	
159 Tb	4748174.50	0.18	4617151.00	102.8	69.5 - 120	
209 Bi	2321555.30	1.60	2380666.00	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000292

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\031SMPL.D\031SMPL.D#
Date Acquired: May 15 2018 07:50 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL4096-001
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0111	0.0111	ppb	15.21	100.	
11 B	17.97	17.97	ppb	2.80	1000.	
23 Na	23,120.	23,120.	ppb	2.21	200000.	
25 Mg	3,894.	3,894.	ppb	2.53	200000.	
27 Al	15.15	15.15	ppb	4.08	200000.	
28 Si	3,109.	3,109.	ppb	2.91	#VALUE!	
29 Si	3,403.	3,403.	ppb	3.06	10000.	
39 K	828.3	828.3	ppb	1.40	200000.	
43 Ca	32,370.	32,370.	ppb	0.89	#VALUE!	
44 Ca	31,370.	31,370.	ppb	1.29	200000.	
51 V	0.1255	0.1255	ppb	65.67	1000.	
52 Cr	0.381	0.381	ppb	12.58	2000.	
53 Cr	-0.8406	-0.8406	ppb	153.46	#VALUE!	
55 Mn	9.425	9.425	ppb	1.33	2000.	
56 Fe	82.31	82.31	ppb	4.13	#VALUE!	
57 Fe	114.5	114.5	ppb	5.28	100000.	
59 Co	0.3615	0.3615	ppb	3.31	1000.	
60 Ni	1.558	1.558	ppb	2.03	1000.	
63 Cu	20.92	20.92	ppb	1.31	#VALUE!	
65 Cu	20.39	20.39	ppb	0.83	2000.	
66 Zn	9.926	9.926	ppb	0.38	2000.	
68 Zn	9.511	9.511	ppb	2.83	#VALUE!	
75 As	0.286	0.286	ppb	28.61	1000.	
82 Se	0.0606	0.0606	ppb	211.68	1000.	
88 Sr	207.5	207.5	ppb	1.47	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.036	0.036	ppb	9.79	1000.	
107 Ag	0.0159	0.0159	ppb	29.66	100.	
109 Ag	0.0125	0.0125	ppb	18.44	#VALUE!	
111 Cd	0.0342	0.0342	ppb	80.82	#VALUE!	
114 Cd	0.0381	0.0381	ppb	19.90	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.885	1.885	ppb	2.27	1000.	
120 Sn	1.888	1.888	ppb	2.28	#VALUE!	
121 Sb	0.0434	0.0434	ppb	14.45	#VALUE!	
123 Sb	0.0484	0.0484	ppb	5.26	1000.	
135 Ba	4.922	4.922	ppb	3.79	2000.	
137 Ba	4.974	4.974	ppb	3.41	#VALUE!	
182 W	0.0182	0.0182	ppb	48.36	1000.	
203 Tl	0.0134	0.0134	ppb	49.49	1000.	
205 Tl	0.005	0.005	ppb	77.95	#VALUE!	
208 Pb	0.6766	0.6766	ppb	1.94	2000.	
232 Th	0.0669	0.0669	ppb	28.58	1000.	
238 U	0.0313	0.0313	ppb	13.94	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4112162.80	1.37	3927738.80	104.7	69.5 - 120	
45 Sc	2705097.80	0.61	2572658.80	105.1	69.5 - 120	
72 Ge	529560.50	0.67	510197.59	103.8	69.5 - 120	
159 Tb	4786442.50	0.46	4617151.00	103.7	69.5 - 120	
209 Bi	2410667.00	0.62	2380666.00	101.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000293

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\032SMPL.D\032SMPL.D#
Date Acquired: May 15 2018 07:54 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-001
Misc Info: LE04IMS1
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.665	1.133	ppb	2.63	100.	
11 B	61.65	12.33	ppb	2.46	1000.	
23 Na	1,124.	224.8	ppb	1.82	200000.	
25 Mg	23,615.	4,723.	ppb	3.40	200000.	
27 Al	98,300.	19,660.	ppb	2.66	200000.	
28 Si	3,178.	635.6	ppb	2.06	#VALUE!	
29 Si	3,164.5	632.9	ppb	1.93	10000.	
39 K	33,880.	6,776.	ppb	0.76	200000.	
43 Ca	25,265.	5,053.	ppb	2.20	#VALUE!	
44 Ca	25,445.	5,089.	ppb	2.10	200000.	
51 V	210.5	42.1	ppb	0.82	1000.	
52 Cr	107.3	21.46	ppb	0.54	2000.	
53 Cr	143.8	28.76	ppb	4.85	#VALUE!	
55 Mn	2,838.5	567.7	ppb	1.22	2000.	
56 Fe	93,950.	18,790.	ppb	0.21	#VALUE!	
57 Fe	91,700.	18,340.	ppb	0.47	100000.	
59 Co	53.1	10.62	ppb	1.06	1000.	
60 Ni	84.75	16.95	ppb	1.39	1000.	
63 Cu	92.85	18.57	ppb	1.25	#VALUE!	
65 Cu	95.2	19.04	ppb	0.97	2000.	
66 Zn	320.5	64.1	ppb	0.94	2000.	
68 Zn	368.35	73.67	ppb	0.74	#VALUE!	
75 As	25.71	5.142	ppb	3.52	1000.	
82 Se	5.905	1.181	ppb	23.64	1000.	
88 Sr	332.15	66.43	ppb	1.01	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.77	2.354	ppb	1.13	1000.	
107 Ag	0.587	0.1174	ppb	5.71	100.	
109 Ag	0.545	0.109	ppb	5.83	#VALUE!	
111 Cd	3.9155	0.7831	ppb	4.13	#VALUE!	
114 Cd	1.9825	0.3965	ppb	2.65	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.605	9.121	ppb	2.18	1000.	
120 Sn	45.345	9.069	ppb	0.45	#VALUE!	
121 Sb	1.3815	0.2763	ppb	1.12	#VALUE!	
123 Sb	1.3885	0.2777	ppb	1.77	1000.	
135 Ba	1,590.5	318.1	ppb	1.71	2000.	
137 Ba	1,602.5	320.5	ppb	1.35	#VALUE!	
182 W	0.8605	0.1721	ppb	2.61	1000.	
203 Tl	2.2645	0.4529	ppb	5.03	1000.	
205 Tl	2.2215	0.4443	ppb	4.94	#VALUE!	
208 Pb	130.55	26.11	ppb	0.86	2000.	
232 Th	79.1	15.82	ppb	0.54	1000.	
238 U	18.015	3.603	ppb	1.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4100547.00	1.42	3927738.80	104.4	69.5 - 120	
45 Sc	2680447.30	1.31	2572658.80	104.2	69.5 - 120	
72 Ge	517377.25	0.53	510197.59	101.4	69.5 - 120	
159 Tb	4881977.00	1.27	4617151.00	105.7	69.5 - 120	
209 Bi	2507848.30	0.82	2380666.00	105.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000294

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\033SMPL.D\033SMPL.D#
Date Acquired: May 15 2018 07:58 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3807-002
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.855	1.571	ppb	2.39	100.	
11 B	138.8	27.76	ppb	3.54	1000.	
23 Na	2,017.5	403.5	ppb	5.59	200000.	
25 Mg	89,750.	17,950.	ppb	3.87	200000.	
27 Al	171,200.	34,240.	ppb	3.33	200000.	
28 Si	4,025.	805.	ppb	3.46	#VALUE!	
29 Si	3,970.5	794.1	ppb	4.69	10000.	
39 K	46,935.	9,387.	ppb	2.82	200000.	
43 Ca	336,050.	67,210.	ppb	1.98	#VALUE!	
44 Ca	316,850.	63,370.	ppb	2.23	200000.	
51 V	441.85	88.37	ppb	1.30	1000.	
52 Cr	167.85	33.57	ppb	1.81	2000.	
53 Cr	200.4	40.08	ppb	1.72	#VALUE!	
55 Mn	2,977.	595.4	ppb	1.02	2000.	
56 Fe	163,800.	32,760.	ppb	0.65	#VALUE!	
57 Fe	161,050.	32,210.	ppb	1.80	100000.	
59 Co	65.2	13.04	ppb	2.94	1000.	
60 Ni	150.3	30.06	ppb	1.53	1000.	
63 Cu	111.2	22.24	ppb	0.06	#VALUE!	
65 Cu	112.85	22.57	ppb	1.17	2000.	
66 Zn	425.75	85.15	ppb	2.43	2000.	
68 Zn	487.75	97.55	ppb	0.99	#VALUE!	
75 As	113.05	22.61	ppb	1.02	1000.	
82 Se	3.7585	0.7517	ppb	17.25	1000.	
88 Sr	1,356.	271.2	ppb	0.59	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.695	2.139	ppb	0.84	1000.	
107 Ag	0.7635	0.1527	ppb	8.09	100.	
109 Ag	0.6355	0.1271	ppb	8.25	#VALUE!	
111 Cd	2.7505	0.5501	ppb	4.52	#VALUE!	
114 Cd	-0.0084	-0.0017	ppb	343.20	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.3	10.06	ppb	1.62	1000.	
120 Sn	50.7	10.14	ppb	2.37	#VALUE!	
121 Sb	2.48	0.496	ppb	2.93	#VALUE!	
123 Sb	2.4245	0.4849	ppb	1.49	1000.	
135 Ba	2,297.5	459.5	ppb	1.69	2000.	
137 Ba	2,288.5	457.7	ppb	1.61	#VALUE!	
182 W	0.821	0.1642	ppb	8.48	1000.	
203 Tl	2.8515	0.5703	ppb	3.51	1000.	
205 Tl	2.8775	0.5755	ppb	3.04	#VALUE!	
208 Pb	109.9	21.98	ppb	2.45	2000.	
232 Th	76.15	15.23	ppb	2.76	1000.	
238 U	16.255	3.251	ppb	3.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4018657.00	3.16	3927738.80	102.3	69.5 - 120	
45 Sc	2614905.30	1.71	2572658.80	101.6	69.5 - 120	
72 Ge	505923.63	0.42	510197.59	99.2	69.5 - 120	
159 Tb	4816300.50	1.40	4617151.00	104.3	69.5 - 120	
209 Bi	2442884.30	3.00	2380666.00	102.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000295

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\034SMPL.D\034SMPL.D#
Date Acquired: May 15 2018 08:02 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0005	-0.0005	ppb	226.97	100.	
11 B	1.369	1.369	ppb	13.66	1000.	
23 Na	16.46	16.46	ppb	2.47	200000.	
25 Mg	1.985	1.985	ppb	62.72	200000.	
27 Al	3.419	3.419	ppb	74.93	200000.	
28 Si	6.281	6.281	ppb	164.46	#VALUE!	
29 Si	-13.93	-13.93	ppb	81.48	10000.	
39 K	-1.439	-1.439	ppb	123.56	200000.	
43 Ca	44.78	44.78	ppb	15.11	#VALUE!	
44 Ca	37.67	37.67	ppb	9.58	200000.	
51 V	0.0834	0.0834	ppb	41.97	1000.	
52 Cr	-0.0404	-0.0404	ppb	56.58	2000.	
53 Cr	-4.345	-4.345	ppb	0.37	#VALUE!	
55 Mn	0.0833	0.0833	ppb	60.63	2000.	
56 Fe	2.037	2.037	ppb	285.52	#VALUE!	
57 Fe	2.956	2.956	ppb	46.58	100000.	
59 Co	0.0045	0.0045	ppb	99.73	1000.	
60 Ni	0.0348	0.0348	ppb	23.95	1000.	
63 Cu	0.2209	0.2209	ppb	7.21	#VALUE!	
65 Cu	0.234	0.234	ppb	10.47	2000.	
66 Zn	0.6397	0.6397	ppb	8.23	2000.	
68 Zn	0.415	0.415	ppb	5.15	#VALUE!	
75 As	0.0047	0.0047	ppb	4236.90	1000.	
82 Se	0.1101	0.1101	ppb	67.48	1000.	
88 Sr	0.0483	0.0483	ppb	40.56	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0118	0.0118	ppb	27.29	1000.	
107 Ag	0.001	0.001	ppb	165.83	100.	
109 Ag	0.0012	0.0012	ppb	192.54	#VALUE!	
111 Cd	0.0001	0.0001	ppb	6639.10	#VALUE!	
114 Cd	0.0016	0.0016	ppb	52.71	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0613	0.0613	ppb	25.29	1000.	
120 Sn	0.0357	0.0357	ppb	38.76	#VALUE!	
121 Sb	0.0012	0.0012	ppb	159.63	#VALUE!	
123 Sb	0.0051	0.0051	ppb	92.45	1000.	
135 Ba	0.1388	0.1388	ppb	15.95	2000.	
137 Ba	0.1252	0.1252	ppb	12.68	#VALUE!	
182 W	0.0061	0.0061	ppb	39.75	1000.	
203 Tl	0.0097	0.0097	ppb	96.96	1000.	
205 Tl	0.0039	0.0039	ppb	38.20	#VALUE!	
208 Pb	0.1189	0.1189	ppb	10.72	2000.	
232 Th	0.0186	0.0186	ppb	44.47	1000.	
238 U	0.0007	0.0007	ppb	136.42	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3954243.30	0.87	3927738.80	100.7	69.5 - 120	
45 Sc	2540530.50	0.79	2572658.80	98.8	69.5 - 120	
72 Ge	502235.00	0.90	510197.59	98.4	69.5 - 120	
159 Tb	4602784.00	1.62	4617151.00	99.7	69.5 - 120	
209 Bi	2371603.30	1.39	2380666.00	99.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000296

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\035SMPL.D\035SMPL.D#
Date Acquired: May 15 2018 08:07 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE07IMW1
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0005	-0.0001	ppb	1144.80	100.	
11 B	3.2275	0.6455	ppb	8.17	1000.	
23 Na	15.32	3.064	ppb	11.14	200000.	
25 Mg	9.73	1.946	ppb	7.28	200000.	
27 Al	7.385	1.477	ppb	13.01	200000.	
28 Si	41.275	8.255	ppb	138.95	#VALUE!	
29 Si	-42.75	-8.55	ppb	82.41	10000.	
39 K	-9.28	-1.856	ppb	103.56	200000.	
43 Ca	3.5895	0.7179	ppb	534.34	#VALUE!	
44 Ca	12.675	2.535	ppb	37.94	200000.	
51 V	0.0058	0.0012	ppb	5462.70	1000.	
52 Cr	-0.2075	-0.0415	ppb	46.43	2000.	
53 Cr	-8.63	-1.726	ppb	19.22	#VALUE!	
55 Mn	0.079	0.0158	ppb	22.24	2000.	
56 Fe	-13.51	-2.702	ppb	46.78	#VALUE!	
57 Fe	-0.5155	-0.1031	ppb	2183.30	100000.	
59 Co	-0.0039	-0.0008	ppb	304.24	1000.	
60 Ni	-0.008	-0.0016	ppb	484.06	1000.	
63 Cu	0.086	0.0172	ppb	78.94	#VALUE!	
65 Cu	0.1503	0.0301	ppb	15.06	2000.	
66 Zn	0.5215	0.1043	ppb	14.92	2000.	
68 Zn	0.1087	0.0217	ppb	482.28	#VALUE!	
75 As	0.8845	0.1769	ppb	49.84	1000.	
82 Se	0.998	0.1996	ppb	46.39	1000.	
88 Sr	0.0105	0.0021	ppb	118.26	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0157	0.0031	ppb	81.79	1000.	
107 Ag	0.0023	0.0005	ppb	428.94	100.	
109 Ag	-0.0015	-0.0003	ppb	837.87	#VALUE!	
111 Cd	-0.0551	-0.011	ppb	66.57	#VALUE!	
114 Cd	0.01	0.002	ppb	168.35	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.1209	0.0242	ppb	50.95	1000.	
120 Sn	0.0797	0.0159	ppb	95.17	#VALUE!	
121 Sb	0.0027	0.0005	ppb	514.26	#VALUE!	
123 Sb	0.0226	0.0045	ppb	2.70	1000.	
135 Ba	0.0549	0.011	ppb	40.29	2000.	
137 Ba	0.0323	0.0065	ppb	138.31	#VALUE!	
182 W	0.031	0.0062	ppb	28.66	1000.	
203 Tl	0.0109	0.0022	ppb	373.78	1000.	
205 Tl	0.0045	0.0009	ppb	532.52	#VALUE!	
208 Pb	-0.106	-0.0212	ppb	40.14	2000.	
232 Th	0.1015	0.0203	ppb	50.91	1000.	
238 U	-0.0017	-0.0003	ppb	76.06	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3902003.80	1.95	3927738.80	99.3	69.5 - 120	
45 Sc	2518454.30	1.96	2572658.80	97.9	69.5 - 120	
72 Ge	498793.03	2.06	510197.59	97.8	69.5 - 120	
159 Tb	4580423.50	1.27	4617151.00	99.2	69.5 - 120	
209 Bi	2383297.50	0.73	2380666.00	100.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000297

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\036SMPL.D\036SMPL.D#
Date Acquired: May 15 2018 08:11 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE07IMW1
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	48.89	9.778	ppb	2.28	100.	
11 B	497.2	99.44	ppb	3.34	1000.	
23 Na	7,435.	1,487.	ppb	1.90	200000.	
25 Mg	5,020.	1,004.	ppb	1.97	200000.	
27 Al	2,034.5	406.9	ppb	0.49	200000.	
28 Si	1,032.	206.4	ppb	3.58	#VALUE!	
29 Si	909.	181.8	ppb	5.24	10000.	
39 K	9,920.	1,984.	ppb	0.47	200000.	
43 Ca	2,882.	576.4	ppb	3.58	#VALUE!	
44 Ca	2,512.5	502.5	ppb	0.28	200000.	
51 V	503.	100.6	ppb	1.59	1000.	
52 Cr	196.75	39.35	ppb	0.98	2000.	
53 Cr	204.3	40.86	ppb	2.09	#VALUE!	
55 Mn	502.	100.4	ppb	1.34	2000.	
56 Fe	981.5	196.3	ppb	3.08	#VALUE!	
57 Fe	983.	196.6	ppb	4.09	100000.	
59 Co	518.	103.6	ppb	1.98	1000.	
60 Ni	505.5	101.1	ppb	1.04	1000.	
63 Cu	247.9	49.58	ppb	0.12	#VALUE!	
65 Cu	253.65	50.73	ppb	0.40	2000.	
66 Zn	517.	103.4	ppb	0.92	2000.	
68 Zn	578.5	115.7	ppb	1.39	#VALUE!	
75 As	104.2	20.84	ppb	0.70	1000.	
82 Se	104.15	20.83	ppb	3.65	1000.	
88 Sr	493.15	98.63	ppb	0.74	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.15	20.23	ppb	0.47	1000.	
107 Ag	51.2	10.24	ppb	0.90	100.	
109 Ag	50.85	10.17	ppb	0.59	#VALUE!	
111 Cd	255.85	51.17	ppb	0.92	#VALUE!	
114 Cd	255.55	51.11	ppb	0.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	503.5	100.7	ppb	1.45	1000.	
120 Sn	501.	100.2	ppb	1.74	#VALUE!	
121 Sb	102.95	20.59	ppb	2.01	#VALUE!	
123 Sb	102.85	20.57	ppb	2.60	1000.	
135 Ba	2,023.	404.6	ppb	1.40	2000.	
137 Ba	2,003.	400.6	ppb	1.26	#VALUE!	
182 W	101.25	20.25	ppb	2.49	1000.	
203 Tl	98.9	19.78	ppb	0.22	1000.	
205 Tl	99.4	19.88	ppb	1.63	#VALUE!	
208 Pb	100.1	20.02	ppb	1.10	2000.	
232 Th	95.7	19.14	ppb	1.00	1000.	
238 U	97.9	19.58	ppb	1.04	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4077643.30	2.03	3927738.80	103.8	69.5 - 120	
45 Sc	2589261.00	1.20	2572658.80	100.6	69.5 - 120	
72 Ge	504378.34	0.91	510197.59	98.9	69.5 - 120	
159 Tb	4679568.50	1.53	4617151.00	101.4	69.5 - 120	
209 Bi	2421956.80	0.21	2380666.00	101.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000298

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\037SMPL.D\037SMPL.D#
Date Acquired: May 15 2018 08:15 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-002
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.565	0.113	ppb	8.41	100.	
11 B	270.9	54.18	ppb	5.28	1000.	
23 Na	281,450.	56,290.	ppb	2.79	200000.	
25 Mg	66,350.	13,270.	ppb	1.16	200000.	
27 Al	10,425.	2,085.	ppb	2.21	200000.	
28 Si	36,865.	7,373.	ppb	0.68	#VALUE!	
29 Si	39,630.	7,926.	ppb	1.36	10000.	
39 K	20,310.	4,062.	ppb	1.69	200000.	
43 Ca	354,100.	70,820.	ppb	2.05	#VALUE!	
44 Ca	331,150.	66,230.	ppb	1.00	200000.	
51 V	34.26	6.852	ppb	2.68	1000.	
52 Cr	41.56	8.312	ppb	1.28	2000.	
53 Cr	77.25	15.45	ppb	13.81	#VALUE!	
55 Mn	1,451.5	290.3	ppb	1.17	2000.	
56 Fe	14,625.	2,925.	ppb	1.72	#VALUE!	
57 Fe	15,345.	3,069.	ppb	1.17	100000.	
59 Co	6.085	1.217	ppb	3.17	1000.	
60 Ni	21.22	4.244	ppb	2.30	1000.	
63 Cu	23.38	4.676	ppb	2.23	#VALUE!	
65 Cu	15.735	3.147	ppb	3.16	2000.	
66 Zn	140.85	28.17	ppb	3.21	2000.	
68 Zn	139.95	27.99	ppb	2.15	#VALUE!	
75 As	20.38	4.076	ppb	4.63	1000.	
82 Se	1.724	0.3448	ppb	71.11	1000.	
88 Sr	1,422.	284.4	ppb	0.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	21.97	4.394	ppb	2.38	1000.	
107 Ag	0.0407	0.0081	ppb	31.68	100.	
109 Ag	0.0271	0.0054	ppb	31.30	#VALUE!	
111 Cd	0.0545	0.0109	ppb	198.81	#VALUE!	
114 Cd	0.0201	0.004	ppb	248.53	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.48	0.496	ppb	0.50	1000.	
120 Sn	2.537	0.5074	ppb	2.84	#VALUE!	
121 Sb	0.922	0.1844	ppb	2.61	#VALUE!	
123 Sb	0.9775	0.1955	ppb	3.55	1000.	
135 Ba	243.45	48.69	ppb	0.75	2000.	
137 Ba	245.65	49.13	ppb	1.19	#VALUE!	
182 W	0.5595	0.1119	ppb	16.59	1000.	
203 Tl	0.1717	0.0343	ppb	31.36	1000.	
205 Tl	0.1416	0.0283	ppb	13.29	#VALUE!	
208 Pb	10.725	2.145	ppb	1.47	2000.	
232 Th	7.525	1.505	ppb	3.38	1000.	
238 U	4.9885	0.9977	ppb	2.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4012288.30	3.19	3927738.80	102.2	69.5 - 120	
45 Sc	2587933.00	2.15	2572658.80	100.6	69.5 - 120	
72 Ge	514773.69	0.82	510197.59	100.9	69.5 - 120	
159 Tb	4848173.50	1.33	4617151.00	105.0	69.5 - 120	
209 Bi	2408503.00	1.63	2380666.00	101.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000299

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\038_CCV.D\038_CCV.D#
Date Acquired: May 15 2018 08:19 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.66	ppb	0.94	25	98.64	
11 B	26.34	ppb	2.74	25	105.36	
23 Na	4,618.	ppb	3.62	5,000	92.36	
25 Mg	4,686.	ppb	1.60	5,000	93.72	
27 Al	479.7	ppb	1.29	500	95.94	
28 Si	466.9	ppb	0.76	500	93.38	
29 Si	454.	ppb	2.23	500	90.8	
39 K	4,757.	ppb	0.42	5,000	95.14	
43 Ca	4,844.	ppb	1.11	5,000	96.88	
44 Ca	4,918.	ppb	2.07	5,000	98.36	
51 V	24.04	ppb	1.79	25	96.16	
52 Cr	24.45	ppb	0.63	25	97.8	
53 Cr	23.17	ppb	8.70	25	92.68	
55 Mn	24.21	ppb	1.28	25	96.84	
56 Fe	4,774.	ppb	0.61	5,000	95.48	
57 Fe	4,875.	ppb	0.34	5,000	97.5	
59 Co	24.49	ppb	1.48	25	97.96	
60 Ni	24.6	ppb	0.87	25	98.4	
63 Cu	24.61	ppb	0.77	25	98.44	
65 Cu	24.5	ppb	1.15	25	98	
66 Zn	24.97	ppb	2.04	25	99.88	
68 Zn	24.63	ppb	1.10	25	98.52	
75 As	24.72	ppb	0.59	25	98.88	
82 Se	25.41	ppb	0.62	25	101.64	
88 Sr	23.93	ppb	0.92	25	95.72	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.66	ppb	1.01	25	98.64	
107 Ag	24.95	ppb	1.37	25	99.8	
109 Ag	24.86	ppb	0.76	25	99.44	
111 Cd	24.92	ppb	1.49	25	99.68	
114 Cd	24.98	ppb	1.15	25	99.92	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.16	ppb	1.43	25	96.64	
120 Sn	24.04	ppb	2.89	25	96.16	
121 Sb	24.57	ppb	1.69	25	98.28	
123 Sb	24.58	ppb	1.92	25	98.32	
135 Ba	25.06	ppb	2.64	25	100.24	
137 Ba	24.58	ppb	3.28	25	98.32	
182 W	24.52	ppb	3.07	25	98.08	
203 Tl	24.	ppb	2.37	25	96	
205 Tl	24.2	ppb	2.32	25	96.8	
208 Pb	24.23	ppb	1.89	25	96.92	
232 Th	23.78	ppb	2.92	25	95.12	
238 U	23.88	ppb	1.95	25	95.52	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4016574.50	0.62	3927738.80	102.3	80 - 120.4	
45 Sc	2682869.80	1.41	2572658.80	104.3	80 - 120.4	
72 Ge	512815.84	0.70	510197.59	100.5	80 - 120.4	
159 Tb	4822348.00	1.80	4617151.00	104.4	80 - 120.4	
209 Bi	2488946.80	1.42	2380666.00	104.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000300

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\039_CCB.D\039_CCB.D#
Date Acquired: May 15 2018 08:23 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0018	ppb	166.59	1.00	
11 B	2.18	ppb	9.85	1.00	
23 Na	3.602	ppb	60.05	1.00	
25 Mg	0.7431	ppb	127.01	1.00	
27 Al	0.2165	ppb	89.70	1.00	
28 Si	10.97	ppb	16.45	1.00	
29 Si	3.096	ppb	150.32	1.00	
39 K	1.707	ppb	141.07	1.00	
43 Ca	5.974	ppb	112.69	1.00	
44 Ca	2.844	ppb	72.08	1.00	
51 V	0.0613	ppb	73.32	1.00	
52 Cr	-0.0046	ppb	347.31	1.00	
53 Cr	-3.014	ppb	7.23	1.00	
55 Mn	0.0084	ppb	196.07	1.00	
56 Fe	3.556	ppb	114.06	1.00	
57 Fe	0.5631	ppb	162.56	1.00	
59 Co	0.0046	ppb	112.92	1.00	
60 Ni	0.0083	ppb	91.24	1.00	
63 Cu	0.0178	ppb	39.05	1.00	
65 Cu	0.0209	ppb	12.50	1.00	
66 Zn	0.0659	ppb	135.88	1.00	
68 Zn	-0.1338	ppb	14.48	1.00	
75 As	0.1143	ppb	63.07	1.00	
82 Se	0.1674	ppb	170.79	1.00	
88 Sr	0.0093	ppb	156.50	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0311	ppb	15.59	1.00	
107 Ag	0.0036	ppb	102.78	1.00	
109 Ag	0.0026	ppb	162.63	1.00	
111 Cd	0.038	ppb	26.44	1.00	
114 Cd	0.0046	ppb	118.29	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0577	ppb	20.32	1.00	
120 Sn	0.0524	ppb	19.21	1.00	
121 Sb	0.0074	ppb	32.47	1.00	
123 Sb	0.0091	ppb	15.92	1.00	
135 Ba	0.017	ppb	61.72	1.00	
137 Ba	0.0133	ppb	83.11	1.00	
182 W	0.0513	ppb	22.58	1.00	
203 Tl	0.0106	ppb	85.40	1.00	
205 Tl	0.0039	ppb	27.82	1.00	
208 Pb	-0.0135	ppb	81.05	1.00	
232 Th	0.0606	ppb	8.96	1.00	
238 U	0.0023	ppb	85.16	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3855350.00	4.90	3927738.80	98.2	79.5 - 120	
45 Sc	2535912.00	1.46	2572658.80	98.6	79.5 - 120	
72 Ge	503141.22	1.14	510197.59	98.6	79.5 - 120	
159 Tb	4563850.00	0.42	4617151.00	98.8	79.5 - 120	
209 Bi	2369504.00	1.12	2380666.00	99.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000301

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\040SMPL.D\040SMPL.D#
Date Acquired: May 15 2018 08:27 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-003
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0126	0.0025	ppb	48.18	100.	
11 B	273.	54.6	ppb	3.85	1000.	
23 Na	305,000.	61,000.	ppb	0.95	200000.	
25 Mg	71,150.	14,230.	ppb	1.19	200000.	
27 Al	9.925	1.985	ppb	3.48	200000.	
28 Si	14,335.	2,867.	ppb	0.97	#VALUE!	
29 Si	15,225.	3,045.	ppb	4.55	10000.	
39 K	19,070.	3,814.	ppb	0.50	200000.	
43 Ca	371,750.	74,350.	ppb	0.95	#VALUE!	
44 Ca	354,600.	70,920.	ppb	1.17	200000.	
51 V	1.3985	0.2797	ppb	16.60	1000.	
52 Cr	2.24	0.448	ppb	9.19	2000.	
53 Cr	77.5	15.5	ppb	31.92	#VALUE!	
55 Mn	1,442.	288.4	ppb	1.49	2000.	
56 Fe	1,524.	304.8	ppb	1.14	#VALUE!	
57 Fe	1,893.5	378.7	ppb	1.42	100000.	
59 Co	1.7355	0.3471	ppb	4.47	1000.	
60 Ni	6.02	1.204	ppb	6.06	1000.	
63 Cu	14.31	2.862	ppb	1.68	#VALUE!	
65 Cu	5.47	1.094	ppb	5.23	2000.	
66 Zn	29.255	5.851	ppb	2.15	2000.	
68 Zn	26.145	5.229	ppb	3.13	#VALUE!	
75 As	14.57	2.914	ppb	5.66	1000.	
82 Se	1.3745	0.2749	ppb	34.63	1000.	
88 Sr	1,485.	297.	ppb	0.90	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	15.175	3.035	ppb	1.23	1000.	
107 Ag	0.0197	0.0039	ppb	19.61	100.	
109 Ag	0.0119	0.0024	ppb	69.31	#VALUE!	
111 Cd	0.0839	0.0168	ppb	87.06	#VALUE!	
114 Cd	0.0125	0.0025	ppb	229.20	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.0405	0.2081	ppb	12.89	1000.	
120 Sn	1.0075	0.2015	ppb	5.49	#VALUE!	
121 Sb	0.8245	0.1649	ppb	10.89	#VALUE!	
123 Sb	0.87	0.174	ppb	8.86	1000.	
135 Ba	41.17	8.234	ppb	1.44	2000.	
137 Ba	40.555	8.111	ppb	1.02	#VALUE!	
182 W	0.2407	0.0481	ppb	9.67	1000.	
203 Tl	0.0231	0.0046	ppb	157.01	1000.	
205 Tl	-0.0041	-0.0008	ppb	724.06	#VALUE!	
208 Pb	-0.0233	-0.0047	ppb	117.66	2000.	
232 Th	0.4747	0.0949	ppb	20.14	1000.	
238 U	4.1975	0.8395	ppb	1.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3922212.00	3.83	3927738.80	99.9	69.5 - 120	
45 Sc	2669194.00	1.05	2572658.80	103.8	69.5 - 120	
72 Ge	527739.19	1.61	510197.59	103.4	69.5 - 120	
159 Tb	4851172.00	1.82	4617151.00	105.1	69.5 - 120	
209 Bi	2389735.50	0.85	2380666.00	100.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000302

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\041SMPL.D\041SMPL.D#
Date Acquired: May 15 2018 08:31 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.1595	0.0319	ppb	5.06	100.	
11 B	227.45	45.49	ppb	0.73	1000.	
23 Na	318,900.	63,780.	ppb	2.08	200000.	
25 Mg	79,150.	15,830.	ppb	2.85	200000.	
27 Al	3,138.5	627.7	ppb	1.63	200000.	
28 Si	24,430.	4,886.	ppb	0.63	#VALUE!	
29 Si	26,640.	5,328.	ppb	1.06	10000.	
39 K	19,600.	3,920.	ppb	1.85	200000.	
43 Ca	394,500.	78,900.	ppb	0.92	#VALUE!	
44 Ca	372,250.	74,450.	ppb	0.34	200000.	
51 V	7.6	1.52	ppb	7.45	1000.	
52 Cr	27.755	5.551	ppb	1.40	2000.	
53 Cr	104.65	20.93	ppb	3.57	#VALUE!	
55 Mn	1,357.5	271.5	ppb	0.59	2000.	
56 Fe	10,615.	2,123.	ppb	0.61	#VALUE!	
57 Fe	11,010.	2,202.	ppb	0.09	100000.	
59 Co	2.026	0.4052	ppb	4.58	1000.	
60 Ni	11.155	2.231	ppb	2.52	1000.	
63 Cu	22.105	4.421	ppb	0.22	#VALUE!	
65 Cu	12.915	2.583	ppb	1.54	2000.	
66 Zn	143.4	28.68	ppb	0.63	2000.	
68 Zn	138.25	27.65	ppb	2.13	#VALUE!	
75 As	13.885	2.777	ppb	6.02	1000.	
82 Se	3.5235	0.7047	ppb	5.47	1000.	
88 Sr	1,645.	329.	ppb	0.75	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.455	3.491	ppb	3.31	1000.	
107 Ag	0.0177	0.0035	ppb	67.36	100.	
109 Ag	0.0168	0.0034	ppb	112.43	#VALUE!	
111 Cd	0.1835	0.0367	ppb	74.44	#VALUE!	
114 Cd	0.0327	0.0065	ppb	59.91	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.5255	0.5051	ppb	4.45	1000.	
120 Sn	2.47	0.494	ppb	2.98	#VALUE!	
121 Sb	0.2651	0.053	ppb	20.16	#VALUE!	
123 Sb	0.3426	0.0685	ppb	12.02	1000.	
135 Ba	96.5	19.3	ppb	2.93	2000.	
137 Ba	97.2	19.44	ppb	1.52	#VALUE!	
182 W	0.3587	0.0717	ppb	19.86	1000.	
203 Tl	0.0819	0.0164	ppb	23.66	1000.	
205 Tl	0.0621	0.0124	ppb	33.85	#VALUE!	
208 Pb	3.401	0.6802	ppb	2.07	2000.	
232 Th	2.475	0.495	ppb	7.68	1000.	
238 U	2.074	0.4148	ppb	0.41	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3761706.30	0.93	3927738.80	95.8	69.5 - 120	
45 Sc	2630217.30	0.98	2572658.80	102.2	69.5 - 120	
72 Ge	520460.09	0.22	510197.59	102.0	69.5 - 120	
159 Tb	4803478.50	0.71	4617151.00	104.0	69.5 - 120	
209 Bi	2372049.80	1.26	2380666.00	99.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000303

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\042SMPL.D\042SMPL.D#
Date Acquired: May 15 2018 08:36 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004L
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.1301	0.0052	ppb	47.83	100.	
11 B	272.25	10.89	ppb	1.46	1000.	
23 Na	323,500.	12,940.	ppb	1.70	200000.	
25 Mg	80,700.	3,228.	ppb	0.26	200000.	
27 Al	3,342.5	133.7	ppb	3.55	200000.	
28 Si	23,890.	955.6	ppb	1.38	#VALUE!	
29 Si	24,085.	963.4	ppb	1.64	10000.	
39 K	19,195.	767.8	ppb	0.90	200000.	
43 Ca	387,500.	15,500.	ppb	0.80	#VALUE!	
44 Ca	377,250.	15,090.	ppb	0.97	200000.	
51 V	6.6275	0.2651	ppb	35.81	1000.	
52 Cr	27.775	1.111	ppb	2.76	2000.	
53 Cr	160.4	6.416	ppb	3.33	#VALUE!	
55 Mn	1,418.25	56.73	ppb	0.69	2000.	
56 Fe	10,665.	426.6	ppb	0.49	#VALUE!	
57 Fe	11,350.	454.	ppb	2.21	100000.	
59 Co	2.071	0.0828	ppb	5.76	1000.	
60 Ni	11.62	0.4648	ppb	9.35	1000.	
63 Cu	22.8925	0.9157	ppb	4.26	#VALUE!	
65 Cu	13.63	0.5452	ppb	3.79	2000.	
66 Zn	157.25	6.29	ppb	3.32	2000.	
68 Zn	146.125	5.845	ppb	4.09	#VALUE!	
75 As	16.2825	0.6513	ppb	25.84	1000.	
82 Se	2.505	0.1002	ppb	152.30	1000.	
88 Sr	1,719.75	68.79	ppb	0.01	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.36	0.6944	ppb	3.76	1000.	
107 Ag	0.0652	0.0026	ppb	38.75	100.	
109 Ag	0.0023	0.0001	ppb	1209.80	#VALUE!	
111 Cd	0.8203	0.0328	ppb	46.11	#VALUE!	
114 Cd	0.063	0.0025	ppb	68.59	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.0875	0.1235	ppb	8.49	1000.	
120 Sn	2.7525	0.1101	ppb	13.72	#VALUE!	
121 Sb	0.3068	0.0123	ppb	9.92	#VALUE!	
123 Sb	0.5538	0.0222	ppb	9.28	1000.	
135 Ba	98.325	3.933	ppb	2.79	2000.	
137 Ba	100.275	4.011	ppb	3.75	#VALUE!	
182 W	0.4108	0.0164	ppb	13.59	1000.	
203 Tl	0.085	0.0034	ppb	126.68	1000.	
205 Tl	-0.0314	-0.0013	ppb	51.93	#VALUE!	
208 Pb	2.5325	0.1013	ppb	15.81	2000.	
232 Th	2.2078	0.0883	ppb	7.36	1000.	
238 U	1.8965	0.0759	ppb	3.92	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3991227.80	0.78	3927738.80	101.6	69.5 - 120	
45 Sc	2673605.30	1.11	2572658.80	103.9	69.5 - 120	
72 Ge	525500.75	1.02	510197.59	103.0	69.5 - 120	
159 Tb	4809825.00	0.79	4617151.00	104.2	69.5 - 120	
209 Bi	2480411.30	0.94	2380666.00	104.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000304

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\043SMPL.D\043SMPL.D#
Date Acquired: May 15 2018 08:40 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004A
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.675	2.135	ppb	6.26	100.	
11 B	424.05	84.81	ppb	2.43	1000.	
23 Na	323,600.	64,720.	ppb	2.31	200000.	
25 Mg	78,800.	15,760.	ppb	2.24	200000.	
27 Al	4,029.5	805.9	ppb	1.58	200000.	
28 Si	29,100.	5,820.	ppb	1.07	#VALUE!	
29 Si	31,470.	6,294.	ppb	2.08	10000.	
39 K	29,095.	5,819.	ppb	0.57	200000.	
43 Ca	384,500.	76,900.	ppb	1.09	#VALUE!	
44 Ca	363,400.	72,680.	ppb	1.25	200000.	
51 V	57.7	11.54	ppb	1.73	1000.	
52 Cr	76.5	15.3	ppb	0.88	2000.	
53 Cr	143.85	28.77	ppb	1.57	#VALUE!	
55 Mn	1,356.5	271.3	ppb	1.03	2000.	
56 Fe	11,375.	2,275.	ppb	0.02	#VALUE!	
57 Fe	11,740.	2,348.	ppb	1.00	100000.	
59 Co	11.9	2.38	ppb	1.44	1000.	
60 Ni	30.345	6.069	ppb	1.78	1000.	
63 Cu	51.05	10.21	ppb	1.79	#VALUE!	
65 Cu	41.31	8.262	ppb	1.78	2000.	
66 Zn	232.2	46.44	ppb	0.87	2000.	
68 Zn	230.1	46.02	ppb	1.71	#VALUE!	
75 As	61.15	12.23	ppb	1.53	1000.	
82 Se	49.595	9.919	ppb	1.10	1000.	
88 Sr	1,671.5	334.3	ppb	0.47	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	67.7	13.54	ppb	0.87	1000.	
107 Ag	9.675	1.935	ppb	0.78	100.	
109 Ag	9.705	1.941	ppb	1.93	#VALUE!	
111 Cd	9.775	1.955	ppb	3.17	#VALUE!	
114 Cd	9.775	1.955	ppb	2.93	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.35	10.47	ppb	1.15	1000.	
120 Sn	52.2	10.44	ppb	1.01	#VALUE!	
121 Sb	10.135	2.027	ppb	1.62	#VALUE!	
123 Sb	10.34	2.068	ppb	4.67	1000.	
135 Ba	115.9	23.18	ppb	2.14	2000.	
137 Ba	115.3	23.06	ppb	1.10	#VALUE!	
182 W	53.25	10.65	ppb	1.36	1000.	
203 Tl	10.635	2.127	ppb	1.75	1000.	
205 Tl	10.475	2.095	ppb	0.50	#VALUE!	
208 Pb	13.87	2.774	ppb	1.24	2000.	
232 Th	13.18	2.636	ppb	0.94	1000.	
238 U	13.03	2.606	ppb	1.81	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3962230.80	3.94	3927738.80	100.9	69.5 - 120	
45 Sc	2669154.00	0.73	2572658.80	103.8	69.5 - 120	
72 Ge	522555.25	1.02	510197.59	102.4	69.5 - 120	
159 Tb	4847288.50	1.72	4617151.00	105.0	69.5 - 120	
209 Bi	2373576.80	1.34	2380666.00	99.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000305

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\044SMPL.D\044SMPL.D#
Date Acquired: May 15 2018 08:44 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004S
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	56.05	11.21	ppb	2.73	100.	
11 B	820.	164.	ppb	2.33	1000.	
23 Na	357,250.	71,450.	ppb	1.04	200000.	
25 Mg	94,200.	18,840.	ppb	3.87	200000.	
27 Al	5,830.	1,166.	ppb	2.57	200000.	
28 Si	28,810.	5,762.	ppb	3.56	#VALUE!	
29 Si	31,215.	6,243.	ppb	2.43	10000.	
39 K	31,925.	6,385.	ppb	2.30	200000.	
43 Ca	438,950.	87,790.	ppb	0.96	#VALUE!	
44 Ca	418,250.	83,650.	ppb	1.60	200000.	
51 V	578.5	115.7	ppb	0.58	1000.	
52 Cr	245.95	49.19	ppb	1.76	2000.	
53 Cr	331.8	66.36	ppb	0.77	#VALUE!	
55 Mn	2,027.	405.4	ppb	0.48	2000.	
56 Fe	12,935.	2,587.	ppb	1.14	#VALUE!	
57 Fe	13,160.	2,632.	ppb	1.42	100000.	
59 Co	561.5	112.3	ppb	0.09	1000.	
60 Ni	550.	110.	ppb	0.43	1000.	
63 Cu	286.	57.2	ppb	0.68	#VALUE!	
65 Cu	278.85	55.77	ppb	1.22	2000.	
66 Zn	669.5	133.9	ppb	1.35	2000.	
68 Zn	729.5	145.9	ppb	1.27	#VALUE!	
75 As	124.45	24.89	ppb	3.33	1000.	
82 Se	108.15	21.63	ppb	2.15	1000.	
88 Sr	2,369.	473.8	ppb	0.88	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	133.15	26.63	ppb	1.31	1000.	
107 Ag	52.5	10.5	ppb	1.29	100.	
109 Ag	52.55	10.51	ppb	1.73	#VALUE!	
111 Cd	263.35	52.67	ppb	1.40	#VALUE!	
114 Cd	265.6	53.12	ppb	1.50	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	550.5	110.1	ppb	1.98	1000.	
120 Sn	549.5	109.9	ppb	1.21	#VALUE!	
121 Sb	109.65	21.93	ppb	1.58	#VALUE!	
123 Sb	110.25	22.05	ppb	2.36	1000.	
135 Ba	2,338.	467.6	ppb	1.69	2000.	
137 Ba	2,366.	473.2	ppb	0.91	#VALUE!	
182 W	116.1	23.22	ppb	0.59	1000.	
203 Tl	114.9	22.98	ppb	1.33	1000.	
205 Tl	115.2	23.04	ppb	2.10	#VALUE!	
208 Pb	119.1	23.82	ppb	1.33	2000.	
232 Th	122.9	24.58	ppb	1.28	1000.	
238 U	124.3	24.86	ppb	1.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4030679.50	3.28	3927738.80	102.6	69.5 - 120	
45 Sc	2672440.00	1.89	2572658.80	103.9	69.5 - 120	
72 Ge	511634.94	0.82	510197.59	100.3	69.5 - 120	
159 Tb	4784838.50	1.14	4617151.00	103.6	69.5 - 120	
209 Bi	2347763.50	1.44	2380666.00	98.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000306

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\045SMPL.D\045SMPL.D#
Date Acquired: May 15 2018 08:48 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-004P
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	49.4	9.88	ppb	2.13	100.	
11 B	743.5	148.7	ppb	3.57	1000.	
23 Na	336,950.	67,390.	ppb	2.01	200000.	
25 Mg	86,600.	17,320.	ppb	2.19	200000.	
27 Al	5,490.	1,098.	ppb	1.87	200000.	
28 Si	26,070.	5,214.	ppb	1.68	#VALUE!	
29 Si	28,425.	5,685.	ppb	1.87	10000.	
39 K	29,220.	5,844.	ppb	2.05	200000.	
43 Ca	399,050.	79,810.	ppb	1.71	#VALUE!	
44 Ca	374,400.	74,880.	ppb	1.17	200000.	
51 V	516.	103.2	ppb	1.54	1000.	
52 Cr	219.9	43.98	ppb	1.40	2000.	
53 Cr	298.1	59.62	ppb	0.55	#VALUE!	
55 Mn	1,817.	363.4	ppb	0.64	2000.	
56 Fe	11,565.	2,313.	ppb	1.24	#VALUE!	
57 Fe	11,890.	2,378.	ppb	1.48	100000.	
59 Co	504.5	100.9	ppb	0.87	1000.	
60 Ni	489.15	97.83	ppb	0.75	1000.	
63 Cu	253.2	50.64	ppb	0.22	#VALUE!	
65 Cu	248.2	49.64	ppb	1.21	2000.	
66 Zn	593.5	118.7	ppb	1.17	2000.	
68 Zn	645.	129.	ppb	0.54	#VALUE!	
75 As	111.25	22.25	ppb	1.53	1000.	
82 Se	96.4	19.28	ppb	0.96	1000.	
88 Sr	2,107.5	421.5	ppb	1.02	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	116.15	23.23	ppb	0.30	1000.	
107 Ag	46.11	9.222	ppb	0.30	100.	
109 Ag	46.235	9.247	ppb	0.82	#VALUE!	
111 Cd	230.	46.	ppb	0.52	#VALUE!	
114 Cd	230.65	46.13	ppb	0.53	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	495.05	99.01	ppb	0.92	1000.	
120 Sn	495.5	99.1	ppb	0.57	#VALUE!	
121 Sb	98.25	19.65	ppb	1.23	#VALUE!	
123 Sb	97.75	19.55	ppb	0.57	1000.	
135 Ba	2,098.5	419.7	ppb	0.68	2000.	
137 Ba	2,131.5	426.3	ppb	0.33	#VALUE!	
182 W	99.55	19.91	ppb	0.98	1000.	
203 Tl	101.7	20.34	ppb	0.61	1000.	
205 Tl	101.25	20.25	ppb	0.85	#VALUE!	
208 Pb	103.85	20.77	ppb	0.98	2000.	
232 Th	107.3	21.46	ppb	0.97	1000.	
238 U	108.3	21.66	ppb	0.57	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4674846.00	1.78	3927738.80	119.0	69.5 - 120	
45 Sc	2917644.80	0.97	2572658.80	113.4	69.5 - 120	
72 Ge	555517.94	0.20	510197.59	108.9	69.5 - 120	
159 Tb	4989005.00	0.83	4617151.00	108.1	69.5 - 120	
209 Bi	2417636.50	1.11	2380666.00	101.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000307

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\046SMPL.D\046SMPL.D#
Date Acquired: May 15 2018 08:52 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005
Misc Info:
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0102	0.002	ppb	122.87	100.	
11 B	246.75	49.35	ppb	4.81	1000.	
23 Na	329,850.	65,970.	ppb	1.07	200000.	
25 Mg	81,900.	16,380.	ppb	2.15	200000.	
27 Al	9.795	1.959	ppb	6.90	200000.	
28 Si	17,715.	3,543.	ppb	2.70	#VALUE!	
29 Si	19,395.	3,879.	ppb	2.16	10000.	
39 K	19,120.	3,824.	ppb	2.56	200000.	
43 Ca	403,300.	80,660.	ppb	1.02	#VALUE!	
44 Ca	380,750.	76,150.	ppb	0.29	200000.	
51 V	0.82	0.164	ppb	10.18	1000.	
52 Cr	1.881	0.3762	ppb	1.76	2000.	
53 Cr	75.65	15.13	ppb	11.42	#VALUE!	
55 Mn	1,341.	268.2	ppb	0.95	2000.	
56 Fe	6,455.	1,291.	ppb	1.45	#VALUE!	
57 Fe	6,960.	1,392.	ppb	1.11	100000.	
59 Co	0.805	0.161	ppb	7.88	1000.	
60 Ni	4.2375	0.8475	ppb	4.48	1000.	
63 Cu	10.625	2.125	ppb	0.99	#VALUE!	
65 Cu	1.5145	0.3029	ppb	9.05	2000.	
66 Zn	49.07	9.814	ppb	0.28	2000.	
68 Zn	45.69	9.138	ppb	1.34	#VALUE!	
75 As	11.89	2.378	ppb	14.60	1000.	
82 Se	2.3125	0.4625	ppb	32.07	1000.	
88 Sr	1,657.5	331.5	ppb	0.29	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	13.115	2.623	ppb	1.39	1000.	
107 Ag	0.0091	0.0018	ppb	105.12	100.	
109 Ag	0.0019	0.0004	ppb	74.79	#VALUE!	
111 Cd	0.1372	0.0274	ppb	9.32	#VALUE!	
114 Cd	-0.0025	-0.0005	ppb	1300.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.022	0.2044	ppb	5.02	1000.	
120 Sn	1.0115	0.2023	ppb	10.81	#VALUE!	
121 Sb	0.2524	0.0505	ppb	12.26	#VALUE!	
123 Sb	0.2842	0.0568	ppb	10.27	1000.	
135 Ba	31.405	6.281	ppb	2.92	2000.	
137 Ba	31.985	6.397	ppb	0.71	#VALUE!	
182 W	0.4194	0.0839	ppb	19.27	1000.	
203 Tl	0.04	0.008	ppb	74.42	1000.	
205 Tl	-0.0013	-0.0003	ppb	2563.70	#VALUE!	
208 Pb	-0.2657	-0.0531	ppb	2.78	2000.	
232 Th	0.6755	0.1351	ppb	14.49	1000.	
238 U	1.7865	0.3573	ppb	2.49	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4197086.00	5.26	3927738.80	106.9	69.5 - 120	
45 Sc	2733665.50	0.31	2572658.80	106.3	69.5 - 120	
72 Ge	534922.94	0.77	510197.59	104.8	69.5 - 120	
159 Tb	4831836.00	1.31	4617151.00	104.6	69.5 - 120	
209 Bi	2358338.00	1.46	2380666.00	99.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000308

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\047SMPL.D\047SMPL.D#
Date Acquired: May 15 2018 08:56 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005L
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0368	0.0015	ppb	50.58	100.	
11 B	328.25	13.13	ppb	1.58	1000.	
23 Na	340,750.	13,630.	ppb	1.87	200000.	
25 Mg	86,250.	3,450.	ppb	1.50	200000.	
27 Al	22.81	0.9124	ppb	10.26	200000.	
28 Si	17,702.5	708.1	ppb	3.81	#VALUE!	
29 Si	17,947.5	717.9	ppb	2.74	10000.	
39 K	19,700.	788.	ppb	2.07	200000.	
43 Ca	406,250.	16,250.	ppb	2.12	#VALUE!	
44 Ca	393,750.	15,750.	ppb	1.98	200000.	
51 V	1.8275	0.0731	ppb	70.94	1000.	
52 Cr	2.965	0.1186	ppb	14.13	2000.	
53 Cr	127.25	5.09	ppb	8.16	#VALUE!	
55 Mn	1,459.75	58.39	ppb	1.16	2000.	
56 Fe	6,855.	274.2	ppb	0.73	#VALUE!	
57 Fe	7,532.5	301.3	ppb	1.08	100000.	
59 Co	0.7193	0.0288	ppb	30.21	1000.	
60 Ni	4.4475	0.1779	ppb	3.39	1000.	
63 Cu	11.4875	0.4595	ppb	3.79	#VALUE!	
65 Cu	2.81	0.1124	ppb	22.91	2000.	
66 Zn	59.5	2.38	ppb	2.38	2000.	
68 Zn	50.4	2.016	ppb	4.82	#VALUE!	
75 As	14.775	0.591	ppb	14.92	1000.	
82 Se	0.4998	0.02	ppb	580.29	1000.	
88 Sr	1,811.25	72.45	ppb	1.03	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.8675	0.5147	ppb	2.40	1000.	
107 Ag	0.0078	0.0003	ppb	489.23	100.	
109 Ag	-0.0211	-0.0008	ppb	94.17	#VALUE!	
111 Cd	1.7068	0.0683	ppb	35.20	#VALUE!	
114 Cd	0.0379	0.0015	ppb	166.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.5413	0.0617	ppb	2.51	1000.	
120 Sn	1.5095	0.0604	ppb	42.20	#VALUE!	
121 Sb	0.1619	0.0065	ppb	57.94	#VALUE!	
123 Sb	0.3705	0.0148	ppb	28.72	1000.	
135 Ba	33.	1.32	ppb	0.78	2000.	
137 Ba	33.	1.32	ppb	8.98	#VALUE!	
182 W	0.4355	0.0174	ppb	17.98	1000.	
203 Tl	0.1218	0.0049	ppb	174.69	1000.	
205 Tl	-0.0046	-0.0002	ppb	1814.10	#VALUE!	
208 Pb	-0.8763	-0.0351	ppb	5.63	2000.	
232 Th	0.4873	0.0195	ppb	40.82	1000.	
238 U	1.7308	0.0692	ppb	0.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4104332.50	0.70	3927738.80	104.5	69.5 - 120	
45 Sc	2753865.30	1.68	2572658.80	107.0	69.5 - 120	
72 Ge	534089.00	0.65	510197.59	104.7	69.5 - 120	
159 Tb	4798278.50	0.65	4617151.00	103.9	69.5 - 120	
209 Bi	2453695.30	0.70	2380666.00	103.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000309

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\048SMPL.D\048SMPL.D#
Date Acquired: May 15 2018 09:01 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005A
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.475	2.095	ppb	3.25	100.	
11 B	453.85	90.77	ppb	3.36	1000.	
23 Na	341,850.	68,370.	ppb	4.69	200000.	
25 Mg	82,050.	16,410.	ppb	1.55	200000.	
27 Al	1,057.5	211.5	ppb	1.70	200000.	
28 Si	22,405.	4,481.	ppb	2.14	#VALUE!	
29 Si	24,370.	4,874.	ppb	4.81	10000.	
39 K	28,760.	5,752.	ppb	2.63	200000.	
43 Ca	404,650.	80,930.	ppb	1.45	#VALUE!	
44 Ca	378,950.	75,790.	ppb	0.88	200000.	
51 V	51.8	10.36	ppb	1.45	1000.	
52 Cr	52.5	10.5	ppb	2.35	2000.	
53 Cr	124.65	24.93	ppb	2.99	#VALUE!	
55 Mn	1,347.	269.4	ppb	1.35	2000.	
56 Fe	7,450.	1,490.	ppb	2.03	#VALUE!	
57 Fe	7,960.	1,592.	ppb	2.04	100000.	
59 Co	10.535	2.107	ppb	1.97	1000.	
60 Ni	23.68	4.736	ppb	1.98	1000.	
63 Cu	39.22	7.844	ppb	1.32	#VALUE!	
65 Cu	30.305	6.061	ppb	0.73	2000.	
66 Zn	142.1	28.42	ppb	0.31	2000.	
68 Zn	135.2	27.04	ppb	2.34	#VALUE!	
75 As	62.85	12.57	ppb	1.57	1000.	
82 Se	49.76	9.952	ppb	1.98	1000.	
88 Sr	1,681.	336.2	ppb	1.58	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	63.3	12.66	ppb	1.66	1000.	
107 Ag	9.455	1.891	ppb	1.46	100.	
109 Ag	9.61	1.922	ppb	1.60	#VALUE!	
111 Cd	9.805	1.961	ppb	2.80	#VALUE!	
114 Cd	9.405	1.881	ppb	1.63	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.4	10.28	ppb	3.71	1000.	
120 Sn	50.95	10.19	ppb	3.17	#VALUE!	
121 Sb	10.29	2.058	ppb	4.94	#VALUE!	
123 Sb	10.375	2.075	ppb	1.59	1000.	
135 Ba	51.45	10.29	ppb	1.56	2000.	
137 Ba	52.3	10.46	ppb	3.00	#VALUE!	
182 W	52.85	10.57	ppb	2.06	1000.	
203 Tl	10.33	2.066	ppb	0.23	1000.	
205 Tl	10.235	2.047	ppb	1.98	#VALUE!	
208 Pb	10.025	2.005	ppb	3.92	2000.	
232 Th	10.955	2.191	ppb	1.24	1000.	
238 U	12.485	2.497	ppb	0.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4166964.00	6.12	3927738.80	106.1	69.5 - 120	
45 Sc	2713133.00	2.09	2572658.80	105.5	69.5 - 120	
72 Ge	530580.25	1.18	510197.59	104.0	69.5 - 120	
159 Tb	4806113.50	1.56	4617151.00	104.1	69.5 - 120	
209 Bi	2365146.80	0.98	2380666.00	99.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000310

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\049SMPL.D\049SMPL.D#
Date Acquired: May 15 2018 09:05 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0054	-0.0011	ppb	1.67	100.	
11 B	20.665	4.133	ppb	14.82	1000.	
23 Na	54.95	10.99	ppb	46.75	200000.	
25 Mg	13.16	2.632	ppb	47.23	200000.	
27 Al	7.305	1.461	ppb	6.12	200000.	
28 Si	43.25	8.65	ppb	24.24	#VALUE!	
29 Si	90.7	18.14	ppb	14.53	10000.	
39 K	19.79	3.958	ppb	60.23	200000.	
43 Ca	42.53	8.506	ppb	73.21	#VALUE!	
44 Ca	41.5	8.3	ppb	71.11	200000.	
51 V	0.588	0.1176	ppb	112.50	1000.	
52 Cr	0.828	0.1656	ppb	23.06	2000.	
53 Cr	22.185	4.437	ppb	3.75	#VALUE!	
55 Mn	0.538	0.1076	ppb	18.61	2000.	
56 Fe	46.34	9.268	ppb	38.09	#VALUE!	
57 Fe	26.02	5.204	ppb	13.59	100000.	
59 Co	0.0023	0.0005	ppb	583.41	1000.	
60 Ni	0.1897	0.0379	ppb	16.56	1000.	
63 Cu	1.0575	0.2115	ppb	8.68	#VALUE!	
65 Cu	1.076	0.2152	ppb	12.60	2000.	
66 Zn	1.1935	0.2387	ppb	14.61	2000.	
68 Zn	-0.0524	-0.0105	ppb	262.12	#VALUE!	
75 As	0.3365	0.0673	ppb	105.74	1000.	
82 Se	0.0906	0.0181	ppb	900.66	1000.	
88 Sr	0.1344	0.0269	ppb	71.65	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0729	0.0146	ppb	39.12	1000.	
107 Ag	0.0072	0.0014	ppb	132.52	100.	
109 Ag	0.0166	0.0033	ppb	26.94	#VALUE!	
111 Cd	0.3276	0.0655	ppb	41.35	#VALUE!	
114 Cd	-0.0122	-0.0024	ppb	379.14	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	13.93	2.786	ppb	4.62	1000.	
120 Sn	13.945	2.789	ppb	3.91	#VALUE!	
121 Sb	0.0065	0.0013	ppb	198.00	#VALUE!	
123 Sb	0.0134	0.0027	ppb	161.46	1000.	
135 Ba	0.1444	0.0289	ppb	45.01	2000.	
137 Ba	0.1412	0.0282	ppb	22.74	#VALUE!	
182 W	0.0621	0.0124	ppb	27.38	1000.	
203 Tl	0.0116	0.0023	ppb	137.77	1000.	
205 Tl	0.023	0.0046	ppb	68.37	#VALUE!	
208 Pb	0.3768	0.0754	ppb	5.24	2000.	
232 Th	0.0347	0.0069	ppb	16.27	1000.	
238 U	0.0027	0.0005	ppb	26.90	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4000313.80	0.67	3927738.80	101.8	69.5 - 120	
45 Sc	2608051.00	1.52	2572658.80	101.4	69.5 - 120	
72 Ge	509603.56	0.82	510197.59	99.9	69.5 - 120	
159 Tb	4553705.50	1.42	4617151.00	98.6	69.5 - 120	
209 Bi	2342422.80	0.35	2380666.00	98.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000311

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\050_CCV.D\050_CCV.D#
Date Acquired: May 15 2018 09:09 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.11	ppb	5.21	25	100.44	
11 B	26.12	ppb	3.92	25	104.48	
23 Na	4,816.	ppb	2.19	5,000	96.32	
25 Mg	4,897.	ppb	2.60	5,000	97.94	
27 Al	498.7	ppb	4.17	500	99.74	
28 Si	481.	ppb	1.87	500	96.2	
29 Si	463.8	ppb	1.89	500	92.76	
39 K	4,848.	ppb	1.82	5,000	96.96	
43 Ca	4,907.	ppb	1.39	5,000	98.14	
44 Ca	4,924.	ppb	0.81	5,000	98.48	
51 V	24.16	ppb	0.12	25	96.64	
52 Cr	24.44	ppb	0.94	25	97.76	
53 Cr	24.41	ppb	2.34	25	97.64	
55 Mn	24.44	ppb	0.50	25	97.76	
56 Fe	4,817.	ppb	0.49	5,000	96.34	
57 Fe	4,884.	ppb	0.95	5,000	97.68	
59 Co	24.2	ppb	0.36	25	96.8	
60 Ni	24.7	ppb	2.62	25	98.8	
63 Cu	24.55	ppb	0.45	25	98.2	
65 Cu	24.54	ppb	1.48	25	98.16	
66 Zn	24.76	ppb	1.50	25	99.04	
68 Zn	24.77	ppb	1.81	25	99.08	
75 As	24.61	ppb	0.71	25	98.44	
82 Se	25.19	ppb	0.63	25	100.76	
88 Sr	23.99	ppb	0.68	25	95.96	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.22	ppb	0.46	25	96.88	
107 Ag	24.61	ppb	0.55	25	98.44	
109 Ag	24.66	ppb	0.27	25	98.64	
111 Cd	24.67	ppb	0.47	25	98.68	
114 Cd	24.53	ppb	0.88	25	98.12	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.08	ppb	0.72	25	96.32	
120 Sn	24.03	ppb	0.87	25	96.12	
121 Sb	24.55	ppb	0.93	25	98.2	
123 Sb	24.41	ppb	1.35	25	97.64	
135 Ba	24.82	ppb	1.04	25	99.28	
137 Ba	24.58	ppb	0.54	25	98.32	
182 W	23.98	ppb	1.73	25	95.92	
203 Tl	24.14	ppb	2.28	25	96.56	
205 Tl	24.07	ppb	1.30	25	96.28	
208 Pb	24.22	ppb	1.15	25	96.88	
232 Th	23.76	ppb	1.26	25	95.04	
238 U	24.39	ppb	2.29	25	97.56	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4136729.00	1.58	3927738.80	105.3	80 - 120.4	
45 Sc	2714310.80	1.77	2572658.80	105.5	80 - 120.4	
72 Ge	516181.22	2.08	510197.59	101.2	80 - 120.4	
159 Tb	4799252.00	2.03	4617151.00	103.9	80 - 120.4	
209 Bi	2442106.00	0.05	2380666.00	102.6	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\051_CCB.D\051_CCB.D#
Date Acquired: May 15 2018 09:13 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0001	ppb	3053.90	1.00	
11 B	2.529	ppb	7.56	1.00	
23 Na	4.937	ppb	38.97	1.00	
25 Mg	0.5382	ppb	127.59	1.00	
27 Al	0.1463	ppb	73.82	1.00	
28 Si	18.24	ppb	69.85	1.00	
29 Si	15.16	ppb	109.10	1.00	
39 K	2.95	ppb	141.19	1.00	
43 Ca	1.41	ppb	219.57	1.00	
44 Ca	3.349	ppb	84.98	1.00	
51 V	0.0204	ppb	362.75	1.00	
52 Cr	-0.0362	ppb	60.56	1.00	
53 Cr	-2.215	ppb	9.65	1.00	
55 Mn	0.0116	ppb	66.29	1.00	
56 Fe	1.735	ppb	337.12	1.00	
57 Fe	3.239	ppb	66.47	1.00	
59 Co	0.0008	ppb	186.65	1.00	
60 Ni	0.0007	ppb	717.61	1.00	
63 Cu	0.0429	ppb	29.72	1.00	
65 Cu	0.0407	ppb	43.50	1.00	
66 Zn	0.1032	ppb	14.05	1.00	
68 Zn	-0.0387	ppb	28.70	1.00	
75 As	0.0019	ppb	11410.00	1.00	
82 Se	0.0548	ppb	335.28	1.00	
88 Sr	0.0094	ppb	154.78	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0272	ppb	41.93	1.00	
107 Ag	0.002	ppb	155.32	1.00	
109 Ag	0.0033	ppb	70.25	1.00	
111 Cd	0.0646	ppb	41.05	1.00	
114 Cd	0.0027	ppb	22.08	1.00	
115 In	--------	---	--------	---	
118 Sn	0.044	ppb	31.25	1.00	
120 Sn	0.047	ppb	36.41	1.00	
121 Sb	0.0071	ppb	66.73	1.00	
123 Sb	0.0095	ppb	17.74	1.00	
135 Ba	0.02	ppb	69.95	1.00	
137 Ba	0.0119	ppb	49.33	1.00	
182 W	0.05	ppb	17.10	1.00	
203 Tl	0.0082	ppb	125.44	1.00	
205 Tl	0.0042	ppb	146.90	1.00	
208 Pb	-0.0053	ppb	51.83	1.00	
232 Th	0.0604	ppb	10.87	1.00	
238 U	0.0028	ppb	39.12	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3871903.30	1.76	3927738.80	98.6	79.5 - 120	
45 Sc	2525691.50	2.66	2572658.80	98.2	79.5 - 120	
72 Ge	495311.94	0.75	510197.59	97.1	79.5 - 120	
159 Tb	4436158.50	1.32	4617151.00	96.1	79.5 - 120	
209 Bi	2330879.30	0.39	2380666.00	97.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000313

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\052SMPL.D\052SMPL.D#
Date Acquired: May 15 2018 09:17 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005S
Misc Info:
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	49.9	9.98	ppb	2.34	100.	
11 B	746.	149.2	ppb	4.51	1000.	
23 Na	346,900.	69,380.	ppb	2.08	200000.	
25 Mg	88,500.	17,700.	ppb	2.05	200000.	
27 Al	2,048.	409.6	ppb	3.66	200000.	
28 Si	19,185.	3,837.	ppb	1.99	#VALUE!	
29 Si	21,195.	4,239.	ppb	2.35	10000.	
39 K	29,635.	5,927.	ppb	1.57	200000.	
43 Ca	416,300.	83,260.	ppb	2.36	#VALUE!	
44 Ca	390,150.	78,030.	ppb	1.66	200000.	
51 V	503.5	100.7	ppb	1.51	1000.	
52 Cr	195.25	39.05	ppb	1.63	2000.	
53 Cr	271.3	54.26	ppb	2.32	#VALUE!	
55 Mn	1,850.5	370.1	ppb	2.30	2000.	
56 Fe	7,695.	1,539.	ppb	1.14	#VALUE!	
57 Fe	8,020.	1,604.	ppb	1.32	100000.	
59 Co	500.	100.	ppb	1.21	1000.	
60 Ni	486.75	97.35	ppb	1.47	1000.	
63 Cu	246.9	49.38	ppb	0.46	#VALUE!	
65 Cu	238.9	47.78	ppb	1.85	2000.	
66 Zn	508.	101.6	ppb	1.87	2000.	
68 Zn	566.	113.2	ppb	2.12	#VALUE!	
75 As	110.95	22.19	ppb	2.86	1000.	
82 Se	96.15	19.23	ppb	3.88	1000.	
88 Sr	2,169.5	433.9	ppb	1.05	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	113.4	22.68	ppb	1.11	1000.	
107 Ag	47.175	9.435	ppb	2.06	100.	
109 Ag	46.78	9.356	ppb	1.98	#VALUE!	
111 Cd	232.6	46.52	ppb	1.19	#VALUE!	
114 Cd	233.8	46.76	ppb	1.24	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	497.75	99.55	ppb	1.20	1000.	
120 Sn	497.8	99.56	ppb	0.68	#VALUE!	
121 Sb	99.35	19.87	ppb	0.99	#VALUE!	
123 Sb	99.6	19.92	ppb	1.30	1000.	
135 Ba	2,033.	406.6	ppb	1.33	2000.	
137 Ba	2,031.	406.2	ppb	1.92	#VALUE!	
182 W	103.25	20.65	ppb	0.91	1000.	
203 Tl	102.55	20.51	ppb	1.30	1000.	
205 Tl	102.15	20.43	ppb	0.46	#VALUE!	
208 Pb	101.55	20.31	ppb	0.79	2000.	
232 Th	106.35	21.27	ppb	1.00	1000.	
238 U	108.7	21.74	ppb	1.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4196586.00	2.22	3927738.80	106.8	69.5 - 120	
45 Sc	2681217.80	2.83	2572658.80	104.2	69.5 - 120	
72 Ge	518473.81	1.49	510197.59	101.6	69.5 - 120	
159 Tb	4762145.50	1.00	4617151.00	103.1	69.5 - 120	
209 Bi	2308454.50	1.20	2380666.00	97.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000314

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\053SMPL.D\053SMPL.D#
Date Acquired: May 15 2018 09:21 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-005P
Misc Info:
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	50.9	10.18	ppb	4.43	100.	
11 B	779.	155.8	ppb	4.50	1000.	
23 Na	352,200.	70,440.	ppb	0.39	200000.	
25 Mg	87,750.	17,550.	ppb	1.47	200000.	
27 Al	2,092.	418.4	ppb	3.02	200000.	
28 Si	19,285.	3,857.	ppb	1.43	#VALUE!	
29 Si	20,970.	4,194.	ppb	0.75	10000.	
39 K	29,080.	5,816.	ppb	0.48	200000.	
43 Ca	413,700.	82,740.	ppb	1.15	#VALUE!	
44 Ca	387,050.	77,410.	ppb	0.46	200000.	
51 V	516.5	103.3	ppb	2.12	1000.	
52 Cr	198.35	39.67	ppb	1.96	2000.	
53 Cr	282.6	56.52	ppb	1.48	#VALUE!	
55 Mn	1,870.5	374.1	ppb	1.49	2000.	
56 Fe	7,715.	1,543.	ppb	1.58	#VALUE!	
57 Fe	8,135.	1,627.	ppb	2.16	100000.	
59 Co	511.	102.2	ppb	0.13	1000.	
60 Ni	487.8	97.56	ppb	1.32	1000.	
63 Cu	246.	49.2	ppb	2.16	#VALUE!	
65 Cu	242.85	48.57	ppb	0.58	2000.	
66 Zn	513.5	102.7	ppb	1.86	2000.	
68 Zn	564.5	112.9	ppb	2.07	#VALUE!	
75 As	112.85	22.57	ppb	1.93	1000.	
82 Se	97.5	19.5	ppb	2.19	1000.	
88 Sr	2,173.5	434.7	ppb	1.26	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	113.4	22.68	ppb	1.48	1000.	
107 Ag	47.19	9.438	ppb	0.83	100.	
109 Ag	46.98	9.396	ppb	0.71	#VALUE!	
111 Cd	232.85	46.57	ppb	0.87	#VALUE!	
114 Cd	234.95	46.99	ppb	1.18	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	504.	100.8	ppb	1.94	1000.	
120 Sn	504.	100.8	ppb	2.12	#VALUE!	
121 Sb	101.55	20.31	ppb	1.89	#VALUE!	
123 Sb	101.6	20.32	ppb	2.39	1000.	
135 Ba	2,079.	415.8	ppb	2.05	2000.	
137 Ba	2,051.5	410.3	ppb	0.73	#VALUE!	
182 W	104.15	20.83	ppb	2.59	1000.	
203 Tl	101.3	20.26	ppb	2.10	1000.	
205 Tl	102.25	20.45	ppb	1.87	#VALUE!	
208 Pb	101.85	20.37	ppb	1.99	2000.	
232 Th	105.35	21.07	ppb	2.17	1000.	
238 U	108.1	21.62	ppb	1.51	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4199603.00	4.24	3927738.80	106.9	69.5 - 120	
45 Sc	2715271.00	0.27	2572658.80	105.5	69.5 - 120	
72 Ge	522342.50	0.72	510197.59	102.4	69.5 - 120	
159 Tb	4727914.50	1.73	4617151.00	102.4	69.5 - 120	
209 Bi	2318426.50	1.99	2380666.00	97.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000315

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\054SMPL.D\054SMPL.D#
Date Acquired: May 15 2018 09:25 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-006
Misc Info:
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	1.726	0.3452	ppb	2.79	100.	
11 B	260.5	52.1	ppb	3.35	1000.	
23 Na	297,050.	59,410.	ppb	1.26	200000.	
25 Mg	77,100.	15,420.	ppb	4.49	200000.	
27 Al	34,015.	6,803.	ppb	2.71	200000.	
28 Si	70,250.	14,050.	ppb	3.18	#VALUE!	
29 Si	71,650.	14,330.	ppb	2.64	10000.	>LDR
39 K	24,750.	4,950.	ppb	2.04	200000.	
43 Ca	409,450.	81,890.	ppb	3.04	#VALUE!	
44 Ca	377,800.	75,560.	ppb	1.17	200000.	
51 V	78.85	15.77	ppb	2.74	1000.	
52 Cr	114.2	22.84	ppb	0.68	2000.	
53 Cr	150.35	30.07	ppb	0.90	#VALUE!	
55 Mn	1,719.	343.8	ppb	2.42	2000.	
56 Fe	43,195.	8,639.	ppb	1.55	#VALUE!	
57 Fe	43,595.	8,719.	ppb	1.38	100000.	
59 Co	17.835	3.567	ppb	0.72	1000.	
60 Ni	55.85	11.17	ppb	1.24	1000.	
63 Cu	55.35	11.07	ppb	1.03	#VALUE!	
65 Cu	47.855	9.571	ppb	1.93	2000.	
66 Zn	196.65	39.33	ppb	0.27	2000.	
68 Zn	201.	40.2	ppb	0.85	#VALUE!	
75 As	15.455	3.091	ppb	5.49	1000.	
82 Se	4.2445	0.8489	ppb	22.16	1000.	
88 Sr	1,608.	321.6	ppb	1.76	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	24.785	4.957	ppb	2.27	1000.	
107 Ag	0.1132	0.0226	ppb	10.18	100.	
109 Ag	0.104	0.0208	ppb	13.42	#VALUE!	
111 Cd	0.6245	0.1249	ppb	8.17	#VALUE!	
114 Cd	0.3274	0.0655	ppb	11.46	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.1995	0.6399	ppb	0.86	1000.	
120 Sn	3.115	0.623	ppb	3.14	#VALUE!	
121 Sb	0.7125	0.1425	ppb	9.80	#VALUE!	
123 Sb	0.753	0.1506	ppb	5.24	1000.	
135 Ba	370.5	74.1	ppb	0.99	2000.	
137 Ba	370.6	74.12	ppb	0.75	#VALUE!	
182 W	0.4852	0.097	ppb	10.52	1000.	
203 Tl	0.503	0.1006	ppb	19.51	1000.	
205 Tl	0.4639	0.0928	ppb	4.09	#VALUE!	
208 Pb	34.48	6.896	ppb	0.65	2000.	
232 Th	23.14	4.628	ppb	1.84	1000.	
238 U	10.825	2.165	ppb	0.96	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3982417.50	3.13	3927738.80	101.4	69.5 - 120	
45 Sc	2671777.00	2.84	2572658.80	103.9	69.5 - 120	
72 Ge	517128.06	1.23	510197.59	101.4	69.5 - 120	
159 Tb	4788531.50	0.09	4617151.00	103.7	69.5 - 120	
209 Bi	2360853.80	1.41	2380666.00	99.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000316

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\055SMPL.D\055SMPL.D#
Date Acquired: May 15 2018 09:30 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-007
Misc Info:
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0063	0.0013	ppb	181.92	100.	
11 B	223.45	44.69	ppb	3.59	1000.	
23 Na	288,350.	57,670.	ppb	2.36	200000.	
25 Mg	68,650.	13,730.	ppb	1.41	200000.	
27 Al	20.465	4.093	ppb	6.28	200000.	
28 Si	18,310.	3,662.	ppb	2.18	#VALUE!	
29 Si	20,125.	4,025.	ppb	2.41	10000.	
39 K	17,250.	3,450.	ppb	2.32	200000.	
43 Ca	372,350.	74,470.	ppb	2.87	#VALUE!	
44 Ca	350,550.	70,110.	ppb	2.35	200000.	
51 V	1.2115	0.2423	ppb	32.49	1000.	
52 Cr	2.4385	0.4877	ppb	7.82	2000.	
53 Cr	65.85	13.17	ppb	16.06	#VALUE!	
55 Mn	1,334.	266.8	ppb	1.88	2000.	
56 Fe	6,240.	1,248.	ppb	1.99	#VALUE!	
57 Fe	6,580.	1,316.	ppb	0.91	100000.	
59 Co	0.6225	0.1245	ppb	6.62	1000.	
60 Ni	4.239	0.8478	ppb	1.23	1000.	
63 Cu	9.435	1.887	ppb	4.40	#VALUE!	
65 Cu	1.384	0.2768	ppb	5.01	2000.	
66 Zn	18.4	3.68	ppb	0.70	2000.	
68 Zn	15.835	3.167	ppb	3.12	#VALUE!	
75 As	9.785	1.957	ppb	4.88	1000.	
82 Se	1.863	0.3726	ppb	16.39	1000.	
88 Sr	1,448.	289.6	ppb	1.26	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	12.555	2.511	ppb	1.93	1000.	
107 Ag	0.0008	0.0002	ppb	1410.90	100.	
109 Ag	0.0026	0.0005	ppb	322.13	#VALUE!	
111 Cd	0.1602	0.032	ppb	65.78	#VALUE!	
114 Cd	-0.0102	-0.002	ppb	67.86	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.023	0.2046	ppb	11.07	1000.	
120 Sn	1.022	0.2044	ppb	4.56	#VALUE!	
121 Sb	0.1442	0.0288	ppb	25.42	#VALUE!	
123 Sb	0.1722	0.0344	ppb	14.84	1000.	
135 Ba	33.975	6.795	ppb	2.01	2000.	
137 Ba	33.69	6.738	ppb	4.30	#VALUE!	
182 W	0.2745	0.0549	ppb	16.33	1000.	
203 Tl	0.0658	0.0132	ppb	67.08	1000.	
205 Tl	0.0265	0.0053	ppb	66.54	#VALUE!	
208 Pb	-0.2518	-0.0504	ppb	3.46	2000.	
232 Th	0.4051	0.081	ppb	25.12	1000.	
238 U	0.765	0.153	ppb	1.08	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3962612.00	3.01	3927738.80	100.9	69.5 - 120	
45 Sc	2623350.50	3.10	2572658.80	102.0	69.5 - 120	
72 Ge	513744.88	1.26	510197.59	100.7	69.5 - 120	
159 Tb	4687806.00	2.11	4617151.00	101.5	69.5 - 120	
209 Bi	2349893.50	0.64	2380666.00	98.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000317

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\056SMPL.D\056SMPL.D#
Date Acquired: May 15 2018 09:34 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-008
Misc Info:
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	1.761	0.3522	ppb	3.33	100.	
11 B	203.35	40.67	ppb	1.06	1000.	
23 Na	273,500.	54,700.	ppb	2.27	200000.	
25 Mg	77,100.	15,420.	ppb	2.10	200000.	
27 Al	26,645.	5,329.	ppb	4.34	200000.	
28 Si	62,050.	12,410.	ppb	4.43	#VALUE!	
29 Si	64,450.	12,890.	ppb	2.31	10000.	>LDR
39 K	24,095.	4,819.	ppb	2.62	200000.	
43 Ca	441,250.	88,250.	ppb	2.28	#VALUE!	
44 Ca	418,650.	83,730.	ppb	2.37	200000.	
51 V	75.65	15.13	ppb	1.81	1000.	
52 Cr	92.1	18.42	ppb	1.26	2000.	
53 Cr	125.1	25.02	ppb	3.65	#VALUE!	
55 Mn	1,870.5	374.1	ppb	1.05	2000.	
56 Fe	42,240.	8,448.	ppb	1.14	#VALUE!	
57 Fe	43,015.	8,603.	ppb	1.17	100000.	
59 Co	10.325	2.065	ppb	0.94	1000.	
60 Ni	47.21	9.442	ppb	2.13	1000.	
63 Cu	48.935	9.787	ppb	2.23	#VALUE!	
65 Cu	42.38	8.476	ppb	2.64	2000.	
66 Zn	207.05	41.41	ppb	1.76	2000.	
68 Zn	224.2	44.84	ppb	2.52	#VALUE!	
75 As	45.52	9.104	ppb	4.69	1000.	
82 Se	4.802	0.9604	ppb	34.63	1000.	
88 Sr	1,681.	336.2	ppb	0.90	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	21.475	4.295	ppb	3.14	1000.	
107 Ag	0.1411	0.0282	ppb	22.70	100.	
109 Ag	0.0883	0.0177	ppb	13.42	#VALUE!	
111 Cd	0.5205	0.1041	ppb	11.17	#VALUE!	
114 Cd	0.1436	0.0287	ppb	34.68	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.5275	0.5055	ppb	6.47	1000.	
120 Sn	2.49	0.498	ppb	4.44	#VALUE!	
121 Sb	0.4929	0.0986	ppb	7.60	#VALUE!	
123 Sb	0.474	0.0948	ppb	10.71	1000.	
135 Ba	702.	140.4	ppb	1.81	2000.	
137 Ba	701.5	140.3	ppb	1.37	#VALUE!	
182 W	0.4942	0.0988	ppb	5.69	1000.	
203 Tl	0.37	0.074	ppb	15.48	1000.	
205 Tl	0.3824	0.0765	ppb	0.83	#VALUE!	
208 Pb	23.43	4.686	ppb	3.28	2000.	
232 Th	19.275	3.855	ppb	3.21	1000.	
238 U	5.875	1.175	ppb	4.83	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3874035.00	2.60	3927738.80	98.6	69.5 - 120	
45 Sc	2629377.00	1.46	2572658.80	102.2	69.5 - 120	
72 Ge	509218.34	0.94	510197.59	99.8	69.5 - 120	
159 Tb	4761461.50	0.97	4617151.00	103.1	69.5 - 120	
209 Bi	2380346.50	3.12	2380666.00	100.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000318

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\057SMPL.D\057SMPL.D#
Date Acquired: May 15 2018 09:38 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-009
Misc Info:
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0114	0.0023	ppb	41.96	100.	
11 B	190.8	38.16	ppb	1.64	1000.	
23 Na	271,550.	54,310.	ppb	1.84	200000.	
25 Mg	69,250.	13,850.	ppb	1.06	200000.	
27 Al	16.915	3.383	ppb	9.70	200000.	
28 Si	16,235.	3,247.	ppb	2.36	#VALUE!	
29 Si	17,715.	3,543.	ppb	0.73	10000.	
39 K	18,410.	3,682.	ppb	1.07	200000.	
43 Ca	403,450.	80,690.	ppb	0.33	#VALUE!	
44 Ca	377,300.	75,460.	ppb	0.47	200000.	
51 V	1.331	0.2662	ppb	69.91	1000.	
52 Cr	1.9125	0.3825	ppb	4.88	2000.	
53 Cr	71.75	14.35	ppb	18.47	#VALUE!	
55 Mn	1,277.5	255.5	ppb	0.38	2000.	
56 Fe	3,709.	741.8	ppb	1.75	#VALUE!	
57 Fe	4,094.	818.8	ppb	2.01	100000.	
59 Co	1.0875	0.2175	ppb	6.86	1000.	
60 Ni	20.35	4.07	ppb	2.78	1000.	
63 Cu	9.275	1.855	ppb	2.93	#VALUE!	
65 Cu	1.582	0.3164	ppb	4.85	2000.	
66 Zn	52.4	10.48	ppb	1.00	2000.	
68 Zn	49.04	9.808	ppb	2.09	#VALUE!	
75 As	26.555	5.311	ppb	6.57	1000.	
82 Se	2.633	0.5266	ppb	10.67	1000.	
88 Sr	1,525.	305.	ppb	2.09	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.285	2.457	ppb	1.09	1000.	
107 Ag	-0.0004	-0.0001	ppb	971.30	100.	
109 Ag	0.0015	0.0003	ppb	292.17	#VALUE!	
111 Cd	0.2428	0.0486	ppb	32.17	#VALUE!	
114 Cd	0.0005	0.0001	ppb	4432.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.861	0.1722	ppb	16.30	1000.	
120 Sn	0.931	0.1862	ppb	11.27	#VALUE!	
121 Sb	0.1714	0.0343	ppb	14.18	#VALUE!	
123 Sb	0.2074	0.0415	ppb	22.67	1000.	
135 Ba	40.72	8.144	ppb	2.56	2000.	
137 Ba	40.4	8.08	ppb	2.34	#VALUE!	
182 W	0.3052	0.061	ppb	4.06	1000.	
203 Tl	-0.0064	-0.0013	ppb	557.40	1000.	
205 Tl	0.0022	0.0004	ppb	1272.60	#VALUE!	
208 Pb	-0.2006	-0.0401	ppb	23.83	2000.	
232 Th	0.2337	0.0467	ppb	29.30	1000.	
238 U	2.343	0.4686	ppb	1.14	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4057630.00	0.82	3927738.80	103.3	69.5 - 120	
45 Sc	2674540.30	1.22	2572658.80	104.0	69.5 - 120	
72 Ge	521810.75	0.73	510197.59	102.3	69.5 - 120	
159 Tb	4747509.00	0.53	4617151.00	102.8	69.5 - 120	
209 Bi	2359705.30	1.26	2380666.00	99.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000319

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\058SMPL.D\058SMPL.D#
Date Acquired: May 15 2018 09:42 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-010
Misc Info:
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	2.0955	0.4191	ppb	7.87	100.	
11 B	230.	46.	ppb	5.84	1000.	
23 Na	282,250.	56,450.	ppb	4.22	200000.	
25 Mg	74,850.	14,970.	ppb	4.03	200000.	
27 Al	40,905.	8,181.	ppb	2.77	200000.	
28 Si	67,650.	13,530.	ppb	4.32	#VALUE!	
29 Si	69,650.	13,930.	ppb	3.03	10000.	>LDR
39 K	25,095.	5,019.	ppb	1.95	200000.	
43 Ca	389,000.	77,800.	ppb	1.81	#VALUE!	
44 Ca	365,500.	73,100.	ppb	1.45	200000.	
51 V	99.85	19.97	ppb	3.90	1000.	
52 Cr	144.8	28.96	ppb	0.52	2000.	
53 Cr	183.15	36.63	ppb	1.25	#VALUE!	
55 Mn	1,745.	349.	ppb	1.22	2000.	
56 Fe	52,000.	10,400.	ppb	2.01	#VALUE!	
57 Fe	52,000.	10,400.	ppb	1.90	100000.	
59 Co	22.71	4.542	ppb	1.94	1000.	
60 Ni	71.65	14.33	ppb	1.21	1000.	
63 Cu	61.7	12.34	ppb	2.30	#VALUE!	
65 Cu	54.5	10.9	ppb	1.15	2000.	
66 Zn	225.05	45.01	ppb	0.47	2000.	
68 Zn	233.3	46.66	ppb	2.42	#VALUE!	
75 As	15.995	3.199	ppb	4.06	1000.	
82 Se	3.877	0.7754	ppb	7.56	1000.	
88 Sr	1,573.	314.6	ppb	1.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	26.715	5.343	ppb	1.18	1000.	
107 Ag	0.1117	0.0223	ppb	8.57	100.	
109 Ag	0.092	0.0184	ppb	31.68	#VALUE!	
111 Cd	0.801	0.1602	ppb	12.20	#VALUE!	
114 Cd	0.3909	0.0782	ppb	10.64	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.381	0.6762	ppb	4.61	1000.	
120 Sn	3.299	0.6598	ppb	5.30	#VALUE!	
121 Sb	0.7195	0.1439	ppb	3.46	#VALUE!	
123 Sb	0.752	0.1504	ppb	12.89	1000.	
135 Ba	446.65	89.33	ppb	2.74	2000.	
137 Ba	444.75	88.95	ppb	2.48	#VALUE!	
182 W	0.4398	0.088	ppb	6.27	1000.	
203 Tl	0.595	0.119	ppb	4.17	1000.	
205 Tl	0.5035	0.1007	ppb	10.47	#VALUE!	
208 Pb	41.225	8.245	ppb	1.86	2000.	
232 Th	30.335	6.067	ppb	1.79	1000.	
238 U	13.515	2.703	ppb	1.80	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3956793.80	5.73	3927738.80	100.7	69.5 - 120	
45 Sc	2652608.00	1.83	2572658.80	103.1	69.5 - 120	
72 Ge	509845.38	0.80	510197.59	99.9	69.5 - 120	
159 Tb	4764786.00	2.01	4617151.00	103.2	69.5 - 120	
209 Bi	2370220.30	1.95	2380666.00	99.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000320

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\059SMPL.D\059SMPL.D#
Date Acquired: May 15 2018 09:47 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-011
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0053	0.0011	ppb	63.77	100.	
11 B	215.8	43.16	ppb	4.08	1000.	
23 Na	279,850.	55,970.	ppb	3.59	200000.	
25 Mg	68,800.	13,760.	ppb	2.64	200000.	
27 Al	11.08	2.216	ppb	4.06	200000.	
28 Si	18,600.	3,720.	ppb	4.33	#VALUE!	
29 Si	20,200.	4,040.	ppb	3.60	10000.	
39 K	17,205.	3,441.	ppb	2.69	200000.	
43 Ca	371,750.	74,350.	ppb	1.09	#VALUE!	
44 Ca	348,650.	69,730.	ppb	1.95	200000.	
51 V	1.1495	0.2299	ppb	57.76	1000.	
52 Cr	2.3195	0.4639	ppb	4.67	2000.	
53 Cr	66.25	13.25	ppb	14.95	#VALUE!	
55 Mn	1,304.5	260.9	ppb	3.18	2000.	
56 Fe	5,960.	1,192.	ppb	2.06	#VALUE!	
57 Fe	6,375.	1,275.	ppb	1.78	100000.	
59 Co	0.605	0.121	ppb	8.97	1000.	
60 Ni	3.639	0.7278	ppb	2.21	1000.	
63 Cu	9.8	1.96	ppb	1.79	#VALUE!	
65 Cu	1.4545	0.2909	ppb	7.70	2000.	
66 Zn	15.38	3.076	ppb	3.25	2000.	
68 Zn	13.33	2.666	ppb	2.43	#VALUE!	
75 As	9.45	1.89	ppb	11.31	1000.	
82 Se	1.962	0.3924	ppb	34.12	1000.	
88 Sr	1,413.5	282.7	ppb	1.33	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.54	2.508	ppb	2.08	1000.	
107 Ag	0.0077	0.0015	ppb	44.24	100.	
109 Ag	0.0053	0.0011	ppb	74.68	#VALUE!	
111 Cd	0.1638	0.0328	ppb	102.32	#VALUE!	
114 Cd	-0.0045	-0.0009	ppb	541.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.004	0.2008	ppb	11.46	1000.	
120 Sn	0.99	0.198	ppb	10.81	#VALUE!	
121 Sb	0.1142	0.0228	ppb	19.61	#VALUE!	
123 Sb	0.1422	0.0284	ppb	26.63	1000.	
135 Ba	32.01	6.402	ppb	1.81	2000.	
137 Ba	32.27	6.454	ppb	2.06	#VALUE!	
182 W	0.2188	0.0438	ppb	24.70	1000.	
203 Tl	0.0114	0.0023	ppb	113.77	1000.	
205 Tl	0.0042	0.0008	ppb	429.19	#VALUE!	
208 Pb	-0.2477	-0.0495	ppb	20.35	2000.	
232 Th	0.2019	0.0404	ppb	26.33	1000.	
238 U	0.7735	0.1547	ppb	1.03	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4044604.00	3.68	3927738.80	103.0	69.5 - 120	
45 Sc	2627561.50	0.92	2572658.80	102.1	69.5 - 120	
72 Ge	515163.50	1.24	510197.59	101.0	69.5 - 120	
159 Tb	4717266.50	2.83	4617151.00	102.2	69.5 - 120	
209 Bi	2346511.50	2.43	2380666.00	98.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000321

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\060SMPL.D\060SMPL.D#
Date Acquired: May 15 2018 09:51 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-012
Misc Info:
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	1.4825	0.2965	ppb	6.32	100.	
11 B	208.85	41.77	ppb	4.90	1000.	
23 Na	296,300.	59,260.	ppb	2.70	200000.	
25 Mg	81,400.	16,280.	ppb	0.36	200000.	
27 Al	24,445.	4,889.	ppb	4.98	200000.	
28 Si	50,100.	10,020.	ppb	4.64	#VALUE!	
29 Si	52,800.	10,560.	ppb	2.59	10000.	>LDR
39 K	23,750.	4,750.	ppb	3.05	200000.	
43 Ca	447,700.	89,540.	ppb	1.81	#VALUE!	
44 Ca	419,300.	83,860.	ppb	1.50	200000.	
51 V	60.	12.	ppb	1.67	1000.	
52 Cr	106.3	21.26	ppb	1.77	2000.	
53 Cr	145.95	29.19	ppb	2.39	#VALUE!	
55 Mn	1,986.	397.2	ppb	0.74	2000.	
56 Fe	34,750.	6,950.	ppb	1.05	#VALUE!	
57 Fe	35,420.	7,084.	ppb	1.43	100000.	
59 Co	12.345	2.469	ppb	1.24	1000.	
60 Ni	63.75	12.75	ppb	0.37	1000.	
63 Cu	39.575	7.915	ppb	1.48	#VALUE!	
65 Cu	31.76	6.352	ppb	1.32	2000.	
66 Zn	143.05	28.61	ppb	0.63	2000.	
68 Zn	147.75	29.55	ppb	1.01	#VALUE!	
75 As	31.23	6.246	ppb	4.51	1000.	
82 Se	6.9	1.38	ppb	6.54	1000.	
88 Sr	1,689.	337.8	ppb	0.94	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	22.69	4.538	ppb	1.03	1000.	
107 Ag	0.1168	0.0234	ppb	8.77	100.	
109 Ag	0.1174	0.0235	ppb	13.06	#VALUE!	
111 Cd	0.8075	0.1615	ppb	1.23	#VALUE!	
114 Cd	0.478	0.0956	ppb	7.50	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.1125	0.4225	ppb	3.14	1000.	
120 Sn	2.232	0.4464	ppb	2.43	#VALUE!	
121 Sb	0.4845	0.0969	ppb	5.12	#VALUE!	
123 Sb	0.4543	0.0909	ppb	7.91	1000.	
135 Ba	333.15	66.63	ppb	1.67	2000.	
137 Ba	334.1	66.82	ppb	1.34	#VALUE!	
182 W	0.4376	0.0875	ppb	6.52	1000.	
203 Tl	0.4159	0.0832	ppb	12.42	1000.	
205 Tl	0.4128	0.0826	ppb	0.67	#VALUE!	
208 Pb	22.79	4.558	ppb	1.67	2000.	
232 Th	14.52	2.904	ppb	1.09	1000.	
238 U	6.37	1.274	ppb	1.02	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3949935.00	3.98	3927738.80	100.6	69.5 - 120	
45 Sc	2636380.00	1.91	2572658.80	102.5	69.5 - 120	
72 Ge	510580.84	0.58	510197.59	100.1	69.5 - 120	
159 Tb	4760118.50	0.76	4617151.00	103.1	69.5 - 120	
209 Bi	2376653.50	0.21	2380666.00	99.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000322

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\061SMPL.D\061SMPL.D#
Date Acquired: May 15 2018 09:55 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0002	-0.0002	ppb	311.54	100.	
11 B	2.908	2.908	ppb	9.27	1000.	
23 Na	15.52	15.52	ppb	40.50	200000.	
25 Mg	4.142	4.142	ppb	39.81	200000.	
27 Al	3.202	3.202	ppb	13.12	200000.	
28 Si	40.19	40.19	ppb	12.96	#VALUE!	
29 Si	33.17	33.17	ppb	29.98	10000.	
39 K	0.0796	0.0796	ppb	2854.80	200000.	
43 Ca	10.49	10.49	ppb	100.38	#VALUE!	
44 Ca	14.56	14.56	ppb	61.01	200000.	
51 V	0.0267	0.0267	ppb	280.37	1000.	
52 Cr	0.0141	0.0141	ppb	92.18	2000.	
53 Cr	-1.227	-1.227	ppb	2.00	#VALUE!	
55 Mn	0.1019	0.1019	ppb	57.74	2000.	
56 Fe	10.73	10.73	ppb	30.05	#VALUE!	
57 Fe	7.468	7.468	ppb	12.78	100000.	
59 Co	0.0076	0.0076	ppb	58.23	1000.	
60 Ni	0.0202	0.0202	ppb	39.87	1000.	
63 Cu	0.2076	0.2076	ppb	1.36	#VALUE!	
65 Cu	0.245	0.245	ppb	7.09	2000.	
66 Zn	0.2752	0.2752	ppb	15.15	2000.	
68 Zn	0.0315	0.0315	ppb	425.30	#VALUE!	
75 As	0.149	0.149	ppb	94.16	1000.	
82 Se	0.1758	0.1758	ppb	136.01	1000.	
88 Sr	0.0427	0.0427	ppb	107.24	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1617	0.1617	ppb	3.93	1000.	
107 Ag	0.0007	0.0007	ppb	198.43	100.	
109 Ag	-0.0003	-0.0003	ppb	175.03	#VALUE!	
111 Cd	0.0613	0.0613	ppb	29.29	#VALUE!	
114 Cd	0.0049	0.0049	ppb	17.77	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.048	0.048	ppb	10.21	1000.	
120 Sn	0.045	0.045	ppb	12.70	#VALUE!	
121 Sb	-0.0003	-0.0003	ppb	264.58	#VALUE!	
123 Sb	0.0005	0.0005	ppb	418.87	1000.	
135 Ba	0.0794	0.0794	ppb	17.07	2000.	
137 Ba	0.0759	0.0759	ppb	6.18	#VALUE!	
182 W	0.0011	0.0011	ppb	188.15	1000.	
203 Tl	0.009	0.009	ppb	52.06	1000.	
205 Tl	0.0002	0.0002	ppb	555.35	#VALUE!	
208 Pb	0.1438	0.1438	ppb	13.49	2000.	
232 Th	0.0047	0.0047	ppb	56.44	1000.	
238 U	0.0005	0.0005	ppb	98.14	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4029455.80	3.02	3927738.80	102.6	69.5 - 120	
45 Sc	2582611.30	1.47	2572658.80	100.4	69.5 - 120	
72 Ge	495729.56	2.07	510197.59	97.2	69.5 - 120	
159 Tb	4455480.00	1.97	4617151.00	96.5	69.5 - 120	
209 Bi	2346931.00	2.11	2380666.00	98.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000323

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\062_CCV.D\062_CCV.D#
Date Acquired: May 15 2018 09:59 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.84	ppb	1.56	25	99.36	
11 B	25.61	ppb	6.05	25	102.44	
23 Na	4,835.	ppb	0.89	5,000	96.7	
25 Mg	4,900.	ppb	1.40	5,000	98	
27 Al	494.3	ppb	2.09	500	98.86	
28 Si	477.4	ppb	1.13	500	95.48	
29 Si	456.	ppb	0.57	500	91.2	
39 K	4,812.	ppb	0.73	5,000	96.24	
43 Ca	4,803.	ppb	0.78	5,000	96.06	
44 Ca	4,870.	ppb	1.17	5,000	97.4	
51 V	24.27	ppb	0.96	25	97.08	
52 Cr	24.43	ppb	1.11	25	97.72	
53 Cr	23.15	ppb	1.83	25	92.6	
55 Mn	24.2	ppb	0.94	25	96.8	
56 Fe	4,784.	ppb	1.27	5,000	95.68	
57 Fe	4,840.	ppb	0.63	5,000	96.8	
59 Co	24.26	ppb	0.77	25	97.04	
60 Ni	24.47	ppb	0.50	25	97.88	
63 Cu	24.36	ppb	1.10	25	97.44	
65 Cu	24.18	ppb	1.16	25	96.72	
66 Zn	24.6	ppb	0.82	25	98.4	
68 Zn	23.76	ppb	0.31	25	95.04	
75 As	24.69	ppb	0.41	25	98.76	
82 Se	24.95	ppb	1.36	25	99.8	
88 Sr	23.88	ppb	0.43	25	95.52	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.17	ppb	0.27	25	96.68	
107 Ag	24.49	ppb	0.69	25	97.96	
109 Ag	24.31	ppb	0.26	25	97.24	
111 Cd	24.29	ppb	0.56	25	97.16	
114 Cd	24.33	ppb	0.24	25	97.32	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.78	ppb	0.78	25	95.12	
120 Sn	23.75	ppb	1.15	25	95	
121 Sb	24.25	ppb	0.99	25	97	
123 Sb	24.26	ppb	1.37	25	97.04	
135 Ba	24.34	ppb	0.76	25	97.36	
137 Ba	24.46	ppb	0.88	25	97.84	
182 W	23.79	ppb	0.66	25	95.16	
203 Tl	23.94	ppb	1.98	25	95.76	
205 Tl	23.99	ppb	1.24	25	95.96	
208 Pb	24.02	ppb	1.30	25	96.08	
232 Th	23.78	ppb	1.51	25	95.12	
238 U	24.42	ppb	1.44	25	97.68	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4222635.50	2.21	3927738.80	107.5	80 - 120.4	
45 Sc	2737753.50	0.77	2572658.80	106.4	80 - 120.4	
72 Ge	512067.59	0.97	510197.59	100.4	80 - 120.4	
159 Tb	4765422.50	0.43	4617151.00	103.2	80 - 120.4	
209 Bi	2437298.30	0.21	2380666.00	102.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\063_CCB.D\063_CCB.D#
Date Acquired: May 15 2018 10:03 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.002	ppb	40.95	1.00	
11 B	2.408	ppb	10.62	1.00	
23 Na	4.364	ppb	7.91	1.00	
25 Mg	0.2018	ppb	59.32	1.00	
27 Al	0.1232	ppb	22.47	1.00	
28 Si	22.32	ppb	25.73	1.00	
29 Si	16.22	ppb	24.43	1.00	
39 K	1.081	ppb	139.96	1.00	
43 Ca	1.275	ppb	154.35	1.00	
44 Ca	1.211	ppb	27.84	1.00	
51 V	0.0156	ppb	686.98	1.00	
52 Cr	-0.0047	ppb	565.61	1.00	
53 Cr	-2.746	ppb	9.79	1.00	
55 Mn	0.0046	ppb	146.94	1.00	
56 Fe	4.711	ppb	55.51	1.00	
57 Fe	1.957	ppb	47.93	1.00	
59 Co	0.0029	ppb	55.18	1.00	
60 Ni	0.0014	ppb	985.42	1.00	
63 Cu	0.0672	ppb	16.16	1.00	
65 Cu	0.0415	ppb	81.77	1.00	
66 Zn	0.1181	ppb	51.59	1.00	
68 Zn	-0.1219	ppb	57.15	1.00	
75 As	-0.0239	ppb	226.27	1.00	
82 Se	0.1574	ppb	15.14	1.00	
88 Sr	-0.0002	ppb	231.49	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0233	ppb	36.50	1.00	
107 Ag	0.0031	ppb	53.69	1.00	
109 Ag	0.0028	ppb	95.13	1.00	
111 Cd	0.0341	ppb	36.95	1.00	
114 Cd	0.0056	ppb	83.21	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0657	ppb	20.09	1.00	
120 Sn	0.0516	ppb	12.22	1.00	
121 Sb	0.0078	ppb	19.88	1.00	
123 Sb	0.012	ppb	49.98	1.00	
135 Ba	0.0245	ppb	14.77	1.00	
137 Ba	0.0086	ppb	124.77	1.00	
182 W	0.0476	ppb	35.96	1.00	
203 Tl	0.0128	ppb	10.89	1.00	
205 Tl	0.0081	ppb	52.01	1.00	
208 Pb	0.0007	ppb	669.58	1.00	
232 Th	0.0533	ppb	5.58	1.00	
238 U	0.0027	ppb	35.89	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3905871.50	5.78	3927738.80	99.4	79.5 - 120	
45 Sc	2494548.80	1.31	2572658.80	97.0	79.5 - 120	
72 Ge	479379.31	0.85	510197.59	94.0	79.5 - 120	
159 Tb	4384390.50	0.35	4617151.00	95.0	79.5 - 120	
209 Bi	2285738.50	1.06	2380666.00	96.0	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\064SMPL.D\064SMPL.D#
Date Acquired: May 15 2018 10:07 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-013
Misc Info:
Vial Number: 2307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0067	0.0013	ppb	155.65	100.	
11 B	188.25	37.65	ppb	6.59	1000.	
23 Na	308,300.	61,660.	ppb	4.50	200000.	
25 Mg	76,250.	15,250.	ppb	3.80	200000.	
27 Al	9.86	1.972	ppb	6.86	200000.	
28 Si	19,745.	3,949.	ppb	3.70	#VALUE!	
29 Si	21,440.	4,288.	ppb	3.28	10000.	
39 K	18,675.	3,735.	ppb	2.69	200000.	
43 Ca	411,350.	82,270.	ppb	1.84	#VALUE!	
44 Ca	389,700.	77,940.	ppb	0.14	200000.	
51 V	1.336	0.2672	ppb	26.23	1000.	
52 Cr	2.296	0.4592	ppb	10.59	2000.	
53 Cr	64.85	12.97	ppb	28.17	#VALUE!	
55 Mn	1,375.5	275.1	ppb	0.49	2000.	
56 Fe	4,637.5	927.5	ppb	0.88	#VALUE!	
57 Fe	5,115.	1,023.	ppb	0.79	100000.	
59 Co	0.4899	0.098	ppb	6.15	1000.	
60 Ni	1.901	0.3802	ppb	2.46	1000.	
63 Cu	10.35	2.07	ppb	0.95	#VALUE!	
65 Cu	1.611	0.3222	ppb	4.94	2000.	
66 Zn	21.19	4.238	ppb	0.32	2000.	
68 Zn	19.61	3.922	ppb	5.02	#VALUE!	
75 As	10.13	2.026	ppb	7.93	1000.	
82 Se	2.943	0.5886	ppb	27.95	1000.	
88 Sr	1,622.	324.4	ppb	0.86	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	10.61	2.122	ppb	1.40	1000.	
107 Ag	0.0028	0.0006	ppb	179.58	100.	
109 Ag	0.002	0.0004	ppb	244.55	#VALUE!	
111 Cd	0.2633	0.0527	ppb	46.72	#VALUE!	
114 Cd	0.001	0.0002	ppb	792.09	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.99	0.198	ppb	4.95	1000.	
120 Sn	0.9345	0.1869	ppb	5.08	#VALUE!	
121 Sb	0.1259	0.0252	ppb	13.86	#VALUE!	
123 Sb	0.1489	0.0298	ppb	18.67	1000.	
135 Ba	43.06	8.612	ppb	2.92	2000.	
137 Ba	43.215	8.643	ppb	0.19	#VALUE!	
182 W	0.2946	0.0589	ppb	11.90	1000.	
203 Tl	0.0256	0.0051	ppb	135.85	1000.	
205 Tl	-0.023	-0.0046	ppb	91.31	#VALUE!	
208 Pb	-0.2361	-0.0472	ppb	28.42	2000.	
232 Th	0.4151	0.083	ppb	17.37	1000.	
238 U	0.8315	0.1663	ppb	3.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4367482.00	4.24	3927738.80	111.2	69.5 - 120	
45 Sc	2762253.00	2.21	2572658.80	107.4	69.5 - 120	
72 Ge	527626.06	3.04	510197.59	103.4	69.5 - 120	
159 Tb	4732993.00	2.13	4617151.00	102.5	69.5 - 120	
209 Bi	2314200.30	1.71	2380666.00	97.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000326

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\065SMPL.D\065SMPL.D#
Date Acquired: May 15 2018 10:12 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-014
Misc Info:
Vial Number: 2308
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0045	0.0009	ppb	198.87	100.	
11 B	12.76	2.552	ppb	10.74	1000.	
23 Na	48.95	9.79	ppb	15.99	200000.	
25 Mg	18.5	3.7	ppb	10.97	200000.	
27 Al	9.51	1.902	ppb	4.88	200000.	
28 Si	63.1	12.62	ppb	36.12	#VALUE!	
29 Si	129.5	25.9	ppb	59.58	10000.	
39 K	12.705	2.541	ppb	115.27	200000.	
43 Ca	45.5	9.1	ppb	47.31	#VALUE!	
44 Ca	53.8	10.76	ppb	12.71	200000.	
51 V	1.636	0.3272	ppb	15.92	1000.	
52 Cr	1.924	0.3848	ppb	4.58	2000.	
53 Cr	74.4	14.88	ppb	2.24	#VALUE!	
55 Mn	0.5925	0.1185	ppb	5.42	2000.	
56 Fe	94.35	18.87	ppb	22.95	#VALUE!	
57 Fe	31.07	6.214	ppb	19.09	100000.	
59 Co	-0.0142	-0.0028	ppb	84.28	1000.	
60 Ni	0.1308	0.0262	ppb	12.74	1000.	
63 Cu	1.041	0.2082	ppb	3.57	#VALUE!	
65 Cu	1.0225	0.2045	ppb	6.17	2000.	
66 Zn	1.135	0.227	ppb	5.95	2000.	
68 Zn	-0.0091	-0.0018	ppb	1858.00	#VALUE!	
75 As	0.4816	0.0963	ppb	92.30	1000.	
82 Se	0.653	0.1306	ppb	160.64	1000.	
88 Sr	0.2002	0.04	ppb	12.85	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.1707	0.0341	ppb	2.68	1000.	
107 Ag	0.008	0.0016	ppb	71.63	100.	
109 Ag	0.0108	0.0022	ppb	63.77	#VALUE!	
111 Cd	0.3667	0.0733	ppb	32.63	#VALUE!	
114 Cd	-0.007	-0.0014	ppb	172.83	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.024	0.2048	ppb	15.23	1000.	
120 Sn	1.0315	0.2063	ppb	5.40	#VALUE!	
121 Sb	0.0153	0.0031	ppb	134.95	#VALUE!	
123 Sb	0.0456	0.0091	ppb	23.94	1000.	
135 Ba	0.2969	0.0594	ppb	9.46	2000.	
137 Ba	0.2682	0.0536	ppb	33.38	#VALUE!	
182 W	0.0221	0.0044	ppb	65.17	1000.	
203 Tl	-0.0154	-0.0031	ppb	161.68	1000.	
205 Tl	0.0071	0.0014	ppb	391.58	#VALUE!	
208 Pb	-0.1827	-0.0365	ppb	36.00	2000.	
232 Th	0.1122	0.0224	ppb	45.79	1000.	
238 U	-0.0012	-0.0002	ppb	222.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3950290.00	0.40	3927738.80	100.6	69.5 - 120	
45 Sc	2530694.00	2.62	2572658.80	98.4	69.5 - 120	
72 Ge	495171.31	1.18	510197.59	97.1	69.5 - 120	
159 Tb	4447220.00	1.48	4617151.00	96.3	69.5 - 120	
209 Bi	2322021.00	2.06	2380666.00	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000327

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\066SMPL.D\066SMPL.D#
Date Acquired: May 15 2018 10:16 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-015
Misc Info:
Vial Number: 2309
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.5085	0.1017	ppb	4.64	100.	
11 B	199.45	39.89	ppb	3.80	1000.	
23 Na	279,950.	55,990.	ppb	2.50	200000.	
25 Mg	66,850.	13,370.	ppb	0.96	200000.	
27 Al	10,330.	2,066.	ppb	0.62	200000.	
28 Si	41,630.	8,326.	ppb	1.83	#VALUE!	
29 Si	43,790.	8,758.	ppb	2.46	10000.	
39 K	20,505.	4,101.	ppb	1.50	200000.	
43 Ca	386,450.	77,290.	ppb	0.54	#VALUE!	
44 Ca	361,250.	72,250.	ppb	0.63	200000.	
51 V	34.625	6.925	ppb	3.37	1000.	
52 Cr	56.15	11.23	ppb	0.50	2000.	
53 Cr	95.9	19.18	ppb	2.64	#VALUE!	
55 Mn	1,414.5	282.9	ppb	0.79	2000.	
56 Fe	20,340.	4,068.	ppb	0.57	#VALUE!	
57 Fe	21,035.	4,207.	ppb	1.35	100000.	
59 Co	5.53	1.106	ppb	1.10	1000.	
60 Ni	28.4	5.68	ppb	2.77	1000.	
63 Cu	33.11	6.622	ppb	1.28	#VALUE!	
65 Cu	25.985	5.197	ppb	1.66	2000.	
66 Zn	90.3	18.06	ppb	0.57	2000.	
68 Zn	94.55	18.91	ppb	1.66	#VALUE!	
75 As	12.695	2.539	ppb	17.02	1000.	
82 Se	2.7885	0.5577	ppb	58.97	1000.	
88 Sr	1,501.	300.2	ppb	0.90	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	20.64	4.128	ppb	1.92	1000.	
107 Ag	0.0369	0.0074	ppb	14.47	100.	
109 Ag	0.0459	0.0092	ppb	21.57	#VALUE!	
111 Cd	0.2777	0.0555	ppb	58.11	#VALUE!	
114 Cd	-0.011	-0.0022	ppb	133.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.7615	0.3523	ppb	3.85	1000.	
120 Sn	1.8025	0.3605	ppb	3.46	#VALUE!	
121 Sb	0.3356	0.0671	ppb	26.15	#VALUE!	
123 Sb	0.37	0.074	ppb	12.79	1000.	
135 Ba	225.35	45.07	ppb	1.50	2000.	
137 Ba	225.5	45.1	ppb	0.89	#VALUE!	
182 W	0.518	0.1036	ppb	7.84	1000.	
203 Tl	0.1847	0.0369	ppb	7.74	1000.	
205 Tl	0.1515	0.0303	ppb	13.22	#VALUE!	
208 Pb	10.305	2.061	ppb	1.55	2000.	
232 Th	8.255	1.651	ppb	1.83	1000.	
238 U	2.043	0.4086	ppb	0.64	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4178981.30	0.92	3927738.80	106.4	69.5 - 120	
45 Sc	2650893.00	0.89	2572658.80	103.0	69.5 - 120	
72 Ge	510203.59	0.36	510197.59	100.0	69.5 - 120	
159 Tb	4729541.00	1.31	4617151.00	102.4	69.5 - 120	
209 Bi	2347590.00	0.66	2380666.00	98.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000328

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\067SMPL.D\067SMPL.D#
Date Acquired: May 15 2018 10:20 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-016
Misc Info:
Vial Number: 2310
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0046	0.0009	ppb	118.61	100.	
11 B	203.65	40.73	ppb	4.65	1000.	
23 Na	280,950.	56,190.	ppb	1.02	200000.	
25 Mg	64,250.	12,850.	ppb	2.89	200000.	
27 Al	10.34	2.068	ppb	5.21	200000.	
28 Si	19,050.	3,810.	ppb	2.19	#VALUE!	
29 Si	20,795.	4,159.	ppb	0.41	10000.	
39 K	17,845.	3,569.	ppb	1.65	200000.	
43 Ca	381,000.	76,200.	ppb	0.66	#VALUE!	
44 Ca	362,350.	72,470.	ppb	1.19	200000.	
51 V	0.4242	0.0848	ppb	156.06	1000.	
52 Cr	2.1565	0.4313	ppb	7.74	2000.	
53 Cr	58.7	11.74	ppb	11.70	#VALUE!	
55 Mn	1,321.5	264.3	ppb	1.49	2000.	
56 Fe	5,785.	1,157.	ppb	2.30	#VALUE!	
57 Fe	6,240.	1,248.	ppb	2.42	100000.	
59 Co	0.736	0.1472	ppb	6.48	1000.	
60 Ni	7.23	1.446	ppb	1.51	1000.	
63 Cu	9.77	1.954	ppb	2.67	#VALUE!	
65 Cu	1.944	0.3888	ppb	7.91	2000.	
66 Zn	26.915	5.383	ppb	2.85	2000.	
68 Zn	24.72	4.944	ppb	1.29	#VALUE!	
75 As	9.245	1.849	ppb	13.45	1000.	
82 Se	1.4295	0.2859	ppb	54.70	1000.	
88 Sr	1,466.5	293.3	ppb	0.37	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	12.875	2.575	ppb	1.35	1000.	
107 Ag	0.0007	0.0001	ppb	923.23	100.	
109 Ag	0.0035	0.0007	ppb	78.28	#VALUE!	
111 Cd	0.1301	0.026	ppb	57.11	#VALUE!	
114 Cd	0.007	0.0014	ppb	285.25	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.949	0.1898	ppb	6.12	1000.	
120 Sn	0.958	0.1916	ppb	5.31	#VALUE!	
121 Sb	0.1349	0.027	ppb	15.95	#VALUE!	
123 Sb	0.1428	0.0286	ppb	37.58	1000.	
135 Ba	35.865	7.173	ppb	0.27	2000.	
137 Ba	36.42	7.284	ppb	1.16	#VALUE!	
182 W	0.3226	0.0645	ppb	3.76	1000.	
203 Tl	0.0277	0.0055	ppb	197.76	1000.	
205 Tl	-0.0176	-0.0035	ppb	96.71	#VALUE!	
208 Pb	-0.2209	-0.0442	ppb	12.45	2000.	
232 Th	0.1228	0.0246	ppb	15.76	1000.	
238 U	1.0025	0.2005	ppb	6.77	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4065115.00	2.88	3927738.80	103.5	69.5 - 120	
45 Sc	2657548.00	0.71	2572658.80	103.3	69.5 - 120	
72 Ge	514546.00	0.02	510197.59	100.9	69.5 - 120	
159 Tb	4676124.50	0.95	4617151.00	101.3	69.5 - 120	
209 Bi	2348305.50	0.99	2380666.00	98.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000329

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\068SMPL.D\068SMPL.D#
Date Acquired: May 15 2018 10:24 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-017
Misc Info:
Vial Number: 2311
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.509	0.1018	ppb	6.32	100.	
11 B	196.1	39.22	ppb	1.14	1000.	
23 Na	238,450.	47,690.	ppb	3.30	200000.	
25 Mg	59,100.	11,820.	ppb	2.47	200000.	
27 Al	8,650.	1,730.	ppb	1.47	200000.	
28 Si	35,560.	7,112.	ppb	0.75	#VALUE!	
29 Si	37,800.	7,560.	ppb	1.99	10000.	
39 K	19,425.	3,885.	ppb	3.28	200000.	
43 Ca	384,550.	76,910.	ppb	2.65	#VALUE!	
44 Ca	360,800.	72,160.	ppb	2.49	200000.	
51 V	26.09	5.218	ppb	1.35	1000.	
52 Cr	33.615	6.723	ppb	1.58	2000.	
53 Cr	72.45	14.49	ppb	4.08	#VALUE!	
55 Mn	1,396.	279.2	ppb	3.07	2000.	
56 Fe	15,735.	3,147.	ppb	2.43	#VALUE!	
57 Fe	16,145.	3,229.	ppb	2.68	100000.	
59 Co	4.0725	0.8145	ppb	4.65	1000.	
60 Ni	13.785	2.757	ppb	2.88	1000.	
63 Cu	24.505	4.901	ppb	1.36	#VALUE!	
65 Cu	17.635	3.527	ppb	3.23	2000.	
66 Zn	60.5	12.1	ppb	2.10	2000.	
68 Zn	62.85	12.57	ppb	3.09	#VALUE!	
75 As	28.255	5.651	ppb	7.53	1000.	
82 Se	2.625	0.525	ppb	49.73	1000.	
88 Sr	1,416.	283.2	ppb	0.83	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	14.94	2.988	ppb	1.96	1000.	
107 Ag	0.0422	0.0084	ppb	35.79	100.	
109 Ag	0.0393	0.0079	ppb	46.49	#VALUE!	
111 Cd	0.3983	0.0797	ppb	41.04	#VALUE!	
114 Cd	0.118	0.0236	ppb	22.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.5675	0.3135	ppb	3.04	1000.	
120 Sn	1.4675	0.2935	ppb	1.60	#VALUE!	
121 Sb	0.4122	0.0824	ppb	1.00	#VALUE!	
123 Sb	0.4383	0.0877	ppb	9.30	1000.	
135 Ba	203.3	40.66	ppb	1.20	2000.	
137 Ba	204.25	40.85	ppb	0.92	#VALUE!	
182 W	0.309	0.0618	ppb	14.82	1000.	
203 Tl	0.1679	0.0336	ppb	19.51	1000.	
205 Tl	0.1308	0.0262	ppb	27.43	#VALUE!	
208 Pb	12.15	2.43	ppb	2.90	2000.	
232 Th	5.65	1.13	ppb	4.40	1000.	
238 U	3.624	0.7248	ppb	4.51	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3952377.00	2.13	3927738.80	100.6	69.5 - 120	
45 Sc	2592497.00	1.25	2572658.80	100.8	69.5 - 120	
72 Ge	503000.25	1.01	510197.59	98.6	69.5 - 120	
159 Tb	4652936.00	0.91	4617151.00	100.8	69.5 - 120	
209 Bi	2357018.00	1.45	2380666.00	99.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000330

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\069SMPL.D\069SMPL.D#
Date Acquired: May 15 2018 10:28 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3808-018
Misc Info:
Vial Number: 2312
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0045	0.0009	ppb	267.18	100.	
11 B	192.15	38.43	ppb	4.15	1000.	
23 Na	240,300.	48,060.	ppb	0.65	200000.	
25 Mg	58,050.	11,610.	ppb	2.60	200000.	
27 Al	9.06	1.812	ppb	0.07	200000.	
28 Si	16,785.	3,357.	ppb	3.23	#VALUE!	
29 Si	18,345.	3,669.	ppb	2.68	10000.	
39 K	17,760.	3,552.	ppb	4.06	200000.	
43 Ca	368,550.	73,710.	ppb	2.64	#VALUE!	
44 Ca	348,900.	69,780.	ppb	3.12	200000.	
51 V	0.74	0.148	ppb	163.04	1000.	
52 Cr	1.645	0.329	ppb	6.50	2000.	
53 Cr	57.5	11.5	ppb	16.82	#VALUE!	
55 Mn	1,236.5	247.3	ppb	0.39	2000.	
56 Fe	1,862.	372.4	ppb	1.73	#VALUE!	
57 Fe	2,298.	459.6	ppb	1.39	100000.	
59 Co	0.5135	0.1027	ppb	3.80	1000.	
60 Ni	1.667	0.3334	ppb	12.21	1000.	
63 Cu	8.17	1.634	ppb	2.52	#VALUE!	
65 Cu	1.459	0.2918	ppb	16.03	2000.	
66 Zn	13.195	2.639	ppb	1.52	2000.	
68 Zn	11.56	2.312	ppb	6.84	#VALUE!	
75 As	22.155	4.431	ppb	2.96	1000.	
82 Se	1.6735	0.3347	ppb	60.77	1000.	
88 Sr	1,373.5	274.7	ppb	1.08	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.655	2.131	ppb	0.61	1000.	
107 Ag	-0.0054	-0.0011	ppb	73.07	100.	
109 Ag	0.0043	0.0009	ppb	130.28	#VALUE!	
111 Cd	0.1976	0.0395	ppb	47.93	#VALUE!	
114 Cd	0.0204	0.0041	ppb	81.79	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.9485	0.1897	ppb	9.47	1000.	
120 Sn	1.007	0.2014	ppb	7.07	#VALUE!	
121 Sb	0.1623	0.0325	ppb	4.70	#VALUE!	
123 Sb	0.1842	0.0368	ppb	6.35	1000.	
135 Ba	30.185	6.037	ppb	3.46	2000.	
137 Ba	30.155	6.031	ppb	3.49	#VALUE!	
182 W	0.2308	0.0462	ppb	8.81	1000.	
203 Tl	0.0295	0.0059	ppb	101.36	1000.	
205 Tl	-0.0167	-0.0033	ppb	146.44	#VALUE!	
208 Pb	-0.2411	-0.0482	ppb	21.30	2000.	
232 Th	0.0972	0.0194	ppb	2.27	1000.	
238 U	2.548	0.5096	ppb	3.56	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4050708.30	2.34	3927738.80	103.1	69.5 - 120	
45 Sc	2680928.00	1.68	2572658.80	104.2	69.5 - 120	
72 Ge	516162.78	0.17	510197.59	101.2	69.5 - 120	
159 Tb	4740578.00	1.44	4617151.00	102.7	69.5 - 120	
209 Bi	2344643.50	1.27	2380666.00	98.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000331

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\070SMPL.D\070SMPL.D#
Date Acquired: May 15 2018 10:33 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2401
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0004	-0.0004	ppb	361.50	100.	
11 B	2.519	2.519	ppb	11.37	1000.	
23 Na	34.05	34.05	ppb	14.17	200000.	
25 Mg	2.323	2.323	ppb	27.26	200000.	
27 Al	2.521	2.521	ppb	9.88	200000.	
28 Si	4.037	4.037	ppb	250.93	#VALUE!	
29 Si	9.417	9.417	ppb	111.82	10000.	
39 K	1.882	1.882	ppb	144.95	200000.	
43 Ca	9.973	9.973	ppb	52.56	#VALUE!	
44 Ca	10.09	10.09	ppb	49.79	200000.	
51 V	0.0688	0.0688	ppb	94.96	1000.	
52 Cr	0.0686	0.0686	ppb	5.14	2000.	
53 Cr	0.2139	0.2139	ppb	247.83	#VALUE!	
55 Mn	0.2416	0.2416	ppb	4.07	2000.	
56 Fe	10.79	10.79	ppb	49.06	#VALUE!	
57 Fe	8.464	8.464	ppb	13.13	100000.	
59 Co	0.0047	0.0047	ppb	96.61	1000.	
60 Ni	0.0375	0.0375	ppb	38.65	1000.	
63 Cu	0.3244	0.3244	ppb	7.14	#VALUE!	
65 Cu	0.3274	0.3274	ppb	4.80	2000.	
66 Zn	4.827	4.827	ppb	2.47	2000.	
68 Zn	4.49	4.49	ppb	1.52	#VALUE!	
75 As	0.094	0.094	ppb	135.06	1000.	
82 Se	0.1077	0.1077	ppb	215.78	1000.	
88 Sr	0.0278	0.0278	ppb	71.83	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0062	0.0062	ppb	33.17	1000.	
107 Ag	0.0007	0.0007	ppb	280.90	100.	
109 Ag	0.0012	0.0012	ppb	70.62	#VALUE!	
111 Cd	0.0644	0.0644	ppb	34.16	#VALUE!	
114 Cd	-0.0044	-0.0044	ppb	83.84	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0589	0.0589	ppb	36.48	1000.	
120 Sn	0.0611	0.0611	ppb	22.95	#VALUE!	
121 Sb	-0.0005	-0.0005	ppb	308.38	#VALUE!	
123 Sb	0.0038	0.0038	ppb	50.82	1000.	
135 Ba	0.1468	0.1468	ppb	24.69	2000.	
137 Ba	0.1511	0.1511	ppb	1.50	#VALUE!	
182 W	0.0031	0.0031	ppb	34.51	1000.	
203 Tl	0.0083	0.0083	ppb	97.07	1000.	
205 Tl	0.0084	0.0084	ppb	37.83	#VALUE!	
208 Pb	0.131	0.131	ppb	5.28	2000.	
232 Th	0.0005	0.0005	ppb	171.23	1000.	
238 U	-0.0002	-0.0002	ppb	328.51	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4060592.80	2.70	3927738.80	103.4	69.5 - 120	
45 Sc	2612022.00	1.40	2572658.80	101.5	69.5 - 120	
72 Ge	496454.91	1.29	510197.59	97.3	69.5 - 120	
159 Tb	4467283.50	0.79	4617151.00	96.8	69.5 - 120	
209 Bi	2350894.30	1.30	2380666.00	98.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000332

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\071SMPL.D\071SMPL.D#
Date Acquired: May 15 2018 10:37 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2402
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0007	-0.0007	ppb	134.57	100.	
11 B	1.349	1.349	ppb	1.70	1000.	
23 Na	14.29	14.29	ppb	2.41	200000.	
25 Mg	3.556	3.556	ppb	2.77	200000.	
27 Al	1.827	1.827	ppb	2.48	200000.	
28 Si	22.74	22.74	ppb	40.29	#VALUE!	
29 Si	29.26	29.26	ppb	49.73	10000.	
39 K	4.521	4.521	ppb	57.00	200000.	
43 Ca	8.995	8.995	ppb	47.05	#VALUE!	
44 Ca	8.053	8.053	ppb	6.66	200000.	
51 V	0.0572	0.0572	ppb	154.63	1000.	
52 Cr	0.0432	0.0432	ppb	32.14	2000.	
53 Cr	-0.5855	-0.5855	ppb	38.41	#VALUE!	
55 Mn	0.0444	0.0444	ppb	18.39	2000.	
56 Fe	11.43	11.43	ppb	35.81	#VALUE!	
57 Fe	6.797	6.797	ppb	25.66	100000.	
59 Co	0.0027	0.0027	ppb	61.22	1000.	
60 Ni	0.0247	0.0247	ppb	39.20	1000.	
63 Cu	0.2289	0.2289	ppb	8.44	#VALUE!	
65 Cu	0.2375	0.2375	ppb	2.54	2000.	
66 Zn	0.4771	0.4771	ppb	4.59	2000.	
68 Zn	0.2475	0.2475	ppb	18.14	#VALUE!	
75 As	0.1278	0.1278	ppb	118.23	1000.	
82 Se	0.2755	0.2755	ppb	111.62	1000.	
88 Sr	0.0116	0.0116	ppb	24.09	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0017	0.0017	ppb	113.91	1000.	
107 Ag	0.0003	0.0003	ppb	372.01	100.	
109 Ag	0.0014	0.0014	ppb	57.83	#VALUE!	
111 Cd	0.1138	0.1138	ppb	2.90	#VALUE!	
114 Cd	0.0011	0.0011	ppb	422.06	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0372	0.0372	ppb	40.62	1000.	
120 Sn	0.027	0.027	ppb	19.42	#VALUE!	
121 Sb	0.0004	0.0004	ppb	553.64	#VALUE!	
123 Sb	0.003	0.003	ppb	90.85	1000.	
135 Ba	0.1288	0.1288	ppb	8.11	2000.	
137 Ba	0.1078	0.1078	ppb	13.29	#VALUE!	
182 W	-0.0007	-0.0007	ppb	557.74	1000.	
203 Tl	0.0089	0.0089	ppb	56.33	1000.	
205 Tl	0.0083	0.0083	ppb	81.60	#VALUE!	
208 Pb	0.166	0.166	ppb	8.97	2000.	
232 Th	0.0004	0.0004	ppb	122.98	1000.	
238 U	-0.0002	-0.0002	ppb	277.61	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3843981.30	3.19	3927738.80	97.9	69.5 - 120	
45 Sc	2471715.50	2.48	2572658.80	96.1	69.5 - 120	
72 Ge	477561.91	2.89	510197.59	93.6	69.5 - 120	
159 Tb	4333664.00	1.63	4617151.00	93.9	69.5 - 120	
209 Bi	2266850.30	2.17	2380666.00	95.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000333

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\072SMPL.D\072SMPL.D#
Date Acquired: May 15 2018 10:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBSLE08IMS2
Misc Info:
Vial Number: 2403
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0041	-0.0008	ppb	144.07	100.	
11 B	7.135	1.427	ppb	9.26	1000.	
23 Na	44.46	8.892	ppb	1.72	200000.	
25 Mg	15.81	3.162	ppb	6.70	200000.	
27 Al	7.37	1.474	ppb	4.09	200000.	
28 Si	-0.1153	-0.0231	ppb	19172.00	#VALUE!	
29 Si	137.05	27.41	ppb	18.66	10000.	
39 K	51.65	10.33	ppb	22.18	200000.	
43 Ca	14.77	2.954	ppb	102.30	#VALUE!	
44 Ca	51.4	10.28	ppb	14.56	200000.	
51 V	1.071	0.2142	ppb	34.83	1000.	
52 Cr	2.6315	0.5263	ppb	7.62	2000.	
53 Cr	61.3	12.26	ppb	7.78	#VALUE!	
55 Mn	0.3983	0.0797	ppb	6.21	2000.	
56 Fe	69.35	13.87	ppb	25.62	#VALUE!	
57 Fe	20.065	4.013	ppb	44.98	100000.	
59 Co	0.0024	0.0005	ppb	229.30	1000.	
60 Ni	0.3782	0.0756	ppb	22.44	1000.	
63 Cu	0.904	0.1808	ppb	6.03	#VALUE!	
65 Cu	0.9145	0.1829	ppb	19.52	2000.	
66 Zn	1.1395	0.2279	ppb	5.13	2000.	
68 Zn	0.1656	0.0331	ppb	232.43	#VALUE!	
75 As	0.7615	0.1523	ppb	150.82	1000.	
82 Se	0.3815	0.0763	ppb	244.69	1000.	
88 Sr	0.1697	0.0339	ppb	19.39	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0622	0.0124	ppb	7.45	1000.	
107 Ag	0.0027	0.0005	ppb	221.13	100.	
109 Ag	-0.0029	-0.0006	ppb	152.45	#VALUE!	
111 Cd	0.4942	0.0988	ppb	34.55	#VALUE!	
114 Cd	-0.0615	-0.0123	ppb	104.48	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	41.44	8.288	ppb	2.60	1000.	
120 Sn	42.09	8.418	ppb	2.41	#VALUE!	
121 Sb	0.0165	0.0033	ppb	39.33	#VALUE!	
123 Sb	0.0356	0.0071	ppb	52.55	1000.	
135 Ba	0.2181	0.0436	ppb	3.59	2000.	
137 Ba	0.1136	0.0227	ppb	29.16	#VALUE!	
182 W	0.0197	0.0039	ppb	135.94	1000.	
203 Tl	-0.0011	-0.0002	ppb	3170.00	1000.	
205 Tl	-0.0028	-0.0006	ppb	196.66	#VALUE!	
208 Pb	-0.0584	-0.0117	ppb	112.25	2000.	
232 Th	0.0323	0.0065	ppb	10.65	1000.	
238 U	0.0007	0.0001	ppb	108.21	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3816472.00	1.74	3927738.80	97.2	69.5 - 120	
45 Sc	2449404.30	1.38	2572658.80	95.2	69.5 - 120	
72 Ge	475983.28	1.35	510197.59	93.3	69.5 - 120	
159 Tb	4332031.50	1.13	4617151.00	93.8	69.5 - 120	
209 Bi	2265095.50	0.74	2380666.00	95.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000334

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\073SMPL.D\073SMPL.D#
Date Acquired: May 15 2018 10:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSOLE08IMS2
Misc Info:
Vial Number: 2404
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	47.47	9.494	ppb	2.71	100.	
11 B	511.	102.2	ppb	2.17	1000.	
23 Na	7,870.	1,574.	ppb	2.33	200000.	
25 Mg	5,385.	1,077.	ppb	3.25	200000.	
27 Al	2,106.	421.2	ppb	1.33	200000.	
28 Si	899.	179.8	ppb	4.16	#VALUE!	
29 Si	961.	192.2	ppb	4.81	10000.	
39 K	9,910.	1,982.	ppb	2.63	200000.	
43 Ca	2,897.	579.4	ppb	2.91	#VALUE!	
44 Ca	2,513.5	502.7	ppb	1.86	200000.	
51 V	497.35	99.47	ppb	3.29	1000.	
52 Cr	196.55	39.31	ppb	2.44	2000.	
53 Cr	268.15	53.63	ppb	1.51	#VALUE!	
55 Mn	489.8	97.96	ppb	1.83	2000.	
56 Fe	964.5	192.9	ppb	2.55	#VALUE!	
57 Fe	951.	190.2	ppb	1.52	100000.	
59 Co	497.25	99.45	ppb	0.90	1000.	
60 Ni	490.	98.	ppb	1.52	1000.	
63 Cu	239.05	47.81	ppb	0.40	#VALUE!	
65 Cu	241.8	48.36	ppb	2.12	2000.	
66 Zn	461.2	92.24	ppb	0.75	2000.	
68 Zn	520.5	104.1	ppb	1.14	#VALUE!	
75 As	94.7	18.94	ppb	1.36	1000.	
82 Se	92.8	18.56	ppb	0.70	1000.	
88 Sr	473.05	94.61	ppb	0.56	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	94.95	18.99	ppb	1.84	1000.	
107 Ag	48.16	9.632	ppb	1.17	100.	
109 Ag	48.255	9.651	ppb	1.26	#VALUE!	
111 Cd	231.75	46.35	ppb	1.52	#VALUE!	
114 Cd	233.4	46.68	ppb	1.10	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	530.5	106.1	ppb	1.19	1000.	
120 Sn	529.5	105.9	ppb	1.99	#VALUE!	
121 Sb	98.4	19.68	ppb	2.16	#VALUE!	
123 Sb	99.05	19.81	ppb	1.64	1000.	
135 Ba	2,003.5	400.7	ppb	1.72	2000.	
137 Ba	2,010.5	402.1	ppb	2.94	#VALUE!	
182 W	101.45	20.29	ppb	0.38	1000.	
203 Tl	100.4	20.08	ppb	2.13	1000.	
205 Tl	100.85	20.17	ppb	1.04	#VALUE!	
208 Pb	101.4	20.28	ppb	1.38	2000.	
232 Th	100.8	20.16	ppb	1.83	1000.	
238 U	102.15	20.43	ppb	1.87	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4672298.50	2.86	3927738.80	119.0	69.5 - 120	
45 Sc	2700036.80	2.98	2572658.80	105.0	69.5 - 120	
72 Ge	520871.31	2.43	510197.59	102.1	69.5 - 120	
159 Tb	4626069.00	0.88	4617151.00	100.2	69.5 - 120	
209 Bi	2398915.50	1.06	2380666.00	100.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000335

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\074_CCV.D\074_CCV.D#
Date Acquired: May 15 2018 10:49 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.94	ppb	0.90	25	99.76	
11 B	28.7	ppb	1.78	25	114.8	Fail
23 Na	4,891.	ppb	2.12	5,000	97.82	
25 Mg	4,900.	ppb	1.61	5,000	98	
27 Al	488.7	ppb	0.36	500	97.74	
28 Si	472.9	ppb	4.10	500	94.58	
29 Si	466.7	ppb	3.58	500	93.34	
39 K	4,846.	ppb	0.14	5,000	96.92	
43 Ca	4,897.	ppb	1.84	5,000	97.94	
44 Ca	4,898.	ppb	1.46	5,000	97.96	
51 V	24.14	ppb	0.78	25	96.56	
52 Cr	24.5	ppb	0.89	25	98	
53 Cr	24.12	ppb	3.33	25	96.48	
55 Mn	24.05	ppb	1.15	25	96.2	
56 Fe	4,763.	ppb	0.57	5,000	95.26	
57 Fe	4,806.	ppb	0.57	5,000	96.12	
59 Co	24.11	ppb	0.56	25	96.44	
60 Ni	24.46	ppb	1.57	25	97.84	
63 Cu	24.18	ppb	0.61	25	96.72	
65 Cu	24.27	ppb	1.67	25	97.08	
66 Zn	24.4	ppb	1.30	25	97.6	
68 Zn	24.09	ppb	0.88	25	96.36	
75 As	24.31	ppb	1.20	25	97.24	
82 Se	24.99	ppb	1.77	25	99.96	
88 Sr	23.73	ppb	1.05	25	94.92	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.96	ppb	0.39	25	95.84	
107 Ag	24.21	ppb	0.26	25	96.84	
109 Ag	24.32	ppb	0.55	25	97.28	
111 Cd	24.29	ppb	0.68	25	97.16	
114 Cd	24.29	ppb	1.08	25	97.16	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.45	ppb	0.78	25	93.8	
120 Sn	23.42	ppb	0.66	25	93.68	
121 Sb	23.82	ppb	0.77	25	95.28	
123 Sb	23.87	ppb	0.13	25	95.48	
135 Ba	24.46	ppb	1.05	25	97.84	
137 Ba	24.2	ppb	0.92	25	96.8	
182 W	24.	ppb	1.00	25	96	
203 Tl	23.4	ppb	2.27	25	93.6	
205 Tl	23.68	ppb	1.75	25	94.72	
208 Pb	23.81	ppb	1.61	25	95.24	
232 Th	23.59	ppb	2.19	25	94.36	
238 U	24.32	ppb	1.63	25	97.28	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4036640.80	0.92	3927738.80	102.8	80 - 120.4	
45 Sc	2592441.80	2.32	2572658.80	100.8	80 - 120.4	
72 Ge	487523.50	1.35	510197.59	95.6	80 - 120.4	
159 Tb	4592434.50	0.55	4617151.00	99.5	80 - 120.4	
209 Bi	2413533.00	1.42	2380666.00	101.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000336

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\075_CCB.D\075_CCB.D#
Date Acquired: May 15 2018 10:53 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0009	ppb	23.18	1.00	
11 B	2.725	ppb	15.37	1.00	
23 Na	3.268	ppb	4.74	1.00	
25 Mg	0.2017	ppb	28.16	1.00	
27 Al	0.1304	ppb	30.19	1.00	
28 Si	19.59	ppb	29.11	1.00	
29 Si	28.6	ppb	46.99	1.00	
39 K	6.403	ppb	7.06	1.00	
43 Ca	-5.477	ppb	14.25	1.00	
44 Ca	1.151	ppb	69.48	1.00	
51 V	0.0294	ppb	277.84	1.00	
52 Cr	0.0123	ppb	241.30	1.00	
53 Cr	-2.185	ppb	5.94	1.00	
55 Mn	0.008	ppb	35.07	1.00	
56 Fe	2.604	ppb	68.24	1.00	
57 Fe	2.686	ppb	52.12	1.00	
59 Co	-0.0001	ppb	5645.20	1.00	
60 Ni	0.0045	ppb	46.34	1.00	
63 Cu	0.0524	ppb	42.80	1.00	
65 Cu	0.0601	ppb	0.88	1.00	
66 Zn	0.0807	ppb	53.75	1.00	
68 Zn	-0.0984	ppb	100.26	1.00	
75 As	0.0617	ppb	67.39	1.00	
82 Se	0.2786	ppb	52.73	1.00	
88 Sr	0.0008	ppb	162.92	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0277	ppb	29.40	1.00	
107 Ag	0.0012	ppb	252.67	1.00	
109 Ag	0.0017	ppb	94.50	1.00	
111 Cd	0.0731	ppb	24.16	1.00	
114 Cd	-0.0001	ppb	214.51	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0623	ppb	10.78	1.00	
120 Sn	0.0635	ppb	28.10	1.00	
121 Sb	0.0093	ppb	39.79	1.00	
123 Sb	0.0143	ppb	29.47	1.00	
135 Ba	0.0161	ppb	50.33	1.00	
137 Ba	0.0082	ppb	48.70	1.00	
182 W	0.0454	ppb	21.75	1.00	
203 Tl	0.0067	ppb	77.07	1.00	
205 Tl	0.0112	ppb	21.80	1.00	
208 Pb	0.0156	ppb	29.20	1.00	
232 Th	0.0713	ppb	9.09	1.00	
238 U	0.0029	ppb	13.05	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3815086.30	0.71	3927738.80	97.1	79.5 - 120	
45 Sc	2402736.50	1.06	2572658.80	93.4	79.5 - 120	
72 Ge	467004.03	0.31	510197.59	91.5	79.5 - 120	
159 Tb	4258601.00	0.81	4617151.00	92.2	79.5 - 120	
209 Bi	2267539.30	1.43	2380666.00	95.2	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000337

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\076SMPL.D\076SMPL.D#
Date Acquired: May 15 2018 10:58 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-024
Misc Info:
Vial Number: 2405
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.53	1.306	ppb	1.88	100.	
11 B	120.35	24.07	ppb	2.68	1000.	
23 Na	5,410.	1,082.	ppb	4.16	200000.	
25 Mg	87,000.	17,400.	ppb	2.53	200000.	
27 Al	136,750.	27,350.	ppb	3.21	200000.	
28 Si	2,294.	458.8	ppb	6.76	#VALUE!	
29 Si	2,139.5	427.9	ppb	1.56	10000.	
39 K	34,395.	6,879.	ppb	1.16	200000.	
43 Ca	901,500.	180,300.	ppb	2.48	#VALUE!	
44 Ca	881,500.	176,300.	ppb	2.00	200000.	
51 V	255.4	51.08	ppb	1.14	1000.	
52 Cr	124.15	24.83	ppb	0.29	2000.	
53 Cr	150.	30.	ppb	1.36	#VALUE!	
55 Mn	2,825.5	565.1	ppb	1.48	2000.	
56 Fe	119,900.	23,980.	ppb	1.21	#VALUE!	
57 Fe	117,000.	23,400.	ppb	0.62	100000.	
59 Co	38.165	7.633	ppb	2.23	1000.	
60 Ni	92.15	18.43	ppb	1.11	1000.	
63 Cu	71.05	14.21	ppb	0.67	#VALUE!	
65 Cu	73.1	14.62	ppb	1.19	2000.	
66 Zn	304.15	60.83	ppb	0.39	2000.	
68 Zn	402.6	80.52	ppb	1.37	#VALUE!	
75 As	34.015	6.803	ppb	1.94	1000.	
82 Se	5.08	1.016	ppb	10.93	1000.	
88 Sr	2,173.	434.6	ppb	1.26	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.1515	0.6303	ppb	5.52	1000.	
107 Ag	0.676	0.1352	ppb	2.02	100.	
109 Ag	0.5055	0.1011	ppb	2.89	#VALUE!	
111 Cd	3.6375	0.7275	ppb	4.90	#VALUE!	
114 Cd	0.8845	0.1769	ppb	10.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.715	9.343	ppb	2.42	1000.	
120 Sn	46.56	9.312	ppb	2.45	#VALUE!	
121 Sb	1.151	0.2302	ppb	4.82	#VALUE!	
123 Sb	1.103	0.2206	ppb	4.65	1000.	
135 Ba	2,873.	574.6	ppb	1.54	2000.	
137 Ba	2,876.	575.2	ppb	0.64	#VALUE!	
182 W	0.508	0.1016	ppb	3.45	1000.	
203 Tl	2.553	0.5106	ppb	2.97	1000.	
205 Tl	2.5685	0.5137	ppb	3.18	#VALUE!	
208 Pb	86.5	17.3	ppb	0.48	2000.	
232 Th	62.1	12.42	ppb	0.35	1000.	
238 U	12.11	2.422	ppb	0.58	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4179047.00	1.28	3927738.80	106.4	69.5 - 120	
45 Sc	2642953.30	0.95	2572658.80	102.7	69.5 - 120	
72 Ge	491791.09	0.47	510197.59	96.4	69.5 - 120	
159 Tb	4673001.00	2.03	4617151.00	101.2	69.5 - 120	
209 Bi	2340479.00	1.22	2380666.00	98.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000338

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\077SMPL.D\077SMPL.D#
Date Acquired: May 15 2018 11:02 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-024L
Misc Info:
Vial Number: 2406
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.625	0.265	ppb	2.06	100.	
11 B	155.725	6.229	ppb	3.62	1000.	
23 Na	5,800.	232.	ppb	2.05	200000.	
25 Mg	91,350.	3,654.	ppb	0.88	200000.	
27 Al	140,475.	5,619.	ppb	0.63	200000.	
28 Si	2,034.	81.36	ppb	5.81	#VALUE!	
29 Si	1,275.5	51.02	ppb	13.60	10000.	
39 K	35,100.	1,404.	ppb	2.09	200000.	
43 Ca	939,500.	37,580.	ppb	2.79	#VALUE!	
44 Ca	911,250.	36,450.	ppb	2.27	200000.	
51 V	256.5	10.26	ppb	1.81	1000.	
52 Cr	124.15	4.966	ppb	0.96	2000.	
53 Cr	85.725	3.429	ppb	13.82	#VALUE!	
55 Mn	2,987.5	119.5	ppb	0.85	2000.	
56 Fe	122,675.	4,907.	ppb	0.19	#VALUE!	
57 Fe	126,325.	5,053.	ppb	0.23	100000.	
59 Co	40.025	1.601	ppb	1.76	1000.	
60 Ni	98.75	3.95	ppb	1.86	1000.	
63 Cu	77.75	3.11	ppb	0.77	#VALUE!	
65 Cu	79.725	3.189	ppb	1.71	2000.	
66 Zn	344.5	13.78	ppb	2.27	2000.	
68 Zn	444.	17.76	ppb	0.84	#VALUE!	
75 As	37.55	1.502	ppb	5.51	1000.	
82 Se	6.3625	0.2545	ppb	39.73	1000.	
88 Sr	2,290.	91.6	ppb	0.18	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	2.8625	0.1145	ppb	7.00	1000.	
107 Ag	0.7725	0.0309	ppb	18.71	100.	
109 Ag	0.4783	0.0191	ppb	9.75	#VALUE!	
111 Cd	3.9675	0.1587	ppb	9.57	#VALUE!	
114 Cd	0.9045	0.0362	ppb	57.55	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.325	1.933	ppb	2.09	1000.	
120 Sn	48.35	1.934	ppb	1.48	#VALUE!	
121 Sb	1.1535	0.0461	ppb	9.52	#VALUE!	
123 Sb	1.4848	0.0594	ppb	23.00	1000.	
135 Ba	2,940.	117.6	ppb	1.50	2000.	
137 Ba	2,940.	117.6	ppb	1.47	#VALUE!	
182 W	0.4853	0.0194	ppb	20.59	1000.	
203 Tl	2.7225	0.1089	ppb	7.98	1000.	
205 Tl	2.5625	0.1025	ppb	8.57	#VALUE!	
208 Pb	84.625	3.385	ppb	1.88	2000.	
232 Th	57.85	2.314	ppb	1.79	1000.	
238 U	11.855	0.4742	ppb	2.08	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4074809.00	3.14	3927738.80	103.7	69.5 - 120	
45 Sc	2602086.50	0.54	2572658.80	101.1	69.5 - 120	
72 Ge	492550.00	0.65	510197.59	96.5	69.5 - 120	
159 Tb	4662375.50	0.64	4617151.00	101.0	69.5 - 120	
209 Bi	2438264.30	0.38	2380666.00	102.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000339

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\078SMPL.D\078SMPL.D#
Date Acquired: May 15 2018 11:06 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-024A
Misc Info:
Vial Number: 2407
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	15.91	3.182	ppb	4.44	100.	
11 B	319.55	63.91	ppb	2.17	1000.	
23 Na	14,690.	2,938.	ppb	1.76	200000.	
25 Mg	87,050.	17,410.	ppb	5.24	200000.	
27 Al	135,550.	27,110.	ppb	4.60	200000.	
28 Si	7,115.	1,423.	ppb	2.48	#VALUE!	
29 Si	6,935.	1,387.	ppb	2.62	10000.	
39 K	43,160.	8,632.	ppb	0.56	200000.	
43 Ca	898,500.	179,700.	ppb	1.70	#VALUE!	
44 Ca	869,000.	173,800.	ppb	1.28	200000.	
51 V	303.2	60.64	ppb	2.28	1000.	
52 Cr	172.	34.4	ppb	2.37	2000.	
53 Cr	205.45	41.09	ppb	0.53	#VALUE!	
55 Mn	2,826.5	565.3	ppb	1.33	2000.	
56 Fe	119,350.	23,870.	ppb	1.75	#VALUE!	
57 Fe	118,050.	23,610.	ppb	1.92	100000.	
59 Co	47.665	9.533	ppb	3.40	1000.	
60 Ni	109.8	21.96	ppb	2.01	1000.	
63 Cu	98.1	19.62	ppb	1.15	#VALUE!	
65 Cu	99.8	19.96	ppb	0.25	2000.	
66 Zn	392.2	78.44	ppb	0.86	2000.	
68 Zn	481.85	96.37	ppb	2.21	#VALUE!	
75 As	81.1	16.22	ppb	1.89	1000.	
82 Se	49.325	9.865	ppb	3.68	1000.	
88 Sr	2,207.5	441.5	ppb	1.51	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	53.55	10.71	ppb	0.63	1000.	
107 Ag	10.19	2.038	ppb	1.25	100.	
109 Ag	9.885	1.977	ppb	0.94	#VALUE!	
111 Cd	13.005	2.601	ppb	1.01	#VALUE!	
114 Cd	10.135	2.027	ppb	1.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	93.55	18.71	ppb	3.49	1000.	
120 Sn	93.6	18.72	ppb	2.11	#VALUE!	
121 Sb	10.56	2.112	ppb	1.36	#VALUE!	
123 Sb	10.525	2.105	ppb	3.51	1000.	
135 Ba	2,844.	568.8	ppb	1.99	2000.	
137 Ba	2,873.	574.6	ppb	2.03	#VALUE!	
182 W	52.2	10.44	ppb	2.10	1000.	
203 Tl	12.875	2.575	ppb	1.27	1000.	
205 Tl	12.885	2.577	ppb	3.59	#VALUE!	
208 Pb	96.35	19.27	ppb	2.19	2000.	
232 Th	73.05	14.61	ppb	2.00	1000.	
238 U	23.25	4.65	ppb	2.14	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4154798.80	3.01	3927738.80	105.8	69.5 - 120	
45 Sc	2642813.00	1.75	2572658.80	102.7	69.5 - 120	
72 Ge	488003.94	1.09	510197.59	95.6	69.5 - 120	
159 Tb	4664968.00	2.18	4617151.00	101.0	69.5 - 120	
209 Bi	2306041.80	2.86	2380666.00	96.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000340

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\079SMPL.D\079SMPL.D#
Date Acquired: May 15 2018 11:10 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-024S
Misc Info:
Vial Number: 2408
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	50.65	10.13	ppb	1.25	100.	
11 B	574.5	114.9	ppb	3.92	1000.	
23 Na	13,475.	2,695.	ppb	3.40	200000.	
25 Mg	102,800.	20,560.	ppb	1.97	200000.	
27 Al	166,150.	33,230.	ppb	1.04	200000.	
28 Si	3,572.	714.4	ppb	0.80	#VALUE!	
29 Si	3,547.	709.4	ppb	1.85	10000.	
39 K	48,975.	9,795.	ppb	1.41	200000.	
43 Ca	1,011,500.	202,300.	ppb	0.65	#VALUE!	
44 Ca	981,000.	196,200.	ppb	0.79	200000.	
51 V	820.	164.	ppb	0.75	1000.	
52 Cr	334.05	66.81	ppb	1.29	2000.	
53 Cr	383.	76.6	ppb	0.30	#VALUE!	
55 Mn	3,215.5	643.1	ppb	1.04	2000.	
56 Fe	131,950.	26,390.	ppb	0.95	#VALUE!	
57 Fe	128,200.	25,640.	ppb	0.40	100000.	
59 Co	513.5	102.7	ppb	1.06	1000.	
60 Ni	548.5	109.7	ppb	0.98	1000.	
63 Cu	292.3	58.46	ppb	0.96	#VALUE!	
65 Cu	300.25	60.05	ppb	0.26	2000.	
66 Zn	745.	149.	ppb	0.99	2000.	
68 Zn	963.	192.6	ppb	0.40	#VALUE!	
75 As	129.7	25.94	ppb	1.88	1000.	
82 Se	87.7	17.54	ppb	3.43	1000.	
88 Sr	2,979.	595.8	ppb	0.36	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	94.8	18.96	ppb	0.57	1000.	
107 Ag	46.225	9.245	ppb	1.22	100.	
109 Ag	45.705	9.141	ppb	0.79	#VALUE!	
111 Cd	223.55	44.71	ppb	0.28	#VALUE!	
114 Cd	222.7	44.54	ppb	0.54	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	497.95	99.59	ppb	0.87	1000.	
120 Sn	500.5	100.1	ppb	0.92	#VALUE!	
121 Sb	29.63	5.926	ppb	1.14	#VALUE!	
123 Sb	30.2	6.04	ppb	0.47	1000.	
135 Ba	6,595.	1,319.	ppb	0.82	2000.	
137 Ba	6,450.	1,290.	ppb	0.68	#VALUE!	
182 W	51.15	10.23	ppb	1.58	1000.	
203 Tl	101.05	20.21	ppb	0.95	1000.	
205 Tl	103.35	20.67	ppb	0.73	#VALUE!	
208 Pb	196.2	39.24	ppb	0.80	2000.	
232 Th	172.75	34.55	ppb	0.78	1000.	
238 U	121.05	24.21	ppb	0.61	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4372508.50	2.15	3927738.80	111.3	69.5 - 120	
45 Sc	2617642.00	0.46	2572658.80	101.7	69.5 - 120	
72 Ge	489992.28	0.73	510197.59	96.0	69.5 - 120	
159 Tb	4626289.50	0.48	4617151.00	100.2	69.5 - 120	
209 Bi	2285375.50	0.32	2380666.00	96.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000341

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\080SMPL.D\080SMPL.D#
Date Acquired: May 15 2018 11:15 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-024P
Misc Info:
Vial Number: 2409
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	50.5	10.1	ppb	1.81	100.	
11 B	602.5	120.5	ppb	4.76	1000.	
23 Na	15,215.	3,043.	ppb	2.97	200000.	
25 Mg	93,000.	18,600.	ppb	1.93	200000.	
27 Al	170,900.	34,180.	ppb	0.90	200000.	
28 Si	3,130.5	626.1	ppb	1.46	#VALUE!	
29 Si	2,870.5	574.1	ppb	2.18	10000.	
39 K	49,450.	9,890.	ppb	0.33	200000.	
43 Ca	860,500.	172,100.	ppb	1.08	#VALUE!	
44 Ca	830,500.	166,100.	ppb	0.31	200000.	
51 V	783.5	156.7	ppb	2.11	1000.	
52 Cr	330.25	66.05	ppb	1.77	2000.	
53 Cr	372.7	74.54	ppb	2.39	#VALUE!	
55 Mn	3,231.	646.2	ppb	1.08	2000.	
56 Fe	136,600.	27,320.	ppb	0.50	#VALUE!	
57 Fe	133,250.	26,650.	ppb	1.33	100000.	
59 Co	509.	101.8	ppb	1.71	1000.	
60 Ni	544.5	108.9	ppb	1.10	1000.	
63 Cu	290.35	58.07	ppb	1.43	#VALUE!	
65 Cu	297.6	59.52	ppb	0.49	2000.	
66 Zn	760.5	152.1	ppb	1.78	2000.	
68 Zn	1,135.	227.	ppb	1.35	#VALUE!	
75 As	125.	25.	ppb	3.48	1000.	
82 Se	87.95	17.59	ppb	1.27	1000.	
88 Sr	2,681.5	536.3	ppb	2.01	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	89.45	17.89	ppb	1.53	1000.	
107 Ag	44.59	8.918	ppb	1.65	100.	
109 Ag	44.625	8.925	ppb	1.14	#VALUE!	
111 Cd	220.25	44.05	ppb	1.34	#VALUE!	
114 Cd	217.6	43.52	ppb	1.62	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	466.	93.2	ppb	0.86	1000.	
120 Sn	464.05	92.81	ppb	1.59	#VALUE!	
121 Sb	27.26	5.452	ppb	1.41	#VALUE!	
123 Sb	27.255	5.451	ppb	2.61	1000.	
135 Ba	10,425.	2,085.	ppb	1.07	2000.	>LDR
137 Ba	10,270.	2,054.	ppb	1.18	#VALUE!	
182 W	45.145	9.029	ppb	2.36	1000.	
203 Tl	97.6	19.52	ppb	0.66	1000.	
205 Tl	97.8	19.56	ppb	0.56	#VALUE!	
208 Pb	192.75	38.55	ppb	0.39	2000.	
232 Th	168.35	33.67	ppb	0.48	1000.	
238 U	113.85	22.77	ppb	0.75	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4106075.00	3.87	3927738.80	104.5	69.5 - 120	
45 Sc	2592434.30	1.19	2572658.80	100.8	69.5 - 120	
72 Ge	478953.25	1.92	510197.59	93.9	69.5 - 120	
159 Tb	4628809.00	1.02	4617151.00	100.3	69.5 - 120	
209 Bi	2302554.30	0.83	2380666.00	96.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000342

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\081SMPL.D\081SMPL.D#
Date Acquired: May 15 2018 11:19 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-041
Misc Info:
Vial Number: 2410
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.165	1.833	ppb	1.98	100.	
11 B	175.85	35.17	ppb	4.23	1000.	
23 Na	8,170.	1,634.	ppb	1.00	200000.	
25 Mg	101,650.	20,330.	ppb	1.57	200000.	
27 Al	216,400.	43,280.	ppb	1.34	200000.	
28 Si	3,122.5	624.5	ppb	0.87	#VALUE!	
29 Si	2,962.5	592.5	ppb	4.61	10000.	
39 K	51,550.	10,310.	ppb	0.85	200000.	
43 Ca	701,000.	140,200.	ppb	2.68	#VALUE!	
44 Ca	671,500.	134,300.	ppb	1.83	200000.	
51 V	412.95	82.59	ppb	1.08	1000.	
52 Cr	188.05	37.61	ppb	0.95	2000.	
53 Cr	219.	43.8	ppb	1.99	#VALUE!	
55 Mn	5,625.	1,125.	ppb	1.09	2000.	
56 Fe	186,050.	37,210.	ppb	1.26	#VALUE!	
57 Fe	181,900.	36,380.	ppb	1.61	100000.	
59 Co	112.55	22.51	ppb	1.60	1000.	
60 Ni	168.15	33.63	ppb	1.33	1000.	
63 Cu	104.45	20.89	ppb	0.63	#VALUE!	
65 Cu	106.75	21.35	ppb	1.77	2000.	
66 Zn	442.1	88.42	ppb	1.38	2000.	
68 Zn	525.5	105.1	ppb	1.64	#VALUE!	
75 As	56.8	11.36	ppb	1.06	1000.	
82 Se	4.8915	0.9783	ppb	8.09	1000.	
88 Sr	1,524.	304.8	ppb	0.38	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.35	1.27	ppb	0.98	1000.	
107 Ag	0.829	0.1658	ppb	3.57	100.	
109 Ag	0.62	0.124	ppb	5.07	#VALUE!	
111 Cd	5.315	1.063	ppb	6.64	#VALUE!	
114 Cd	1.8575	0.3715	ppb	5.61	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.475	9.695	ppb	0.98	1000.	
120 Sn	48.085	9.617	ppb	2.27	#VALUE!	
121 Sb	1.5735	0.3147	ppb	2.45	#VALUE!	
123 Sb	1.6	0.32	ppb	6.96	1000.	
135 Ba	2,733.	546.6	ppb	1.20	2000.	
137 Ba	2,750.	550.	ppb	0.46	#VALUE!	
182 W	0.779	0.1558	ppb	5.28	1000.	
203 Tl	3.409	0.6818	ppb	3.87	1000.	
205 Tl	3.5415	0.7083	ppb	3.49	#VALUE!	
208 Pb	152.5	30.5	ppb	0.31	2000.	
232 Th	93.3	18.66	ppb	0.44	1000.	
238 U	16.2	3.24	ppb	1.67	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4175266.30	1.73	3927738.80	106.3	69.5 - 120	
45 Sc	2591124.00	1.15	2572658.80	100.7	69.5 - 120	
72 Ge	490769.31	0.50	510197.59	96.2	69.5 - 120	
159 Tb	4657342.00	1.13	4617151.00	100.9	69.5 - 120	
209 Bi	2314142.50	1.05	2380666.00	97.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000343

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\082SMPL.D\082SMPL.D#
Date Acquired: May 15 2018 11:23 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-042
Misc Info:
Vial Number: 2411
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.295	1.459	ppb	2.81	100.	
11 B	141.45	28.29	ppb	4.05	1000.	
23 Na	3,135.5	627.1	ppb	1.33	200000.	
25 Mg	96,550.	19,310.	ppb	0.33	200000.	
27 Al	163,800.	32,760.	ppb	1.84	200000.	
28 Si	2,967.	593.4	ppb	1.31	#VALUE!	
29 Si	2,804.	560.8	ppb	3.64	10000.	
39 K	44,230.	8,846.	ppb	1.07	200000.	
43 Ca	761,000.	152,200.	ppb	0.57	#VALUE!	
44 Ca	724,000.	144,800.	ppb	1.15	200000.	
51 V	376.45	75.29	ppb	1.13	1000.	
52 Cr	150.55	30.11	ppb	0.43	2000.	
53 Cr	176.4	35.28	ppb	0.65	#VALUE!	
55 Mn	4,621.	924.2	ppb	1.11	2000.	
56 Fe	143,950.	28,790.	ppb	1.17	#VALUE!	
57 Fe	140,850.	28,170.	ppb	0.14	100000.	
59 Co	152.45	30.49	ppb	0.20	1000.	
60 Ni	166.75	33.35	ppb	0.58	1000.	
63 Cu	102.35	20.47	ppb	1.55	#VALUE!	
65 Cu	106.75	21.35	ppb	0.85	2000.	
66 Zn	368.1	73.62	ppb	1.22	2000.	
68 Zn	450.1	90.02	ppb	1.32	#VALUE!	
75 As	86.4	17.28	ppb	2.11	1000.	
82 Se	4.5705	0.9141	ppb	19.54	1000.	
88 Sr	2,121.	424.2	ppb	0.39	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.475	1.095	ppb	1.21	1000.	
107 Ag	0.7395	0.1479	ppb	3.32	100.	
109 Ag	0.5885	0.1177	ppb	3.47	#VALUE!	
111 Cd	3.576	0.7152	ppb	3.06	#VALUE!	
114 Cd	0.9365	0.1873	ppb	30.44	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.355	8.871	ppb	0.89	1000.	
120 Sn	45.1	9.02	ppb	0.95	#VALUE!	
121 Sb	1.612	0.3224	ppb	4.38	#VALUE!	
123 Sb	1.648	0.3296	ppb	1.89	1000.	
135 Ba	2,618.5	523.7	ppb	0.75	2000.	
137 Ba	2,640.	528.	ppb	1.04	#VALUE!	
182 W	1.044	0.2088	ppb	6.42	1000.	
203 Tl	2.925	0.585	ppb	2.80	1000.	
205 Tl	2.957	0.5914	ppb	3.24	#VALUE!	
208 Pb	117.9	23.58	ppb	0.73	2000.	
232 Th	73.35	14.67	ppb	0.31	1000.	
238 U	14.015	2.803	ppb	0.23	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4050038.80	1.31	3927738.80	103.1	69.5 - 120	
45 Sc	2538160.50	0.69	2572658.80	98.7	69.5 - 120	
72 Ge	476083.97	0.35	510197.59	93.3	69.5 - 120	
159 Tb	4611266.00	0.39	4617151.00	99.9	69.5 - 120	
209 Bi	2307398.80	0.43	2380666.00	96.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000344

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\083SMPL.D\083SMPL.D#
Date Acquired: May 15 2018 11:28 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-043
Misc Info:
Vial Number: 2412
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.86	1.372	ppb	8.11	100.	
11 B	142.55	28.51	ppb	5.70	1000.	
23 Na	3,076.	615.2	ppb	2.50	200000.	
25 Mg	82,500.	16,500.	ppb	0.52	200000.	
27 Al	160,400.	32,080.	ppb	1.88	200000.	
28 Si	2,767.	553.4	ppb	2.79	#VALUE!	
29 Si	2,649.5	529.9	ppb	3.23	10000.	
39 K	41,860.	8,372.	ppb	2.48	200000.	
43 Ca	731,000.	146,200.	ppb	3.70	#VALUE!	
44 Ca	704,000.	140,800.	ppb	1.89	200000.	
51 V	339.1	67.82	ppb	1.60	1000.	
52 Cr	135.85	27.17	ppb	1.72	2000.	
53 Cr	155.05	31.01	ppb	0.58	#VALUE!	
55 Mn	3,622.5	724.5	ppb	0.52	2000.	
56 Fe	159,000.	31,800.	ppb	1.16	#VALUE!	
57 Fe	155,700.	31,140.	ppb	0.85	100000.	
59 Co	53.7	10.74	ppb	1.69	1000.	
60 Ni	113.25	22.65	ppb	1.14	1000.	
63 Cu	83.7	16.74	ppb	1.02	#VALUE!	
65 Cu	85.9	17.18	ppb	1.52	2000.	
66 Zn	318.4	63.68	ppb	0.91	2000.	
68 Zn	402.25	80.45	ppb	0.92	#VALUE!	
75 As	87.15	17.43	ppb	2.16	1000.	
82 Se	6.315	1.263	ppb	11.16	1000.	
88 Sr	1,922.	384.4	ppb	1.12	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.69	1.538	ppb	0.80	1000.	
107 Ag	0.631	0.1262	ppb	0.55	100.	
109 Ag	0.4591	0.0918	ppb	8.52	#VALUE!	
111 Cd	3.277	0.6554	ppb	6.39	#VALUE!	
114 Cd	0.6585	0.1317	ppb	7.65	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.635	8.927	ppb	2.19	1000.	
120 Sn	44.855	8.971	ppb	1.95	#VALUE!	
121 Sb	1.261	0.2522	ppb	5.06	#VALUE!	
123 Sb	1.401	0.2802	ppb	2.84	1000.	
135 Ba	2,528.5	505.7	ppb	1.07	2000.	
137 Ba	2,523.	504.6	ppb	1.33	#VALUE!	
182 W	0.8535	0.1707	ppb	2.98	1000.	
203 Tl	2.4915	0.4983	ppb	4.01	1000.	
205 Tl	2.5105	0.5021	ppb	0.86	#VALUE!	
208 Pb	93.2	18.64	ppb	0.12	2000.	
232 Th	65.3	13.06	ppb	1.31	1000.	
238 U	13.21	2.642	ppb	0.62	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4077719.00	4.80	3927738.80	103.8	69.5 - 120	
45 Sc	2561773.30	1.45	2572658.80	99.6	69.5 - 120	
72 Ge	481657.16	0.39	510197.59	94.4	69.5 - 120	
159 Tb	4639084.50	0.67	4617151.00	100.5	69.5 - 120	
209 Bi	2328231.30	0.89	2380666.00	97.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000345

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\084SMPL.D\084SMPL.D#
Date Acquired: May 15 2018 11:32 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-044
Misc Info:
Vial Number: 2501
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.65	1.73	ppb	5.17	100.	
11 B	152.75	30.55	ppb	4.93	1000.	
23 Na	4,759.	951.8	ppb	1.53	200000.	
25 Mg	94,900.	18,980.	ppb	2.08	200000.	
27 Al	200,150.	40,030.	ppb	3.02	200000.	
28 Si	2,806.5	561.3	ppb	2.81	#VALUE!	
29 Si	2,678.	535.6	ppb	5.29	10000.	
39 K	47,085.	9,417.	ppb	3.58	200000.	
43 Ca	532,000.	106,400.	ppb	2.99	#VALUE!	
44 Ca	501,500.	100,300.	ppb	2.24	200000.	
51 V	355.35	71.07	ppb	1.65	1000.	
52 Cr	182.7	36.54	ppb	0.49	2000.	
53 Cr	207.25	41.45	ppb	2.05	#VALUE!	
55 Mn	3,595.	719.	ppb	1.11	2000.	
56 Fe	183,350.	36,670.	ppb	1.10	#VALUE!	
57 Fe	177,650.	35,530.	ppb	0.49	100000.	
59 Co	57.65	11.53	ppb	0.56	1000.	
60 Ni	122.15	24.43	ppb	0.60	1000.	
63 Cu	99.75	19.95	ppb	0.41	#VALUE!	
65 Cu	102.95	20.59	ppb	1.02	2000.	
66 Zn	416.9	83.38	ppb	0.46	2000.	
68 Zn	471.1	94.22	ppb	0.40	#VALUE!	
75 As	21.61	4.322	ppb	6.39	1000.	
82 Se	4.5765	0.9153	ppb	18.79	1000.	
88 Sr	1,207.	241.4	ppb	0.62	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.558	0.7116	ppb	0.46	1000.	
107 Ag	0.798	0.1596	ppb	3.29	100.	
109 Ag	0.638	0.1276	ppb	4.54	#VALUE!	
111 Cd	3.4815	0.6963	ppb	0.93	#VALUE!	
114 Cd	0.4437	0.0887	ppb	12.78	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.925	9.585	ppb	0.72	1000.	
120 Sn	48.14	9.628	ppb	1.10	#VALUE!	
121 Sb	1.451	0.2902	ppb	2.45	#VALUE!	
123 Sb	1.4855	0.2971	ppb	2.05	1000.	
135 Ba	2,074.	414.8	ppb	1.03	2000.	
137 Ba	2,086.5	417.3	ppb	2.08	#VALUE!	
182 W	0.5085	0.1017	ppb	0.75	1000.	
203 Tl	3.057	0.6114	ppb	4.54	1000.	
205 Tl	2.9625	0.5925	ppb	1.88	#VALUE!	
208 Pb	112.6	22.52	ppb	1.43	2000.	
232 Th	88.05	17.61	ppb	1.90	1000.	
238 U	12.265	2.453	ppb	2.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4297161.00	5.78	3927738.80	109.4	69.5 - 120	
45 Sc	2588515.30	2.09	2572658.80	100.6	69.5 - 120	
72 Ge	492342.72	2.20	510197.59	96.5	69.5 - 120	
159 Tb	4638938.50	1.13	4617151.00	100.5	69.5 - 120	
209 Bi	2329961.50	0.28	2380666.00	97.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000346

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\085SMPL.D\085SMPL.D#
Date Acquired: May 15 2018 11:36 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2502
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0083	-0.0017	ppb	105.01	100.	
11 B	11.87	2.374	ppb	13.03	1000.	
23 Na	68.05	13.61	ppb	4.92	200000.	
25 Mg	3.827	0.7654	ppb	32.95	200000.	
27 Al	6.35	1.27	ppb	29.16	200000.	
28 Si	46.915	9.383	ppb	89.30	#VALUE!	
29 Si	-152.95	-30.59	ppb	46.91	10000.	
39 K	-23.605	-4.721	ppb	42.92	200000.	
43 Ca	83.7	16.74	ppb	9.98	#VALUE!	
44 Ca	74.	14.8	ppb	5.01	200000.	
51 V	0.2609	0.0522	ppb	49.91	1000.	
52 Cr	-0.2128	-0.0426	ppb	44.20	2000.	
53 Cr	-23.165	-4.633	ppb	1.23	#VALUE!	
55 Mn	0.155	0.031	ppb	34.61	2000.	
56 Fe	22.035	4.407	ppb	58.41	#VALUE!	
57 Fe	28.39	5.678	ppb	39.73	100000.	
59 Co	0.0158	0.0032	ppb	67.06	1000.	
60 Ni	0.0659	0.0132	ppb	65.20	1000.	
63 Cu	1.4475	0.2895	ppb	0.95	#VALUE!	
65 Cu	1.3435	0.2687	ppb	1.32	2000.	
66 Zn	1.4845	0.2969	ppb	3.81	2000.	
68 Zn	0.3926	0.0785	ppb	98.24	#VALUE!	
75 As	0.3544	0.0709	ppb	288.98	1000.	
82 Se	0.576	0.1152	ppb	108.85	1000.	
88 Sr	0.0829	0.0166	ppb	26.95	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0139	0.0028	ppb	22.06	1000.	
107 Ag	0.0062	0.0012	ppb	68.49	100.	
109 Ag	-0.0019	-0.0004	ppb	174.40	#VALUE!	
111 Cd	-0.0408	-0.0082	ppb	572.39	#VALUE!	
114 Cd	0.0125	0.0025	ppb	59.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.129	0.0258	ppb	49.94	1000.	
120 Sn	0.1551	0.031	ppb	50.16	#VALUE!	
121 Sb	0.0005	0.0001	ppb	1405.20	#VALUE!	
123 Sb	-0.0056	-0.0011	ppb	233.39	1000.	
135 Ba	0.1677	0.0335	ppb	32.50	2000.	
137 Ba	0.123	0.0246	ppb	19.75	#VALUE!	
182 W	0.0012	0.0002	ppb	1891.80	1000.	
203 Tl	0.0355	0.0071	ppb	77.66	1000.	
205 Tl	0.0045	0.0009	ppb	639.73	#VALUE!	
208 Pb	0.5915	0.1183	ppb	7.31	2000.	
232 Th	0.0435	0.0087	ppb	33.19	1000.	
238 U	0.0019	0.0004	ppb	199.15	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4092586.50	1.67	3927738.80	104.2	69.5 - 120	
45 Sc	2541709.50	1.26	2572658.80	98.8	69.5 - 120	
72 Ge	479385.81	0.52	510197.59	94.0	69.5 - 120	
159 Tb	4388604.50	1.45	4617151.00	95.1	69.5 - 120	
209 Bi	2311535.30	0.48	2380666.00	97.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000347

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\086_CCV.D\086_CCV.D#
Date Acquired: May 15 2018 11:41 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.42	ppb	4.54	25	93.68	
11 B	24.74	ppb	5.81	25	98.96	
23 Na	4,907.	ppb	2.76	5,000	98.14	
25 Mg	4,819.	ppb	2.01	5,000	96.38	
27 Al	489.1	ppb	2.69	500	97.82	
28 Si	478.	ppb	2.47	500	95.6	
29 Si	447.1	ppb	3.07	500	89.42	Fail
39 K	4,888.	ppb	1.52	5,000	97.76	
43 Ca	4,865.	ppb	1.76	5,000	97.3	
44 Ca	4,943.	ppb	1.21	5,000	98.86	
51 V	24.85	ppb	3.14	25	99.4	
52 Cr	24.65	ppb	1.03	25	98.6	
53 Cr	21.81	ppb	2.62	25	87.24	
55 Mn	24.36	ppb	2.00	25	97.44	
56 Fe	4,797.	ppb	2.54	5,000	95.94	
57 Fe	4,880.	ppb	3.15	5,000	97.6	
59 Co	24.31	ppb	0.59	25	97.24	
60 Ni	24.75	ppb	1.93	25	99	
63 Cu	24.56	ppb	1.44	25	98.24	
65 Cu	24.49	ppb	1.08	25	97.96	
66 Zn	24.6	ppb	0.80	25	98.4	
68 Zn	24.36	ppb	2.35	25	97.44	
75 As	24.31	ppb	1.39	25	97.24	
82 Se	24.83	ppb	1.86	25	99.32	
88 Sr	23.57	ppb	0.87	25	94.28	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.21	ppb	0.64	25	96.84	
107 Ag	24.02	ppb	0.66	25	96.08	
109 Ag	24.08	ppb	0.69	25	96.32	
111 Cd	24.18	ppb	0.50	25	96.72	
114 Cd	24.21	ppb	0.98	25	96.84	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.65	ppb	0.86	25	94.6	
120 Sn	23.76	ppb	1.19	25	95.04	
121 Sb	24.17	ppb	1.19	25	96.68	
123 Sb	24.17	ppb	1.19	25	96.68	
135 Ba	24.56	ppb	0.91	25	98.24	
137 Ba	24.44	ppb	1.01	25	97.76	
182 W	23.61	ppb	1.28	25	94.44	
203 Tl	23.88	ppb	1.72	25	95.52	
205 Tl	23.97	ppb	0.39	25	95.88	
208 Pb	24.01	ppb	1.08	25	96.04	
232 Th	23.84	ppb	1.21	25	95.36	
238 U	24.31	ppb	0.65	25	97.24	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4455268.50	8.86	3927738.80	113.4	80 - 120.4	
45 Sc	2681968.50	5.29	2572658.80	104.2	80 - 120.4	
72 Ge	499503.25	2.54	510197.59	97.9	80 - 120.4	
159 Tb	4630686.00	1.99	4617151.00	100.3	80 - 120.4	
209 Bi	2371178.30	1.66	2380666.00	99.6	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000348

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\087_CCB.D\087_CCB.D#
Date Acquired: May 15 2018 11:45 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0007	ppb	299.17	1.00	
11 B	1.923	ppb	14.93	1.00	
23 Na	1.679	ppb	14.78	1.00	
25 Mg	0.2656	ppb	53.28	1.00	
27 Al	0.101	ppb	78.91	1.00	
28 Si	12.65	ppb	146.96	1.00	
29 Si	-19.07	ppb	113.74	1.00	
39 K	-3.117	ppb	129.16	1.00	
43 Ca	1.085	ppb	182.30	1.00	
44 Ca	1.423	ppb	40.16	1.00	
51 V	0.0333	ppb	206.73	1.00	
52 Cr	-0.0264	ppb	69.51	1.00	
53 Cr	-3.822	ppb	6.51	1.00	
55 Mn	0.0072	ppb	90.07	1.00	
56 Fe	3.78	ppb	104.47	1.00	
57 Fe	0.8781	ppb	323.43	1.00	
59 Co	0.0006	ppb	368.50	1.00	
60 Ni	0.0003	ppb	2013.80	1.00	
63 Cu	0.0773	ppb	6.99	1.00	
65 Cu	0.0703	ppb	18.40	1.00	
66 Zn	0.1202	ppb	44.19	1.00	
68 Zn	-0.1372	ppb	72.46	1.00	
75 As	0.0977	ppb	109.13	1.00	
82 Se	0.0394	ppb	23.60	1.00	
88 Sr	0.0018	ppb	380.58	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0298	ppb	19.05	1.00	
107 Ag	0.002	ppb	91.60	1.00	
109 Ag	0.0006	ppb	142.94	1.00	
111 Cd	0.0215	ppb	77.35	1.00	
114 Cd	0.0006	ppb	140.47	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0561	ppb	9.53	1.00	
120 Sn	0.0561	ppb	11.96	1.00	
121 Sb	0.0069	ppb	43.29	1.00	
123 Sb	0.0119	ppb	26.81	1.00	
135 Ba	0.0281	ppb	35.55	1.00	
137 Ba	0.0126	ppb	68.22	1.00	
182 W	0.0458	ppb	33.16	1.00	
203 Tl	0.0076	ppb	29.49	1.00	
205 Tl	0.005	ppb	83.54	1.00	
208 Pb	0.0004	ppb	1978.40	1.00	
232 Th	0.045	ppb	10.93	1.00	
238 U	0.0017	ppb	75.98	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4213955.50	0.83	3927738.80	107.3	79.5 - 120	
45 Sc	2546516.80	3.97	2572658.80	99.0	79.5 - 120	
72 Ge	481076.63	2.23	510197.59	94.3	79.5 - 120	
159 Tb	4330806.50	1.20	4617151.00	93.8	79.5 - 120	
209 Bi	2268287.00	1.77	2380666.00	95.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000349

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\088SMPL.D\088SMPL.D#
Date Acquired: May 15 2018 11:49 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-046
Misc Info:
Vial Number: 2503
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.48	1.496	ppb	1.47	100.	
11 B	147.4	29.48	ppb	2.76	1000.	
23 Na	8,150.	1,630.	ppb	4.23	200000.	
25 Mg	90,650.	18,130.	ppb	4.17	200000.	
27 Al	176,650.	35,330.	ppb	0.31	200000.	
28 Si	2,864.	572.8	ppb	1.91	#VALUE!	
29 Si	2,746.	549.2	ppb	2.05	10000.	
39 K	45,545.	9,109.	ppb	1.90	200000.	
43 Ca	575,500.	115,100.	ppb	0.72	#VALUE!	
44 Ca	552,500.	110,500.	ppb	0.42	200000.	
51 V	360.25	72.05	ppb	3.94	1000.	
52 Cr	163.95	32.79	ppb	1.02	2000.	
53 Cr	191.95	38.39	ppb	1.44	#VALUE!	
55 Mn	3,810.5	762.1	ppb	1.57	2000.	
56 Fe	155,900.	31,180.	ppb	1.20	#VALUE!	
57 Fe	152,450.	30,490.	ppb	1.56	100000.	
59 Co	68.55	13.71	ppb	0.07	1000.	
60 Ni	137.9	27.58	ppb	0.88	1000.	
63 Cu	97.5	19.5	ppb	0.46	#VALUE!	
65 Cu	100.2	20.04	ppb	1.33	2000.	
66 Zn	381.15	76.23	ppb	1.37	2000.	
68 Zn	453.65	90.73	ppb	1.81	#VALUE!	
75 As	54.1	10.82	ppb	1.21	1000.	
82 Se	4.212	0.8424	ppb	25.02	1000.	
88 Sr	1,587.	317.4	ppb	0.48	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.73	1.346	ppb	1.77	1000.	
107 Ag	0.7425	0.1485	ppb	1.23	100.	
109 Ag	0.596	0.1192	ppb	7.34	#VALUE!	
111 Cd	3.154	0.6308	ppb	5.55	#VALUE!	
114 Cd	0.2651	0.053	ppb	35.47	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.395	9.279	ppb	1.91	1000.	
120 Sn	46.105	9.221	ppb	1.04	#VALUE!	
121 Sb	1.466	0.2932	ppb	2.21	#VALUE!	
123 Sb	1.5235	0.3047	ppb	5.70	1000.	
135 Ba	2,347.	469.4	ppb	0.30	2000.	
137 Ba	2,367.	473.4	ppb	1.11	#VALUE!	
182 W	0.743	0.1486	ppb	3.34	1000.	
203 Tl	2.859	0.5718	ppb	4.14	1000.	
205 Tl	2.8905	0.5781	ppb	3.77	#VALUE!	
208 Pb	115.05	23.01	ppb	1.48	2000.	
232 Th	76.35	15.27	ppb	0.55	1000.	
238 U	13.41	2.682	ppb	1.51	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4410353.00	0.63	3927738.80	112.3	69.5 - 120	
45 Sc	2659870.50	0.99	2572658.80	103.4	69.5 - 120	
72 Ge	489557.81	0.66	510197.59	96.0	69.5 - 120	
159 Tb	4648647.00	0.53	4617151.00	100.7	69.5 - 120	
209 Bi	2315193.30	1.64	2380666.00	97.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000350

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\089SMPL.D\089SMPL.D#
Date Acquired: May 15 2018 11:53 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3809-047
Misc Info:
Vial Number: 2504
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.73	1.546	ppb	6.42	100.	
11 B	141.75	28.35	ppb	7.45	1000.	
23 Na	5,405.	1,081.	ppb	0.52	200000.	
25 Mg	92,800.	18,560.	ppb	3.63	200000.	
27 Al	180,450.	36,090.	ppb	1.93	200000.	
28 Si	3,248.	649.6	ppb	3.17	#VALUE!	
29 Si	3,003.5	600.7	ppb	3.57	10000.	
39 K	46,870.	9,374.	ppb	1.46	200000.	
43 Ca	614,500.	122,900.	ppb	2.61	#VALUE!	
44 Ca	592,500.	118,500.	ppb	2.06	200000.	
51 V	389.45	77.89	ppb	0.51	1000.	
52 Cr	165.05	33.01	ppb	2.18	2000.	
53 Cr	189.95	37.99	ppb	2.12	#VALUE!	
55 Mn	4,699.	939.8	ppb	0.56	2000.	
56 Fe	158,800.	31,760.	ppb	0.55	#VALUE!	
57 Fe	153,550.	30,710.	ppb	1.13	100000.	
59 Co	60.6	12.12	ppb	2.37	1000.	
60 Ni	149.7	29.94	ppb	0.75	1000.	
63 Cu	106.1	21.22	ppb	1.50	#VALUE!	
65 Cu	109.6	21.92	ppb	2.49	2000.	
66 Zn	401.1	80.22	ppb	2.06	2000.	
68 Zn	560.	112.	ppb	1.93	#VALUE!	
75 As	59.55	11.91	ppb	1.59	1000.	
82 Se	4.6945	0.9389	ppb	20.93	1000.	
88 Sr	1,881.	376.2	ppb	1.30	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.82	1.564	ppb	0.96	1000.	
107 Ag	0.779	0.1558	ppb	1.05	100.	
109 Ag	0.582	0.1164	ppb	8.35	#VALUE!	
111 Cd	3.494	0.6988	ppb	3.43	#VALUE!	
114 Cd	0.742	0.1484	ppb	36.95	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.825	9.365	ppb	1.53	1000.	
120 Sn	47.53	9.506	ppb	0.32	#VALUE!	
121 Sb	1.8335	0.3667	ppb	3.77	#VALUE!	
123 Sb	1.781	0.3562	ppb	4.53	1000.	
135 Ba	4,627.	925.4	ppb	1.00	2000.	
137 Ba	4,572.	914.4	ppb	1.70	#VALUE!	
182 W	0.714	0.1428	ppb	9.14	1000.	
203 Tl	3.1305	0.6261	ppb	8.40	1000.	
205 Tl	3.1565	0.6313	ppb	0.69	#VALUE!	
208 Pb	106.8	21.36	ppb	2.01	2000.	
232 Th	80.25	16.05	ppb	2.52	1000.	
238 U	14.17	2.834	ppb	3.01	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4502998.00	6.73	3927738.80	114.6	69.5 - 120	
45 Sc	2692769.50	3.46	2572658.80	104.7	69.5 - 120	
72 Ge	495071.03	2.02	510197.59	97.0	69.5 - 120	
159 Tb	4621974.00	1.03	4617151.00	100.1	69.5 - 120	
209 Bi	2326846.00	1.69	2380666.00	97.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000351

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\090SMPL.D\090SMPL.D#
Date Acquired: May 15 2018 11:57 pm
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2505
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0005	-0.0005	ppb	222.30	100.	
11 B	1.993	1.993	ppb	15.42	1000.	
23 Na	23.52	23.52	ppb	2.72	200000.	
25 Mg	4.608	4.608	ppb	54.19	200000.	
27 Al	5.393	5.393	ppb	57.74	200000.	
28 Si	15.04	15.04	ppb	36.96	#VALUE!	
29 Si	-26.8	-26.8	ppb	20.12	10000.	
39 K	-2.322	-2.322	ppb	29.72	200000.	
43 Ca	23.41	23.41	ppb	76.25	#VALUE!	
44 Ca	20.72	20.72	ppb	56.23	200000.	
51 V	0.0342	0.0342	ppb	21.92	1000.	
52 Cr	-0.0221	-0.0221	ppb	100.68	2000.	
53 Cr	-4.423	-4.423	ppb	4.43	#VALUE!	
55 Mn	0.2021	0.2021	ppb	39.49	2000.	
56 Fe	14.38	14.38	ppb	17.04	#VALUE!	
57 Fe	14.43	14.43	ppb	15.05	100000.	
59 Co	0.011	0.011	ppb	25.66	1000.	
60 Ni	5.936	5.936	ppb	3.00	1000.	
63 Cu	2.6	2.6	ppb	2.31	#VALUE!	
65 Cu	2.557	2.557	ppb	2.20	2000.	
66 Zn	0.7382	0.7382	ppb	7.24	2000.	
68 Zn	0.5131	0.5131	ppb	14.84	#VALUE!	
75 As	-0.0248	-0.0248	ppb	425.00	1000.	
82 Se	0.0052	0.0052	ppb	3309.10	1000.	
88 Sr	0.0503	0.0503	ppb	103.96	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.002	0.002	ppb	109.24	1000.	
107 Ag	0.0012	0.0012	ppb	252.16	100.	
109 Ag	0.0022	0.0022	ppb	52.11	#VALUE!	
111 Cd	-0.0015	-0.0015	ppb	1015.70	#VALUE!	
114 Cd	0.0025	0.0025	ppb	69.87	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0594	0.0594	ppb	36.96	1000.	
120 Sn	0.0421	0.0421	ppb	19.21	#VALUE!	
121 Sb	0.0035	0.0035	ppb	107.94	#VALUE!	
123 Sb	0.0078	0.0078	ppb	76.26	1000.	
135 Ba	0.2743	0.2743	ppb	31.82	2000.	
137 Ba	0.2717	0.2717	ppb	35.71	#VALUE!	
182 W	0.0028	0.0028	ppb	88.20	1000.	
203 Tl	0.0054	0.0054	ppb	108.22	1000.	
205 Tl	0.0043	0.0043	ppb	94.23	#VALUE!	
208 Pb	0.1476	0.1476	ppb	10.14	2000.	
232 Th	0.0122	0.0122	ppb	55.13	1000.	
238 U	0.0023	0.0023	ppb	10.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4437903.00	1.75	3927738.80	113.0	69.5 - 120	
45 Sc	2581895.00	0.63	2572658.80	100.4	69.5 - 120	
72 Ge	494122.44	1.06	510197.59	96.8	69.5 - 120	
159 Tb	4450450.00	1.47	4617151.00	96.4	69.5 - 120	
209 Bi	2311888.80	0.75	2380666.00	97.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000352

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\091SMPL.D\091SMPL.D#
Date Acquired: May 16 2018 12:02 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: PBWLE07IMW2
Misc Info:
Vial Number: 2506
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0046	-0.0009	ppb	51.42	100.	
11 B	5.315	1.063	ppb	0.95	1000.	
23 Na	8.785	1.757	ppb	3.07	200000.	
25 Mg	10.115	2.023	ppb	6.85	200000.	
27 Al	6.975	1.395	ppb	4.35	200000.	
28 Si	-35.495	-7.099	ppb	216.37	#VALUE!	
29 Si	-233.5	-46.7	ppb	47.52	10000.	
39 K	-50.75	-10.15	ppb	31.76	200000.	
43 Ca	-7.865	-1.573	ppb	82.20	#VALUE!	
44 Ca	7.575	1.515	ppb	98.48	200000.	
51 V	0.0582	0.0116	ppb	278.87	1000.	
52 Cr	-0.1255	-0.0251	ppb	101.35	2000.	
53 Cr	-13.635	-2.727	ppb	10.94	#VALUE!	
55 Mn	0.0819	0.0164	ppb	60.39	2000.	
56 Fe	-22.93	-4.586	ppb	137.61	#VALUE!	
57 Fe	0.7885	0.1577	ppb	1632.80	100000.	
59 Co	0.007	0.0014	ppb	133.31	1000.	
60 Ni	0.0024	0.0005	ppb	1456.50	1000.	
63 Cu	0.366	0.0732	ppb	12.29	#VALUE!	
65 Cu	0.454	0.0908	ppb	10.90	2000.	
66 Zn	0.2762	0.0552	ppb	131.28	2000.	
68 Zn	-0.6915	-0.1383	ppb	36.55	#VALUE!	
75 As	-0.0707	-0.0141	ppb	1547.40	1000.	
82 Se	0.2692	0.0538	ppb	351.60	1000.	
88 Sr	0.0219	0.0044	ppb	20.87	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	-0.0068	-0.0014	ppb	155.30	1000.	
107 Ag	0.0022	0.0004	ppb	824.51	100.	
109 Ag	0.0011	0.0002	ppb	955.68	#VALUE!	
111 Cd	0.0304	0.0061	ppb	94.58	#VALUE!	
114 Cd	0.0002	0.	ppb	3825.60	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0977	0.0195	ppb	40.00	1000.	
120 Sn	0.0774	0.0155	ppb	61.08	#VALUE!	
121 Sb	-0.0244	-0.0049	ppb	30.52	#VALUE!	
123 Sb	0.002	0.0004	ppb	371.65	1000.	
135 Ba	0.0523	0.0105	ppb	151.77	2000.	
137 Ba	0.0102	0.002	ppb	160.21	#VALUE!	
182 W	0.012	0.0024	ppb	107.21	1000.	
203 Tl	0.0224	0.0045	ppb	74.91	1000.	
205 Tl	0.0098	0.002	ppb	151.94	#VALUE!	
208 Pb	-0.0057	-0.0011	ppb	986.82	2000.	
232 Th	0.0355	0.0071	ppb	34.94	1000.	
238 U	-0.0016	-0.0003	ppb	81.99	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4667728.00	3.49	3927738.80	118.8	69.5 - 120	
45 Sc	2774649.30	4.74	2572658.80	107.9	69.5 - 120	
72 Ge	511732.56	3.72	510197.59	100.3	69.5 - 120	
159 Tb	4529257.00	2.05	4617151.00	98.1	69.5 - 120	
209 Bi	2328603.00	1.81	2380666.00	97.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000353

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\092SMPL.D\092SMPL.D#
Date Acquired: May 16 2018 12:06 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: LCSWLE07IMW2
Misc Info:
Vial Number: 2507
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	45.135	9.027	ppb	2.45	100.	
11 B	475.05	95.01	ppb	6.33	1000.	
23 Na	7,665.	1,533.	ppb	1.73	200000.	
25 Mg	5,295.	1,059.	ppb	1.36	200000.	
27 Al	2,099.	419.8	ppb	1.65	200000.	
28 Si	1,033.5	206.7	ppb	2.80	#VALUE!	
29 Si	854.	170.8	ppb	3.51	10000.	
39 K	9,955.	1,991.	ppb	0.92	200000.	
43 Ca	3,045.5	609.1	ppb	2.88	#VALUE!	
44 Ca	2,585.5	517.1	ppb	3.15	200000.	
51 V	528.5	105.7	ppb	0.92	1000.	
52 Cr	205.9	41.18	ppb	0.58	2000.	
53 Cr	245.85	49.17	ppb	0.97	#VALUE!	
55 Mn	517.	103.4	ppb	0.42	2000.	
56 Fe	1,061.5	212.3	ppb	2.72	#VALUE!	
57 Fe	1,039.5	207.9	ppb	2.73	100000.	
59 Co	528.5	105.7	ppb	0.66	1000.	
60 Ni	519.5	103.9	ppb	1.45	1000.	
63 Cu	253.55	50.71	ppb	0.75	#VALUE!	
65 Cu	257.2	51.44	ppb	0.81	2000.	
66 Zn	496.25	99.25	ppb	1.44	2000.	
68 Zn	563.	112.6	ppb	0.90	#VALUE!	
75 As	100.95	20.19	ppb	1.11	1000.	
82 Se	99.6	19.92	ppb	0.51	1000.	
88 Sr	497.95	99.59	ppb	0.38	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.1	20.22	ppb	0.67	1000.	
107 Ag	51.55	10.31	ppb	0.67	100.	
109 Ag	51.25	10.25	ppb	0.92	#VALUE!	
111 Cd	247.9	49.58	ppb	0.73	#VALUE!	
114 Cd	248.7	49.74	ppb	0.86	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	501.	100.2	ppb	0.69	1000.	
120 Sn	497.2	99.44	ppb	0.94	#VALUE!	
121 Sb	100.	20.	ppb	1.29	#VALUE!	
123 Sb	100.15	20.03	ppb	0.84	1000.	
135 Ba	2,052.	410.4	ppb	0.71	2000.	
137 Ba	2,058.	411.6	ppb	0.59	#VALUE!	
182 W	103.	20.6	ppb	0.73	1000.	
203 Tl	101.5	20.3	ppb	0.98	1000.	
205 Tl	102.55	20.51	ppb	0.41	#VALUE!	
208 Pb	102.5	20.5	ppb	0.61	2000.	
232 Th	102.5	20.5	ppb	1.40	1000.	
238 U	104.3	20.86	ppb	1.00	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4620347.50	2.65	3927738.80	117.6	69.5 - 120	
45 Sc	2559969.30	0.65	2572658.80	99.5	69.5 - 120	
72 Ge	480408.59	0.65	510197.59	94.2	69.5 - 120	
159 Tb	4481469.50	0.37	4617151.00	97.1	69.5 - 120	
209 Bi	2351315.50	0.79	2380666.00	98.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000354

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\093SMPL.D\093SMPL.D#
Date Acquired: May 16 2018 12:10 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-002
Misc Info:
Vial Number: 2508
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.4268	0.0854	ppb	5.19	100.	
11 B	519.	103.8	ppb	1.53	1000.	
23 Na	200,050.	40,010.	ppb	0.64	200000.	
25 Mg	40,970.	8,194.	ppb	1.32	200000.	
27 Al	7,375.	1,475.	ppb	1.01	200000.	
28 Si	32,730.	6,546.	ppb	1.36	#VALUE!	
29 Si	35,265.	7,053.	ppb	2.63	10000.	
39 K	16,410.	3,282.	ppb	2.09	200000.	
43 Ca	267,650.	53,530.	ppb	0.92	#VALUE!	
44 Ca	249,650.	49,930.	ppb	0.10	200000.	
51 V	20.79	4.158	ppb	6.63	1000.	
52 Cr	46.145	9.229	ppb	0.83	2000.	
53 Cr	68.8	13.76	ppb	4.82	#VALUE!	
55 Mn	1,166.5	233.3	ppb	0.88	2000.	
56 Fe	14,725.	2,945.	ppb	1.23	#VALUE!	
57 Fe	15,075.	3,015.	ppb	1.29	100000.	
59 Co	3.6425	0.7285	ppb	5.54	1000.	
60 Ni	17.84	3.568	ppb	0.87	1000.	
63 Cu	38.265	7.653	ppb	1.30	#VALUE!	
65 Cu	33.65	6.73	ppb	1.16	2000.	
66 Zn	83.75	16.75	ppb	0.95	2000.	
68 Zn	88.1	17.62	ppb	0.49	#VALUE!	
75 As	24.66	4.932	ppb	1.96	1000.	
82 Se	2.812	0.5624	ppb	57.72	1000.	
88 Sr	1,005.	201.	ppb	0.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	19.74	3.948	ppb	1.96	1000.	
107 Ag	0.0425	0.0085	ppb	6.93	100.	
109 Ag	0.0516	0.0103	ppb	36.43	#VALUE!	
111 Cd	0.6735	0.1347	ppb	23.85	#VALUE!	
114 Cd	0.5765	0.1153	ppb	2.73	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.434	0.2868	ppb	4.61	1000.	
120 Sn	1.439	0.2878	ppb	6.77	#VALUE!	
121 Sb	0.512	0.1024	ppb	3.17	#VALUE!	
123 Sb	0.629	0.1258	ppb	2.78	1000.	
135 Ba	272.4	54.48	ppb	1.26	2000.	
137 Ba	272.65	54.53	ppb	1.08	#VALUE!	
182 W	0.4321	0.0864	ppb	13.23	1000.	
203 Tl	0.0987	0.0197	ppb	50.99	1000.	
205 Tl	0.1145	0.0229	ppb	18.98	#VALUE!	
208 Pb	26.32	5.264	ppb	1.00	2000.	
232 Th	9.555	1.911	ppb	2.16	1000.	
238 U	3.84	0.768	ppb	2.05	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4444194.50	1.43	3927738.80	113.1	69.5 - 120	
45 Sc	2608765.80	1.06	2572658.80	101.4	69.5 - 120	
72 Ge	494610.78	0.44	510197.59	96.9	69.5 - 120	
159 Tb	4614964.00	0.78	4617151.00	100.0	69.5 - 120	
209 Bi	2372277.50	2.22	2380666.00	99.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000355

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\094SMPL.D\094SMPL.D#
Date Acquired: May 16 2018 12:14 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-003
Misc Info:
Vial Number: 2509
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0001	0.	ppb	7974.90	100.	
11 B	501.	100.2	ppb	3.67	1000.	
23 Na	188,850.	37,770.	ppb	0.86	200000.	
25 Mg	37,255.	7,451.	ppb	2.67	200000.	
27 Al	11.65	2.33	ppb	5.90	200000.	
28 Si	18,805.	3,761.	ppb	2.72	#VALUE!	
29 Si	20,400.	4,080.	ppb	2.26	10000.	
39 K	13,685.	2,737.	ppb	1.46	200000.	
43 Ca	224,400.	44,880.	ppb	2.42	#VALUE!	
44 Ca	211,950.	42,390.	ppb	2.06	200000.	
51 V	1.0775	0.2155	ppb	38.52	1000.	
52 Cr	2.33	0.466	ppb	1.51	2000.	
53 Cr	42.53	8.506	ppb	18.63	#VALUE!	
55 Mn	770.5	154.1	ppb	0.51	2000.	
56 Fe	2,777.5	555.5	ppb	0.56	#VALUE!	
57 Fe	2,988.	597.6	ppb	1.59	100000.	
59 Co	0.4648	0.093	ppb	8.10	1000.	
60 Ni	5.19	1.038	ppb	5.93	1000.	
63 Cu	6.47	1.294	ppb	1.64	#VALUE!	
65 Cu	0.8405	0.1681	ppb	7.28	2000.	
66 Zn	14.97	2.994	ppb	3.77	2000.	
68 Zn	14.845	2.969	ppb	3.87	#VALUE!	
75 As	18.775	3.755	ppb	4.14	1000.	
82 Se	1.122	0.2244	ppb	53.79	1000.	
88 Sr	880.5	176.1	ppb	0.28	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	13.03	2.606	ppb	0.32	1000.	
107 Ag	0.0023	0.0005	ppb	368.87	100.	
109 Ag	0.004	0.0008	ppb	182.58	#VALUE!	
111 Cd	0.0177	0.0035	ppb	899.04	#VALUE!	
114 Cd	0.0138	0.0028	ppb	129.52	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.911	0.1822	ppb	8.54	1000.	
120 Sn	0.892	0.1784	ppb	19.20	#VALUE!	
121 Sb	0.0989	0.0198	ppb	20.28	#VALUE!	
123 Sb	0.1025	0.0205	ppb	27.41	1000.	
135 Ba	36.275	7.255	ppb	2.47	2000.	
137 Ba	37.135	7.427	ppb	1.11	#VALUE!	
182 W	0.2874	0.0575	ppb	14.16	1000.	
203 Tl	0.0107	0.0021	ppb	332.40	1000.	
205 Tl	-0.0021	-0.0004	ppb	1314.10	#VALUE!	
208 Pb	-0.224	-0.0448	ppb	19.08	2000.	
232 Th	0.2106	0.0421	ppb	13.35	1000.	
238 U	1.4405	0.2881	ppb	2.97	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4364891.00	3.56	3927738.80	111.1	69.5 - 120	
45 Sc	2610562.80	1.04	2572658.80	101.5	69.5 - 120	
72 Ge	499752.25	0.55	510197.59	98.0	69.5 - 120	
159 Tb	4593432.00	1.14	4617151.00	99.5	69.5 - 120	
209 Bi	2364889.80	1.74	2380666.00	99.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000356

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\095SMPL.D\095SMPL.D#
Date Acquired: May 16 2018 12:18 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-004
Misc Info:
Vial Number: 2510
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.594	0.1188	ppb	8.22	100.	
11 B	223.05	44.61	ppb	2.25	1000.	
23 Na	300,400.	60,080.	ppb	0.94	200000.	
25 Mg	74,500.	14,900.	ppb	1.38	200000.	
27 Al	14,815.	2,963.	ppb	0.41	200000.	
28 Si	46,035.	9,207.	ppb	1.29	#VALUE!	
29 Si	48,095.	9,619.	ppb	0.66	10000.	
39 K	21,260.	4,252.	ppb	0.54	200000.	
43 Ca	390,300.	78,060.	ppb	0.45	#VALUE!	
44 Ca	367,800.	73,560.	ppb	1.42	200000.	
51 V	37.99	7.598	ppb	0.77	1000.	
52 Cr	57.85	11.57	ppb	0.24	2000.	
53 Cr	90.05	18.01	ppb	2.77	#VALUE!	
55 Mn	1,469.5	293.9	ppb	0.46	2000.	
56 Fe	24,000.	4,800.	ppb	0.93	#VALUE!	
57 Fe	25,005.	5,001.	ppb	0.84	100000.	
59 Co	7.655	1.531	ppb	2.21	1000.	
60 Ni	26.565	5.313	ppb	1.35	1000.	
63 Cu	40.645	8.129	ppb	2.85	#VALUE!	
65 Cu	31.83	6.366	ppb	1.49	2000.	
66 Zn	170.2	34.04	ppb	1.42	2000.	
68 Zn	168.85	33.77	ppb	2.04	#VALUE!	
75 As	11.7	2.34	ppb	10.28	1000.	
82 Se	2.2625	0.4525	ppb	22.41	1000.	
88 Sr	1,585.	317.	ppb	0.58	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	23.505	4.701	ppb	2.38	1000.	
107 Ag	0.0571	0.0114	ppb	15.18	100.	
109 Ag	0.0584	0.0117	ppb	23.92	#VALUE!	
111 Cd	0.448	0.0896	ppb	37.83	#VALUE!	
114 Cd	0.0623	0.0125	ppb	22.87	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.881	0.3762	ppb	5.39	1000.	
120 Sn	1.915	0.383	ppb	4.96	#VALUE!	
121 Sb	0.506	0.1012	ppb	9.69	#VALUE!	
123 Sb	0.5815	0.1163	ppb	4.30	1000.	
135 Ba	261.25	52.25	ppb	1.63	2000.	
137 Ba	260.2	52.04	ppb	2.23	#VALUE!	
182 W	0.6365	0.1273	ppb	5.78	1000.	
203 Tl	0.2493	0.0499	ppb	24.71	1000.	
205 Tl	0.2288	0.0458	ppb	7.61	#VALUE!	
208 Pb	23.14	4.628	ppb	1.17	2000.	
232 Th	12.295	2.459	ppb	1.78	1000.	
238 U	3.115	0.623	ppb	4.03	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4483115.50	4.14	3927738.80	114.1	69.5 - 120	
45 Sc	2641637.30	0.73	2572658.80	102.7	69.5 - 120	
72 Ge	493594.00	0.67	510197.59	96.7	69.5 - 120	
159 Tb	4590848.00	1.31	4617151.00	99.4	69.5 - 120	
209 Bi	2297563.30	1.24	2380666.00	96.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000357

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\096SMPL.D\096SMPL.D#
Date Acquired: May 16 2018 12:23 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-005
Misc Info:
Vial Number: 2511
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0072	0.0014	ppb	56.97	100.	
11 B	223.4	44.68	ppb	3.61	1000.	
23 Na	322,350.	64,470.	ppb	1.59	200000.	
25 Mg	72,800.	14,560.	ppb	0.23	200000.	
27 Al	10.365	2.073	ppb	8.61	200000.	
28 Si	19,560.	3,912.	ppb	1.59	#VALUE!	
29 Si	21,930.	4,386.	ppb	2.16	10000.	
39 K	18,025.	3,605.	ppb	1.67	200000.	
43 Ca	393,100.	78,620.	ppb	2.22	#VALUE!	
44 Ca	364,050.	72,810.	ppb	1.37	200000.	
51 V	0.8705	0.1741	ppb	30.17	1000.	
52 Cr	2.188	0.4376	ppb	8.44	2000.	
53 Cr	54.8	10.96	ppb	12.30	#VALUE!	
55 Mn	1,349.5	269.9	ppb	0.47	2000.	
56 Fe	7,125.	1,425.	ppb	1.12	#VALUE!	
57 Fe	7,560.	1,512.	ppb	0.79	100000.	
59 Co	0.606	0.1212	ppb	9.97	1000.	
60 Ni	3.824	0.7648	ppb	3.54	1000.	
63 Cu	10.18	2.036	ppb	0.93	#VALUE!	
65 Cu	1.674	0.3348	ppb	3.74	2000.	
66 Zn	25.905	5.181	ppb	2.24	2000.	
68 Zn	22.73	4.546	ppb	1.26	#VALUE!	
75 As	9.295	1.859	ppb	7.88	1000.	
82 Se	1.463	0.2926	ppb	93.54	1000.	
88 Sr	1,516.5	303.3	ppb	0.46	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	12.355	2.471	ppb	0.24	1000.	
107 Ag	0.0038	0.0008	ppb	121.03	100.	
109 Ag	-0.0064	-0.0013	ppb	133.41	#VALUE!	
111 Cd	0.146	0.0292	ppb	34.06	#VALUE!	
114 Cd	-0.0049	-0.001	ppb	253.65	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.9845	0.1969	ppb	9.35	1000.	
120 Sn	0.8865	0.1773	ppb	6.18	#VALUE!	
121 Sb	0.0994	0.0199	ppb	40.23	#VALUE!	
123 Sb	0.1318	0.0264	ppb	23.10	1000.	
135 Ba	33.66	6.732	ppb	1.24	2000.	
137 Ba	33.595	6.719	ppb	0.92	#VALUE!	
182 W	0.2137	0.0427	ppb	23.96	1000.	
203 Tl	-0.001	-0.0002	ppb	1142.60	1000.	
205 Tl	0.0083	0.0017	ppb	169.95	#VALUE!	
208 Pb	-0.2604	-0.0521	ppb	12.65	2000.	
232 Th	0.1204	0.0241	ppb	13.40	1000.	
238 U	0.8605	0.1721	ppb	3.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4518127.50	2.05	3927738.80	115.0	69.5 - 120	
45 Sc	2657941.50	0.61	2572658.80	103.3	69.5 - 120	
72 Ge	505553.94	0.12	510197.59	99.1	69.5 - 120	
159 Tb	4584096.00	0.55	4617151.00	99.3	69.5 - 120	
209 Bi	2302794.30	1.19	2380666.00	96.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000358

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\097SMPL.D\097SMPL.D#
Date Acquired: May 16 2018 12:27 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2512
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0002	-0.0002	ppb	190.18	100.	
11 B	2.995	2.995	ppb	10.36	1000.	
23 Na	7.913	7.913	ppb	20.25	200000.	
25 Mg	1.399	1.399	ppb	30.82	200000.	
27 Al	1.461	1.461	ppb	5.61	200000.	
28 Si	3.025	3.025	ppb	433.39	#VALUE!	
29 Si	-3.944	-3.944	ppb	409.23	10000.	
39 K	-1.537	-1.537	ppb	203.19	200000.	
43 Ca	-0.2565	-0.2565	ppb	952.05	#VALUE!	
44 Ca	4.057	4.057	ppb	55.83	200000.	
51 V	-0.0038	-0.0038	ppb	1153.40	1000.	
52 Cr	-0.0191	-0.0191	ppb	165.86	2000.	
53 Cr	-0.2955	-0.2955	ppb	114.11	#VALUE!	
55 Mn	0.0552	0.0552	ppb	5.32	2000.	
56 Fe	1.599	1.599	ppb	252.78	#VALUE!	
57 Fe	5.37	5.37	ppb	24.82	100000.	
59 Co	-0.0002	-0.0002	ppb	1132.10	1000.	
60 Ni	0.01	0.01	ppb	31.53	1000.	
63 Cu	0.2213	0.2213	ppb	8.97	#VALUE!	
65 Cu	0.2167	0.2167	ppb	10.63	2000.	
66 Zn	0.2438	0.2438	ppb	37.30	2000.	
68 Zn	0.0207	0.0207	ppb	233.22	#VALUE!	
75 As	0.1462	0.1462	ppb	68.27	1000.	
82 Se	0.1821	0.1821	ppb	178.03	1000.	
88 Sr	0.0127	0.0127	ppb	37.95	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0033	0.0033	ppb	74.30	1000.	
107 Ag	-0.0013	-0.0013	ppb	72.65	100.	
109 Ag	0.0018	0.0018	ppb	132.31	#VALUE!	
111 Cd	0.0861	0.0861	ppb	27.86	#VALUE!	
114 Cd	-0.0008	-0.0008	ppb	140.89	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0378	0.0378	ppb	31.60	1000.	
120 Sn	0.0436	0.0436	ppb	59.52	#VALUE!	
121 Sb	0.0006	0.0006	ppb	94.75	#VALUE!	
123 Sb	0.0029	0.0029	ppb	139.54	1000.	
135 Ba	0.1035	0.1035	ppb	6.09	2000.	
137 Ba	0.0792	0.0792	ppb	20.95	#VALUE!	
182 W	0.	0.	ppb	14761.00	1000.	
203 Tl	0.0126	0.0126	ppb	6.56	1000.	
205 Tl	0.0063	0.0063	ppb	84.76	#VALUE!	
208 Pb	0.1258	0.1258	ppb	13.16	2000.	
232 Th	0.0012	0.0012	ppb	133.67	1000.	
238 U	-0.0003	-0.0003	ppb	141.98	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4440769.50	3.93	3927738.80	113.1	69.5 - 120	
45 Sc	2636748.80	2.75	2572658.80	102.5	69.5 - 120	
72 Ge	493395.44	2.46	510197.59	96.7	69.5 - 120	
159 Tb	4386238.00	1.83	4617151.00	95.0	69.5 - 120	
209 Bi	2321804.50	0.89	2380666.00	97.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000359

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\098_CCV.D\098_CCV.D#
Date Acquired: May 16 2018 12:31 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	22.92	ppb	1.10	25	91.68	
11 B	23.35	ppb	4.02	25	93.4	
23 Na	5,041.	ppb	2.29	5,000	100.82	
25 Mg	5,096.	ppb	2.98	5,000	101.92	
27 Al	507.3	ppb	2.17	500	101.46	
28 Si	500.1	ppb	2.10	500	100.02	
29 Si	476.8	ppb	4.70	500	95.36	
39 K	4,851.	ppb	2.85	5,000	97.02	
43 Ca	4,894.	ppb	1.79	5,000	97.88	
44 Ca	4,954.	ppb	1.07	5,000	99.08	
51 V	24.42	ppb	0.31	25	97.68	
52 Cr	24.74	ppb	1.18	25	98.96	
53 Cr	23.64	ppb	2.93	25	94.56	
55 Mn	24.28	ppb	0.25	25	97.12	
56 Fe	4,766.	ppb	1.25	5,000	95.32	
57 Fe	4,902.	ppb	1.43	5,000	98.04	
59 Co	24.32	ppb	0.69	25	97.28	
60 Ni	24.47	ppb	0.58	25	97.88	
63 Cu	24.18	ppb	1.01	25	96.72	
65 Cu	24.5	ppb	0.63	25	98	
66 Zn	24.1	ppb	1.96	25	96.4	
68 Zn	24.22	ppb	0.54	25	96.88	
75 As	24.39	ppb	1.24	25	97.56	
82 Se	24.55	ppb	0.89	25	98.2	
88 Sr	23.49	ppb	1.12	25	93.96	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.88	ppb	0.67	25	95.52	
107 Ag	23.76	ppb	0.89	25	95.04	
109 Ag	23.73	ppb	0.32	25	94.92	
111 Cd	23.61	ppb	0.39	25	94.44	
114 Cd	23.73	ppb	0.63	25	94.92	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.56	ppb	1.57	25	94.24	
120 Sn	23.56	ppb	1.34	25	94.24	
121 Sb	23.95	ppb	1.59	25	95.8	
123 Sb	24.1	ppb	2.13	25	96.4	
135 Ba	24.5	ppb	0.26	25	98	
137 Ba	24.65	ppb	1.05	25	98.6	
182 W	23.73	ppb	1.20	25	94.92	
203 Tl	23.69	ppb	1.87	25	94.76	
205 Tl	23.91	ppb	1.12	25	95.64	
208 Pb	23.86	ppb	1.24	25	95.44	
232 Th	23.9	ppb	1.95	25	95.6	
238 U	24.36	ppb	1.09	25	97.44	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4715299.50	2.14	3927738.80	120.1	80 - 120.4	
45 Sc	2685533.80	1.64	2572658.80	104.4	80 - 120.4	
72 Ge	497554.81	1.83	510197.59	97.5	80 - 120.4	
159 Tb	4559555.50	0.34	4617151.00	98.8	80 - 120.4	
209 Bi	2362709.30	0.70	2380666.00	99.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\099_CCB.D\099_CCB.D#
Date Acquired: May 16 2018 12:35 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0004	ppb	227.64	1.00	
11 B	2.328	ppb	14.26	1.00	
23 Na	2.875	ppb	3.88	1.00	
25 Mg	0.2228	ppb	78.91	1.00	
27 Al	0.0552	ppb	91.03	1.00	
28 Si	-2.298	ppb	360.27	1.00	
29 Si	-9.591	ppb	99.96	1.00	
39 K	-2.264	ppb	25.52	1.00	
43 Ca	-1.084	ppb	197.88	1.00	
44 Ca	0.4531	ppb	144.93	1.00	
51 V	0.0461	ppb	34.63	1.00	
52 Cr	-0.0384	ppb	38.49	1.00	
53 Cr	-3.598	ppb	0.42	1.00	
55 Mn	0.0103	ppb	6.09	1.00	
56 Fe	-0.4778	ppb	348.89	1.00	
57 Fe	2.163	ppb	34.79	1.00	
59 Co	0.0006	ppb	247.49	1.00	
60 Ni	0.0024	ppb	428.10	1.00	
63 Cu	0.0392	ppb	50.18	1.00	
65 Cu	0.0477	ppb	18.23	1.00	
66 Zn	0.0819	ppb	96.18	1.00	
68 Zn	-0.1275	ppb	29.90	1.00	
75 As	0.1627	ppb	25.80	1.00	
82 Se	0.2142	ppb	62.70	1.00	
88 Sr	0.0001	ppb	4783.00	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0182	ppb	10.19	1.00	
107 Ag	0.0019	ppb	91.26	1.00	
109 Ag	0.0027	ppb	115.48	1.00	
111 Cd	0.0756	ppb	20.59	1.00	
114 Cd	0.0015	ppb	526.93	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0488	ppb	20.77	1.00	
120 Sn	0.0394	ppb	10.70	1.00	
121 Sb	0.0077	ppb	69.42	1.00	
123 Sb	0.0136	ppb	30.36	1.00	
135 Ba	0.0073	ppb	77.51	1.00	
137 Ba	0.0053	ppb	34.86	1.00	
182 W	0.0459	ppb	40.68	1.00	
203 Tl	0.0108	ppb	10.84	1.00	
205 Tl	0.0016	ppb	194.14	1.00	
208 Pb	-0.004	ppb	22.24	1.00	
232 Th	0.054	ppb	13.94	1.00	
238 U	0.0016	ppb	78.68	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4397487.50	5.46	3927738.80	112.0	79.5 - 120	
45 Sc	2609395.50	0.31	2572658.80	101.4	79.5 - 120	
72 Ge	482523.00	0.89	510197.59	94.6	79.5 - 120	
159 Tb	4330353.50	1.06	4617151.00	93.8	79.5 - 120	
209 Bi	2285600.50	0.45	2380666.00	96.0	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\100SMPL.D\100SMPL.D#
Date Acquired: May 16 2018 12:39 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-006
Misc Info:
Vial Number: 3101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.1473	0.0295	ppb	21.47	100.	
11 B	202.3	40.46	ppb	2.48	1000.	
23 Na	301,700.	60,340.	ppb	2.76	200000.	
25 Mg	68,500.	13,700.	ppb	3.64	200000.	
27 Al	3,417.	683.4	ppb	2.09	200000.	
28 Si	27,300.	5,460.	ppb	0.99	#VALUE!	
29 Si	29,295.	5,859.	ppb	0.13	10000.	
39 K	17,355.	3,471.	ppb	1.62	200000.	
43 Ca	376,050.	75,210.	ppb	2.86	#VALUE!	
44 Ca	355,500.	71,100.	ppb	2.42	200000.	
51 V	9.28	1.856	ppb	4.85	1000.	
52 Cr	30.17	6.034	ppb	0.95	2000.	
53 Cr	63.4	12.68	ppb	8.94	#VALUE!	
55 Mn	1,377.	275.4	ppb	1.33	2000.	
56 Fe	9,895.	1,979.	ppb	0.92	#VALUE!	
57 Fe	10,455.	2,091.	ppb	1.13	100000.	
59 Co	2.175	0.435	ppb	3.90	1000.	
60 Ni	13.86	2.772	ppb	3.19	1000.	
63 Cu	17.325	3.465	ppb	2.36	#VALUE!	
65 Cu	9.24	1.848	ppb	2.20	2000.	
66 Zn	46.915	9.383	ppb	1.18	2000.	
68 Zn	44.385	8.877	ppb	1.64	#VALUE!	
75 As	10.165	2.033	ppb	17.44	1000.	
82 Se	2.58	0.516	ppb	29.61	1000.	
88 Sr	1,480.5	296.1	ppb	0.84	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	14.325	2.865	ppb	0.95	1000.	
107 Ag	0.0298	0.006	ppb	45.02	100.	
109 Ag	0.0208	0.0042	ppb	24.56	#VALUE!	
111 Cd	0.3422	0.0684	ppb	8.97	#VALUE!	
114 Cd	0.0003	0.0001	ppb	7538.40	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.137	0.2274	ppb	3.95	1000.	
120 Sn	1.071	0.2142	ppb	4.36	#VALUE!	
121 Sb	0.1677	0.0335	ppb	8.76	#VALUE!	
123 Sb	0.2275	0.0455	ppb	24.62	1000.	
135 Ba	83.7	16.74	ppb	0.28	2000.	
137 Ba	82.75	16.55	ppb	0.90	#VALUE!	
182 W	0.3749	0.075	ppb	7.53	1000.	
203 Tl	0.0265	0.0053	ppb	91.38	1000.	
205 Tl	0.0631	0.0126	ppb	18.15	#VALUE!	
208 Pb	5.71	1.142	ppb	1.23	2000.	
232 Th	2.973	0.5946	ppb	2.74	1000.	
238 U	1.397	0.2794	ppb	3.52	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4648919.50	1.66	3927738.80	118.4	69.5 - 120	
45 Sc	2701578.00	1.44	2572658.80	105.0	69.5 - 120	
72 Ge	502467.78	0.77	510197.59	98.5	69.5 - 120	
159 Tb	4508571.00	0.61	4617151.00	97.6	69.5 - 120	
209 Bi	2255514.50	1.77	2380666.00	94.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000362

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\101SMPL.D\101SMPL.D#
Date Acquired: May 16 2018 12:43 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-008
Misc Info:
Vial Number: 3102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	1.6585	0.3317	ppb	12.84	100.	
11 B	474.4	94.88	ppb	3.46	1000.	
23 Na	195,850.	39,170.	ppb	1.65	200000.	
25 Mg	41,300.	8,260.	ppb	3.50	200000.	
27 Al	34,805.	6,961.	ppb	1.69	200000.	
28 Si	75,700.	15,140.	ppb	1.48	#VALUE!	
29 Si	78,400.	15,680.	ppb	2.22	10000.	>LDR
39 K	21,160.	4,232.	ppb	2.91	200000.	
43 Ca	239,850.	47,970.	ppb	2.05	#VALUE!	
44 Ca	227,750.	45,550.	ppb	0.27	200000.	
51 V	115.05	23.01	ppb	1.86	1000.	
52 Cr	134.85	26.97	ppb	1.94	2000.	
53 Cr	159.7	31.94	ppb	0.66	#VALUE!	
55 Mn	1,097.	219.4	ppb	0.94	2000.	
56 Fe	43,975.	8,795.	ppb	0.58	#VALUE!	
57 Fe	44,235.	8,847.	ppb	0.64	100000.	
59 Co	17.78	3.556	ppb	4.39	1000.	
60 Ni	61.25	12.25	ppb	1.52	1000.	
63 Cu	57.8	11.56	ppb	1.05	#VALUE!	
65 Cu	52.65	10.53	ppb	2.76	2000.	
66 Zn	153.45	30.69	ppb	0.95	2000.	
68 Zn	169.7	33.94	ppb	1.09	#VALUE!	
75 As	23.06	4.612	ppb	2.12	1000.	
82 Se	2.4005	0.4801	ppb	9.05	1000.	
88 Sr	934.	186.8	ppb	0.47	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	24.385	4.877	ppb	1.48	1000.	
107 Ag	0.1312	0.0262	ppb	23.01	100.	
109 Ag	0.1059	0.0212	ppb	8.26	#VALUE!	
111 Cd	0.6965	0.1393	ppb	30.88	#VALUE!	
114 Cd	0.3255	0.0651	ppb	3.49	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.3775	0.4755	ppb	2.94	1000.	
120 Sn	2.5225	0.5045	ppb	0.99	#VALUE!	
121 Sb	0.951	0.1902	ppb	7.96	#VALUE!	
123 Sb	0.941	0.1882	ppb	6.51	1000.	
135 Ba	564.5	112.9	ppb	2.09	2000.	
137 Ba	561.	112.2	ppb	1.91	#VALUE!	
182 W	0.3692	0.0738	ppb	11.41	1000.	
203 Tl	0.5585	0.1117	ppb	4.35	1000.	
205 Tl	0.5965	0.1193	ppb	8.55	#VALUE!	
208 Pb	47.285	9.457	ppb	1.43	2000.	
232 Th	22.625	4.525	ppb	1.76	1000.	
238 U	5.105	1.021	ppb	0.43	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4267954.00	6.07	3927738.80	108.7	69.5 - 120	
45 Sc	2618732.50	0.53	2572658.80	101.8	69.5 - 120	
72 Ge	485829.50	0.12	510197.59	95.2	69.5 - 120	
159 Tb	4546969.50	1.25	4617151.00	98.5	69.5 - 120	
209 Bi	2343463.00	1.06	2380666.00	98.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000363

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\102SMPL.D\102SMPL.D#
Date Acquired: May 16 2018 12:48 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-009
Misc Info:
Vial Number: 3103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0024	-0.0005	ppb	424.89	100.	
11 B	430.95	86.19	ppb	4.13	1000.	
23 Na	186,700.	37,340.	ppb	3.21	200000.	
25 Mg	31,040.	6,208.	ppb	2.00	200000.	
27 Al	12.015	2.403	ppb	6.05	200000.	
28 Si	18,520.	3,704.	ppb	1.54	#VALUE!	
29 Si	20,295.	4,059.	ppb	0.68	10000.	
39 K	13,205.	2,641.	ppb	0.65	200000.	
43 Ca	188,950.	37,790.	ppb	2.38	#VALUE!	
44 Ca	182,050.	36,410.	ppb	1.02	200000.	
51 V	0.5115	0.1023	ppb	108.02	1000.	
52 Cr	1.8865	0.3773	ppb	3.62	2000.	
53 Cr	37.045	7.409	ppb	12.92	#VALUE!	
55 Mn	595.	119.	ppb	0.67	2000.	
56 Fe	2,590.	518.	ppb	0.69	#VALUE!	
57 Fe	2,851.5	570.3	ppb	2.71	100000.	
59 Co	0.3119	0.0624	ppb	6.76	1000.	
60 Ni	1.0775	0.2155	ppb	2.39	1000.	
63 Cu	6.61	1.322	ppb	5.02	#VALUE!	
65 Cu	1.025	0.205	ppb	4.31	2000.	
66 Zn	6.32	1.264	ppb	8.18	2000.	
68 Zn	5.785	1.157	ppb	5.38	#VALUE!	
75 As	13.235	2.647	ppb	10.09	1000.	
82 Se	1.857	0.3714	ppb	19.15	1000.	
88 Sr	757.	151.4	ppb	0.14	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	12.745	2.549	ppb	0.52	1000.	
107 Ag	0.0038	0.0008	ppb	424.78	100.	
109 Ag	0.0074	0.0015	ppb	136.29	#VALUE!	
111 Cd	0.224	0.0448	ppb	8.68	#VALUE!	
114 Cd	0.0044	0.0009	ppb	239.25	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.8675	0.1735	ppb	4.53	1000.	
120 Sn	0.8315	0.1663	ppb	4.02	#VALUE!	
121 Sb	0.0458	0.0092	ppb	21.05	#VALUE!	
123 Sb	0.1109	0.0222	ppb	47.59	1000.	
135 Ba	33.165	6.633	ppb	1.98	2000.	
137 Ba	33.445	6.689	ppb	2.10	#VALUE!	
182 W	0.2071	0.0414	ppb	14.73	1000.	
203 Tl	0.0016	0.0003	ppb	1574.90	1000.	
205 Tl	-0.0045	-0.0009	ppb	541.36	#VALUE!	
208 Pb	-0.2732	-0.0546	ppb	19.58	2000.	
232 Th	0.1995	0.0399	ppb	11.44	1000.	
238 U	1.1835	0.2367	ppb	2.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4381748.00	1.17	3927738.80	111.6	69.5 - 120	
45 Sc	2561691.80	1.88	2572658.80	99.6	69.5 - 120	
72 Ge	486776.13	1.34	510197.59	95.4	69.5 - 120	
159 Tb	4496652.50	1.52	4617151.00	97.4	69.5 - 120	
209 Bi	2326341.80	0.99	2380666.00	97.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000364

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\103SMPL.D\103SMPL.D#
Date Acquired: May 16 2018 12:52 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-010
Misc Info:
Vial Number: 3104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.2044	0.0409	ppb	9.05	100.	
11 B	225.85	45.17	ppb	3.13	1000.	
23 Na	364,600.	72,920.	ppb	1.54	200000.	
25 Mg	89,250.	17,850.	ppb	2.55	200000.	
27 Al	2,901.	580.2	ppb	4.96	200000.	
28 Si	25,110.	5,022.	ppb	3.23	#VALUE!	
29 Si	26,950.	5,390.	ppb	1.95	10000.	
39 K	21,320.	4,264.	ppb	2.45	200000.	
43 Ca	401,250.	80,250.	ppb	3.96	#VALUE!	
44 Ca	379,550.	75,910.	ppb	2.70	200000.	
51 V	9.955	1.991	ppb	2.60	1000.	
52 Cr	34.225	6.845	ppb	0.34	2000.	
53 Cr	79.95	15.99	ppb	0.30	#VALUE!	
55 Mn	1,355.5	271.1	ppb	0.49	2000.	
56 Fe	13,030.	2,606.	ppb	0.66	#VALUE!	
57 Fe	13,630.	2,726.	ppb	0.33	100000.	
59 Co	2.6355	0.5271	ppb	1.41	1000.	
60 Ni	13.275	2.655	ppb	5.27	1000.	
63 Cu	27.12	5.424	ppb	1.26	#VALUE!	
65 Cu	18.245	3.649	ppb	3.83	2000.	
66 Zn	76.4	15.28	ppb	2.65	2000.	
68 Zn	71.65	14.33	ppb	1.33	#VALUE!	
75 As	9.94	1.988	ppb	1.23	1000.	
82 Se	1.946	0.3892	ppb	11.91	1000.	
88 Sr	1,690.5	338.1	ppb	0.56	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	15.415	3.083	ppb	1.54	1000.	
107 Ag	0.0242	0.0048	ppb	42.26	100.	
109 Ag	0.0094	0.0019	ppb	28.64	#VALUE!	
111 Cd	0.2897	0.0579	ppb	22.17	#VALUE!	
114 Cd	0.0653	0.0131	ppb	73.33	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.0845	0.2169	ppb	11.36	1000.	
120 Sn	1.0895	0.2179	ppb	10.47	#VALUE!	
121 Sb	0.1183	0.0237	ppb	37.38	#VALUE!	
123 Sb	0.2083	0.0417	ppb	19.15	1000.	
135 Ba	74.6	14.92	ppb	0.53	2000.	
137 Ba	74.95	14.99	ppb	2.27	#VALUE!	
182 W	0.3019	0.0604	ppb	13.54	1000.	
203 Tl	0.0702	0.014	ppb	16.14	1000.	
205 Tl	0.0536	0.0107	ppb	90.99	#VALUE!	
208 Pb	6.57	1.314	ppb	1.06	2000.	
232 Th	4.594	0.9188	ppb	1.27	1000.	
238 U	2.514	0.5028	ppb	2.06	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4662938.50	4.50	3927738.80	118.7	69.5 - 120	
45 Sc	2722617.50	3.04	2572658.80	105.8	69.5 - 120	
72 Ge	505071.84	1.38	510197.59	99.0	69.5 - 120	
159 Tb	4567284.00	0.30	4617151.00	98.9	69.5 - 120	
209 Bi	2256626.50	1.26	2380666.00	94.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000365

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\104SMPL.D\104SMPL.D#
Date Acquired: May 16 2018 12:56 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-011
Misc Info:
Vial Number: 3105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.001	0.0002	ppb	554.48	100.	
11 B	231.	46.2	ppb	3.18	1000.	
23 Na	353,400.	70,680.	ppb	2.89	200000.	
25 Mg	88,850.	17,770.	ppb	2.06	200000.	
27 Al	9.795	1.959	ppb	10.14	200000.	
28 Si	19,380.	3,876.	ppb	0.49	#VALUE!	
29 Si	20,995.	4,199.	ppb	1.96	10000.	
39 K	20,680.	4,136.	ppb	2.40	200000.	
43 Ca	397,500.	79,500.	ppb	0.61	#VALUE!	
44 Ca	376,600.	75,320.	ppb	0.79	200000.	
51 V	1.3695	0.2739	ppb	27.02	1000.	
52 Cr	1.948	0.3896	ppb	2.33	2000.	
53 Cr	53.5	10.7	ppb	9.39	#VALUE!	
55 Mn	1,303.	260.6	ppb	1.13	2000.	
56 Fe	7,360.	1,472.	ppb	1.33	#VALUE!	
57 Fe	7,920.	1,584.	ppb	1.74	100000.	
59 Co	0.6005	0.1201	ppb	10.74	1000.	
60 Ni	2.5205	0.5041	ppb	8.92	1000.	
63 Cu	11.755	2.351	ppb	1.88	#VALUE!	
65 Cu	1.55	0.31	ppb	4.51	2000.	
66 Zn	17.92	3.584	ppb	0.97	2000.	
68 Zn	14.71	2.942	ppb	3.02	#VALUE!	
75 As	8.265	1.653	ppb	2.77	1000.	
82 Se	1.1795	0.2359	ppb	65.37	1000.	
88 Sr	1,687.5	337.5	ppb	1.45	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.315	2.263	ppb	3.03	1000.	
107 Ag	-0.0088	-0.0018	ppb	64.83	100.	
109 Ag	0.0068	0.0014	ppb	102.22	#VALUE!	
111 Cd	0.2127	0.0425	ppb	87.23	#VALUE!	
114 Cd	-0.0094	-0.0019	ppb	189.95	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.918	0.1836	ppb	16.87	1000.	
120 Sn	0.904	0.1808	ppb	9.47	#VALUE!	
121 Sb	0.0859	0.0172	ppb	9.63	#VALUE!	
123 Sb	0.1052	0.021	ppb	40.71	1000.	
135 Ba	32.735	6.547	ppb	3.74	2000.	
137 Ba	33.035	6.607	ppb	1.74	#VALUE!	
182 W	0.2647	0.0529	ppb	4.07	1000.	
203 Tl	-0.0282	-0.0056	ppb	64.53	1000.	
205 Tl	-0.0015	-0.0003	ppb	801.47	#VALUE!	
208 Pb	-0.2671	-0.0534	ppb	6.88	2000.	
232 Th	0.1087	0.0217	ppb	23.78	1000.	
238 U	1.8755	0.3751	ppb	2.43	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4136883.80	0.45	3927738.80	105.3	69.5 - 120	
45 Sc	2567716.80	1.01	2572658.80	99.8	69.5 - 120	
72 Ge	482241.25	1.01	510197.59	94.5	69.5 - 120	
159 Tb	4444936.00	0.51	4617151.00	96.3	69.5 - 120	
209 Bi	2212436.00	0.36	2380666.00	92.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000366

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\105SMPL.D\105SMPL.D#
Date Acquired: May 16 2018 01:00 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-011L
Misc Info:
Vial Number: 3106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0032	-0.0001	ppb	414.74	100.	
11 B	281.	11.24	ppb	0.17	1000.	
23 Na	365,500.	14,620.	ppb	1.70	200000.	
25 Mg	93,375.	3,735.	ppb	0.91	200000.	
27 Al	22.645	0.9058	ppb	10.99	200000.	
28 Si	19,067.5	762.7	ppb	1.68	#VALUE!	
29 Si	18,787.5	751.5	ppb	0.50	10000.	
39 K	20,187.5	807.5	ppb	0.98	200000.	
43 Ca	388,250.	15,530.	ppb	0.52	#VALUE!	
44 Ca	381,000.	15,240.	ppb	0.81	200000.	
51 V	1.6433	0.0657	ppb	168.11	1000.	
52 Cr	0.7675	0.0307	ppb	81.47	2000.	
53 Cr	46.575	1.863	ppb	25.04	#VALUE!	
55 Mn	1,342.5	53.7	ppb	0.93	2000.	
56 Fe	7,172.5	286.9	ppb	1.13	#VALUE!	
57 Fe	7,992.5	319.7	ppb	2.68	100000.	
59 Co	0.5305	0.0212	ppb	21.88	1000.	
60 Ni	2.9375	0.1175	ppb	9.63	1000.	
63 Cu	12.4825	0.4993	ppb	3.10	#VALUE!	
65 Cu	2.402	0.0961	ppb	18.52	2000.	
66 Zn	20.46	0.8184	ppb	5.28	2000.	
68 Zn	11.1625	0.4465	ppb	28.67	#VALUE!	
75 As	11.785	0.4714	ppb	41.13	1000.	
82 Se	5.65	0.226	ppb	44.00	1000.	
88 Sr	1,781.5	71.26	ppb	1.29	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.8375	0.4335	ppb	6.30	1000.	
107 Ag	-0.0181	-0.0007	ppb	198.75	100.	
109 Ag	0.0078	0.0003	ppb	186.25	#VALUE!	
111 Cd	1.5205	0.0608	ppb	5.61	#VALUE!	
114 Cd	-0.025	-0.001	ppb	108.94	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.282	0.0513	ppb	28.16	1000.	
120 Sn	1.2873	0.0515	ppb	26.49	#VALUE!	
121 Sb	0.0673	0.0027	ppb	144.72	#VALUE!	
123 Sb	0.1262	0.005	ppb	126.75	1000.	
135 Ba	32.275	1.291	ppb	4.33	2000.	
137 Ba	33.	1.32	ppb	1.43	#VALUE!	
182 W	0.2753	0.011	ppb	81.00	1000.	
203 Tl	0.3113	0.0125	ppb	26.67	1000.	
205 Tl	-0.0635	-0.0025	ppb	112.77	#VALUE!	
208 Pb	-0.6513	-0.0261	ppb	13.69	2000.	
232 Th	0.059	0.0024	ppb	19.15	1000.	
238 U	1.6453	0.0658	ppb	6.69	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4361571.50	2.14	3927738.80	111.0	69.5 - 120	
45 Sc	2625771.50	1.44	2572658.80	102.1	69.5 - 120	
72 Ge	490796.16	1.10	510197.59	96.2	69.5 - 120	
159 Tb	4487431.50	0.50	4617151.00	97.2	69.5 - 120	
209 Bi	2330175.80	0.35	2380666.00	97.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000367

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\106SMPL.D\106SMPL.D#
Date Acquired: May 16 2018 01:05 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-011A
Misc Info:
Vial Number: 3107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.565	1.913	ppb	1.54	100.	
11 B	420.85	84.17	ppb	0.86	1000.	
23 Na	353,150.	70,630.	ppb	2.19	200000.	
25 Mg	88,650.	17,730.	ppb	0.81	200000.	
27 Al	1,065.	213.	ppb	0.23	200000.	
28 Si	23,675.	4,735.	ppb	0.51	#VALUE!	
29 Si	25,550.	5,110.	ppb	2.10	10000.	
39 K	29,785.	5,957.	ppb	1.09	200000.	
43 Ca	391,950.	78,390.	ppb	1.06	#VALUE!	
44 Ca	366,650.	73,330.	ppb	0.45	200000.	
51 V	50.5	10.1	ppb	1.73	1000.	
52 Cr	51.1	10.22	ppb	1.12	2000.	
53 Cr	103.25	20.65	ppb	5.37	#VALUE!	
55 Mn	1,256.	251.2	ppb	1.68	2000.	
56 Fe	7,930.	1,586.	ppb	1.40	#VALUE!	
57 Fe	8,365.	1,673.	ppb	1.77	100000.	
59 Co	10.3	2.06	ppb	2.14	1000.	
60 Ni	21.645	4.329	ppb	3.85	1000.	
63 Cu	38.975	7.795	ppb	2.41	#VALUE!	
65 Cu	29.915	5.983	ppb	3.84	2000.	
66 Zn	107.15	21.43	ppb	0.29	2000.	
68 Zn	100.4	20.08	ppb	0.71	#VALUE!	
75 As	56.5	11.3	ppb	1.95	1000.	
82 Se	46.61	9.322	ppb	2.57	1000.	
88 Sr	1,669.	333.8	ppb	0.95	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	59.45	11.89	ppb	1.64	1000.	
107 Ag	9.41	1.882	ppb	2.33	100.	
109 Ag	9.19	1.838	ppb	1.73	#VALUE!	
111 Cd	9.575	1.915	ppb	0.76	#VALUE!	
114 Cd	9.155	1.831	ppb	4.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.245	9.849	ppb	2.29	1000.	
120 Sn	48.935	9.787	ppb	0.81	#VALUE!	
121 Sb	9.87	1.974	ppb	1.83	#VALUE!	
123 Sb	9.915	1.983	ppb	2.03	1000.	
135 Ba	50.8	10.16	ppb	0.94	2000.	
137 Ba	51.6	10.32	ppb	0.64	#VALUE!	
182 W	51.5	10.3	ppb	0.46	1000.	
203 Tl	9.735	1.947	ppb	2.29	1000.	
205 Tl	9.98	1.996	ppb	2.25	#VALUE!	
208 Pb	9.74	1.948	ppb	0.78	2000.	
232 Th	10.52	2.104	ppb	1.31	1000.	
238 U	12.305	2.461	ppb	1.84	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4255429.50	1.82	3927738.80	108.3	69.5 - 120	
45 Sc	2550521.80	1.37	2572658.80	99.1	69.5 - 120	
72 Ge	481496.56	1.07	510197.59	94.4	69.5 - 120	
159 Tb	4433204.50	0.33	4617151.00	96.0	69.5 - 120	
209 Bi	2236154.30	0.56	2380666.00	93.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000368

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\107SMPL.D\107SMPL.D#
Date Acquired: May 16 2018 01:09 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-011S
Misc Info:
Vial Number: 3108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	48.93	9.786	ppb	1.67	100.	
11 B	736.5	147.3	ppb	2.91	1000.	
23 Na	363,750.	72,750.	ppb	2.50	200000.	
25 Mg	94,950.	18,990.	ppb	1.49	200000.	
27 Al	2,159.5	431.9	ppb	2.99	200000.	
28 Si	20,390.	4,078.	ppb	2.53	#VALUE!	
29 Si	21,775.	4,355.	ppb	2.18	10000.	
39 K	30,655.	6,131.	ppb	0.38	200000.	
43 Ca	403,650.	80,730.	ppb	1.95	#VALUE!	
44 Ca	381,150.	76,230.	ppb	0.53	200000.	
51 V	551.5	110.3	ppb	0.67	1000.	
52 Cr	206.85	41.37	ppb	1.62	2000.	
53 Cr	265.05	53.01	ppb	1.45	#VALUE!	
55 Mn	1,794.	358.8	ppb	1.21	2000.	
56 Fe	8,555.	1,711.	ppb	0.58	#VALUE!	
57 Fe	8,945.	1,789.	ppb	1.55	100000.	
59 Co	516.	103.2	ppb	1.37	1000.	
60 Ni	499.25	99.85	ppb	1.43	1000.	
63 Cu	251.05	50.21	ppb	1.92	#VALUE!	
65 Cu	243.75	48.75	ppb	0.73	2000.	
66 Zn	487.8	97.56	ppb	1.43	2000.	
68 Zn	547.5	109.5	ppb	1.93	#VALUE!	
75 As	113.75	22.75	ppb	1.00	1000.	
82 Se	100.65	20.13	ppb	2.55	1000.	
88 Sr	2,206.	441.2	ppb	1.04	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	113.5	22.7	ppb	1.13	1000.	
107 Ag	47.54	9.508	ppb	1.88	100.	
109 Ag	46.885	9.377	ppb	0.85	#VALUE!	
111 Cd	239.65	47.93	ppb	1.07	#VALUE!	
114 Cd	238.75	47.75	ppb	0.93	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	499.2	99.84	ppb	2.74	1000.	
120 Sn	496.95	99.39	ppb	1.95	#VALUE!	
121 Sb	102.4	20.48	ppb	1.73	#VALUE!	
123 Sb	103.2	20.64	ppb	2.37	1000.	
135 Ba	2,071.	414.2	ppb	1.98	2000.	
137 Ba	2,078.5	415.7	ppb	2.16	#VALUE!	
182 W	104.75	20.95	ppb	1.16	1000.	
203 Tl	105.15	21.03	ppb	1.69	1000.	
205 Tl	106.25	21.25	ppb	1.54	#VALUE!	
208 Pb	105.5	21.1	ppb	1.49	2000.	
232 Th	109.65	21.93	ppb	2.42	1000.	
238 U	114.1	22.82	ppb	1.55	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4345834.50	1.74	3927738.80	110.6	69.5 - 120	
45 Sc	2601617.80	1.47	2572658.80	101.1	69.5 - 120	
72 Ge	477329.56	0.25	510197.59	93.6	69.5 - 120	
159 Tb	4453021.00	1.09	4617151.00	96.4	69.5 - 120	
209 Bi	2197382.30	1.08	2380666.00	92.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000369

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\108SMPL.D\108SMPL.D#
Date Acquired: May 16 2018 01:13 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-011P
Misc Info:
Vial Number: 3109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	49.07	9.814	ppb	4.87	100.	
11 B	741.	148.2	ppb	3.61	1000.	
23 Na	361,150.	72,230.	ppb	1.29	200000.	
25 Mg	92,700.	18,540.	ppb	1.41	200000.	
27 Al	2,179.	435.8	ppb	3.31	200000.	
28 Si	20,375.	4,075.	ppb	3.27	#VALUE!	
29 Si	22,115.	4,423.	ppb	3.24	10000.	
39 K	29,950.	5,990.	ppb	1.75	200000.	
43 Ca	398,550.	79,710.	ppb	0.14	#VALUE!	
44 Ca	371,400.	74,280.	ppb	0.78	200000.	
51 V	530.	106.	ppb	3.25	1000.	
52 Cr	200.75	40.15	ppb	2.29	2000.	
53 Cr	258.75	51.75	ppb	0.20	#VALUE!	
55 Mn	1,767.5	353.5	ppb	0.98	2000.	
56 Fe	8,370.	1,674.	ppb	1.62	#VALUE!	
57 Fe	8,795.	1,759.	ppb	0.97	100000.	
59 Co	509.	101.8	ppb	2.57	1000.	
60 Ni	485.4	97.08	ppb	1.27	1000.	
63 Cu	244.05	48.81	ppb	0.58	#VALUE!	
65 Cu	242.	48.4	ppb	1.86	2000.	
66 Zn	472.35	94.47	ppb	0.94	2000.	
68 Zn	526.5	105.3	ppb	1.35	#VALUE!	
75 As	108.95	21.79	ppb	2.10	1000.	
82 Se	97.4	19.48	ppb	0.14	1000.	
88 Sr	2,135.	427.	ppb	1.46	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	112.05	22.41	ppb	1.31	1000.	
107 Ag	46.56	9.312	ppb	0.53	100.	
109 Ag	46.255	9.251	ppb	1.73	#VALUE!	
111 Cd	229.8	45.96	ppb	0.90	#VALUE!	
114 Cd	230.9	46.18	ppb	1.22	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	487.45	97.49	ppb	1.40	1000.	
120 Sn	487.7	97.54	ppb	1.24	#VALUE!	
121 Sb	98.65	19.73	ppb	1.10	#VALUE!	
123 Sb	97.55	19.51	ppb	1.57	1000.	
135 Ba	2,019.5	403.9	ppb	1.51	2000.	
137 Ba	2,018.5	403.7	ppb	1.09	#VALUE!	
182 W	104.	20.8	ppb	1.12	1000.	
203 Tl	100.35	20.07	ppb	1.33	1000.	
205 Tl	101.7	20.34	ppb	1.48	#VALUE!	
208 Pb	101.2	20.24	ppb	1.69	2000.	
232 Th	107.45	21.49	ppb	1.08	1000.	
238 U	111.45	22.29	ppb	1.79	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4163332.50	4.87	3927738.80	106.0	69.5 - 120	
45 Sc	2531417.80	0.57	2572658.80	98.4	69.5 - 120	
72 Ge	469425.38	0.89	510197.59	92.0	69.5 - 120	
159 Tb	4392247.50	1.62	4617151.00	95.1	69.5 - 120	
209 Bi	2192653.80	1.32	2380666.00	92.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000370

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\109SMPL.D\109SMPL.D#
Date Acquired: May 16 2018 01:17 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 3110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0009	-0.0009	ppb	91.72	100.	
11 B	7.329	7.329	ppb	14.44	1000.	
23 Na	16.83	16.83	ppb	10.86	200000.	
25 Mg	2.899	2.899	ppb	14.74	200000.	
27 Al	2.191	2.191	ppb	10.63	200000.	
28 Si	21.76	21.76	ppb	41.33	#VALUE!	
29 Si	9.496	9.496	ppb	119.42	10000.	
39 K	1.835	1.835	ppb	138.47	200000.	
43 Ca	26.2	26.2	ppb	26.67	#VALUE!	
44 Ca	23.69	23.69	ppb	9.35	200000.	
51 V	0.0113	0.0113	ppb	216.75	1000.	
52 Cr	0.3772	0.3772	ppb	9.33	2000.	
53 Cr	-1.075	-1.075	ppb	12.03	#VALUE!	
55 Mn	0.1101	0.1101	ppb	9.48	2000.	
56 Fe	11.47	11.47	ppb	69.53	#VALUE!	
57 Fe	11.65	11.65	ppb	7.85	100000.	
59 Co	0.0103	0.0103	ppb	28.09	1000.	
60 Ni	0.0351	0.0351	ppb	49.62	1000.	
63 Cu	0.2682	0.2682	ppb	7.58	#VALUE!	
65 Cu	0.2594	0.2594	ppb	3.89	2000.	
66 Zn	0.5795	0.5795	ppb	8.44	2000.	
68 Zn	0.3208	0.3208	ppb	31.58	#VALUE!	
75 As	0.1003	0.1003	ppb	104.09	1000.	
82 Se	0.0209	0.0209	ppb	680.56	1000.	
88 Sr	0.0276	0.0276	ppb	21.39	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0814	0.0814	ppb	12.75	1000.	
107 Ag	0.0019	0.0019	ppb	29.45	100.	
109 Ag	0.0017	0.0017	ppb	120.12	#VALUE!	
111 Cd	0.107	0.107	ppb	13.20	#VALUE!	
114 Cd	0.0009	0.0009	ppb	164.29	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.08	0.08	ppb	17.33	1000.	
120 Sn	0.0689	0.0689	ppb	23.66	#VALUE!	
121 Sb	0.0066	0.0066	ppb	54.95	#VALUE!	
123 Sb	0.0127	0.0127	ppb	13.72	1000.	
135 Ba	0.1887	0.1887	ppb	9.90	2000.	
137 Ba	0.1885	0.1885	ppb	12.07	#VALUE!	
182 W	0.022	0.022	ppb	16.86	1000.	
203 Tl	0.0129	0.0129	ppb	72.88	1000.	
205 Tl	0.0049	0.0049	ppb	96.87	#VALUE!	
208 Pb	0.1389	0.1389	ppb	6.75	2000.	
232 Th	0.0296	0.0296	ppb	27.94	1000.	
238 U	0.0013	0.0013	ppb	78.62	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3997589.00	2.57	3927738.80	101.8	69.5 - 120	
45 Sc	2506976.50	1.67	2572658.80	97.4	69.5 - 120	
72 Ge	460727.53	2.47	510197.59	90.3	69.5 - 120	
159 Tb	4205619.50	1.46	4617151.00	91.1	69.5 - 120	
209 Bi	2220019.30	2.20	2380666.00	93.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000371

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\110_CCV.D\110_CCV.D#
Date Acquired: May 16 2018 01:21 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.72	ppb	1.89	25	98.88	
11 B	27.32	ppb	2.69	25	109.28	
23 Na	5,009.	ppb	0.22	5,000	100.18	
25 Mg	5,062.	ppb	1.04	5,000	101.24	
27 Al	514.7	ppb	0.75	500	102.94	
28 Si	510.4	ppb	1.99	500	102.08	
29 Si	486.	ppb	3.38	500	97.2	
39 K	4,771.	ppb	0.74	5,000	95.42	
43 Ca	4,819.	ppb	1.54	5,000	96.38	
44 Ca	4,967.	ppb	1.31	5,000	99.34	
51 V	24.92	ppb	1.70	25	99.68	
52 Cr	24.73	ppb	0.46	25	98.92	
53 Cr	23.6	ppb	2.44	25	94.4	
55 Mn	24.5	ppb	0.27	25	98	
56 Fe	4,784.	ppb	1.03	5,000	95.68	
57 Fe	4,926.	ppb	0.40	5,000	98.52	
59 Co	24.42	ppb	0.92	25	97.68	
60 Ni	24.57	ppb	0.41	25	98.28	
63 Cu	24.15	ppb	0.74	25	96.6	
65 Cu	24.61	ppb	1.02	25	98.44	
66 Zn	24.43	ppb	2.10	25	97.72	
68 Zn	23.59	ppb	1.22	25	94.36	
75 As	24.35	ppb	0.78	25	97.4	
82 Se	24.3	ppb	1.14	25	97.2	
88 Sr	23.76	ppb	0.44	25	95.04	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.03	ppb	0.52	25	96.12	
107 Ag	24.08	ppb	0.81	25	96.32	
109 Ag	23.81	ppb	0.75	25	95.24	
111 Cd	23.98	ppb	0.34	25	95.92	
114 Cd	23.76	ppb	0.90	25	95.04	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.69	ppb	1.09	25	94.76	
120 Sn	23.43	ppb	0.92	25	93.72	
121 Sb	24.18	ppb	0.87	25	96.72	
123 Sb	24.05	ppb	1.62	25	96.2	
135 Ba	24.42	ppb	1.11	25	97.68	
137 Ba	24.55	ppb	1.38	25	98.2	
182 W	23.78	ppb	1.11	25	95.12	
203 Tl	23.62	ppb	1.95	25	94.48	
205 Tl	23.76	ppb	1.05	25	95.04	
208 Pb	23.79	ppb	1.66	25	95.16	
232 Th	23.72	ppb	2.38	25	94.88	
238 U	24.45	ppb	1.91	25	97.8	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4201389.00	1.00	3927738.80	107.0	80 - 120.4	
45 Sc	2583496.00	0.40	2572658.80	100.4	80 - 120.4	
72 Ge	469864.28	0.34	510197.59	92.1	80 - 120.4	
159 Tb	4365732.50	0.15	4617151.00	94.6	80 - 120.4	
209 Bi	2283598.00	1.24	2380666.00	95.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000372

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\111_CCB.D\111_CCB.D#
Date Acquired: May 16 2018 01:25 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0022	ppb	61.10	1.00	
11 B	2.954	ppb	12.77	1.00	
23 Na	5.475	ppb	41.37	1.00	
25 Mg	0.6531	ppb	133.12	1.00	
27 Al	0.1568	ppb	101.85	1.00	
28 Si	25.92	ppb	28.38	1.00	
29 Si	18.6	ppb	39.80	1.00	
39 K	3.683	ppb	21.97	1.00	
43 Ca	1.625	ppb	226.34	1.00	
44 Ca	3.051	ppb	89.81	1.00	
51 V	0.0645	ppb	45.55	1.00	
52 Cr	-0.0139	ppb	184.73	1.00	
53 Cr	-3.34	ppb	4.91	1.00	
55 Mn	0.0277	ppb	29.73	1.00	
56 Fe	-2.408	ppb	86.09	1.00	
57 Fe	2.426	ppb	24.74	1.00	
59 Co	0.0016	ppb	405.15	1.00	
60 Ni	0.0013	ppb	360.86	1.00	
63 Cu	0.0451	ppb	3.48	1.00	
65 Cu	0.0596	ppb	19.69	1.00	
66 Zn	0.1188	ppb	42.58	1.00	
68 Zn	-0.1291	ppb	14.69	1.00	
75 As	0.0273	ppb	741.20	1.00	
82 Se	0.1566	ppb	193.74	1.00	
88 Sr	0.0163	ppb	155.20	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0311	ppb	29.78	1.00	
107 Ag	0.0032	ppb	66.15	1.00	
109 Ag	0.0029	ppb	152.30	1.00	
111 Cd	0.0879	ppb	19.42	1.00	
114 Cd	0.0045	ppb	131.58	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0481	ppb	39.65	1.00	
120 Sn	0.0511	ppb	15.79	1.00	
121 Sb	0.0077	ppb	18.49	1.00	
123 Sb	0.0222	ppb	27.69	1.00	
135 Ba	0.013	ppb	129.99	1.00	
137 Ba	0.0155	ppb	130.05	1.00	
182 W	0.0517	ppb	26.87	1.00	
203 Tl	0.0121	ppb	35.35	1.00	
205 Tl	0.0047	ppb	110.14	1.00	
208 Pb	-0.0012	ppb	415.26	1.00	
232 Th	0.0665	ppb	4.70	1.00	
238 U	0.0031	ppb	32.87	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4075633.30	2.30	3927738.80	103.8	79.5 - 120	
45 Sc	2408106.80	0.81	2572658.80	93.6	79.5 - 120	
72 Ge	451694.59	0.78	510197.59	88.5	79.5 - 120	
159 Tb	4107244.50	1.23	4617151.00	89.0	79.5 - 120	
209 Bi	2197715.50	0.75	2380666.00	92.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\112SMPL.D\112SMPL.D#
Date Acquired: May 16 2018 01:30 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-012
Misc Info:
Vial Number: 3111
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.3965	0.0793	ppb	4.05	100.	
11 B	244.95	48.99	ppb	3.89	1000.	
23 Na	376,850.	75,370.	ppb	0.27	200000.	
25 Mg	96,100.	19,220.	ppb	1.62	200000.	
27 Al	9,395.	1,879.	ppb	1.97	200000.	
28 Si	40,780.	8,156.	ppb	2.63	#VALUE!	
29 Si	42,635.	8,527.	ppb	1.07	10000.	
39 K	24,045.	4,809.	ppb	1.48	200000.	
43 Ca	423,850.	84,770.	ppb	2.23	#VALUE!	
44 Ca	398,600.	79,720.	ppb	0.99	200000.	
51 V	24.7	4.94	ppb	5.32	1000.	
52 Cr	50.8	10.16	ppb	1.87	2000.	
53 Cr	80.45	16.09	ppb	6.79	#VALUE!	
55 Mn	1,440.	288.	ppb	0.53	2000.	
56 Fe	18,205.	3,641.	ppb	0.38	#VALUE!	
57 Fe	19,035.	3,807.	ppb	2.19	100000.	
59 Co	4.7795	0.9559	ppb	4.11	1000.	
60 Ni	19.215	3.843	ppb	3.26	1000.	
63 Cu	31.555	6.311	ppb	1.57	#VALUE!	
65 Cu	21.02	4.204	ppb	2.66	2000.	
66 Zn	89.8	17.96	ppb	1.25	2000.	
68 Zn	92.5	18.5	ppb	2.77	#VALUE!	
75 As	11.255	2.251	ppb	17.16	1000.	
82 Se	2.9705	0.5941	ppb	22.84	1000.	
88 Sr	1,807.	361.4	ppb	0.45	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	18.7	3.74	ppb	1.99	1000.	
107 Ag	0.0388	0.0078	ppb	57.27	100.	
109 Ag	0.0312	0.0062	ppb	25.45	#VALUE!	
111 Cd	0.3576	0.0715	ppb	18.61	#VALUE!	
114 Cd	0.0585	0.0117	ppb	59.97	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.6705	0.3341	ppb	3.69	1000.	
120 Sn	1.5265	0.3053	ppb	7.12	#VALUE!	
121 Sb	0.272	0.0544	ppb	10.24	#VALUE!	
123 Sb	0.3549	0.071	ppb	9.55	1000.	
135 Ba	190.2	38.04	ppb	2.16	2000.	
137 Ba	189.55	37.91	ppb	1.00	#VALUE!	
182 W	0.3631	0.0726	ppb	3.95	1000.	
203 Tl	0.1511	0.0302	ppb	2.91	1000.	
205 Tl	0.1315	0.0263	ppb	2.92	#VALUE!	
208 Pb	8.73	1.746	ppb	1.99	2000.	
232 Th	8.26	1.652	ppb	1.53	1000.	
238 U	2.9535	0.5907	ppb	2.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4068817.00	0.68	3927738.80	103.6	69.5 - 120	
45 Sc	2569460.50	1.17	2572658.80	99.9	69.5 - 120	
72 Ge	480660.31	1.42	510197.59	94.2	69.5 - 120	
159 Tb	4420369.00	1.91	4617151.00	95.7	69.5 - 120	
209 Bi	2195066.80	1.46	2380666.00	92.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000374

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\113SMPL.D\113SMPL.D#
Date Acquired: May 16 2018 01:34 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-013
Misc Info:
Vial Number: 3112
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0006	0.0001	ppb	1762.30	100.	
11 B	232.5	46.5	ppb	1.75	1000.	
23 Na	362,050.	72,410.	ppb	1.75	200000.	
25 Mg	90,800.	18,160.	ppb	1.66	200000.	
27 Al	10.6	2.12	ppb	4.87	200000.	
28 Si	19,385.	3,877.	ppb	3.04	#VALUE!	
29 Si	20,875.	4,175.	ppb	1.47	10000.	
39 K	20,915.	4,183.	ppb	0.50	200000.	
43 Ca	403,750.	80,750.	ppb	1.04	#VALUE!	
44 Ca	379,700.	75,940.	ppb	0.30	200000.	
51 V	1.006	0.2012	ppb	69.93	1000.	
52 Cr	1.8695	0.3739	ppb	7.77	2000.	
53 Cr	49.025	9.805	ppb	6.85	#VALUE!	
55 Mn	1,288.5	257.7	ppb	0.68	2000.	
56 Fe	7,170.	1,434.	ppb	0.39	#VALUE!	
57 Fe	7,690.	1,538.	ppb	0.08	100000.	
59 Co	0.619	0.1238	ppb	5.98	1000.	
60 Ni	1.8565	0.3713	ppb	16.86	1000.	
63 Cu	12.57	2.514	ppb	2.64	#VALUE!	
65 Cu	2.63	0.526	ppb	2.86	2000.	
66 Zn	15.14	3.028	ppb	2.33	2000.	
68 Zn	13.32	2.664	ppb	2.36	#VALUE!	
75 As	8.36	1.672	ppb	9.94	1000.	
82 Se	1.7045	0.3409	ppb	46.58	1000.	
88 Sr	1,698.	339.6	ppb	0.21	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	10.98	2.196	ppb	1.37	1000.	
107 Ag	0.006	0.0012	ppb	292.58	100.	
109 Ag	0.0073	0.0015	ppb	192.84	#VALUE!	
111 Cd	0.4576	0.0915	ppb	35.81	#VALUE!	
114 Cd	0.006	0.0012	ppb	425.12	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.9295	0.1859	ppb	1.35	1000.	
120 Sn	0.8765	0.1753	ppb	9.06	#VALUE!	
121 Sb	0.0723	0.0145	ppb	10.01	#VALUE!	
123 Sb	0.1001	0.02	ppb	6.76	1000.	
135 Ba	32.065	6.413	ppb	2.56	2000.	
137 Ba	32.34	6.468	ppb	2.81	#VALUE!	
182 W	0.2207	0.0441	ppb	2.09	1000.	
203 Tl	0.0249	0.005	ppb	182.86	1000.	
205 Tl	0.0017	0.0003	ppb	418.66	#VALUE!	
208 Pb	-0.1871	-0.0374	ppb	5.90	2000.	
232 Th	0.3126	0.0625	ppb	19.64	1000.	
238 U	1.8295	0.3659	ppb	1.97	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4067477.80	1.89	3927738.80	103.6	69.5 - 120	
45 Sc	2513229.00	2.20	2572658.80	97.7	69.5 - 120	
72 Ge	469869.78	1.34	510197.59	92.1	69.5 - 120	
159 Tb	4335605.00	1.37	4617151.00	93.9	69.5 - 120	
209 Bi	2173991.00	2.06	2380666.00	91.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000375

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\114SMPL.D\114SMPL.D#
Date Acquired: May 16 2018 01:38 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-014
Misc Info:
Vial Number: 3201
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	2.548	0.5096	ppb	6.02	100.	
11 B	2,304.	460.8	ppb	4.69	1000.	
23 Na	67,250.	13,450.	ppb	0.55	200000.	
25 Mg	41,175.	8,235.	ppb	1.11	200000.	
27 Al	45,865.	9,173.	ppb	3.56	200000.	
28 Si	69,550.	13,910.	ppb	3.74	#VALUE!	
29 Si	71,700.	14,340.	ppb	3.74	10000.	>LDR
39 K	28,325.	5,665.	ppb	2.24	200000.	
43 Ca	203,750.	40,750.	ppb	0.33	#VALUE!	
44 Ca	198,100.	39,620.	ppb	1.20	200000.	
51 V	109.75	21.95	ppb	1.67	1000.	
52 Cr	139.3	27.86	ppb	1.19	2000.	
53 Cr	163.05	32.61	ppb	2.33	#VALUE!	
55 Mn	2,463.	492.6	ppb	0.58	2000.	
56 Fe	56,150.	11,230.	ppb	0.97	#VALUE!	
57 Fe	56,300.	11,260.	ppb	1.38	100000.	
59 Co	20.6	4.12	ppb	1.63	1000.	
60 Ni	82.05	16.41	ppb	0.72	1000.	
63 Cu	50.75	10.15	ppb	1.56	#VALUE!	
65 Cu	50.6	10.12	ppb	0.26	2000.	
66 Zn	182.85	36.57	ppb	0.94	2000.	
68 Zn	198.9	39.78	ppb	1.04	#VALUE!	
75 As	38.845	7.769	ppb	4.18	1000.	
82 Se	3.4095	0.6819	ppb	30.24	1000.	
88 Sr	824.	164.8	ppb	0.78	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	27.16	5.432	ppb	0.08	1000.	
107 Ag	0.1842	0.0368	ppb	7.17	100.	
109 Ag	0.176	0.0352	ppb	14.72	#VALUE!	
111 Cd	1.3455	0.2691	ppb	13.48	#VALUE!	
114 Cd	0.628	0.1256	ppb	4.94	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	3.003	0.6006	ppb	0.73	1000.	
120 Sn	3.007	0.6014	ppb	4.46	#VALUE!	
121 Sb	0.504	0.1008	ppb	9.80	#VALUE!	
123 Sb	0.546	0.1092	ppb	4.82	1000.	
135 Ba	590.	118.	ppb	0.53	2000.	
137 Ba	589.5	117.9	ppb	0.38	#VALUE!	
182 W	0.2191	0.0438	ppb	9.96	1000.	
203 Tl	0.7925	0.1585	ppb	6.74	1000.	
205 Tl	0.8095	0.1619	ppb	2.71	#VALUE!	
208 Pb	36.335	7.267	ppb	0.31	2000.	
232 Th	27.71	5.542	ppb	0.40	1000.	
238 U	15.98	3.196	ppb	1.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4166117.80	2.09	3927738.80	106.1	69.5 - 120	
45 Sc	2548255.50	0.74	2572658.80	99.1	69.5 - 120	
72 Ge	471952.84	0.61	510197.59	92.5	69.5 - 120	
159 Tb	4446311.00	0.21	4617151.00	96.3	69.5 - 120	
209 Bi	2303735.80	0.93	2380666.00	96.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000376

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\115SMPL.D\115SMPL.D#
Date Acquired: May 16 2018 01:42 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-015
Misc Info:
Vial Number: 3202
Current Method: C:\ICPCHEM\1\DATA\JLE15C.B\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\DATA\JLE15C.B\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0037	0.0007	ppb	60.94	100.	
11 B	2,374.	474.8	ppb	2.75	1000.	
23 Na	67,500.	13,500.	ppb	3.73	200000.	
25 Mg	24,600.	4,920.	ppb	2.88	200000.	
27 Al	15.63	3.126	ppb	6.35	200000.	
28 Si	14,100.	2,820.	ppb	2.45	#VALUE!	
29 Si	14,230.	2,846.	ppb	2.77	10000.	
39 K	18,435.	3,687.	ppb	1.69	200000.	
43 Ca	132,550.	26,510.	ppb	2.44	#VALUE!	
44 Ca	129,550.	25,910.	ppb	1.02	200000.	
51 V	0.856	0.1712	ppb	21.84	1000.	
52 Cr	1.1285	0.2257	ppb	9.00	2000.	
53 Cr	25.47	5.094	ppb	21.01	#VALUE!	
55 Mn	842.	168.4	ppb	0.72	2000.	
56 Fe	1,405.	281.	ppb	0.98	#VALUE!	
57 Fe	1,604.5	320.9	ppb	1.39	100000.	
59 Co	0.2576	0.0515	ppb	3.28	1000.	
60 Ni	1.328	0.2656	ppb	7.79	1000.	
63 Cu	3.114	0.6228	ppb	2.24	#VALUE!	
65 Cu	1.2845	0.2569	ppb	8.01	2000.	
66 Zn	7.365	1.473	ppb	2.51	2000.	
68 Zn	7.865	1.573	ppb	10.30	#VALUE!	
75 As	9.14	1.828	ppb	5.64	1000.	
82 Se	2.1455	0.4291	ppb	22.32	1000.	
88 Sr	623.	124.6	ppb	1.26	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	17.96	3.592	ppb	1.46	1000.	
107 Ag	0.0038	0.0008	ppb	212.17	100.	
109 Ag	0.0003	0.0001	ppb	628.85	#VALUE!	
111 Cd	0.3185	0.0637	ppb	45.79	#VALUE!	
114 Cd	0.007	0.0014	ppb	58.00	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.892	0.1784	ppb	4.43	1000.	
120 Sn	0.8915	0.1783	ppb	5.81	#VALUE!	
121 Sb	0.1139	0.0228	ppb	22.25	#VALUE!	
123 Sb	0.1551	0.031	ppb	11.79	1000.	
135 Ba	55.15	11.03	ppb	2.50	2000.	
137 Ba	55.15	11.03	ppb	0.92	#VALUE!	
182 W	0.1567	0.0313	ppb	10.29	1000.	
203 Tl	-0.0035	-0.0007	ppb	599.45	1000.	
205 Tl	0.004	0.0008	ppb	792.77	#VALUE!	
208 Pb	-0.1952	-0.039	ppb	10.62	2000.	
232 Th	0.2194	0.0439	ppb	24.98	1000.	
238 U	8.005	1.601	ppb	3.23	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4194951.50	2.49	3927738.80	106.8	69.5 - 120	
45 Sc	2487702.00	1.07	2572658.80	96.7	69.5 - 120	
72 Ge	471692.06	0.88	510197.59	92.5	69.5 - 120	
159 Tb	4402728.00	0.10	4617151.00	95.4	69.5 - 120	
209 Bi	2296099.30	1.02	2380666.00	96.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000377

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\116SMPL.D\116SMPL.D#
Date Acquired: May 16 2018 01:47 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-016
Misc Info:
Vial Number: 3203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.1643	0.0329	ppb	4.67	100.	
11 B	310.5	62.1	ppb	7.94	1000.	
23 Na	378,250.	75,650.	ppb	1.91	200000.	
25 Mg	94,850.	18,970.	ppb	0.96	200000.	
27 Al	3,019.5	603.9	ppb	1.82	200000.	
28 Si	25,970.	5,194.	ppb	2.97	#VALUE!	
29 Si	27,620.	5,524.	ppb	1.57	10000.	
39 K	23,295.	4,659.	ppb	2.30	200000.	
43 Ca	397,450.	79,490.	ppb	1.44	#VALUE!	
44 Ca	376,900.	75,380.	ppb	1.68	200000.	
51 V	9.815	1.963	ppb	15.60	1000.	
52 Cr	39.27	7.854	ppb	0.77	2000.	
53 Cr	79.5	15.9	ppb	7.09	#VALUE!	
55 Mn	1,282.5	256.5	ppb	1.38	2000.	
56 Fe	11,835.	2,367.	ppb	1.23	#VALUE!	
57 Fe	12,365.	2,473.	ppb	0.95	100000.	
59 Co	1.98	0.396	ppb	2.04	1000.	
60 Ni	13.86	2.772	ppb	3.18	1000.	
63 Cu	24.025	4.805	ppb	0.45	#VALUE!	
65 Cu	13.63	2.726	ppb	3.01	2000.	
66 Zn	58.15	11.63	ppb	1.42	2000.	
68 Zn	54.85	10.97	ppb	3.87	#VALUE!	
75 As	9.44	1.888	ppb	7.89	1000.	
82 Se	2.373	0.4746	ppb	14.89	1000.	
88 Sr	1,738.	347.6	ppb	0.31	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	15.215	3.043	ppb	2.87	1000.	
107 Ag	0.0191	0.0038	ppb	56.82	100.	
109 Ag	0.0132	0.0026	ppb	124.18	#VALUE!	
111 Cd	0.1441	0.0288	ppb	49.95	#VALUE!	
114 Cd	0.0113	0.0023	ppb	163.10	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.232	0.2464	ppb	4.73	1000.	
120 Sn	1.1575	0.2315	ppb	3.97	#VALUE!	
121 Sb	0.0975	0.0195	ppb	21.53	#VALUE!	
123 Sb	0.1875	0.0375	ppb	22.64	1000.	
135 Ba	70.95	14.19	ppb	1.60	2000.	
137 Ba	71.	14.2	ppb	1.73	#VALUE!	
182 W	0.2631	0.0526	ppb	15.20	1000.	
203 Tl	0.0774	0.0155	ppb	55.47	1000.	
205 Tl	0.0321	0.0064	ppb	80.80	#VALUE!	
208 Pb	5.755	1.151	ppb	1.72	2000.	
232 Th	3.7515	0.7503	ppb	2.52	1000.	
238 U	2.6605	0.5321	ppb	0.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4042566.50	1.49	3927738.80	102.9	69.5 - 120	
45 Sc	2515844.80	1.40	2572658.80	97.8	69.5 - 120	
72 Ge	471449.25	0.23	510197.59	92.4	69.5 - 120	
159 Tb	4358488.50	1.07	4617151.00	94.4	69.5 - 120	
209 Bi	2207902.00	0.71	2380666.00	92.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000378

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\117SMPL.D\117SMPL.D#
Date Acquired: May 16 2018 01:51 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-017
Misc Info:
Vial Number: 3204
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0063	0.0013	ppb	67.28	100.	
11 B	253.25	50.65	ppb	0.84	1000.	
23 Na	388,400.	77,680.	ppb	1.81	200000.	
25 Mg	98,100.	19,620.	ppb	3.04	200000.	
27 Al	10.61	2.122	ppb	7.89	200000.	
28 Si	18,925.	3,785.	ppb	2.05	#VALUE!	
29 Si	20,575.	4,115.	ppb	1.93	10000.	
39 K	23,030.	4,606.	ppb	1.13	200000.	
43 Ca	406,150.	81,230.	ppb	2.24	#VALUE!	
44 Ca	384,250.	76,850.	ppb	0.96	200000.	
51 V	0.7425	0.1485	ppb	57.50	1000.	
52 Cr	2.157	0.4314	ppb	10.06	2000.	
53 Cr	50.3	10.06	ppb	4.99	#VALUE!	
55 Mn	1,265.5	253.1	ppb	0.25	2000.	
56 Fe	7,300.	1,460.	ppb	0.53	#VALUE!	
57 Fe	7,785.	1,557.	ppb	0.95	100000.	
59 Co	0.579	0.1158	ppb	13.69	1000.	
60 Ni	2.21	0.442	ppb	4.52	1000.	
63 Cu	26.705	5.341	ppb	0.58	#VALUE!	
65 Cu	16.125	3.225	ppb	3.89	2000.	
66 Zn	24.4	4.88	ppb	3.13	2000.	
68 Zn	20.19	4.038	ppb	4.26	#VALUE!	
75 As	9.47	1.894	ppb	14.88	1000.	
82 Se	1.9895	0.3979	ppb	13.93	1000.	
88 Sr	1,753.5	350.7	ppb	1.06	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	11.105	2.221	ppb	2.37	1000.	
107 Ag	0.0011	0.0002	ppb	1308.60	100.	
109 Ag	-0.0017	-0.0003	ppb	200.00	#VALUE!	
111 Cd	0.2789	0.0558	ppb	56.29	#VALUE!	
114 Cd	0.0228	0.0046	ppb	77.67	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.0115	0.2023	ppb	10.21	1000.	
120 Sn	1.0305	0.2061	ppb	10.25	#VALUE!	
121 Sb	0.0681	0.0136	ppb	47.97	#VALUE!	
123 Sb	0.1117	0.0223	ppb	12.71	1000.	
135 Ba	34.02	6.804	ppb	2.73	2000.	
137 Ba	33.94	6.788	ppb	1.60	#VALUE!	
182 W	0.2267	0.0453	ppb	17.78	1000.	
203 Tl	0.0147	0.0029	ppb	231.66	1000.	
205 Tl	0.0058	0.0012	ppb	329.35	#VALUE!	
208 Pb	0.4869	0.0974	ppb	6.02	2000.	
232 Th	0.1289	0.0258	ppb	25.39	1000.	
238 U	2.0375	0.4075	ppb	0.79	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4085711.30	1.60	3927738.80	104.0	69.5 - 120	
45 Sc	2513690.30	0.93	2572658.80	97.7	69.5 - 120	
72 Ge	469894.47	0.72	510197.59	92.1	69.5 - 120	
159 Tb	4348165.50	1.07	4617151.00	94.2	69.5 - 120	
209 Bi	2201865.50	1.20	2380666.00	92.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000379

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\118SMPL.D\118SMPL.D#
Date Acquired: May 16 2018 01:55 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-018
Misc Info:
Vial Number: 3205
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.907	0.1814	ppb	2.13	100.	
11 B	314.2	62.84	ppb	3.25	1000.	
23 Na	243,200.	48,640.	ppb	1.70	200000.	
25 Mg	68,300.	13,660.	ppb	1.68	200000.	
27 Al	18,375.	3,675.	ppb	2.72	200000.	
28 Si	52,800.	10,560.	ppb	2.93	#VALUE!	
29 Si	54,750.	10,950.	ppb	1.53	10000.	>LDR
39 K	25,055.	5,011.	ppb	2.90	200000.	
43 Ca	370,500.	74,100.	ppb	2.38	#VALUE!	
44 Ca	351,050.	70,210.	ppb	0.82	200000.	
51 V	45.39	9.078	ppb	1.77	1000.	
52 Cr	71.7	14.34	ppb	1.18	2000.	
53 Cr	94.4	18.88	ppb	3.85	#VALUE!	
55 Mn	1,977.5	395.5	ppb	0.78	2000.	
56 Fe	30,800.	6,160.	ppb	1.12	#VALUE!	
57 Fe	31,890.	6,378.	ppb	0.44	100000.	
59 Co	21.83	4.366	ppb	1.78	1000.	
60 Ni	41.745	8.349	ppb	3.05	1000.	
63 Cu	42.84	8.568	ppb	1.76	#VALUE!	
65 Cu	37.62	7.524	ppb	0.91	2000.	
66 Zn	126.55	25.31	ppb	0.36	2000.	
68 Zn	136.65	27.33	ppb	1.58	#VALUE!	
75 As	37.41	7.482	ppb	2.44	1000.	
82 Se	3.4515	0.6903	ppb	17.17	1000.	
88 Sr	1,415.	283.	ppb	1.09	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	22.3	4.46	ppb	2.27	1000.	
107 Ag	0.0862	0.0172	ppb	26.11	100.	
109 Ag	0.0824	0.0165	ppb	20.70	#VALUE!	
111 Cd	1.176	0.2352	ppb	21.70	#VALUE!	
114 Cd	0.7165	0.1433	ppb	4.65	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	2.3255	0.4651	ppb	2.89	1000.	
120 Sn	2.362	0.4724	ppb	1.79	#VALUE!	
121 Sb	0.8045	0.1609	ppb	2.20	#VALUE!	
123 Sb	0.866	0.1732	ppb	7.94	1000.	
135 Ba	432.65	86.53	ppb	0.45	2000.	
137 Ba	436.25	87.25	ppb	1.12	#VALUE!	
182 W	0.2913	0.0583	ppb	10.27	1000.	
203 Tl	0.3665	0.0733	ppb	19.69	1000.	
205 Tl	0.4007	0.0801	ppb	6.28	#VALUE!	
208 Pb	32.97	6.594	ppb	1.25	2000.	
232 Th	13.62	2.724	ppb	0.37	1000.	
238 U	13.845	2.769	ppb	0.73	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4073717.80	1.50	3927738.80	103.7	69.5 - 120	
45 Sc	2528020.30	1.92	2572658.80	98.3	69.5 - 120	
72 Ge	468348.97	1.03	510197.59	91.8	69.5 - 120	
159 Tb	4344550.00	0.90	4617151.00	94.1	69.5 - 120	
209 Bi	2199560.50	1.66	2380666.00	92.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000380

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\119SMPL.D\119SMPL.D#
Date Acquired: May 16 2018 01:59 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-019
Misc Info:
Vial Number: 3206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0063	0.0013	ppb	173.67	100.	
11 B	294.7	58.94	ppb	4.68	1000.	
23 Na	246,900.	49,380.	ppb	0.99	200000.	
25 Mg	62,500.	12,500.	ppb	0.96	200000.	
27 Al	12.27	2.454	ppb	13.33	200000.	
28 Si	20,125.	4,025.	ppb	2.14	#VALUE!	
29 Si	22,055.	4,411.	ppb	1.73	10000.	
39 K	20,940.	4,188.	ppb	2.11	200000.	
43 Ca	342,550.	68,510.	ppb	1.29	#VALUE!	
44 Ca	318,500.	63,700.	ppb	0.71	200000.	
51 V	0.9975	0.1995	ppb	45.51	1000.	
52 Cr	1.4555	0.2911	ppb	7.31	2000.	
53 Cr	37.35	7.47	ppb	12.39	#VALUE!	
55 Mn	1,402.	280.4	ppb	0.77	2000.	
56 Fe	3,801.	760.2	ppb	0.11	#VALUE!	
57 Fe	4,249.5	849.9	ppb	1.18	100000.	
59 Co	0.588	0.1176	ppb	10.26	1000.	
60 Ni	1.2805	0.2561	ppb	40.61	1000.	
63 Cu	8.235	1.647	ppb	1.43	#VALUE!	
65 Cu	1.6355	0.3271	ppb	6.38	2000.	
66 Zn	10.79	2.158	ppb	5.66	2000.	
68 Zn	9.955	1.991	ppb	1.87	#VALUE!	
75 As	21.34	4.268	ppb	3.52	1000.	
82 Se	1.4845	0.2969	ppb	20.42	1000.	
88 Sr	1,333.	266.6	ppb	1.47	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.	2.4	ppb	0.82	1000.	
107 Ag	-0.0058	-0.0012	ppb	128.74	100.	
109 Ag	-0.0028	-0.0006	ppb	120.64	#VALUE!	
111 Cd	0.3273	0.0655	ppb	26.91	#VALUE!	
114 Cd	0.0143	0.0029	ppb	55.92	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.94	0.188	ppb	9.99	1000.	
120 Sn	0.8355	0.1671	ppb	9.31	#VALUE!	
121 Sb	0.0698	0.014	ppb	14.22	#VALUE!	
123 Sb	0.1023	0.0205	ppb	27.43	1000.	
135 Ba	70.55	14.11	ppb	1.22	2000.	
137 Ba	70.4	14.08	ppb	2.19	#VALUE!	
182 W	0.2207	0.0441	ppb	8.33	1000.	
203 Tl	-0.0048	-0.001	ppb	335.54	1000.	
205 Tl	-0.0018	-0.0004	ppb	606.41	#VALUE!	
208 Pb	-0.2529	-0.0506	ppb	8.19	2000.	
232 Th	0.1158	0.0232	ppb	16.95	1000.	
238 U	6.58	1.316	ppb	1.84	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4209706.00	4.28	3927738.80	107.2	69.5 - 120	
45 Sc	2542520.50	1.77	2572658.80	98.8	69.5 - 120	
72 Ge	475829.56	0.11	510197.59	93.3	69.5 - 120	
159 Tb	4378355.00	0.23	4617151.00	94.8	69.5 - 120	
209 Bi	2240335.00	1.42	2380666.00	94.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000381

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\120SMPL.D\120SMPL.D#
Date Acquired: May 16 2018 02:04 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: SL3841-020
Misc Info:
Vial Number: 3207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0083	-0.0017	ppb	81.08	100.	
11 B	26.77	5.354	ppb	11.30	1000.	
23 Na	77.85	15.57	ppb	49.08	200000.	
25 Mg	21.68	4.336	ppb	38.77	200000.	
27 Al	16.35	3.27	ppb	56.85	200000.	
28 Si	132.75	26.55	ppb	25.88	#VALUE!	
29 Si	140.95	28.19	ppb	21.40	10000.	
39 K	29.73	5.946	ppb	11.94	200000.	
43 Ca	58.05	11.61	ppb	78.99	#VALUE!	
44 Ca	79.2	15.84	ppb	53.73	200000.	
51 V	0.798	0.1596	ppb	15.03	1000.	
52 Cr	1.2525	0.2505	ppb	8.49	2000.	
53 Cr	39.455	7.891	ppb	4.87	#VALUE!	
55 Mn	0.528	0.1056	ppb	40.43	2000.	
56 Fe	74.95	14.99	ppb	16.02	#VALUE!	
57 Fe	37.01	7.402	ppb	22.91	100000.	
59 Co	0.0086	0.0017	ppb	94.63	1000.	
60 Ni	0.0988	0.0198	ppb	76.42	1000.	
63 Cu	0.5215	0.1043	ppb	5.57	#VALUE!	
65 Cu	0.7155	0.1431	ppb	6.18	2000.	
66 Zn	0.6585	0.1317	ppb	28.34	2000.	
68 Zn	-0.6955	-0.1391	ppb	47.99	#VALUE!	
75 As	1.1375	0.2275	ppb	78.42	1000.	
82 Se	0.4899	0.098	ppb	110.84	1000.	
88 Sr	0.3683	0.0737	ppb	73.54	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.1234	0.0247	ppb	32.91	1000.	
107 Ag	-0.0095	-0.0019	ppb	81.87	100.	
109 Ag	0.0004	0.0001	ppb	1536.50	#VALUE!	
111 Cd	0.3008	0.0602	ppb	29.51	#VALUE!	
114 Cd	-0.0033	-0.0007	ppb	625.81	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.9555	0.1911	ppb	15.31	1000.	
120 Sn	0.945	0.189	ppb	13.48	#VALUE!	
121 Sb	0.0302	0.006	ppb	48.78	#VALUE!	
123 Sb	-0.0001	0.	ppb	18053.00	1000.	
135 Ba	0.111	0.0222	ppb	26.44	2000.	
137 Ba	0.1308	0.0262	ppb	25.16	#VALUE!	
182 W	-0.0016	-0.0003	ppb	930.02	1000.	
203 Tl	0.008	0.0016	ppb	240.58	1000.	
205 Tl	0.0221	0.0044	ppb	41.07	#VALUE!	
208 Pb	-0.1878	-0.0376	ppb	18.10	2000.	
232 Th	0.0369	0.0074	ppb	37.33	1000.	
238 U	-0.0028	-0.0006	ppb	98.94	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3864402.50	1.99	3927738.80	98.4	69.5 - 120	
45 Sc	2277795.50	1.54	2572658.80	88.5	69.5 - 120	
72 Ge	438189.72	0.26	510197.59	85.9	69.5 - 120	
159 Tb	4042844.00	0.97	4617151.00	87.6	69.5 - 120	
209 Bi	2191968.00	0.70	2380666.00	92.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000382

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\121SMPL.D\121SMPL.D#
Date Acquired: May 16 2018 02:08 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 3208
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0007	-0.0007	ppb	204.20	100.	
11 B	3.325	3.325	ppb	6.32	1000.	
23 Na	18.39	18.39	ppb	5.49	200000.	
25 Mg	0.8106	0.8106	ppb	17.14	200000.	
27 Al	1.724	1.724	ppb	9.31	200000.	
28 Si	23.01	23.01	ppb	43.55	#VALUE!	
29 Si	16.94	16.94	ppb	70.60	10000.	
39 K	2.779	2.779	ppb	81.36	200000.	
43 Ca	1.588	1.588	ppb	84.26	#VALUE!	
44 Ca	2.029	2.029	ppb	15.64	200000.	
51 V	0.0617	0.0617	ppb	137.72	1000.	
52 Cr	-0.0117	-0.0117	ppb	86.56	2000.	
53 Cr	-2.638	-2.638	ppb	1.83	#VALUE!	
55 Mn	0.049	0.049	ppb	25.30	2000.	
56 Fe	2.878	2.878	ppb	18.93	#VALUE!	
57 Fe	8.607	8.607	ppb	11.44	100000.	
59 Co	0.0073	0.0073	ppb	33.54	1000.	
60 Ni	0.0127	0.0127	ppb	64.90	1000.	
63 Cu	0.2784	0.2784	ppb	5.24	#VALUE!	
65 Cu	0.2934	0.2934	ppb	8.11	2000.	
66 Zn	0.2088	0.2088	ppb	3.14	2000.	
68 Zn	-0.0841	-0.0841	ppb	55.81	#VALUE!	
75 As	-0.0316	-0.0316	ppb	93.54	1000.	
82 Se	0.1248	0.1248	ppb	229.09	1000.	
88 Sr	0.0074	0.0074	ppb	69.86	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0048	0.0048	ppb	69.48	1000.	
107 Ag	0.0004	0.0004	ppb	355.89	100.	
109 Ag	-0.0002	-0.0002	ppb	881.05	#VALUE!	
111 Cd	0.0982	0.0982	ppb	14.60	#VALUE!	
114 Cd	0.0033	0.0033	ppb	63.81	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0339	0.0339	ppb	34.41	1000.	
120 Sn	0.0152	0.0152	ppb	115.84	#VALUE!	
121 Sb	0.0006	0.0006	ppb	274.11	#VALUE!	
123 Sb	0.0024	0.0024	ppb	95.45	1000.	
135 Ba	0.0691	0.0691	ppb	12.46	2000.	
137 Ba	0.076	0.076	ppb	18.31	#VALUE!	
182 W	0.0011	0.0011	ppb	14.49	1000.	
203 Tl	0.0046	0.0046	ppb	122.23	1000.	
205 Tl	0.0108	0.0108	ppb	43.98	#VALUE!	
208 Pb	0.1317	0.1317	ppb	6.54	2000.	
232 Th	0.0003	0.0003	ppb	211.25	1000.	
238 U	0.	0.	ppb	4493.00	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3970549.50	1.01	3927738.80	101.1	69.5 - 120	
45 Sc	2422971.00	2.00	2572658.80	94.2	69.5 - 120	
72 Ge	449700.88	1.29	510197.59	88.1	69.5 - 120	
159 Tb	4145613.30	1.44	4617151.00	89.8	69.5 - 120	
209 Bi	2209039.00	1.46	2380666.00	92.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000383

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\122_CCV.D\122_CCV.D#
Date Acquired: May 16 2018 02:12 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	23.98	ppb	4.08	25	95.92	
11 B	25.46	ppb	8.44	25	101.84	
23 Na	4,936.	ppb	3.18	5,000	98.72	
25 Mg	4,933.	ppb	2.25	5,000	98.66	
27 Al	501.9	ppb	2.18	500	100.38	
28 Si	511.8	ppb	2.20	500	102.36	
29 Si	492.9	ppb	1.14	500	98.58	
39 K	4,833.	ppb	3.07	5,000	96.66	
43 Ca	4,784.	ppb	2.29	5,000	95.68	
44 Ca	4,857.	ppb	0.69	5,000	97.14	
51 V	24.55	ppb	0.91	25	98.2	
52 Cr	24.65	ppb	0.78	25	98.6	
53 Cr	22.84	ppb	2.70	25	91.36	
55 Mn	24.25	ppb	1.29	25	97	
56 Fe	4,764.	ppb	1.77	5,000	95.28	
57 Fe	4,865.	ppb	0.78	5,000	97.3	
59 Co	24.04	ppb	0.43	25	96.16	
60 Ni	24.44	ppb	0.61	25	97.76	
63 Cu	24.01	ppb	2.47	25	96.04	
65 Cu	24.15	ppb	0.25	25	96.6	
66 Zn	24.39	ppb	0.62	25	97.56	
68 Zn	23.72	ppb	1.19	25	94.88	
75 As	24.42	ppb	1.08	25	97.68	
82 Se	24.43	ppb	0.97	25	97.72	
88 Sr	23.59	ppb	1.24	25	94.36	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	23.75	ppb	0.54	25	95	
107 Ag	23.86	ppb	0.27	25	95.44	
109 Ag	23.93	ppb	0.80	25	95.72	
111 Cd	23.72	ppb	1.10	25	94.88	
114 Cd	23.78	ppb	0.83	25	95.12	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	23.13	ppb	1.89	25	92.52	
120 Sn	23.11	ppb	1.81	25	92.44	
121 Sb	23.53	ppb	2.20	25	94.12	
123 Sb	23.51	ppb	1.96	25	94.04	
135 Ba	23.93	ppb	2.31	25	95.72	
137 Ba	24.09	ppb	1.89	25	96.36	
182 W	23.58	ppb	1.11	25	94.32	
203 Tl	23.58	ppb	0.58	25	94.32	
205 Tl	23.7	ppb	0.57	25	94.8	
208 Pb	23.82	ppb	0.57	25	95.28	
232 Th	23.81	ppb	1.85	25	95.24	
238 U	24.48	ppb	0.49	25	97.92	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4135458.80	3.68	3927738.80	105.3	80 - 120.4	
45 Sc	2490933.80	0.41	2572658.80	96.8	80 - 120.4	
72 Ge	454670.06	0.65	510197.59	89.1	80 - 120.4	
159 Tb	4287418.50	1.53	4617151.00	92.9	80 - 120.4	
209 Bi	2257220.50	0.65	2380666.00	94.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000384

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLE15C.B\123_CCB.D\123_CCB.D#
Date Acquired: May 16 2018 02:16 am
Acq. Method: 1PTCALGe.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: May 15 2018 06:42 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0006	ppb	414.18	1.00	
11 B	3.293	ppb	11.71	1.00	
23 Na	3.708	ppb	11.38	1.00	
25 Mg	0.2587	ppb	93.93	1.00	
27 Al	0.1052	ppb	28.95	1.00	
28 Si	14.01	ppb	13.42	1.00	
29 Si	2.462	ppb	287.98	1.00	
39 K	-0.4743	ppb	438.96	1.00	
43 Ca	-0.7393	ppb	383.74	1.00	
44 Ca	1.133	ppb	52.36	1.00	
51 V	0.0138	ppb	116.79	1.00	
52 Cr	-0.049	ppb	17.39	1.00	
53 Cr	-3.555	ppb	0.64	1.00	
55 Mn	0.0089	ppb	35.84	1.00	
56 Fe	-1.943	ppb	137.73	1.00	
57 Fe	2.058	ppb	124.78	1.00	
59 Co	-0.0006	ppb	59.72	1.00	
60 Ni	-0.0062	ppb	27.02	1.00	
63 Cu	0.0586	ppb	4.26	1.00	
65 Cu	0.0568	ppb	9.78	1.00	
66 Zn	0.1146	ppb	24.78	1.00	
68 Zn	-0.1637	ppb	35.00	1.00	
75 As	0.1327	ppb	58.03	1.00	
82 Se	0.2573	ppb	82.98	1.00	
88 Sr	0.0037	ppb	68.71	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0258	ppb	57.18	1.00	
107 Ag	0.0025	ppb	123.04	1.00	
109 Ag	0.0028	ppb	95.70	1.00	
111 Cd	0.1207	ppb	29.77	1.00	
114 Cd	0.0017	ppb	211.19	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0509	ppb	13.95	1.00	
120 Sn	0.0262	ppb	36.80	1.00	
121 Sb	0.0062	ppb	15.67	1.00	
123 Sb	0.0096	ppb	49.65	1.00	
135 Ba	0.0075	ppb	226.47	1.00	
137 Ba	0.0149	ppb	6.26	1.00	
182 W	0.0491	ppb	32.42	1.00	
203 Tl	0.0038	ppb	28.50	1.00	
205 Tl	0.0033	ppb	139.94	1.00	
208 Pb	0.0032	ppb	201.65	1.00	
232 Th	0.0545	ppb	11.78	1.00	
238 U	0.0024	ppb	41.45	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4047009.00	5.44	3927738.80	103.0	79.5 - 120	
45 Sc	2431362.50	0.81	2572658.80	94.5	79.5 - 120	
72 Ge	445497.25	0.80	510197.59	87.3	79.5 - 120	
159 Tb	4089540.30	0.69	4617151.00	88.6	79.5 - 120	
209 Bi	2205366.30	0.64	2380666.00	92.6	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLE15C.B\013CALB.D\013CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Logbooks and Supporting Documents

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information: **Method:** 7470

HNO3: MS198 H2SO4: MS143

KMNO4: MR2002 K2S2O8: ~~MS66~~ MR1963 JS 5.7.18 NH2OH-HCl: MR1994

REVIEWED
amJ 5/7/18
KATAHDIN ANALYTICAL
METALS SECTION

Standards/Spiking Information:

1ppm A : MW17721
1ppm B : MW17722

Pipet
MII LCSW = 125uL of 1ppm A to 25mL
⊥ Spike(S/P) = 25uL of 1ppm A to 25mL
MK ICV = 600uL of 1ppm B to 100 mL
⊥ S10.0 = 1000uL of 1ppm A to 100 mL

Heat Source ID : B
Start Time: 1101 /Temp. 94 °C
End Time: 1301 /Temp. 92 °C
Thermometer ID/Pos: AL25 12'3

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSWLE07HGW4	LE07HGW4	0.025	L	0.025	L	AQ	HG	JS	05/07/2018	
PBWLE07HGW4	LE07HGW4	↓	L	↓	L	AQ	HG	JS	05/07/2018	
SL3841-002	LE07HGW4	↓	L	↓	L	AQ	HG	JS	05/07/2018	D
SL3841-003	LE07HGW4	↓	L	↓	L	AQ	HG	JS	05/07/2018	A
SL3841-004	LE07HGW4	↓	L	↓	L	AQ	HG	JS	05/07/2018	D
SL3841-005	LE07HGW4	↓	L	↓	L	AQ	HG	JS	05/07/2018	A
SL3841-006	LE07HGW4	↓	L	↓	L	AQ	HG	JS	05/07/2018	D
SL3841-008	LE07HGW4	↓	L	↓	L	AQ	HG	JS	05/07/2018	D
SL3841-009	LE07HGW4	↓	L	↓	L	AQ	HG	JS	05/07/2018	A
SL3841-010	LE07HGW4	↓	L	↓	L	AQ	HG	JS	05/07/2018	D
SL3841-010P	LE07HGW4	↓	L	↓	L	AQ	HG	JS	05/07/2018	↓
SL3841-010S	LE07HGW4	↓	L	↓	L	AQ	HG	JS	05/07/2018	↓
SL3841-011	LE07HGW4	↓	L	↓	L	AQ	HG	JS	05/07/2018	A
SL3841-012	LE07HGW4	↓	L	↓	L	AQ	HG	JS	05/07/2018	D
SL3841-013	LE07HGW4	↓	L	↓	L	AQ	HG	JS	05/07/2018	A
SL3841-014	LE07HGW4	↓	L	↓	L	AQ	HG	JS	05/07/2018	D
SL3841-015	LE07HGW4	↓	L	↓	L	AQ	HG	JS	05/07/2018	A
SL3841-016	LE07HGW4	↓	L	↓	L	AQ	HG	JS	05/07/2018	D
SL3841-017	LE07HGW4	↓	L	↓	L	AQ	HG	JS	05/07/2018	A
SL3841-018	LE07HGW4	↓	L	↓	L	AQ	HG	JS	05/07/2018	D
SL3841-019	LE07HGW4	↓	L	↓	L	AQ	HG	JS	05/07/2018	A
SL3841-020	LE07HGW4	↓	L	↓	L	AQ	HG	JS	05/07/2018	D

amJ
5/7/18

Katahdin Analytical Services, Inc.

Metals Preparation Benchsheet

Reagent Information:

HNO3: MS1299 **HCL:** MS1296

Method: 3010-MS

REVIEWED
MD 5/7/18
KATAHDIN ANALYTICAL
METALS SECTION

Pipet	LCS/Spiking Information:	
M11	CLPP-SPK-1 (ID/Vol):	MS2124 / 0.05 mL
M15	CLPP-SPK-INT1 (ID/Vol):	MW1723 / 0.5 mL
M15	CLPP-SPK-INT2 (ID/Vol):	MW1724 / 0.5 mL
____	____ Spike (ID/Vol):	NA / ____ mL

Heat Source ID : E
Start Time: 0821 **/Temp.** 95 °C
End Time: 1508 **/Temp.** 93 °C
Thermometer ID/Pos: AIC24 / 6.1

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSWLE07IMW2	LE07IMW2	0.05	L	0.05	L	AQ	IM	AMJ	05/07/2018	____
PBWLE07IMW2	LE07IMW2	↓	L	↓	L	AQ	IM	AMJ	05/07/2018	____
SL3841-002	LE07IMW2	↓	L	↓	L	AQ	IM	AMJ	05/07/2018	A
SL3841-003	LE07IMW2	↓	L	↓	L	AQ	IM	AMJ	05/07/2018	D
SL3841-004	LE07IMW2	↓	L	↓	L	AQ	IM	AMJ	05/07/2018	A
SL3841-005	LE07IMW2	↓	L	↓	L	AQ	IM	AMJ	05/07/2018	D
SL3841-006	LE07IMW2	↓	L	↓	L	AQ	IM	AMJ	05/07/2018	A
SL3841-008	LE07IMW2	↓	L	↓	L	AQ	IM	AMJ	05/07/2018	D
SL3841-009	LE07IMW2	↓	L	↓	L	AQ	IM	AMJ	05/07/2018	A
SL3841-010	LE07IMW2	↓	L	↓	L	AQ	IM	AMJ	05/07/2018	P
SL3841-011	LE07IMW2	↓	L	↓	L	AQ	IM	AMJ	05/07/2018	A
SL3841-011P	LE07IMW2	↓	L	↓	L	AQ	IM	AMJ	05/07/2018	A
SL3841-011S	LE07IMW2	↓	L	↓	L	AQ	IM	AMJ	05/07/2018	A
SL3841-012	LE07IMW2	↓	L	↓	L	AQ	IM	AMJ	05/07/2018	D
SL3841-013	LE07IMW2	↓	L	↓	L	AQ	IM	AMJ	05/07/2018	A
SL3841-014	LE07IMW2	↓	L	↓	L	AQ	IM	AMJ	05/07/2018	D
SL3841-015	LE07IMW2	↓	L	↓	L	AQ	IM	AMJ	05/07/2018	A
SL3841-016	LE07IMW2	↓	L	↓	L	AQ	IM	AMJ	05/07/2018	D
SL3841-017	LE07IMW2	↓	L	↓	L	AQ	IM	AMJ	05/07/2018	A
SL3841-018	LE07IMW2	↓	L	↓	L	AQ	IM	AMJ	05/07/2018	D
SL3841-019	LE07IMW2	↓	L	↓	L	AQ	IM	AMJ	05/07/2018	A
SL3841-020	LE07IMW2	↓	L	↓	L	AQ	IM	AMJ	05/07/2018	D

MD 5/7/18

Digestion performed by: AMJ **On:** 5/4/18

Katahdin Analytical Services 4000388

CONVENTIONAL AND PHYSICAL ANALYTICAL DATA

QC Summary Section

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Quality Control Report

Blank Sample Summary Report

Chromium, Hexavalent

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG227685	SW846 7196A	04-MAY-18	N/A	J 0.0028 mg/L	0.025 mg/L	.0125

Katahdin Analytical Services 5000003

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH
nelac
Cert No E87604

Quality Control Report

Laboratory Control Sample Summary Report

Chromium, Hexavalent

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG227685-2	LCS	WG227685	04-MAY-18	N/A	mg/L	.5	0.51	102	85-115	

Katahdin Analytical Services 500004

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH
nelac
Cert No E87604

Quality Control Report

Duplicate Sample Summary Report

Chromium, Hexavalent

Duplicate Sample ID	Original Sample ID	QC Batch	Analysis Date	Result Units	Sample Result	Duplicate Result	RPD(%)	RPD Limit
WG227685-3	SL3841-10	WG227685	04-MAY-18	mg/L	J 0.016	U 0.12	NC	20

Katahdin
ANALYTICAL SERVICES

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Cert No E87604

Quality Control Report

Matrix Spike Sample Summary Report

Chromium, Hexavalent

Matrix Spike Sample ID	Sample Type	Original Sample ID	QC Batch	Analysis Date	Result Units	Spike Amount	Sample Result	MS Result	Recovery (%)	Recovery Limit
WG227685-4	MS	SL3841-10	WG227685	04-MAY-18	mg/L	2.5	J 0.016	0.68	26*	85 - 115

Katahdin Analytical Services 5000006

Sample Data Section

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1 - pH H2 - DO H3 - sulfite H4 - residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

MCL	Maximum Contaminant Level	NL	No limit
NFL	No Free Liquid Present	FLP	Free Liquid Present
NOD	No Odor Detected	TON	Threshold Odor Number

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is 'qualified' because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3841-10
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3841

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-LGIA-DPT16	AQ	03-MAY-18 14:15:00	04-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.016 mg/L	0.12	0.0038	0.062	SW846 7196A	WG227685	04-MAY-18 11:56:22	N/A	N/A	M1

Katahdin Analytical Services 5000009

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3841-11
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3841

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-LGIA-DPT16-FF	AQ	03-MAY-18 14:15:00	04-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.0085 mg/L	0.025	0.00076	.0125	SW846 7196A	WG227685	04-MAY-18 11:39:59	N/A	N/A	

Katahdin Analytical Services 500010

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3841-12
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3841

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-LGIA-DPT116	AQ	03-MAY-18 12:00:00	04-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.0064 mg/L	0.025	0.00076	.0125	SW846 7196A	WG227685	04-MAY-18 11:40:00	N/A	N/A	

Katahdin Analytical Services 500011

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3841-13
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3841

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-LGIA-DPT116-FF	AQ	03-MAY-18 12:00:00	04-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.0083 mg/L	0.025	0.00076	.0125	SW846 7196A	WG227685	04-MAY-18 11:40:01	N/A	N/A	

Katahdin Analytical Services 500012

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3841-14
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3841

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-UGIA-DPT15	AQ	03-MAY-18 14:20:00	04-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U.0125 mg/L	0.025	0.00076	.0125	SW846 7196A	WG227685	04-MAY-18 11:40:02	N/A	N/A	

Katahdin Analytical Services 500013

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3841-15
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3841

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-UGIA-DPT15-FF	AQ	03-MAY-18 14:20:00	04-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.0045 mg/L	0.025	0.00076	.0125	SW846 7196A	WG227685	04-MAY-18 11:40:03	N/A	N/A	

Katahdin Analytical Services 500014

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3841-16
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3841

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-LGIA-DPT12	AQ	03-MAY-18 15:50:00	04-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.0061 mg/L	0.025	0.00076	.0125	SW846 7196A	WG227685	04-MAY-18 11:40:04	N/A	N/A	

Katahdin Analytical Services 500015

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL3841-17
Report Date: 23-MAY-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL3841

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-19C-LGIA-DPT12-FF	AQ	03-MAY-18 15:50:00	04-MAY-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.0058 mg/L	0.025	0.00076	.0125	SW846 7196A	WG227685	04-MAY-18 11:43:53	N/A	N/A	

Katahdin Analytical Services 500016

Raw Data Section

WET CHEMISTRY BATCH REPORT
May 10 2018, 03:12 pm
Batch: WG227685

Parameter: Chromium, Hexavalent

Date Analyzed: 04-MAY-18

Analyst Initials: ZF

Prep Date: N/A

Prep Method: N/A

Prep Chemist: N/A

Sample	Samp Type	Method	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SL3841-10	SAMP	SW846 7196A	95.000mL	95.000mL	5	.01656	J0.016 mg/L M1	NA	.025	0.0038	0.12		
SL3841-11	SAMP	SW846 7196A	95.000mL	95.000mL	1	.00854	J0.0085 mg/L	NA	.025	0.00076	0.025		
SL3841-12	SAMP	SW846 7196A	95.000mL	95.000mL	1	.00641	J0.0064 mg/L	NA	.025	0.00076	0.025		
SL3841-13	SAMP	SW846 7196A	95.000mL	95.000mL	1	.00832	J0.0083 mg/L	NA	.025	0.00076	0.025		
SL3841-14	SAMP	SW846 7196A	95.000mL	95.000mL	1	-.00246	U.0125 mg/L	NA	.025	0.00076	0.025		
SL3841-15	SAMP	SW846 7196A	95.000mL	95.000mL	1	.00451	J0.0045 mg/L	NA	.025	0.00076	0.025		
SL3841-16	SAMP	SW846 7196A	95.000mL	95.000mL	1	.00614	J0.0061 mg/L	NA	.025	0.00076	0.025		
SL3841-17	SAMP	SW846 7196A	95.000mL	95.000mL	1	.00577	J0.0058 mg/L	NA	.025	0.00076	0.025		
WG227685-1	MBLANK	SW846 7196A	95.000mL	95.000mL	1	.00282	J0.0028 mg/L	NA	.025	0.00076	0.025		
WG227685-2	LCS	SW846 7196A	95.000mL	95.000mL	1	.5104	0.51 mg/L	NA	.025	0.00076	0.025		102
WG227685-3	DUP	SW846 7196A	95.000mL	95.000mL	5	.01127	U0.12 mg/L	NA	.025	0.0038	0.12	NC	
WG227685-4	MS	SW846 7196A	95.000mL	95.000mL	5	.67764	0.68 mg/L	NA	.025	0.0038	0.12		26

Comments:

WG227685-1	SL3841-10
WG227685-2	SL3841-10
WG227685-3	SL3841-10
WG227685-4	SL3841-10

Entered by: ZF Date: 5/10/18 Accepted by: [signature] Date 05/13/18 ✓

Katahdin Analytical Services 5000018

KATAHDIN ANALYTICAL SERVICES, LLC
Wet Chemistry Analysis Run Information Sheet

Analyte: HEXAVALENT CHROMIUM	**Analyst:** ZF
Instrument: KONELAB 20	**Analysis Date:** 5/4/18

Analytical Method (Check all that apply):

☑ SW846 7196 ☐ SM 3500-Cr B ☐ Other (list): _____

WG227685 Dprms R473053

Reagent Information:

Reagent Name	Reagent ID	Expiration Date
Diphenylcarbazide Solution	**W16304**	**6/21/2018**
10% v/v Sulfuric Acid	**W15878**	**11/2/2018**

Standards Information:

Standard Name	Concentration (mg/L as Cr^6)	ID	Expiration Date
Cal. Standard / CCV Stock	1000.0	**SWL 4271**	**1/31/2019**
Cal. Std. / CCV Intermediate	25.0	**W16186**	**5/15/2018**
1.0 mg/L Calibration Standard - (1.00 mL / 25.0 mL dilution of Cal. Standard / CCV Intermediate)	1.00	HC_Cal050418	Day of use only
CCV - (0.50 mL / 25.0 mL dilution of Cal. Standard / CCV Intermediate)	0.50	HC_CCV050418	Day of use only
LCS / MS Stock	1000.0	**SWL4101**	**6/20/2018**
LCS / MS Intermediate	25.0	**W16187**	**5/15/2018**
LCS - (0.50 mL / 25.0 mL dilution of LCS / MS Intermediate)	0.50	HC_LCS050418	Day of use only

Notes:

1) Additional calibration standards (0.50, 0.10, 0.050, 0.020, 0.010 mg/L) are automatically prepared by the instrument during analysis through dilution of the 1.0 mg/L Calibration Standard.
2) Matrix spikes are prepared prior to analysis by adding 0.5 mL of LCS / MS Intermediate to 25 mL of sample. Matrix spike added = 0.50 mg/L as Cr6.

Comments:

Aquakem v. 7.2										
Results from time period:										
Fri May 04 10:30:36 2018										
Fri May 04 17:44:51 2018										
Sample Id	Test short name	Result	Result unit	Result date and time	Dil. Factor	Response	Blank init abs. (A)	Main abs. 1		Comments
CRVI-0	Chromium	0.0037466	mg/l	5/4/18 10:30:36	1	0.00106	-0.00077	0.0003	CAL POINT	
CRVI-1.0	Chromium	0.0138429	mg/l	5/4/18 10:30:37	100	0.00735	0.00208	0.00943	CAL POINT	
CRVI-1.0	Chromium	0.0218581	mg/l	5/4/18 10:30:38	50	0.01235	0.00081	0.01315	CAL POINT	
CRVI-1.0	Chromium	0.0496277	mg/l	5/4/18 10:30:39	20	0.02965	0.00056	0.03021	CAL POINT	
CRVI-1.0	Chromium	0.0979593	mg/l	5/4/18 10:30:40	10	0.05976	0.00028	0.06005	CAL POINT	
CRVI-1.0	Chromium	0.4856365	mg/l	5/4/18 10:30:41	2	0.30131	-0.00001	0.30129	CAL POINT	
CRVI-1.0	Chromium	1.0073289	mg/l	5/4/18 10:30:42	1	0.62636	-0.00021	0.62615	CAL POINT	
CRVI-CCV	Chromium	0.5103582	mg/l	5/4/18 11:39:53	1	0.31671	-0.00073	0.31598		102.07%
CRVI-CCB	Chromium	0.0028209	mg/l	5/4/18 11:39:54	1	0.00049	-0.00057	-0.00009		
CRVI LCS	Chromium	0.5104015	mg/l	5/4/18 11:39:55	1	0.31674	0.00023	0.31697	ACCEPTED	
SL3841-10	Chromium	0.0086445	mg/l	5/4/18 11:39:56	1	0.00411	0.00722	0.01134	ACCEPTED	
SL3841-10 DUP	Chromium	0.0086454	mg/l	5/4/18 11:39:57	1	0.00412	0.00498	0.00909	ACCEPTED	
SL3841-10 MS	Chromium	0.0095902	mg/l	5/4/18 11:39:58	1	0.0047	0.00753	0.01223	ACCEPTED	
SL3841-11	Chromium	0.0085399	mg/l	5/4/18 11:39:59	1	0.00405	0.00005	0.0041	ACCEPTED	
SL3841-12	Chromium	0.0064131	mg/l	5/4/18 11:40:00	1	0.00272	0.01597	0.01869	ACCEPTED	
SL3841-13	Chromium	0.0083293	mg/l	5/4/18 11:40:01	1	0.00392	-0.00017	0.00375	ACCEPTED	
SL3841-14	Chromium	-0.0024575	mg/l	5/4/18 11:40:02	1	-0.0028	0.02496	0.02216	ACCEPTED	
SL3841-15	Chromium	0.0045127	mg/l	5/4/18 11:40:03	1	0.00154	-0.00018	0.00136	ACCEPTED	
SL3841-16	Chromium	0.0061467	mg/l	5/4/18 11:40:04	1	0.00256	0.0309	0.03346	ACCEPTED	
CRVI-CCV	Chromium	0.51175	mg/l	5/4/18 11:43:51	1	0.31758	-0.00097	0.31661		102.35%
CRVI-CCB	Chromium	0.0032655	mg/l	5/4/18 11:43:52	1	0.00076	-0.0006	0.00017		
SL3841-17	Chromium	0.0057759	mg/l	5/4/18 11:43:53	1	0.00233	-0.00076	0.00157	ACCEPTED	
CRVI-CCV	Chromium	0.5180123	mg/l	5/4/18 11:45:45	1	0.32148	-0.00089	0.32059		103.60%
CRVI-CCB	Chromium	0.0033583	mg/l	5/4/18 11:45:46	1	0.00082	-0.00075	0.00007		
CRVI-CCV	Chromium	0.5140244	mg/l	5/4/18 11:56:20	1	0.319	-0.0009	0.3181		102.80%
CRVI-CCB	Chromium	0.0032872	mg/l	5/4/18 11:56:21	1	0.00078	-0.0009	-0.00013		
SL3841-10 1/5	Chromium	0.0165626	mg/l	5/4/18 11:56:22	5	0.00079	0.00431	0.0051	ACCEPTED	
SL3841-10 1/5 DU	Chromium	0.0112763	mg/l	5/4/18 11:56:23	5	0.00013	0.00486	0.00499	ACCEPTED	
SL3841-10 1/5 MS	Chromium	0.6776479	mg/l	5/4/18 11:56:24	5	0.08317	0.00483	0.088	ACCEPTED	
CRVI-CCV	Chromium	0.5172741	mg/l	5/4/18 11:58:26	1	0.32102	-0.00095	0.32007		103.45%
CRVI-CCB	Chromium	0.0031807	mg/l	5/4/18 11:58:27	1	0.00071	-0.00114	-0.00043		

Katahdin Analytical Services 5000020

Laboratory
Analyzer User

Date : 5/4/2018
Time : 12:31

Test Chromium
Unit mg/l

Sample ID:	Result	Date and Time	Note
CRVI-CCV	0.510358	5/4/2018 11:39	
CRVI-CCB	0.002821	5/4/2018 11:39	
CRVI LCS	0.510401	5/4/2018 11:39	
SL3841-10	0.008645	5/4/2018 11:39	
SL3841-10 DUP	0.008645	5/4/2018 11:39	
SL3841-10 MS	0.009590	5/4/2018 11:39	
SL3841-11	0.008540	5/4/2018 11:39	
SL3841-12	0.006413	5/4/2018 11:40	
SL3841-13	0.008329	5/4/2018 11:40	
SL3841-14	-0.002	5/4/2018 11:40	
SL3841-15	0.004513	5/4/2018 11:40	
SL3841-16	0.006147	5/4/2018 11:40	
CRVI-CCV	0.511750	5/4/2018 11:43	
CRVI-CCB	0.003265	5/4/2018 11:43	
SL3841-17	0.005776	5/4/2018 11:43	
CRVI-CCV	0.518012	5/4/2018 11:45	
CRVI-CCB	0.003358	5/4/2018 11:45	
CRVI-CCV	0.514024	5/4/2018 11:56	
CRVI-CCB	0.003287	5/4/2018 11:56	
SL3841-10 1/5	0.016563	5/4/2018 11:56	
SL3841-10 1/5 DU	0.011276	5/4/2018 11:56	
SL3841-10 1/5 MS	0.677648	5/4/2018 11:56	
CRVI-CCV	0.517274	5/4/2018 11:58	
CRVI-CCB	0.003181	5/4/2018 11:58	

Laboratory
Analyzer User

5/4/2018 10:32

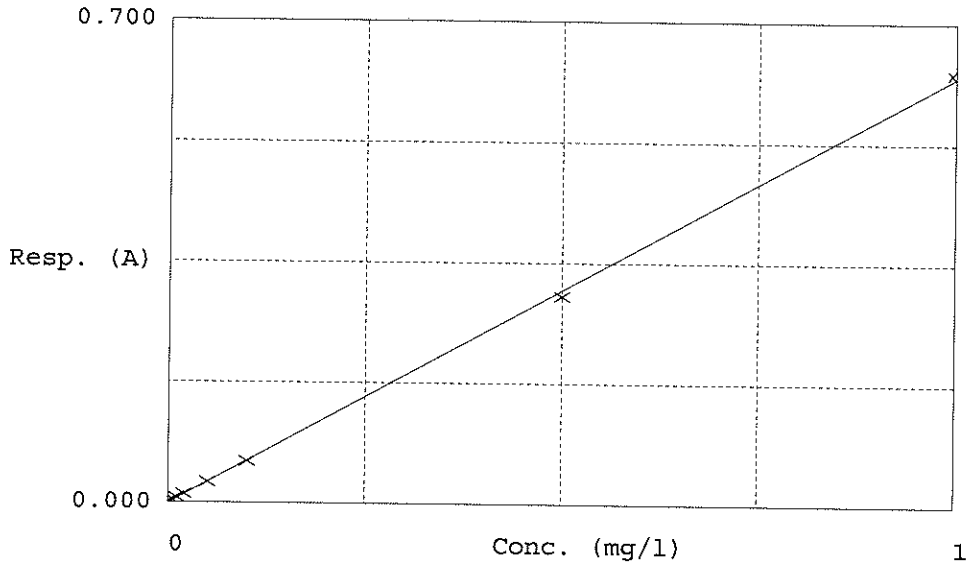
Test Chromium

Accepted 5/4/2018 10:32

Factor 1.605
Bias -0.001

Coeff. of det. 0.999655

Errors



	Calibrator	Response	Calc. con.	Conc.	Errors
1	CRVI-0	0.001	0.0037466	0.0000000	
2	CRVI-1.0	0.007	0.0138429	0.0100000	
3	CRVI-1.0	0.012	0.0218581	0.0200000	
4	CRVI-1.0	0.030	0.0496277	0.0500000	
5	CRVI-1.0	0.060	0.0979593	0.1000000	
6	CRVI-1.0	0.301	0.4856365	0.5000000	
7	CRVI-1.0	0.626	1.0073289	1.0000000	

ATI, INC.
CORNHUSKER
ARMY AMMUNITION PLANT
SL3902

KATAHDIN ANALYTICAL SERVICES
600 TECHNOLOGY WAY
SCARBOROUGH, ME 04074

Katahdin
ANALYTICAL SERVICES

Lab. ID. 2001(non-air)
Lab. ID. 11121 (air only)

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SAMPLE DATA PACKAGE

NARRATIVE
KATAHDIN ANALYTICAL SERVICES
ATI, INC.
CORNHUSKER ARMY AMMUNITION PLANT
SL3902

Sample Receipt

The following samples were received on May 05 and 07, 2018 and were logged in under Katahdin Analytical Services work order number SL3902 for a hardcopy due date of May 17, 2018.

KATAHDIN Sample No.	ATI Sample Identification
SL3902-1	CHAAP-TB-050418
SL3902-2	CHAAP-19C-LGIA-DPT10
SL3902-3	CHAAP-19C-LGIA-DPT10-FF
SL3902-4	CHAAP-19C-LGIA-DPT09
SL3902-5	CHAAP-19C-LGIA-DPT09-FF
SL3902-6	CHAAP-19C-LGIA-DPT08
SL3902-7	CHAAP-19C-LGIA-DPT08-FF
SL3902-8	CHAAP-19C-LGIA-DPT07
SL3902-9	CHAAP-19C-LGIA-DPT07-FF
SL3902-10	CHAAP-19C-LGIA-DPT107
SL3902-11	CHAAP-19C-LGIA-DPT107-FF
SL3902-12	CHAAP-19C-LGIA-DPT06
SL3902-13	CHAAP-19C-LGIA-DPT06-FF
SL3902-14	CHAAP-EB-050418-DPT

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAP standards unless otherwise noted in this narrative or in the Report of Analysis.

We certify that the test results provided in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation L2223.

Analytes which are reported but not listed on our ANAB scope of accreditation will be "^" flagged and the following language will be included in the case narrative for all DoD compliant work: "^" Indicates this analyte is not included on Katahdin Analytical Services DoD-ELAP Scope of Accreditation.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Heather Manz**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of Work Order SL3902 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA and/or for the specific methods listed below or on the Report of Analysis.

Sample SL3902-12 was used for the matrix spike (MS) and matrix spike duplicate (MSD), as per client request.

8270D SIM Analysis

Samples SL3902-8RA and 12RA had high responses for one internal standard that resulted in %D's which were outside the DoD QSM acceptance limit of -50% to +100% of the response of the internal standard of the ICAL midpoint standard.

The target analyte chrysene was detected below ½ of the LOQ in the method blank WG227901-1RA. According to the DoD QSM section D.1.1.1, a method blank is considered to be contaminated if the concentration of any target analyte in the blank exceeds ½ the reporting limit and is greater than 1/10 the amount measured in any sample or 1/10 the regulatory limit (whichever is greater). Since the method blank was acceptable, no further action was taken.

Note: The Form VII has a column for %D that is set to 20%. The DoD QSM 5.0 criterion for an opening CV is 20%D and a closing CV is 50%D. All of the compounds in the CV's were evaluated to either 20% criteria for opening CVs or 50% criteria for closing CVs.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are based on QAPP acceptance limits for the full list of spiked compounds. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable.

8330B Analysis

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are based on QAPP acceptance limits for the full list of spiked compounds. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable.

8260C Analysis

Samples SL3902-2, 4, and 6 had recoveries for the surrogate 1,2-dichloroethane-d4 that were high and outside of the DoD QSM acceptance criteria. Since a high recovery indicates a high bias and no target analytes were detected, no further action was taken.

Sample SL3902-12 was initially analyzed within hold time. The sample was reanalyzed at dilution of 1:10 in order to bring the high concentration of Freon-113 into the calibration range. Due to analyst oversight, the reanalysis was performed four days beyond the 14 day hold time.

The independent check standard (file D1272A), associated with the initial calibration analyzed on the D instrument on 05/10/18, had a high concentration for the target analyte dichlorodifluoromethane, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

The independent check standard (file D1477A), associated with the initial calibration analyzed on the D instrument on 05/22/18, had a high concentration for the target analyte dichlorodifluoromethane, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

The target analyte naphthalene was detected in the method blank WG228859-2 above ½ the LOQ. According to the DoD QSM section D.1.1.1, a method blank is considered to be contaminated if the concentration of any target analyte in the blank exceeds ½ the reporting limit. Since this analyte was not detected in the associated sample, no further action was taken.

The MS/MSD WG228566-6 and 7 had recoveries for the spiked analyte Freon-113 that were non-calculable and reported as 0% recovery due to the concentrations in the native sample being higher than in the MS/MSD. The concentrations of the spiked target analyte in the native sample and MS/MSD were outside of the calibration range. Consequently, the concentrations are estimated values. The laboratory policy is not to reanalyze MS/MSD's for dilutions. The high concentrations likely contributed to the recoveries of these analytes not being calculable in the MS/MSD.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SL3902 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Aqueous-matrix Katahdin Sample Numbers SL3902-(2-14) were digested for ICP-MS analysis on 05/08/18 (QC Batch LE08IMW1) in accordance with USEPA Method 3010A. Katahdin Sample Numbers SL3902-(12, 13) were prepared with duplicate matrix-spiked aliquots, per client request.

The measured concentration of calcium for Katahdin Sample Number SL3902-14 was confirmed through multiple analyses and the analysis of the "raw", undigested sample.

All sample digestates for method 6020A were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting

the samples. Per client request, samples which required an additional dilution have been identified using a "D" flag in the qualifier column on all Form 1s.

ICP-MS analyses of Katahdin Work Order SL3902 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All samples were analyzed within holding times and all analytical run QC criteria were met, except for the following:

The measure selenium concentration (1.27 ug/L) in the Practical Quantitative Limit (PQL) analyzed at 17:16 in analytical run JLE17B is outside the project acceptance criteria. However, the measured selenium concentration for the post-digestion spike of Katahdin Sample Number SL3902-13 (in the raw data as SL3902-013A) is greater than ten times that of the PQL result for selenium, therefore results for selenium for the post-digestion spike of Katahdin Sample Number SL3902-13 were accepted without corrective action.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

Internal Standard Element	Associated Analytes
Lithium	Beryllium, Boron
Scandium	Sodium, Magnesium, Aluminum, Potassium, Calcium
Germanium or Yttrium	Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Silver, Cadmium, Strontium, Molybdenum
Terbium	Antimony, Barium, Tin, Tungsten
Bismuth	Lead, Thallium, Thorium, Uranium

Instrument tuning information can also be found in the raw data section in the reports labeled "6020 QC Tune Report". For Method 6020A, the relative standard deviation was determined from 4 replicate measurements and the peak width was measured at 10% of the peak height.

Analysis of Mercury by Cold Vapor Atomic Absorption (CVAA)

Aqueous-matrix Katahdin Sample Numbers SL3902-(2-14) were digested for mercury analysis on 05/08/18 (QC Batch LE08HGW1) in accordance with USEPA Method 7470A. Katahdin Sample Numbers SL3902-(12, 13) were prepared with duplicate matrix-spiked aliquots, per client request.

Mercury analysis of the Katahdin Work Order SL3902 sample digestates were performed using a Cetac M6100 automated mercury analyzer in accordance with USEPA Method 7470A. All samples were analyzed within holding times. All analytical run QC criteria were met.

Matrix QC Summary

The measured recoveries of aluminum, calcium, magnesium, and sodium in one or both of the matrix-spiked aliquots of Katahdin Sample Number SL3902-12 are outside the project acceptance criteria. This may be attributable to the native concentration being significantly greater than the spike added.

The measured recoveries of calcium, iron, magnesium, manganese and sodium in one or both of the matrix-spiked aliquots of Katahdin Sample Number SL3902-13 are outside the project acceptance criteria. For calcium, magnesium and sodium, this may be attributable to the native concentration being significantly greater than the spike added.

The measured recoveries of aluminum, calcium, magnesium and manganese in the post-digestion spiked aliquot of Katahdin Sample Number SL3902-12 are outside the project's acceptance criteria (80%-120% recovery of the added element). This may be attributable to the native concentration being significantly greater than the spike added.

The measured recoveries of calcium, iron, magnesium, manganese and sodium in the post-digestion spiked aliquot of Katahdin Sample Number SL3902-13 are outside the project's acceptance criteria (80%-120% recovery of the added element). For calcium, magnesium, manganese and sodium, this may be attributable to the native concentration being significantly greater than the spike added.

The matrix-spike duplicate analyses of Katahdin Sample Numbers SL3902-(12, 13) are within the project's acceptance criteria (<20% relative difference between duplicate matrix-spiked aliquots) for all analytes.

The serial dilution analyses of Katahdin Sample Numbers SL3902-(12, 13) are within the project's acceptance criteria (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOD) for all analytes.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the LOQ are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQs, MDLs and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Lab. ID. 2001(non-air)
Lab. ID. 11121(air only)

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Quality Assurance Officer, or their designee, as verified by the following signature.

Leslie Dimond
06.28.18

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client: AFI	KAS PM: HMM	Sampled By: Client	
Project:	KIMS Entry By: JCB	Delivered By: KAS/Fedex	
KAS Work Order#: SL39902	KIMS Review By: HMM	Received By: JCB	
SDG #:	Cooler: 1 of 5	Date/Time Rec.: 5-5-15 10:35	

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	Y				
2. Chain of Custody present in cooler?	Y				
3. Chain of Custody signed by client?	Y				
4. Chain of Custody matches samples?	Y				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	Y				Temp (°C): 1.0
Samples received at <6 °C w/o freezing?	Y				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	Y				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	Y				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?	✓				
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?	Y				1.0°
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client: ATI	KAS PM: [illegible]	Sampled By: Client	
Project:	KIMS Entry By: JLB	Delivered By: KAS/Fedex	
KAS Work Order#: SL3902	KIMS Review By: [illegible]	Received By: JLG	
SDG #:	Cooler: 2 of 5	Date/Time Rec.: [illegible] 5-5-16 1035	

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	Y				
2. Chain of Custody present in cooler?	Y				
3. Chain of Custody signed by client?	Y				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	Y				Temp (°C): 3.0
Samples received at <6 °C w/o freezing?	Y				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	Y				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	Y				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included JLB				
7. Trip Blank present in cooler?	~~✓~~			✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client: ATL	KAS PM: MM	Sampled By: Client	
Project:	KIMS Entry By: JCB	Delivered By: KAS/Fedex	
KAS Work Order#: 523902	KIMS Review By: MM	Received By: JCB	
SDG #:	Cooler: 3 of 5	Date/Time Rec.: 5-5-18 10:35	

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	Y				
2. Chain of Custody present in cooler?	Y				
3. Chain of Custody signed by client?	Y				
4. Chain of Custody matches samples?	Y				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	Y				Temp (°C): 0.2
Samples received at <6 °C w/o freezing?	Y				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	Y				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	Y				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?	JCB			✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included JCB				
7. Trip Blank present in cooler?	JCB			✓	0.2
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client: ATI	KAS PM: HMM	Sampled By: Client	
Project:	KIMS Entry By: TCB	Delivered By: fedex / KAS	
KAS Work Order#: 523902	KIMS Review By: HMM	Received By: AC	
SDG #:	Cooler: 4 of 5	Date/Time Rec.: 5-5-18 1035	

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 3.9
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client: ATI	KAS PM: HMM	Sampled By: Client	
Project:	KIMS Entry By: JCB	Delivered By: KAS/FedEx	
KAS Work Order#: SL3902	KIMS Review By: HMM	Received By: AC	
SDG #:	Cooler: 5 of 5	Date/Time Rec.: 5.5.18 1035	

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 0.3
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client: ATI	KAS PM: HMM	Sampled By: Client	
Project:	KIMS Entry By: JCB	Delivered By: Fedex / KAS	
KAS Work Order#: 523902	KIMS Review By: HMM	Received By: JCB AS03	
SDG #:	Cooler: 1 of 1	Date/Time Rec.: 5-7-18 10:09 9:55	

HMM 5-7-18 10:33

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution HMM 5-7-18
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 2.3
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Arrived late on Mon 5/7. other 5 rec'd 5/5

Heather Manz

From: Spies, Jennifer [jspies@hgl.com]
Sent: Friday, May 11, 2018 5:14 PM
To: Heather Manz
Cc: 'Allison Harbottle'
Subject: RE: CHAAP, SL3902 login COC

Login looks good. Please keep the sample CHAAP-19C-LGIA-DPT10-FF, as you noted. Thanks, Jennifer

Jennifer Spies
HGL
85 NE Interstate Loop 410, Suite 605
San Antonio, TX 78216
phone: 512-291-3588
www.hgl.com

From: Heather Manz <hmanz@katahdinlab.com>
Sent: Monday, May 07, 2018 2:42 PM
To: Spies, Jennifer <jspies@hgl.com>
Cc: 'Allison Harbottle' <aharbottle@katahdinlab.com>
Subject: CHAAP, SL3902 login COC

Hi Jennifer,

Please find the attached login COC and chain for work order SL3902. It looks like "LGIA" was left out of the ID for CHAAP-19C-DPT10-FF. This sample was taken at 09:40. We currently have the sample logged in as CHAAP-19C-LGIA-DPT10-FF. Please let us know if you would like us to change it to match the COC.

Thank you,

Heather Manz

Katahdin's email server will be down this afternoon (05/07/18) starting at 4pm for system maintenance. We apologize for this inconvenience.

Federal Programs Project Manager
Katahdin Analytical Services
A Small Business Enterprise
DoD ELAP Accredited
600 Technology Way
Scarborough, Maine 04074
Office - 207.874.2400 x17
Fax - 207.775.4029
www.katahdinlab.com

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SL3902

Katahdin ANALYTICAL SERVICES
600 Technology Way
P.O. Box 540
Scarborough, ME 04070
Tel: (207) 874-2400
Fax: (207) 775-4029

Chain of Custody

Client:	Contact:	Phone #:	Fax #:
ATI INC.	**David Nelson**	410-992-3424	( )
Address: 9220 Rumsey Road, Suite 100	City: Columbia	State: MD	Zip Code: 21045
Purchase Order #:	Proj. Name/No.:		Katahdin Quote #:
Bill (if different than above):		Address:	
Sampler (Print/Sign): Alex Hedgepath - HGL / Stuart Cameron - ATI			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY

Work Order #:
Katahdin Project Number

Remarks:

Shipping Info: FEDEX UPS CLIENT
Airbill No:
Temp C Temp Blank Intact Not intact

	Sample Description	Time Collected	Date Collected	Matrix	No. of Containers	Analysis and Container Type Preservatives: VOCs (8260) Filt. N	Explosives (8330B) Filt. N	Metals (6020) Filt. N	Metals (6020) Field Filtered Filt. Y	PAHs (8270C-SIM) Filt. N	CrVI (7196A) Filt. N	CrVI (7196A) Field filtered Filt. N	SPLP Metals (1312) Filt. N		Page 1 of 6
1	CHAAP-TB-050418 ✓	915	5/4/2018	W	3	X									
2	CHAAP-19C-LGIA-DPT10 ✓	940	5/4/2018	W	4	X		X							
3	CHAAP-19C-DPT10-FF ✓	940	5/4/2018	W	1				X						
4	CHAAP-19C-LGIA-DPT09 ✓	1035	5/4/2018	W	4	X		X							
5	CHAAP-19C-LGIA-DPT09-FF ✓	1035	5/4/2018	W	1				X						
6	CHAAP-19C-LGIA-DPT08 ✓	1155	5/4/2018	W	4	X		X							
7	CHAAP-19C-LGIA-DPT07 ✓	1250	5/4/2018	W	4	X		X							
8	CHAAP-19C-LGIA-DPT107 ✓	1200	5/4/2018	W	4	X		X							
9	CHAAP-19C-LGIA-DPT06 ✓	1430	5/4/2018	W	4	X		X							
10	CHAAP-19C-LGIA-DPT06-MS/MSD ✓	1430	5/4/2018	W	8	X		X							
11	CHAAP-19C-LGIA-DPT06-FF-MS/MSD ✓	1430	5/4/2018	W	2				X						
12	CHAAP-EB-050418-DPT ✓	1530	5/4/2018	W	4	X		X							
	-END OF SAMPLES														

COMMENTS:

5-7-18 10:30

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath (HGL)	5/4/2018 1600				
Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:

All laboratory and field work shall be governed by KATAHDIN's Standard Terms and Conditions, except where a Purchase Order or Contract supersede.

SL3902

Katahdin ANALYTICAL SERVICES
600 Technology Way
P.O. Box 540
Scarborough, ME 04070
Tel: (207) 874-2400
Fax: (207) 775-4029

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Bill (if different than above):		Address:	
Sampler (Print/Sign): Alex Hedgepath - HGL / Stuart Cameron - ATI			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY Work Order #:
Katahdin Project Number
Remarks:
Shipping Info: FEDEX UPS CLIENT
Airbill No:
Temp C Temp Blank Intact Not Intact

	Sample Description	Time Collected	Date Collected	Matrix	No. of Containers	VOCs (8260) Filt. N	Explosives (8330B) Filt. N	Metals (6020) Filt. N	Metals (6020) Field Filtered Filt. Y	PAHs (8270C-SIM) Filt. N	CrVI (7196A) Filt. N	CrVI (7196A) Field filtered Filt. N	SPLP Metals (1312) Filt. N	
						Analysis and Container Type Preservatives								Page 2 OF 6
1	CHAAP-19C-LGIA-DPT10 ✓	940	5/4/2018	W	4		X			X				
2	CHAAP-19C-LGIA-DPT09 ✓	1035	5/4/2018	W	4		X			X				
	-END OF SAMPLES													

COMMENTS:

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath (HGL)	5/4/2018 1600	5-5-18 10:35 CBowles			
Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:

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Purchase Order #:	Proj. Name/No.:		Katahdin Quote #:
Bill (if different than above):		Address:	
Sampler (Print/Sign): Alex Hedgepath - HGL / Stuart Cameron - ATI			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY

Work Order #:
Katahdin Project Number

Remarks:

Shipping Info: FEDEX UPS CLIENT
Airbill No:
Temp C: Temp Blank Intact Not Intact

	Sample Description	Time Collected	Date Collected	Matrix	No. of Containers	VOCs (8260) Filt. N	Explosives (8330B) Filt. N	Metals (6020) Filt. N	Metals (6020) Field Filtered Filt. Y	PAHs (8270C-SIM) Filt. N	CrVI (7196A) Filt. N	CrVI (7196A) Field filtered Filt. N	SPLP Metals (1312) Filt. N	Filt. N	Page 3 OF 6
1	CHAAP-19C-LGIA-DPT08 ✓	1155	5/4/2018	W	4		X			X					
2	CHAAP-19C-LGIA-DPT06 ✓	1430	5/4/2018	W	4		X			X					
	-END OF SAMPLES														

COMMENTS:

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath (HGL)	5/4/2018 1600				
Relinquished By: AC	Date/Time 5/5-18 1035	Received By: AC	Relinquished By:	Date/Time	Received By:

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Purchase Order #:	Proj. Name/No.:		Katahdin Quote #:
Bill (if different than above):	Address:		
Sampler (Print/Sign): Alex Hedgepath - HGL / Stuart Cameron - ATI			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY — Work Order #: Katahdin Project Number

Remarks:

Shipping Info: FEDEX UPS CLIENT
Airbill No:
Temp C: Temp Blank Intact Not Intact

	Sample Description	Time Collected	Date Collected	Matrix	No. of Containers	Analysis and Container Type Preservatives: VOCs (8260) Filt. N	Explosives (8330B) Filt. N	Metals (6020) Filt. N	Metals (6020) Field Filtered Filt. Y	PAHs (8270C-SIM) Filt. N	CrVI (7196A) Filt. N	CrVI (7196A) Field filtered Filt. N	SPLP Metals (1312) Filt. N	Filt. N
1	CHAAP-19C-LGIA-DPT07 ✓	1250	5/4/2018	W	4		X			X				
2	CHAAP-19C-LGIA-DPT107 ✓	1200	5/4/2018	W	4		X			X				
	-END OF SAMPLES													

COMMENTS:

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath (HGL)	5/4/2018 1600	5-5-18 10:35			
Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:

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Purchase Order #:	Proj. Name/No.:		Katahdin Quote #:
Bill (if different than above):	Address:		
Sampler (Print/Sign): Alex Hedgepath - HGL / Stuart Cameron - ATI			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY — Work Order #: Katahdin Project Number

Remarks:

Shipping Info: FEDEX UPS CLIENT
Airbill No:
Temp C: Temp Blank Intact Not Intact

	Sample Description	Time Collected	Date Collected	Matrix	No. of Containers	VOCs (8260) Filt. N	Explosives (8330B) Filt. N	Metals (6020) Filt. N	Metals (6020) Field Filtered Filt. Y	PAHs (8270C-SIM) Filt. N	CrVI (7196A) Filt. N	CrVI (7196A) Field filtered Filt. N	SPLP Metals (1312) Filt. N	Filt. N	Page 6 OF 6
1	CHAAP-EB-050418-DPT ✓	1530	5/4/2018	W	4		X			X					
2	CHAAP-19C-LGIA-DPT08-FF ✓	1155	5/4/2018	W	1				X						
3	CHAAP-19C-LGIA-DPT07-FF ✓	1250	5/4/2018	W	1				X						
4	CHAAP-19C-LGIA-DPT107-FF ✓	1200	5/4/2018	W	1				X						
5	CHAAP-19C-LGIA-DPT06-FF ✓	1430	5/4/2018	W	1				X						
	-end of samples														

COMMENTS:

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath (HGL)	5/4/2018 1600				
Relinquished By:	Date/Time 5-5-18 1025	Received By:	Relinquished By:	Date/Time	Received By:

All laboratory and field work shall be governed by KATAHDIN's Standard Terms and Conditions, except where a Purchase Order or Contract supersede.

513907

Katahdin ANALYTICAL SERVICES
600 Technology Way
P.O. Box 540
Scarborough, ME 04070
Tel: (207) 874-2400
Fax: (207) 775-4029

Chain of Custody

Client: **ATI INC.**	Contact: **David Nelson**	Phone #: 410-992-3424	Fax #: ( )
Address: 9220 Rumsey Road, Suite 100	City: Columbia	State: MD	Zip Code: 21045
Purchase Order #:	Proj. Name/No.:		Katahdin Quote #:
Bill (if different than above):		Address:	
Sampler (Print/Sign): Alex Hedgepath - HGL / Stuart Cameron - ATI			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY

Work Order #:
Katahdin Project Number

Remarks:

Shipping Info: FEDEX UPS CLIENT
Airbill No:
Temp C Temp Blank Intact Not Intact

	Sample Description	Time Collected	Date Collected	Matrix	No. of Containers	VOCs (8260) Filt. N	Explosives (8330B) Filt. N	Metals (6020) Filt. N	Metals (6020) Field Filtered Filt. Y	PAHs (8270C-SIM) Filt. N	CrVI (7196A) Filt. N	CrVI (7196A) Field filtered Filt. N	SPLP Metals (1312) Filt. N	Filt. N
1	CHAAP-19C-LGIA-DPT06-MS/MSD ✓	1430	5/4/2018	W	8		X			X				
	-END OF SAMPLES													

Analysis and Container Type Preservatives

Page 5 OF 6

COMMENTS:

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath (HGL)	5/4/2018 1600	5-7-18 1020			
Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:

All laboratory and field work shall be governed by KATAHDIN's Standard Terms and Conditions, except where a Purchase Order or Contract supersede.

Katahdin ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

May. 07, 2018
03:36 PM

Login Number: SL3902

Quote/Incoming: ATI-CORN-AAP

Account: ATI001 Web
ATI, Inc.

Project: ATI-CORN-AAP
Cornhusker Army Ammunition Plant

Primary Report Address:
David Nelson
ATI, Inc.
9220 Rumsey Road
Suite 100
Columbia,MD 21045
david.nelson@atiinc.com

Primary Invoice Address:
David Nelson
ATI, Inc.
9220 Rumsey Road
Suite 100
Columbia,MD 21045

Report CC Addresses:

Invoice CC Addresses:

Login Information:

ANALYSIS INSTRUCTIONS	:	FDS, DOD 5.0, ND to LOD w/ J flags. Report all valid runs. Summary needs all forms. GC/MS IS eval window +/- 10s. Metals ICSA - 2 sigfigs. Flag dilutions w/ "D" qualifier. Include any excedences in the case narrative. Limits in KIMS match QAPP. Hold extracts for 60 days. 8260B, 8270DSIM, 8330B, 6020A/7471A/7471B. No explo soil prep needed (8330B Mod). Reprep failing hex cr matrix QC & parent samples, include info in narrative.
CHECK NO.	:	
CLIENT PO#	:	PN:16-027
CLIENT PROJECT MANAGE	:	
CONTRACT	:	W9182F-16-D-0014
COOLER TEMPERATURE	:	1.0, 3.0, 0.2, 3.9, 0.3
DELIVERY SERVICES	:	FedEx Sat
EDD FORMAT	:	ATI-(ERIS)
LOGIN INITIALS	:	JCB
PM	:	HHM
PROJECT NAME	:	Cornhusker Army Ammunition Plant
QC LEVEL	:	IV
REPORT INSTRUCTIONS	:	2 sample receipt dates (May 5 & 7) SDS needs all forms. Check EDD, if errors, fix them or contact client (Jeff Martin 703-736-4533 jmartin@hgl.com). Upload PDF & EDD to SDS. Email david.nelson@atiinc.com, seichelberger@hgl.com, rsullivan@hgl.com, Teresa.offner@atiinc.com, jspies@hgl.com to tell them report is uploaded. Email invoice to jspies@hgl.com, david.nelson@atiinc.com and seichelberger@hgl.com.
SDG ID	:	
SDG STATUS	:	
VERBAL TAT	:	5

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL3902-1	CHAAP-TB-050418	04-MAY-18 09:15	05-MAY-18		17-MAY-18		

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	18-MAY-18	40mL Vial+HCl		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL3902-2	CHAAP-19C-LGIA-DPT10	04-MAY-18 09:40	05-MAY-18		17-MAY-18		

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	18-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	11-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	11-MAY-18	1L N-Amber Glass		
Aqueous	P	TAL-MET-SW846-ICPMS				

SW3010MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7470-MERCURY

5-7-18

Login Number: SL3902 **Quote/Incoming:** ATI-CORN-AAP

Account: ATI001 Web

ATI, Inc.

Project: ATI-CORN-AAP

Cornhusker Army Ammunition Plant

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL3902-3	CHAAP-19C-LGIA-DPT10-FF	04-MAY-18 09:40	05-MAY-18			17-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW3010MS-PREP	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ALUMINUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ANTIMONY-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ARSENIC-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-BARIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-BERYLLIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-CADMIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-CALCIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-CHROMIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-COBALT-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-COPPER-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-IRON-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-LEAD-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-MAGNESIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-MANGANESE-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-NICKEL-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-POTASSIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-SELENIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-SILVER-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-SODIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-THALLIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-VANADIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ZINC-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW7470-MERCURY-DIS	01-JUN-18	500mL Plastic+HNO3		

SL3902-4	CHAAP-19C-LGIA-DPT09	04-MAY-18 10:35	05-MAY-18			17-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	18-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	11-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	11-MAY-18	1L N-Amber Glass		
Aqueous	P	TAL-MET-SW846-ICPMS				

SW3010MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7470-MERCURY

HHM
5-7-18

Login Number: SL3902 **Quote/Incoming:** ATI-CORN-AAP

Account: ATI001 Web

ATI, Inc.

Project: ATI-CORN-AAP

Cornhusker Army Ammunition Plant

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL3902-5	CHAAP-19C-LGIA-DPT09-FF	04-MAY-18 10:35	05-MAY-18			17-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW3010MS-PREP	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ALUMINUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ANTIMONY-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ARSENIC-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-BARIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-BERYLLIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-CADMIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-CALCIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-CHROMIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-COBALT-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-COPPER-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-IRON-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-LEAD-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-MAGNESIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-MANGANESE-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-NICKEL-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-POTASSIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-SELENIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-SILVER-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-SODIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-THALLIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-VANADIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ZINC-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW7470-MERCURY-DIS	01-JUN-18	500mL Plastic+HNO3		

SL3902-6	CHAAP-19C-LGIA-DPT08	04-MAY-18 11:55	05-MAY-18		17-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	18-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	11-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	11-MAY-18	1L N-Amber Glass		
Aqueous	P	TAL-MET-SW846-ICPMS				

SW3010MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7470-MERCURY

5-7-18

Login Number: SL3902 **Quote/Incoming:** ATI-CORN-AAP

Account: ATI001 Web

ATI, Inc.

Project: ATI-CORN-AAP

Cornhusker Army Ammunition Plant

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL3902-7	CHAAP-19C-LGIA-DPT08-FF	04-MAY-18 11:55	05-MAY-18			17-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW3010MS-PREP	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ALUMINUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ANTIMONY-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ARSENIC-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-BARIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-BERYLLIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-CADMIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-CALCIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-CHROMIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-COBALT-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-COPPER-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-IRON-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-LEAD-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-MAGNESIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-MANGANESE-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-NICKEL-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-POTASSIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-SELENIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-SILVER-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-SODIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-THALLIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-VANADIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ZINC-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW7470-MERCURY-DIS	01-JUN-18	500mL Plastic+HNO3		

SL3902-8	CHAAP-19C-LGIA-DPT07	04-MAY-18 12:50	05-MAY-18		17-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	18-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	11-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	11-MAY-18	1L N-Amber Glass		
Aqueous	P	TAL-MET-SW846-ICPMS				

SW3010MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7470-MERCURY

5-7-18

Login Number: SL3902

Quote/Incoming: ATI-CORN-AAP

Account: ATI001 Web

ATI, Inc.

Project: ATI-CORN-AAP

Cornhusker Army Ammunition Plant

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL3902-9	CHAAP-19C-LGIA-DPT07-FF	04-MAY-18 12:50	05-MAY-18			17-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW3010MS-PREP	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ALUMINUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ANTIMONY-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ARSENIC-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-BARIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-BERYLLIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-CADMIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-CALCIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-CHROMIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-COBALT-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-COPPER-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-IRON-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-LEAD-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-MAGNESIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-MANGANESE-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-NICKEL-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-POTASSIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-SELENIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-SILVER-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-SODIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-THALLIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-VANADIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ZINC-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW7470-MERCURY-DIS	01-JUN-18	500mL Plastic+HNO3		

SL3902-10	CHAAP-19C-LGIA-DPT107	04-MAY-18 12:00	05-MAY-18		17-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	18-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	11-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	11-MAY-18	1L N-Amber Glass		
Aqueous	P	TAL-MET-SW846-ICPMS				

SW3010MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7470-MERCURY

MTM
5-7-18

Login Number: SL3902 **Quote/Incoming:** ATI-CORN-AAP

Account: ATI001 Web

ATI, Inc.

Project: ATI-CORN-AAP

Cornhusker Army Ammunition Plant

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL3902-11	CHAAP-19C-LGIA-DPT107-FF	04-MAY-18 12:00	05-MAY-18			17-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW3010MS-PREP	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ALUMINUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ANTIMONY-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ARSENIC-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-BARIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-BERYLLIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-CADMIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-CALCIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-CHROMIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-COBALT-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-COPPER-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-IRON-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-LEAD-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-MAGNESIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-MANGANESE-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-NICKEL-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-POTASSIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-SELENIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-SILVER-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-SODIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-THALLIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-VANADIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ZINC-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW7470-MERCURY-DIS	01-JUN-18	500mL Plastic+HNO3		

SL3902-12	CHAAP-19C-LGIA-DPT06	04-MAY-18 14:30	05-MAY-18			17-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	18-MAY-18	40mL Vial+HCl		**MS/MSD, extra ambers arrived on 05/07/2018**
Aqueous	S	SW8270SIMPAH-S	11-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	11-MAY-18	1L N-Amber Glass		
Aqueous	P	TAL-MET-SW846-ICPMS				

SW3010MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7470-MERCURY

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Katahdin ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

May. 07, 2018
03:36 PM

Login Number: SL3902 **Quote/Incoming:** ATI-CORN-AAP

Account: ATI001 Web
ATI, Inc.

Project: ATI-CORN-AAP
Cornhusker Army Ammunition Plant

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL3902-13	CHAAP-19C-LGIA-DPT06-FF	04-MAY-18 14:30	05-MAY-18			17-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW3010MS-PREP	31-OCT-18	250mL Plastic+HNO3		MS/MSD
Aqueous	S	SW6020-ALUMINUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ANTIMONY-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ARSENIC-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-BARIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-BERYLLIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-CADMIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-CALCIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-CHROMIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-COBALT-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-COPPER-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-IRON-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-LEAD-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-MAGNESIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-MANGANESE-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-NICKEL-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-POTASSIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-SELENIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-SILVER-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-SODIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-THALLIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-VANADIUM-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW6020-ZINC-DIS	31-OCT-18	250mL Plastic+HNO3		
Aqueous	S	SW7470-MERCURY-DIS	01-JUN-18	500mL Plastic+HNO3		

SL3902-14	CHAAP-EB-050418-DPT	04-MAY-18 15:30	05-MAY-18		17-MAY-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	18-MAY-18	40mL Vial+HCl		
Aqueous	S	SW8270SIMPAH-S	11-MAY-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	11-MAY-18	1L N-Amber Glass		
Aqueous	P	TAL-MET-SW846-ICPMS				

SW3010MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7470-MERCURY

Total Samples: ***14*** ***Total Analyses:*** ***173***

5-7-18

SAMPLE DATA SUMMARY PACKAGE

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	The pre-digestion spiked sample recovery is not within control limits.
*	The duplicate sample analysis relative percent difference (RPD) is not within control limits.
B	Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.
A	The post-digestion spiked sample recovery is not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ) (previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.
J	The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).
Q	One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV).

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-1
Client ID: CHAAP-TB-050418
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1332.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-1
Client ID: CHAAP-TB-050418
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1332.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		106.	%					
1,2-Dichloroethane-d4		119.	%					
Toluene-d8		99.6	%					
P-Bromofluorobenzene		99.5	%					

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http://www.katahdinlab.com

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-2
Client ID: CHAAP-19C-LGIA-DPT10
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1342.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-2
Client ID: CHAAP-19C-LGIA-DPT10
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1342.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		111.	%					
1,2-Dichloroethane-d4	*	128.	%					
Toluene-d8		99.5	%					
P-Bromofluorobenzene		100.	%					

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http://www.katahdinlab.com

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-4
Client ID: CHAAP-19C-LGIA-DPT09
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1343.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-4
Client ID: CHAAP-19C-LGIA-DPT09
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1343.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		110.	%					
1,2-Dichloroethane-d4	*	125.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		101.	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-6
Client ID: CHAAP-19C-LGIA-DPT08
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1344.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-6
Client ID: CHAAP-19C-LGIA-DPT08
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1344.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		110.	%					
1,2-Dichloroethane-d4	*	127.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		101.	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-8
Client ID: CHAAP-19C-LGIA-DPT07
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1363.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		5.4	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-8
Client ID: CHAAP-19C-LGIA-DPT07
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1363.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		102.	%					
1,2-Dichloroethane-d4		106.	%					
Toluene-d8		99.2	%					
P-Bromofluorobenzene		98.0	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-10
Client ID: CHAAP-19C-LGIA-DPT107
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1364.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		5.7	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-10
Client ID: CHAAP-19C-LGIA-DPT107
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1364.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		103.	%					
1,2-Dichloroethane-d4		109.	%					
Toluene-d8		99.6	%					
P-Bromofluorobenzene		96.4	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-12
Client ID: CHAAP-19C-LGIA-DPT06
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1371.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	EMM	620	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-12
Client ID: CHAAP-19C-LGIA-DPT06
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1371.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	J	1.6	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		109.	%					
1,2-Dichloroethane-d4		118.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		99.2	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-12DL
Client ID: CHAAP-19C-LGIA-DPT06
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1483.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 22-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228859

Analysis Date: 22-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	5.0	ug/L	10	1	10.	1.9	5.0
1,1,1-Trichloroethane	U	5.0	ug/L	10	1	10.	2.0	5.0
1,1,2,2-Tetrachloroethane	U	5.0	ug/L	10	1	10.	3.8	5.0
Freon-113	MM	490	ug/L	10	1	10.	3.1	5.0
1,1,2-Trichloroethane	U	5.0	ug/L	10	1	10.	3.3	5.0
1,1-Dichloroethane	U	5.0	ug/L	10	1	10.	2.1	5.0
1,1-Dichloroethene	U	5.0	ug/L	10	1	10.	3.5	5.0
1,1-Dichloropropene	U	5.0	ug/L	10	1	10.	2.1	5.0
1,2,3-Trichlorobenzene	U	5.0	ug/L	10	1	10.	2.7	5.0
1,2,3-Trichloropropane	U	5.0	ug/L	10	1	10.	1.9	5.0
1,2,4-Trichlorobenzene	U	5.0	ug/L	10	1	10.	3.7	5.0
1,2,4-Trimethylbenzene	U	5.0	ug/L	10	1	10.	1.9	5.0
1,2-Dibromo-3-Chloropropane	U	5.0	ug/L	10	1	10.	5.0	5.0
1,2-Dichlorobenzene	U	5.0	ug/L	10	1	10.	1.5	5.0
1,2-Dichloroethane	U	5.0	ug/L	10	1	10.	2.0	5.0
1,2-Dichloropropane	U	5.0	ug/L	10	1	10.	2.5	5.0
1,3,5-Trimethylbenzene	U	5.0	ug/L	10	1	10.	2.0	5.0
1,3-Dichlorobenzene	U	5.0	ug/L	10	1	10.	2.6	5.0
1,3-Dichloropropane	U	5.0	ug/L	10	1	10.	2.2	5.0
1,4-Dichlorobenzene	U	5.0	ug/L	10	1	10.	2.4	5.0
2,2-Dichloropropane	U	5.0	ug/L	10	1	10.	2.5	5.0
2-Butanone	U	25	ug/L	10	5	50.	13.	25.
2-Chlorotoluene	U	5.0	ug/L	10	1	10.	2.0	5.0
2-Hexanone	U	25	ug/L	10	5	50.	17.	25.
4-Chlorotoluene	U	5.0	ug/L	10	1	10.	2.6	5.0
P-Isopropyltoluene	U	5.0	ug/L	10	1	10.	2.5	5.0
4-Methyl-2-Pentanone	U	25	ug/L	10	5	50.	13.	25.
Acetone	U	25	ug/L	10	5	50.	22.	25.
Benzene	U	5.0	ug/L	10	1	10.	2.6	5.0
Bromobenzene	U	5.0	ug/L	10	1	10.	2.4	5.0
Bromoform	U	5.0	ug/L	10	1	10.	2.3	5.0
Bromomethane	U	10	ug/L	10	2	20.	4.9	10.
Carbon Disulfide	U	5.0	ug/L	10	1	10.	2.5	5.0
Carbon Tetrachloride	U	5.0	ug/L	10	1	10.	2.2	5.0
Chlorobenzene	U	5.0	ug/L	10	1	10.	2.2	5.0

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-12DL
Client ID: CHAAP-19C-LGIA-DPT06
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1483.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 22-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228859

Analysis Date: 22-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	5.0	ug/L	10	1	10.	2.1	5.0
Dibromochloromethane	U	5.0	ug/L	10	1	10.	3.0	5.0
Chloroethane	U	10	ug/L	10	2	20.	5.5	10.
Chloroform	U	5.0	ug/L	10	1	10.	3.2	5.0
Chloromethane	U	10	ug/L	10	2	20.	3.6	10.
cis-1,2-Dichloroethene	U	5.0	ug/L	10	1	10.	2.1	5.0
cis-1,3-Dichloropropene	U	5.0	ug/L	10	1	10.	1.9	5.0
Dibromomethane	U	5.0	ug/L	10	1	10.	4.6	5.0
Bromodichloromethane	U	5.0	ug/L	10	1	10.	3.3	5.0
Dichlorodifluoromethane	U	10	ug/L	10	2	20.	2.4	10.
Ethylbenzene	U	5.0	ug/L	10	1	10.	2.1	5.0
1,2-Dibromoethane	U	5.0	ug/L	10	1	10.	2.2	5.0
Hexachlorobutadiene	U	7.5	ug/L	10	1	10.	5.2	7.5
Isopropylbenzene	U	5.0	ug/L	10	1	10.	2.3	5.0
Methyl tert-butyl Ether	U	5.0	ug/L	10	1	10.	3.6	5.0
Methylene Chloride	U	25	ug/L	10	5	50.	11.	25.
m+p-Xylenes	U	10	ug/L	10	2	20.	5.9	10.
Naphthalene	U	5.0	ug/L	10	1	10.	3.0	5.0
N-Butylbenzene	U	5.0	ug/L	10	1	10.	2.3	5.0
N-Propylbenzene	U	5.0	ug/L	10	1	10.	2.6	5.0
o-Xylene	U	5.0	ug/L	10	1	10.	2.5	5.0
sec-Butylbenzene	U	5.0	ug/L	10	1	10.	2.1	5.0
Styrene	U	5.0	ug/L	10	1	10.	2.3	5.0
tert-Butylbenzene	U	5.0	ug/L	10	1	10.	3.1	5.0
Tetrachloroethene	U	5.0	ug/L	10	1	10.	4.0	5.0
Toluene	U	5.0	ug/L	10	1	10.	2.7	5.0
trans-1,2-Dichloroethene	U	5.0	ug/L	10	1	10.	2.5	5.0
trans-1,3-Dichloropropene	U	5.0	ug/L	10	1	10.	2.0	5.0
Trichloroethene	U	5.0	ug/L	10	1	10.	2.8	5.0
Trichlorofluoromethane	U	10	ug/L	10	2	20.	2.4	10.
Vinyl Chloride	U	10	ug/L	10	2	20.	2.5	10.
Dibromofluoromethane		107.	%					
1,2-Dichloroethane-d4		115.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		99.0	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-14
Client ID: CHAAP-EB-050418-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1333.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone		8.2	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-14
Client ID: CHAAP-EB-050418-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1333.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	J	0.39	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		106.	%					
1,2-Dichloroethane-d4		118.	%					
Toluene-d8		98.0	%					
P-Bromofluorobenzene		99.3	%					

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Report of Analytical Results

Client:
Lab ID: WG228421-2
Client ID: Method Blank Sample
Project:
SDG: SL3902
Lab File ID: D1331.D

Sample Date:
Received Date:
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG228421-2
Client ID: Method Blank Sample
Project:
SDG: SL3902
Lab File ID: D1331.D

Sample Date:
Received Date:
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		108.	%					
1,2-Dichloroethane-d4		119.	%					

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Report of Analytical Results

Client:
Lab ID: WG228421-2
Client ID: Method Blank Sample
Project:
SDG: SL3902
Lab File ID: D1331.D

Sample Date:
Received Date:
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		99.2	%					
P-Bromofluorobenzene		98.7	%					

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Report of Analytical Results

Client:
Lab ID: WG228566-2
Client ID: Method Blank Sample
Project:
SDG: SL3902
Lab File ID: D1360.D

Sample Date:
Received Date:
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client:
Lab ID: WG228566-2
Client ID: Method Blank Sample
Project:
SDG: SL3902
Lab File ID: D1360.D

Sample Date:
Received Date:
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		97.1	%					
1,2-Dichloroethane-d4		98.4	%					

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Report of Analytical Results

Client:
Lab ID: WG228566-2
Client ID: Method Blank Sample
Project:
SDG: SL3902
Lab File ID: D1360.D

Sample Date:
Received Date:
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		98.4	%					
P-Bromofluorobenzene		95.6	%					

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Report of Analytical Results

Client:
Lab ID: WG228859-2
Client ID: Method Blank Sample
Project:
SDG: SL3902
Lab File ID: D1479.D

Sample Date:
Received Date:
Extract Date: 22-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228859

Analysis Date: 22-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG228859-2
Client ID: Method Blank Sample
Project:
SDG: SL3902
Lab File ID: D1479.D

Sample Date:
Received Date:
Extract Date: 22-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228859

Analysis Date: 22-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	J	0.57	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		99.5	%					
1,2-Dichloroethane-d4		100.	%					

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Report of Analytical Results

Client:
Lab ID: WG228859-2
Client ID: Method Blank Sample
Project:
SDG: SL3902
Lab File ID: D1479.D

Sample Date:
Received Date:
Extract Date: 22-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228859

Analysis Date: 22-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		98.4	%					
P-Bromofluorobenzene		95.3	%					

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** AQ
Lab Code: KAS **SDG:** SL3902

Client Sample ID	Lab Sample ID	Col. ID	BFB	#	DBF	#	DCA	#	TOL	#
CHAAP-TB-050418	SL3902-1		99.5		106.		119.		99.6	
CHAAP-19C-LGIA-DPT10	SL3902-10		96.4		103.		109.		99.6	
CHAAP-19C-LGIA-DPT06	SL3902-12		99.2		109.		118.		100.	
CHAAP-19C-LGIA-DPT06	SL3902-12DL		99.0		107.		115.		101.	
CHAAP-EB-050418-DPT	SL3902-14		99.3		106.		118.		98.0	
CHAAP-19C-LGIA-DPT10	SL3902-2		100.		111.		128.	*	99.5	
CHAAP-19C-LGIA-DPT09	SL3902-4		101.		110.		125.	*	100.	
CHAAP-19C-LGIA-DPT08	SL3902-6		101.		110.		127.	*	100.	
CHAAP-19C-LGIA-DPT07	SL3902-8		98.0		102.		106.		99.2	
Laboratory Control S	WG228421-1		101.		104.		110.		99.7	
Method Blank Sample	WG228421-2		98.7		108.		119.		99.2	
Laboratory Control S	WG228566-1		96.4		97.3		91.3		99.4	
Method Blank Sample	WG228566-2		95.6		97.1		98.4		98.4	
Matrix Spike	WG228566-6		105.		101.		106.		101.	
Matrix Spike Duplica	WG228566-7		101.		100.		103.		99.8	
Laboratory Control S	WG228859-1		97.7		98.5		92.2		101.	
Method Blank Sample	WG228859-2		95.3		99.5		100.		98.4	

		QC Limits
TOL	TOLUENE-D8	89-120
DCA	1,2-DICHLOROETHANE-D4	81-120
DBF	DIBROMOFLUOROMETHANE	80-120
BFB	P-BROMOFLUOROBENZENE	85-120

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG228421-1
Client ID: LCS
Project:
SDG: SL3902
LCS File ID: D1329.D

Sample Date:
Received Date:
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	98.8	50.0	49.4	ug/L	78-125
1,1,1-Trichloroethane	98.8	50.0	49.4	ug/L	74-131
1,1,2,2-Tetrachloroethane	97.4	50.0	48.7	ug/L	71-121
Freon-113	85.6	50.0	42.8	ug/L	70-136
1,1,2-Trichloroethane	96.6	50.0	48.3	ug/L	80-120
1,1-Dichloroethane	104.	50.0	52.0	ug/L	77-125
1,1-Dichloroethene	96.0	50.0	48.0	ug/L	71-131
1,1-Dichloropropene	95.0	50.0	47.5	ug/L	79-125
1,2,3-Trichlorobenzene	98.0	50.0	49.0	ug/L	69-129
1,2,3-Trichloropropane	98.0	50.0	49.0	ug/L	73-122
1,2,4-Trichlorobenzene	98.8	50.0	49.4	ug/L	69-130
1,2,4-Trimethylbenzene	98.4	50.0	49.2	ug/L	76-124
1,2-Dibromo-3-Chloropropane	103.	50.0	51.7	ug/L	62-128
1,2-Dichlorobenzene	94.2	50.0	47.1	ug/L	80-120
1,2-Dichloroethane	100.	50.0	50.0	ug/L	73-128
1,2-Dichloropropane	97.0	50.0	48.5	ug/L	78-122
1,3,5-Trimethylbenzene	98.2	50.0	49.1	ug/L	75-124
1,3-Dichlorobenzene	94.0	50.0	47.0	ug/L	80-120
1,3-Dichloropropane	94.4	50.0	47.2	ug/L	80-120
1,4-Dichlorobenzene	91.8	50.0	45.9	ug/L	79-120
2,2-Dichloropropane	95.8	50.0	47.9	ug/L	60-139
2-Butanone	102.	50.0	50.9	ug/L	56-143
2-Chlorotoluene	96.4	50.0	48.2	ug/L	79-122
2-Hexanone	103.	50.0	51.6	ug/L	57-139
4-Chlorotoluene	97.6	50.0	48.8	ug/L	78-122
P-Isopropyltoluene	101.	50.0	50.7	ug/L	77-127
4-Methyl-2-Pentanone	104.	50.0	51.8	ug/L	67-130
Acetone	104.	50.0	52.0	ug/L	39-160
Benzene	93.8	50.0	46.9	ug/L	79-120
Bromobenzene	92.0	50.0	46.0	ug/L	80-120
Bromoform	94.8	50.0	47.4	ug/L	66-130
Bromomethane	100.	50.0	50.0	ug/L	53-141
Carbon Disulfide	97.6	50.0	48.8	ug/L	64-133
Carbon Tetrachloride	98.2	50.0	49.1	ug/L	72-136
Chlorobenzene	92.8	50.0	46.4	ug/L	82-120

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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG228421-1
Client ID: LCS
Project:
SDG: SL3902
LCS File ID: D1329.D

Sample Date:
Received Date:
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	98.0	50.0	49.0	ug/L	78-123
Dibromochloromethane	104.	50.0	51.9	ug/L	74-126
Chloroethane	114.	50.0	56.9	ug/L	60-138
Chloroform	98.4	50.0	49.2	ug/L	79-124
Chloromethane	112.	50.0	56.2	ug/L	50-139
cis-1,2-Dichloroethene	93.6	50.0	46.8	ug/L	78-123
cis-1,3-Dichloropropene	99.8	50.0	49.9	ug/L	75-124
Dibromomethane	102.	50.0	51.0	ug/L	79-123
Bromodichloromethane	104.	50.0	52.2	ug/L	79-125
Dichlorodifluoromethane	127.	50.0	63.6	ug/L	32-152
Ethylbenzene	94.8	50.0	47.4	ug/L	79-121
1,2-Dibromoethane	98.6	50.0	49.3	ug/L	77-121
Hexachlorobutadiene	103.	50.0	51.6	ug/L	66-134
Isopropylbenzene	102.	50.0	51.1	ug/L	72-131
Methyl tert-butyl Ether	96.6	50.0	48.3	ug/L	71-124
Methylene Chloride	94.0	50.0	47.0	ug/L	74-124
m+p-Xylenes	96.1	100.	96.1	ug/L	80-121
Naphthalene	91.4	50.0	45.7	ug/L	61-128
N-Butylbenzene	106.	50.0	53.2	ug/L	75-128
N-Propylbenzene	95.8	50.0	47.9	ug/L	76-126
o-Xylene	98.0	50.0	49.0	ug/L	78-122
sec-Butylbenzene	100.	50.0	50.2	ug/L	77-126
Styrene	99.6	50.0	49.8	ug/L	78-123
tert-Butylbenzene	98.8	50.0	49.4	ug/L	78-124
Tetrachloroethene	91.0	50.0	45.5	ug/L	74-129
Toluene	92.6	50.0	46.3	ug/L	80-121
trans-1,2-Dichloroethene	91.4	50.0	45.7	ug/L	75-124
trans-1,3-Dichloropropene	107.	50.0	53.6	ug/L	73-127
Trichloroethene	94.6	50.0	47.3	ug/L	79-123
Trichlorofluoromethane	102.	50.0	51.0	ug/L	65-141
Vinyl Chloride	107.	50.0	53.7	ug/L	58-137
Dibromofluoromethane	104.				80-120
1,2-Dichloroethane-d4	110.				81-120
Toluene-d8	99.7				89-120
P-Bromofluorobenzene	101.				85-120

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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG228566-1
Client ID: LCS
Project:
SDG: SL3902
LCS File ID: D1358.D

Sample Date:
Received Date:
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	101.	50.0	50.4	ug/L	78-125
1,1,1-Trichloroethane	93.2	50.0	46.6	ug/L	74-131
1,1,2,2-Tetrachloroethane	93.0	50.0	46.5	ug/L	71-121
Freon-113	94.4	50.0	47.2	ug/L	70-136
1,1,2-Trichloroethane	94.8	50.0	47.4	ug/L	80-120
1,1-Dichloroethane	101.	50.0	50.4	ug/L	77-125
1,1-Dichloroethene	94.0	50.0	47.0	ug/L	71-131
1,1-Dichloropropene	97.6	50.0	48.8	ug/L	79-125
1,2,3-Trichlorobenzene	90.8	50.0	45.4	ug/L	69-129
1,2,3-Trichloropropane	89.6	50.0	44.8	ug/L	73-122
1,2,4-Trichlorobenzene	98.6	50.0	49.3	ug/L	69-130
1,2,4-Trimethylbenzene	102.	50.0	50.8	ug/L	76-124
1,2-Dibromo-3-Chloropropane	81.8	50.0	40.9	ug/L	62-128
1,2-Dichlorobenzene	99.2	50.0	49.6	ug/L	80-120
1,2-Dichloroethane	89.6	50.0	44.8	ug/L	73-128
1,2-Dichloropropane	99.6	50.0	49.8	ug/L	78-122
1,3,5-Trimethylbenzene	102.	50.0	50.9	ug/L	75-124
1,3-Dichlorobenzene	97.8	50.0	48.9	ug/L	80-120
1,3-Dichloropropane	94.6	50.0	47.3	ug/L	80-120
1,4-Dichlorobenzene	94.4	50.0	47.2	ug/L	79-120
2,2-Dichloropropane	95.8	50.0	47.9	ug/L	60-139
2-Butanone	89.2	50.0	44.6	ug/L	56-143
2-Chlorotoluene	98.0	50.0	49.0	ug/L	79-122
2-Hexanone	94.6	50.0	47.3	ug/L	57-139
4-Chlorotoluene	98.0	50.0	49.0	ug/L	78-122
P-Isopropyltoluene	103.	50.0	51.4	ug/L	77-127
4-Methyl-2-Pentanone	92.4	50.0	46.2	ug/L	67-130
Acetone	86.8	50.0	43.4	ug/L	39-160
Benzene	99.8	50.0	49.9	ug/L	79-120
Bromobenzene	98.6	50.0	49.3	ug/L	80-120
Bromoform	101.	50.0	50.5	ug/L	66-130
Bromomethane	90.6	50.0	45.3	ug/L	53-141
Carbon Disulfide	93.4	50.0	46.7	ug/L	64-133
Carbon Tetrachloride	94.6	50.0	47.3	ug/L	72-136
Chlorobenzene	97.0	50.0	48.5	ug/L	82-120

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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG228566-1
Client ID: LCS
Project:
SDG: SL3902
LCS File ID: D1358.D

Sample Date:
Received Date:
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	101.	50.0	50.5	ug/L	78-123
Dibromochloromethane	104.	50.0	52.2	ug/L	74-126
Chloroethane	92.8	50.0	46.4	ug/L	60-138
Chloroform	95.0	50.0	47.5	ug/L	79-124
Chloromethane	91.8	50.0	45.9	ug/L	50-139
cis-1,2-Dichloroethene	99.8	50.0	49.9	ug/L	78-123
cis-1,3-Dichloropropene	91.2	50.0	45.6	ug/L	75-124
Dibromomethane	96.0	50.0	48.0	ug/L	79-123
Bromodichloromethane	101.	50.0	50.4	ug/L	79-125
Dichlorodifluoromethane	95.2	50.0	47.6	ug/L	32-152
Ethylbenzene	96.4	50.0	48.2	ug/L	79-121
1,2-Dibromoethane	94.4	50.0	47.2	ug/L	77-121
Hexachlorobutadiene	89.4	50.0	44.7	ug/L	66-134
Isopropylbenzene	107.	50.0	53.5	ug/L	72-131
Methyl tert-butyl Ether	99.6	50.0	49.8	ug/L	71-124
Methylene Chloride	96.4	50.0	48.2	ug/L	74-124
m+p-Xylenes	99.4	100.	99.4	ug/L	80-121
Naphthalene	84.2	50.0	42.1	ug/L	61-128
N-Butylbenzene	101.	50.0	50.5	ug/L	75-128
N-Propylbenzene	96.6	50.0	48.3	ug/L	76-126
o-Xylene	103.	50.0	51.4	ug/L	78-122
sec-Butylbenzene	100.	50.0	50.0	ug/L	77-126
Styrene	105.	50.0	52.7	ug/L	78-123
tert-Butylbenzene	101.	50.0	50.5	ug/L	78-124
Tetrachloroethene	99.4	50.0	49.7	ug/L	74-129
Toluene	96.4	50.0	48.2	ug/L	80-121
trans-1,2-Dichloroethene	98.4	50.0	49.2	ug/L	75-124
trans-1,3-Dichloropropene	103.	50.0	51.5	ug/L	73-127
Trichloroethene	94.0	50.0	47.0	ug/L	79-123
Trichlorofluoromethane	84.8	50.0	42.4	ug/L	65-141
Vinyl Chloride	93.6	50.0	46.8	ug/L	58-137
Dibromofluoromethane	97.3				80-120
1,2-Dichloroethane-d4	91.3				81-120
Toluene-d8	99.4				89-120
P-Bromofluorobenzene	96.4				85-120

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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG228859-1
Client ID: LCS
Project:
SDG: SL3902
LCS File ID: D1477.D

Sample Date:
Received Date:
Extract Date: 22-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228859

Analysis Date: 22-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	102.	50.0	50.8	ug/L	78-125
1,1,1-Trichloroethane	93.4	50.0	46.7	ug/L	74-131
1,1,2,2-Tetrachloroethane	94.4	50.0	47.2	ug/L	71-121
Freon-113	89.8	50.0	44.9	ug/L	70-136
1,1,2-Trichloroethane	97.0	50.0	48.5	ug/L	80-120
1,1-Dichloroethane	101.	50.0	50.5	ug/L	77-125
1,1-Dichloroethene	88.6	50.0	44.3	ug/L	71-131
1,1-Dichloropropene	98.6	50.0	49.3	ug/L	79-125
1,2,3-Trichlorobenzene	90.0	50.0	45.0	ug/L	69-129
1,2,3-Trichloropropane	90.4	50.0	45.2	ug/L	73-122
1,2,4-Trichlorobenzene	99.4	50.0	49.7	ug/L	69-130
1,2,4-Trimethylbenzene	103.	50.0	51.4	ug/L	76-124
1,2-Dibromo-3-Chloropropane	82.4	50.0	41.2	ug/L	62-128
1,2-Dichlorobenzene	99.8	50.0	49.9	ug/L	80-120
1,2-Dichloroethane	90.0	50.0	45.0	ug/L	73-128
1,2-Dichloropropane	101.	50.0	50.3	ug/L	78-122
1,3,5-Trimethylbenzene	102.	50.0	50.9	ug/L	75-124
1,3-Dichlorobenzene	98.6	50.0	49.3	ug/L	80-120
1,3-Dichloropropane	96.2	50.0	48.1	ug/L	80-120
1,4-Dichlorobenzene	94.8	50.0	47.4	ug/L	79-120
2,2-Dichloropropane	89.0	50.0	44.5	ug/L	60-139
2-Butanone	80.8	50.0	40.4	ug/L	56-143
2-Chlorotoluene	99.4	50.0	49.7	ug/L	79-122
2-Hexanone	81.8	50.0	40.9	ug/L	57-139
4-Chlorotoluene	98.0	50.0	49.0	ug/L	78-122
P-Isopropyltoluene	104.	50.0	52.0	ug/L	77-127
4-Methyl-2-Pentanone	85.4	50.0	42.7	ug/L	67-130
Acetone	85.6	50.0	42.8	ug/L	39-160
Benzene	99.6	50.0	49.8	ug/L	79-120
Bromobenzene	98.8	50.0	49.4	ug/L	80-120
Bromoform	102.	50.0	51.0	ug/L	66-130
Bromomethane	104.	50.0	52.2	ug/L	53-141
Carbon Disulfide	99.0	50.0	49.5	ug/L	64-133
Carbon Tetrachloride	95.2	50.0	47.6	ug/L	72-136
Chlorobenzene	97.0	50.0	48.5	ug/L	82-120

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LCS Recovery Report

Client:
Lab ID: WG228859-1
Client ID: LCS
Project:
SDG: SL3902
LCS File ID: D1477.D

Sample Date:
Received Date:
Extract Date: 22-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228859

Analysis Date: 22-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	99.8	50.0	49.9	ug/L	78-123
Dibromochloromethane	106.	50.0	52.9	ug/L	74-126
Chloroethane	105.	50.0	52.6	ug/L	60-138
Chloroform	96.2	50.0	48.1	ug/L	79-124
Chloromethane	109.	50.0	54.5	ug/L	50-139
cis-1,2-Dichloroethene	98.8	50.0	49.4	ug/L	78-123
cis-1,3-Dichloropropene	90.0	50.0	45.0	ug/L	75-124
Dibromomethane	97.6	50.0	48.8	ug/L	79-123
Bromodichloromethane	103.	50.0	51.6	ug/L	79-125
Dichlorodifluoromethane	127.	50.0	63.6	ug/L	32-152
Ethylbenzene	97.2	50.0	48.6	ug/L	79-121
1,2-Dibromoethane	98.0	50.0	49.0	ug/L	77-121
Hexachlorobutadiene	90.4	50.0	45.2	ug/L	66-134
Isopropylbenzene	107.	50.0	53.4	ug/L	72-131
Methyl tert-butyl Ether	102.	50.0	51.2	ug/L	71-124
Methylene Chloride	97.6	50.0	48.8	ug/L	74-124
m+p-Xylenes	98.7	100.	98.7	ug/L	80-121
Naphthalene	88.6	50.0	44.3	ug/L	61-128
N-Butylbenzene	103.	50.0	51.4	ug/L	75-128
N-Propylbenzene	97.6	50.0	48.8	ug/L	76-126
o-Xylene	103.	50.0	51.3	ug/L	78-122
sec-Butylbenzene	102.	50.0	50.8	ug/L	77-126
Styrene	98.6	50.0	49.3	ug/L	78-123
tert-Butylbenzene	103.	50.0	51.3	ug/L	78-124
Tetrachloroethene	95.2	50.0	47.6	ug/L	74-129
Toluene	98.6	50.0	49.3	ug/L	80-121
trans-1,2-Dichloroethene	94.2	50.0	47.1	ug/L	75-124
trans-1,3-Dichloropropene	104.	50.0	52.1	ug/L	73-127
Trichloroethene	96.2	50.0	48.1	ug/L	79-123
Trichlorofluoromethane	92.8	50.0	46.4	ug/L	65-141
Vinyl Chloride	111.	50.0	55.5	ug/L	58-137
Dibromofluoromethane	98.5				80-120
1,2-Dichloroethane-d4	92.2				81-120
Toluene-d8	101.				89-120
P-Bromofluorobenzene	97.7				85-120

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ANALYTICAL SERVICES

MS/MSD Recovery Report

MS ID: WG228566-6
MSD ID: WG228566-7
Sample ID: SL3902-12
Client ID: CHAAP-19C-LGIA-DPT06
Project:
SDG: SL3902
MS File ID: D1372.D

Received Date:
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566
Report Date: 23-MAY-18
MSD File ID: D1373.d

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
1,1,1,2-Tetrachloroethane	50.0	50.0	ug/L	U0.50	49.9	50.5	99.8	101.	1	20	78-125
1,1,1-Trichloroethane	50.0	50.0	ug/L	U0.50	48.6	48.6	97.2	97.2	0	20	74-131
1,1,2,2-Tetrachloroethane	50.0	50.0	ug/L	U0.50	48.3	47.3	96.6	94.6	2	20	71-121
Freon-113	50.0	50.0	ug/L	EMM620	606.	592.	0*	0*	2	20	70-136
1,1,2-Trichloroethane	50.0	50.0	ug/L	U0.50	48.8	47.4	97.6	94.8	3	20	80-120
1,1-Dichloroethane	50.0	50.0	ug/L	U0.50	50.7	52.1	101.	104.	3	20	77-125
1,1-Dichloroethene	50.0	50.0	ug/L	U0.50	47.5	48.8	95.0	97.6	3	20	71-131
1,1-Dichloropropene	50.0	50.0	ug/L	U0.50	48.8	49.8	97.6	99.6	2	20	79-125
1,2,3-Trichlorobenzene	50.0	50.0	ug/L	U0.50	46.5	46.3	93.0	92.6	0	20	69-129
1,2,3-Trichloropropane	50.0	50.0	ug/L	U0.50	47.9	46.8	95.8	93.6	2	20	73-122
1,2,4-Trichlorobenzene	50.0	50.0	ug/L	U0.50	48.3	48.2	96.6	96.4	0	20	69-130
1,2,4-Trimethylbenzene	50.0	50.0	ug/L	U0.50	49.6	48.8	99.2	97.6	2	20	76-124
1,2-Dibromo-3-Chloropropane	50.0	50.0	ug/L	U0.50	46.4	48.7	92.8	97.4	5	20	62-128
1,2-Dichlorobenzene	50.0	50.0	ug/L	U0.50	48.2	47.5	96.4	95.0	1	20	80-120
1,2-Dichloroethane	50.0	50.0	ug/L	U0.50	49.4	47.8	98.8	95.6	3	20	73-128
1,2-Dichloropropane	50.0	50.0	ug/L	U0.50	49.2	48.2	98.4	96.4	2	20	78-122
1,3,5-Trimethylbenzene	50.0	50.0	ug/L	U0.50	49.6	49.2	99.2	98.4	1	20	75-124
1,3-Dichlorobenzene	50.0	50.0	ug/L	U0.50	47.6	47.1	95.2	94.2	1	20	80-120
1,3-Dichloropropane	50.0	50.0	ug/L	U0.50	47.0	46.8	94.0	93.6	0	20	80-120
1,4-Dichlorobenzene	50.0	50.0	ug/L	U0.50	45.8	45.2	91.6	90.4	1	20	79-120
2,2-Dichloropropane	50.0	50.0	ug/L	U0.50	44.3	44.2	88.6	88.4	0	20	60-139
2-Butanone	50.0	50.0	ug/L	U2.5	48.9	48.3	97.8	96.6	1	20	56-143
2-Chlorotoluene	50.0	50.0	ug/L	U0.50	48.2	47.8	96.4	95.6	1	20	79-122
2-Hexanone	50.0	50.0	ug/L	U2.5	48.6	50.0	97.2	100.	3	20	57-139
4-Chlorotoluene	50.0	50.0	ug/L	U0.50	48.0	47.6	96.0	95.2	1	20	78-122
P-Isopropyltoluene	50.0	50.0	ug/L	U0.50	49.3	49.2	98.6	98.4	0	20	77-127
4-Methyl-2-Pentanone	50.0	50.0	ug/L	U2.5	50.8	48.8	102.	97.6	4	20	67-130
Acetone	50.0	50.0	ug/L	U2.5	50.2	51.6	100.	103.	3	20	39-160
Benzene	50.0	50.0	ug/L	U0.50	48.7	48.6	97.4	97.2	0	20	79-120
Bromobenzene	50.0	50.0	ug/L	U0.50	46.3	46.3	92.6	92.6	0	20	80-120
Bromoform	50.0	50.0	ug/L	U0.50	51.9	54.5	104.	109.	5	20	66-130
Bromomethane	50.0	50.0	ug/L	U1.0	40.6	43.2	81.2	86.4	6	20	53-141
Carbon Disulfide	50.0	50.0	ug/L	U0.50	47.8	47.8	95.6	95.6	0	20	64-133

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MS/MSD Recovery Report

MS ID: WG228566-6
MSD ID: WG228566-7
Sample ID: SL3902-12
Client ID: CHAAP-19C-LGIA-DPT06
Project:
SDG: SL3902
MS File ID: D1372.D

Received Date:
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566
Report Date: 23-MAY-18
MSD File ID: D1373.d

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Carbon Tetrachloride	50.0	50.0	ug/L	U0.50	50.0	49.5	100.	99.0	1	20	72-136
Chlorobenzene	50.0	50.0	ug/L	U0.50	47.1	46.8	94.2	93.6	1	20	82-120
Bromochloromethane	50.0	50.0	ug/L	U0.50	47.8	49.6	95.6	99.2	4	20	78-123
Dibromochloromethane	50.0	50.0	ug/L	U0.50	51.8	52.9	104.	106.	2	20	74-126
Chloroethane	50.0	50.0	ug/L	U1.0	49.2	51.0	98.4	102.	4	20	60-138
Chloroform	50.0	50.0	ug/L	U0.50	49.3	49.0	98.6	98.0	1	20	79-124
Chloromethane	50.0	50.0	ug/L	U1.0	50.2	51.8	100.	104.	3	20	50-139
cis-1,2-Dichloroethene	50.0	50.0	ug/L	U0.50	46.4	48.3	92.8	96.6	4	20	78-123
cis-1,3-Dichloropropene	50.0	50.0	ug/L	U0.50	42.7	42.6	85.4	85.2	0	20	75-124
Dibromomethane	50.0	50.0	ug/L	U0.50	50.3	49.1	101.	98.2	2	20	79-123
Bromodichloromethane	50.0	50.0	ug/L	U0.50	52.6	52.7	105.	105.	0	20	79-125
Dichlorodifluoromethane	50.0	50.0	ug/L	J1.6	51.4	52.3	99.6	101.	2	20	32-152
Ethylbenzene	50.0	50.0	ug/L	U0.50	47.9	48.1	95.8	96.2	0	20	79-121
1,2-Dibromoethane	50.0	50.0	ug/L	U0.50	48.8	47.6	97.6	95.2	2	20	77-121
Hexachlorobutadiene	50.0	50.0	ug/L	U0.75	42.4	43.0	84.8	86.0	1	20	66-134
Isopropylbenzene	50.0	50.0	ug/L	U0.50	51.4	51.5	103.	103.	0	20	72-131
Methyl tert-butyl Ether	50.0	50.0	ug/L	U0.50	46.2	48.4	92.4	96.8	5	20	71-124
Methylene Chloride	50.0	50.0	ug/L	U2.5	45.9	46.7	91.8	93.4	2	20	74-124
m+p-Xylenes	100.	100.	ug/L	U1.0	99.2	99.0	99.2	99.0	0	20	80-121
Naphthalene	50.0	50.0	ug/L	U0.50	43.6	44.0	87.2	88.0	1	20	61-128
N-Butylbenzene	50.0	50.0	ug/L	U0.50	50.1	49.3	100.	98.6	2	20	75-128
N-Propylbenzene	50.0	50.0	ug/L	U0.50	47.1	47.0	94.2	94.0	0	20	76-126
o-Xylene	50.0	50.0	ug/L	U0.50	51.0	51.1	102.	102.	0	20	78-122
sec-Butylbenzene	50.0	50.0	ug/L	U0.50	49.0	48.8	98.0	97.6	0	20	77-126
Styrene	50.0	50.0	ug/L	U0.50	51.4	50.2	103.	100.	2	20	78-123
tert-Butylbenzene	50.0	50.0	ug/L	U0.50	49.5	49.1	99.0	98.2	1	20	78-124
Tetrachloroethene	50.0	50.0	ug/L	U0.50	46.2	47.6	92.4	95.2	3	20	74-129
Toluene	50.0	50.0	ug/L	U0.50	48.6	47.5	97.2	95.0	2	20	80-121
trans-1,2-Dichloroethene	50.0	50.0	ug/L	U0.50	46.5	47.3	93.0	94.6	2	20	75-124
trans-1,3-Dichloropropene	50.0	50.0	ug/L	U0.50	52.6	52.0	105.	104.	1	20	73-127
Trichloroethene	50.0	50.0	ug/L	U0.50	48.8	47.6	97.6	95.2	2	20	79-123
Trichlorofluoromethane	50.0	50.0	ug/L	U1.0	49.4	47.5	98.8	95.0	4	20	65-141
Vinyl Chloride	50.0	50.0	ug/L	U1.0	45.7	49.7	91.4	99.4	8	20	58-137

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MS/MSD Recovery Report

MS ID: WG228566-6
MSD ID: WG228566-7
Sample ID: SL3902-12
Client ID: CHAAP-19C-LGIA-DPT06
Project:
SDG: SL3902
MS File ID: D1372.D

Received Date:
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566
Report Date: 23-MAY-18
MSD File ID: D1373.d

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA

Dibromofluoromethane	101.	100.	80-120
1,2-Dichloroethane-d4	106.	103.	81-120
Toluene-d8	101.	99.8	89-120
P-Bromofluorobenzene	105.	101.	85-120

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : D1331.D
Instrument ID : GCMS-D
Heated Purge : No

SDG : SL3902
Lab Sample ID : WG228421-2
Date Analyzed : 16-MAY-18
Time Analyzed : 14:47

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG228421-1	D1329.D	05/16/18	13:32
CHAAP-TB-050418	SL3902-1	D1332.D	05/16/18	15:23
CHAAP-EB-050418-DPT	SL3902-14	D1333.D	05/16/18	15:58
CHAAP-19C-LGIA-DPT10	SL3902-2	D1342.D	05/16/18	21:19
CHAAP-19C-LGIA-DPT09	SL3902-4	D1343.D	05/16/18	21:55
CHAAP-19C-LGIA-DPT08	SL3902-6	D1344.D	05/16/18	22:30

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : D1360.D
Instrument ID : GCMS-D
Heated Purge : No

SDG : SL3902
Lab Sample ID : WG228566-2
Date Analyzed : 17-MAY-18
Time Analyzed : 14:16

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG228566-1	D1358.D	05/17/18	12:58
CHAAP-19C-LGIA-DPT07	SL3902-8	D1363.D	05/17/18	16:03
CHAAP-19C-LGIA-DPT107	SL3902-10	D1364.D	05/17/18	16:38
CHAAP-19C-LGIA-DPT06	SL3902-12	D1371.D	05/17/18	20:47
Matrix Spike	WG228566-6	D1372.D	05/17/18	21:22
Matrix Spike Duplica	WG228566-7	D1373.D	05/17/18	21:58

Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : D1479.D
Instrument ID : GCMS-D
Heated Purge : No

SDG : SL3902
Lab Sample ID : WG228859-2
Date Analyzed : 22-MAY-18
Time Analyzed : 14:37

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG228859-1	D1477.D	05/22/18	13:18
CHAAP-19C-LGIA-DPT06	SL3902-12DL	D1483.D	05/22/18	17:00

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB173A.D
Instrument ID : GCMS-D

SDG : SL3902
Date Analyzed : 10-MAY-18
Time Analyzed : 07:31
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	20.5		
75	30.0 - 60.0% of mass 95	50.9		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.3		
173	Less than 2.0% of mass 174	0.4	0.51	1
174	Greater than 50.0% of mass 95	73.1		
175	5.0 - 9.0% of mass 174	4.9	6.77	1
176	95.0 - 101.0% of mass 174	70.3	96.24	1
177	5.0 - 9.0% of mass 176	5.1	7.24	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG227999-4	D1259.D	05/10/18	08:36
Initial Calibration	WG227999-3	D1260.D	05/10/18	09:12
Initial Calibration	WG227999-2	D1261.D	05/10/18	09:47
Initial Calibration	WG227999-1	D1262.D	05/10/18	10:22
Initial Calibration	WG227999-6	D1263.D	05/10/18	10:58
Initial Calibration	WG227999-5	D1264.D	05/10/18	11:34

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB179A.D
Instrument ID : GCMS-D

SDG : SL3902
Date Analyzed : 16-MAY-18
Time Analyzed : 12:14
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	23.3		
75	30.0 - 60.0% of mass 95	55.0		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	7.2		
173	Less than 2.0% of mass 174	0.0	0.0	1
174	Greater than 50.0% of mass 95	67.0		
175	5.0 - 9.0% of mass 174	5.3	7.95	1
176	95.0 - 101.0% of mass 174	67.0	100.09	1
177	5.0 - 9.0% of mass 176	5.1	7.58	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG228421-4	D1328.D	05/16/18	12:40
Laboratory Control S	WG228421-1	D1329.D	05/16/18	13:32
Method Blank Sample	WG228421-2	D1331.D	05/16/18	14:47
CHAAP-TB-050418	SL3902-1	D1332.D	05/16/18	15:23
CHAAP-EB-050418-DPT	SL3902-14	D1333.D	05/16/18	15:58
CHAAP-19C-LGIA-DPT10	SL3902-2	D1342.D	05/16/18	21:19
CHAAP-19C-LGIA-DPT09	SL3902-4	D1343.D	05/16/18	21:55
CHAAP-19C-LGIA-DPT08	SL3902-6	D1344.D	05/16/18	22:30
Continuing Calibrati	WG228421-5	D1345.D	05/16/18	23:06

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB180A.D
Instrument ID : GCMS-D

SDG : SL3902
Date Analyzed : 17-MAY-18
Time Analyzed : 07:31
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	22.7		
75	30.0 - 60.0% of mass 95	57.3		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.8		
173	Less than 2.0% of mass 174	0.2	0.34	1
174	Greater than 50.0% of mass 95	70.7		
175	5.0 - 9.0% of mass 174	5.4	7.60	1
176	95.0 - 101.0% of mass 174	68.0	96.27	1
177	5.0 - 9.0% of mass 176	4.1	6.06	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG228547-4	D1351.D	05/17/18	08:11
Initial Calibration	WG228547-3	D1352.D	05/17/18	08:47
Initial Calibration	WG228547-2	D1353.D	05/17/18	09:22
Initial Calibration	WG228547-1	D1354.D	05/17/18	09:58
Initial Calibration	WG228547-6	D1355.D	05/17/18	10:34
Initial Calibration	WG228547-5	D1356.D	05/17/18	11:09

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB181.D
Instrument ID : GCMS-D

SDG : SL3902
Date Analyzed : 17-MAY-18
Time Analyzed : 11:45
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	21.0		
75	30.0 - 60.0% of mass 95	52.5		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	7.0		
173	Less than 2.0% of mass 174	0.6	0.85	1
174	Greater than 50.0% of mass 95	70.6		
175	5.0 - 9.0% of mass 174	5.5	7.87	1
176	95.0 - 101.0% of mass 174	69.4	98.35	1
177	5.0 - 9.0% of mass 176	4.7	6.74	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG228566-4	D1357.D	05/17/18	12:12
Laboratory Control S	WG228566-1	D1358.D	05/17/18	12:58
Independent Source	WG228566-8	D1358A.D	05/17/18	12:58
Method Blank Sample	WG228566-2	D1360.D	05/17/18	14:16
CHAAP-19C-LGIA-DPT07	SL3902-8	D1363.D	05/17/18	16:03
CHAAP-19C-LGIA-DPT107	SL3902-10	D1364.D	05/17/18	16:38
CHAAP-19C-LGIA-DPT06	SL3902-12	D1371.D	05/17/18	20:47
Matrix Spike	WG228566-6	D1372.D	05/17/18	21:22
Matrix Spike Duplica	WG228566-7	D1373.D	05/17/18	21:58
Continuing Calibrati	WG228566-5	D1374.D	05/17/18	22:34

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB188A.D
Instrument ID : GCMS-D

SDG : SL3902
Date Analyzed : 22-MAY-18
Time Analyzed : 08:04
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	22.1		
75	30.0 - 60.0% of mass 95	52.7		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.7		
173	Less than 2.0% of mass 174	0.2	0.30	1
174	Greater than 50.0% of mass 95	67.4		
175	5.0 - 9.0% of mass 174	4.5	6.74	1
176	95.0 - 101.0% of mass 174	64.1	95.08	1
177	5.0 - 9.0% of mass 176	4.3	6.65	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG228847-4	D1470.D	05/22/18	08:30
Initial Calibration	WG228847-3	D1471.D	05/22/18	09:06
Initial Calibration	WG228847-2	D1472.D	05/22/18	09:42
Initial Calibration	WG228847-1	D1473.D	05/22/18	10:17
Initial Calibration	WG228847-6	D1474.D	05/22/18	10:53
Initial Calibration	WG228847-5	D1475.D	05/22/18	11:28

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB189A.D
Instrument ID : GCMS-D

SDG : SL3902
Date Analyzed : 22-MAY-18
Time Analyzed : 12:02
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	20.3		
75	30.0 - 60.0% of mass 95	53.9		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	5.9		
173	Less than 2.0% of mass 174	0.4	0.53	1
174	Greater than 50.0% of mass 95	66.4		
175	5.0 - 9.0% of mass 174	5.1	7.67	1
176	95.0 - 101.0% of mass 174	64.0	96.33	1
177	5.0 - 9.0% of mass 176	4.6	7.14	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG228859-4	D1476.D	05/22/18	12:26
Laboratory Control S	WG228859-1	D1477.D	05/22/18	13:18
Independent Source	WG228859-6	D1477A.D	05/22/18	13:18
Method Blank Sample	WG228859-2	D1479.D	05/22/18	14:37
CHAAP-19C-LGIA-DPT06	SL3902-12DL	D1483.D	05/22/18	17:00
Continuing Calibrati	WG228859-5	D1493.D	05/22/18	22:57

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SL3902
Project : Cornhusker Army Ammunition Plant **Instrument ID:** GCMS-D
Lab File IDs : D1262.d D1261.d D1260.d D1259.d D1264.d D1263.d **Column ID:**
Calibration Date(s): 10-MAY-18 08:36 10-MAY-18 11:34

	1.0000 Level 1	5.0000 Level 2	20.0000 Level 3	50.0000 Level 4	100.0000 Level 5	150.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Dichlorodifluoromethane	0.56036	0.59912	0.62483	0.60950	0.62453	0.61277	AVG		0.60519		3.96777	15.00000	O
Chloromethane	0.71127	0.68264	0.67802	0.59645	0.63672	0.59762	AVG		0.65045		7.33830	15.00000	O
Vinyl chloride	0.46959	0.49687	0.51239	0.48848	0.56664	0.51577	AVG		0.50829		6.52407	15.00000	O
Bromomethane	0.30260	0.26788	0.26498	0.23963	0.24674	0.25289	AVG		0.26245		8.53203	15.00000	O
Chloroethane	0.23847	0.26206	0.25226	0.22731	0.18302	+++++	AVG		0.23262		13.2063	15.00000	O
Trichlorofluoromethane	0.76041	0.78015	0.80338	0.79947	0.79324	0.79504	AVG		0.78861		2.01768	15.00000	O
1,1-Dichloroethene	0.34469	0.32839	0.33955	0.33016	0.34879	0.33647	AVG		0.33801		2.36567	15.00000	O
Carbon Disulfide	0.99826	0.97103	1.06246	1.03232	1.12397	1.08371	AVG		1.04529		5.38727	15.00000	O
Freon-113	0.30122	0.29262	0.30001	0.28888	0.30027	0.29087	AVG		0.29565		1.84828	15.00000	O
Methylene Chloride	0.61362	0.55548	0.57546	0.53776	0.55687	0.54615	AVG		0.56422		4.83685	15.00000	O
Acetone	0.17382	0.14952	0.15679	0.15230	0.15231	0.15542	AVG		0.15669		5.59790	15.00000	O
trans-1,2-Dichloroethene	0.53235	0.50919	0.52822	0.49421	0.53192	0.50130	AVG		0.51620		3.25004	15.00000	O
Methyl tert-butyl ether	1.17857	1.21878	1.34740	1.37229	1.46092	1.43232	AVG		1.33505		8.53040	15.00000	O
1,1-Dichloroethane	0.96520	0.94646	0.98243	0.94643	0.99564	0.95460	AVG		0.96513		2.09263	15.00000	O
cis-1,2-Dichloroethene	0.54551	0.52174	0.56593	0.53592	0.57367	0.55414	AVG		0.54948		3.49762	15.00000	O
2,2-Dichloropropane	0.51306	0.56999	0.66803	0.68445	0.69207	0.68747	AVG		0.63584		11.9021	15.00000	O
Bromochloromethane	0.25010	0.27752	0.28551	0.27723	0.28805	0.24706	AVG		0.27091		6.58674	15.00000	O
Chloroform	1.04357	0.98020	1.02330	0.98855	1.03325	1.00142	AVG		1.01172		2.51944	15.00000	O
Carbon Tetrachloride	0.37895	0.39537	0.44336	0.44346	0.46738	0.45689	AVG		0.43090		8.22438	15.00000	O
1,1,1-Trichloroethane	0.78735	0.78923	0.84489	0.82921	0.88442	0.85946	AVG		0.83243		4.65205	15.00000	O
1,1-Dichloropropene	0.43243	0.43097	0.47757	0.45493	0.48549	0.46283	AVG		0.45737		4.94117	15.00000	O
2-Butanone	0.21658	0.23388	0.24827	0.25015	0.25362	0.25502	AVG		0.24292		6.15404	15.00000	O
Benzene	1.19928	1.19823	1.27774	1.22214	1.26810	1.23664	AVG		1.23369		2.73880	15.00000	O
1,2-Dichloroethane	0.59710	0.48606	0.51110	0.51053	0.49204	0.49744	AVG		0.51571		7.96933	15.00000	O
Trichloroethene	0.33988	0.33083	0.34805	0.33016	0.34010	0.32904	AVG		0.33634		2.24769	15.00000	O
Dibromomethane	0.21127	0.21183	0.23563	0.23446	0.23435	0.23663	AVG		0.22736		5.40021	15.00000	O
1,2-Dichloropropane	0.30665	0.31790	0.34807	0.33817	0.34525	0.34515	AVG		0.33353		5.14493	15.00000	O
Bromodichloromethane	0.43827	0.41371	0.47751	0.46910	0.48560	0.48922	AVG		0.46224		6.47849	15.00000	O
cis-1,3-dichloropropene	0.40927	0.46214	0.57360	0.58801	0.60037	0.59327	AVG		0.53778		15.1155	15.00000	W
Toluene	0.76506	0.74235	0.77132	0.74148	0.76806	0.73442	AVG		0.75378		2.13553	15.00000	O
4-methyl-2-pentanone	0.26774	0.29231	0.32726	0.32637	0.30872	0.30419	AVG		0.30443		7.36532	15.00000	O
Tetrachloroethene	0.26361	0.27417	0.27963	0.26259	0.28530	0.27048	AVG		0.27263		3.27508	15.00000	O
trans-1,3-Dichloropropene	0.35692	0.40341	0.49142	0.51215	0.51535	0.51716	AVG		0.46607		14.7546	15.00000	O
1,1,2-Trichloroethane	0.26522	0.25564	0.26624	0.27058	0.26863	0.26663	AVG		0.26549		1.95539	15.00000	O
Dibromochloromethane	0.30045	0.33006	0.38445	0.40073	0.41646	0.42129	AVG		0.37557		13.1454	15.00000	O
1,3-Dichloropropane	0.57494	0.59960	0.63036	0.61601	0.62439	0.62201	AVG		0.61122		3.37716	15.00000	O
1,2-Dibromoethane	0.29121	0.29925	0.32787	0.33305	0.33514	0.33418	AVG		0.32012		6.12463	15.00000	O

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ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3902
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-D
Lab File IDs : D1262.d D1261.d D1260.d D1259.d D1264.d D1263.d
Column ID:
Calibration Date(s): 10-MAY-18 08:36 10-MAY-18 11:34

2-Hexanone	0.17592	0.21419	0.24851	0.25061	0.24841	0.24695	AVG		0.23077		13.0938	15.00000	O
Chlorobenzene	0.94896	0.92088	0.94262	0.89588	0.93169	0.90524	AVG		0.92421		2.25981	15.00000	O
Ethylbenzene	1.53365	1.56731	1.65724	1.56248	1.61363	1.56803	AVG		1.58372		2.79162	15.00000	O
1,1,1,2-Tetrachloroethane	0.28742	0.30973	0.34276	0.33853	0.35068	0.34685	AVG		0.32933		7.64384	15.00000	O
m+p-Xylenes	1.11930	1.22345	1.27593	1.20484	1.22419	1.17647	AVG		1.20403		4.37803	15.00000	O
o-Xylene	1.03413	1.15571	1.29155	1.24563	1.29555	1.26663	AVG		1.21487		8.40901	15.00000	O
Styrene	0.72024	0.89322	0.98448	0.96404	0.99464	0.95801	AVG		0.91910		11.2786	15.00000	O
Bromoform	1584	9268	45859	120673	252742	364795	LNR	0.02359	0.25784		0.99968	0.99000	O
Isopropylbenzene	2.17850	2.61226	2.81289	2.72321	2.87585	2.72617	AVG		2.65481		9.41391	15.00000	O
Bromobenzene	0.75667	0.73016	0.76879	0.73878	0.76032	0.73115	AVG		0.74765		2.19406	15.00000	O
N-Propylbenzene	3.29934	3.43179	3.63045	3.44994	3.61382	3.40826	AVG		3.47227		3.66998	15.00000	O
1,1,2,2-Tetrachloroethane	0.85905	0.85152	0.88887	0.86825	0.88535	0.86536	AVG		0.86973		1.68771	15.00000	O
1,3,5-Trimethylbenzene	2.06442	2.25303	2.42670	2.33047	2.44030	2.30345	AVG		2.30306		5.96370	15.00000	O
2-Chlorotoluene	1.97476	2.02601	2.17288	2.08126	2.16779	2.05598	AVG		2.07978		3.78004	15.00000	O
1,2,3-Trichloropropane	0.75585	0.73651	0.76927	0.75552	0.74559	0.73112	AVG		0.74898		1.87631	15.00000	O
4-Chlorotoluene	2.13480	2.15903	2.31262	2.19625	2.27703	2.17938	AVG		2.20985		3.16148	15.00000	O
tert-Butylbenzene	1.84017	2.12417	2.30255	2.21466	2.31209	2.21065	AVG		2.16738		8.05122	15.00000	O
1,2,4-Trimethylbenzene	2.04309	2.33581	2.54040	2.41743	2.55079	2.42936	AVG		2.38615		7.81732	15.00000	O
P-Isopropyltoluene	1.82971	2.14413	2.36353	2.27462	2.40797	2.30971	AVG		2.22161		9.54932	15.00000	O
1,3-Dichlorobenzene	1.37362	1.31865	1.35917	1.29679	1.35357	1.29820	AVG		1.33333		2.48399	15.00000	O
1,4-Dichlorobenzene	1.50533	1.35595	1.40068	1.33379	1.38029	1.32567	AVG		1.38362		4.76389	15.00000	O
N-Butylbenzene	1.81494	1.96843	2.16719	2.10347	2.22662	2.14011	AVG		2.07013		7.33830	15.00000	O
sec-Butylbenzene	2.44542	2.68142	2.87797	2.75294	2.90061	2.74913	AVG		2.73458		6.01129	15.00000	O
1,2-Dichlorobenzene	1.21625	1.20840	1.30227	1.26609	1.31735	1.27885	AVG		1.26487		3.51843	15.00000	O
1,2-Dibromo-3-Chloropropane	0.11325	0.11876	0.13743	0.14316	0.15391	0.16240	AVG		0.13815		13.9524	15.00000	O
Hexachlorobutadiene	0.33751	0.28488	0.29239	0.27408	0.30171	0.29236	AVG		0.29715		7.33877	15.00000	O
1,2,4-Trichlorobenzene	0.68629	0.68828	0.75962	0.74157	0.80620	0.78164	AVG		0.74393		6.57699	15.00000	O
Naphthalene	5588	33699	172641	424409	938571	1336967	LNR	0.02224	1.84187		0.99939	0.99000	O
1,2,3-Trichlorobenzene	0.55970	0.58317	0.62336	0.60235	0.64596	0.63136	AVG		0.60765		5.30849	15.00000	O
Dibromofluoromethane	0.59327	0.58023	0.58757	0.58775	0.58840	0.58990	AVG		0.58785		0.72990	15.00000	
1,2-Dichloroethane-D4	0.76439	0.74846	0.73661	0.74720	0.71646	0.74655	AVG		0.74328		2.13794	15.00000	
Toluene-D8	1.21612	1.19459	1.22020	1.22926	1.22849	1.22746	AVG		1.21935		1.08305	15.00000	
P-Bromofluorobenzene	0.48224	0.47486	0.49316	0.48863	0.48436	0.49716	AVG		0.48673		1.64465	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3902
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-D
Lab File IDs : D1354.d D1353.d D1352.d D1351.d D1356.d D1355.d
Column ID:
Calibration Date(s): 17-MAY-18 08:11 17-MAY-18 11:09

	1.0000 Level 1	5.0000 Level 2	20.0000 Level 3	50.0000 Level 4	100.0000 Level 5	150.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Dichlorodifluoromethane	0.79300	0.96937	0.89845	0.84663	0.87321	0.84698	AVG		0.87127		6.82672	15.00000	O
Chloromethane	0.87951	0.93660	0.78647	0.67068	0.78352	0.73924	AVG		0.79934		11.9799(	15.00000	O
Vinyl chloride	0.59946	0.71193	0.60441	0.56433	0.67146	0.60581	AVG		0.62623		8.69713	15.00000	O
Bromomethane	0.34697	0.35727	0.29267	0.28194	0.30939	0.31305	AVG		0.31688		9.37706	15.00000	O
Chloroethane	0.28651	0.34838	0.28906	0.27081	0.26281	+++++	AVG		0.29152		11.52707	15.00000	O
Trichlorofluoromethane	0.91981	1.10400	0.98417	0.97784	0.96130	0.95399	AVG		0.98352		6.42620	15.00000	O
1,1-Dichloroethene	0.42112	0.38787	0.35145	0.33495	0.35738	0.34565	AVG		0.36640		8.78477	15.00000	O
Carbon Disulfide	1.19739	1.17482	1.14792	1.14066	1.23036	1.19632	AVG		1.18124		2.85825	15.00000	O
Freon-113	0.28290	0.28850	0.31279	0.30554	0.31667	0.29672	AVG		0.30052		4.47874	15.00000	O
Methylene Chloride	0.64204	0.56279	0.52137	0.51621	0.55275	0.53602	AVG		0.55520		8.30821	15.00000	O
Acetone	0.18214	0.16029	0.16150	0.15713	0.16145	0.15245	AVG		0.16249		6.29144	15.00000	O
trans-1,2-Dichloroethene	0.54755	0.52619	0.47789	0.48204	0.51207	0.49236	AVG		0.50635		5.38735	15.00000	O
Methyl tert-butyl ether	1.16697	1.18583	1.26471	1.32111	1.51659	1.44392	AVG		1.31652		10.6562	15.00000	O
1,1-Dichloroethane	1.09130	1.04721	0.97407	0.98752	1.00826	0.99941	AVG		1.01796		4.28776	15.00000	O
cis-1,2-Dichloroethene	0.53482	0.53653	0.50982	0.52108	0.56060	0.55343	AVG		0.53605		3.55774	15.00000	O
2,2-Dichloropropane	0.66562	0.69608	0.69487	0.73014	0.72998	0.75752	AVG		0.71237		4.62243	15.00000	O
Bromochloromethane	0.25286	0.26960	0.27284	0.28086	0.28381	0.24986	AVG		0.26831		5.26824	15.00000	O
Chloroform	1.12020	1.10289	1.01132	1.03934	1.06013	1.06097	AVG		1.06581		3.76668	15.00000	O
Carbon Tetrachloride	0.49064	0.48949	0.45439	0.46014	0.47686	0.47640	AVG		0.47465		3.13209	15.00000	O
1,1,1-Trichloroethane	0.98350	0.94493	0.87313	0.88751	0.90492	0.92163	AVG		0.91927		4.38740	15.00000	O
1,1-Dichloropropene	0.48565	0.47329	0.46296	0.45351	0.47731	0.47490	AVG		0.47127		2.41038	15.00000	O
2-Butanone	0.23016	0.22526	0.24155	0.24293	0.25944	0.24986	AVG		0.24154		5.19133	15.00000	O
Benzene	1.22980	1.24322	1.18890	1.19028	1.24833	1.22889	AVG		1.22157		2.11969	15.00000	O
1,2-Dichloroethane	0.70747	0.56001	0.54504	0.54335	0.53100	0.54687	AVG		0.57229		11.6841	15.00000	O
Trichloroethene	0.38821	0.36285	0.34254	0.33584	0.33714	0.33844	AVG		0.35084		5.94675	15.00000	O
Dibromomethane	0.24117	0.21822	0.22484	0.23265	0.23501	0.23806	AVG		0.23166		3.71633	15.00000	O
1,2-Dichloropropane	0.34122	0.33334	0.33064	0.33358	0.34385	0.34980	AVG		0.33874		2.19378	15.00000	O
Bromodichloromethane	0.47390	0.45184	0.46415	0.48054	0.49438	0.51487	AVG		0.47995		4.66274	15.00000	O
cis-1,3-dichloropropene	3462	19790	94112	254013	569134	818228	LNR	0.02753	0.61582		0.99953	0.99000	O
Toluene	0.80764	0.79276	0.72461	0.72060	0.74326	0.74749	AVG		0.75606		4.76571	15.00000	O
4-methyl-2-pentanone	0.28581	0.28808	0.31418	0.32311	0.32450	0.31184	AVG		0.30792		5.51649	15.00000	O
Tetrachloroethene	0.28430	0.28535	0.25823	0.25531	0.26524	0.26074	AVG		0.26820		4.95681	15.00000	O
trans-1,3-Dichloropropene	0.39878	0.42294	0.48694	0.52254	0.53464	0.54818	AVG		0.48567		12.7434(	15.00000	O
1,1,2-Trichloroethane	0.27368	0.25744	0.25222	0.26012	0.26672	0.26458	AVG		0.26246		2.87222	15.00000	O
Dibromochloromethane	0.32331	0.33019	0.36518	0.39210	0.41232	0.41604	AVG		0.37319		10.8033(	15.00000	O
1,3-Dichloropropane	0.61095	0.56780	0.57950	0.60235	0.62039	0.60928	AVG		0.59838		3.39929	15.00000	O
1,2-Dibromoethane	0.30858	0.30034	0.31266	0.32110	0.33020	0.33039	AVG		0.31721		3.82863	15.00000	O

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3902
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-D
Lab File IDs : D1354.d D1353.d D1352.d D1351.d D1356.d D1355.d
Column ID:
Calibration Date(s): 17-MAY-18 08:11 17-MAY-18 11:09

2-Hexanone	0.17289	0.19756	0.24019	0.24508	0.25502	0.24329	AVG		0.22567		14.4747	15.00000	O
Chlorobenzene	0.97633	0.94691	0.88767	0.88684	0.90220	0.90412	AVG		0.91734		3.95117	15.00000	O
Ethylbenzene	1.68401	1.68635	1.57756	1.59542	1.60838	1.60141	AVG		1.62552		2.91192	15.00000	O
1,1,1,2-Tetrachloroethane	0.32125	0.31902	0.32734	0.33974	0.34723	0.35269	AVG		0.33454		4.19921	15.00000	O
m+p-Xylenes	1.17012	1.27771	1.21928	1.23994	1.23071	1.23192	AVG		1.22828		2.83471	15.00000	O
o-Xylene	0.96684	1.13413	1.21107	1.26099	1.29652	1.29786	AVG		1.19457		10.6720	15.00000	O
Styrene	0.69459	0.84351	0.90970	0.94140	0.97173	0.96555	AVG		0.88775		11.8925	15.00000	O
Bromoform	0.17128	0.18815	0.21190	0.23508	0.24776	0.24673	AVG		0.21682		14.7388	15.00000	O
Isopropylbenzene	2.35854	2.64724	2.71037	2.72357	2.84112	2.81203	AVG		2.68214		6.47041	15.00000	O
Bromobenzene	0.77815	0.72615	0.72712	0.71078	0.73756	0.72533	AVG		0.73418		3.15644	15.00000	O
N-Propylbenzene	3.75081	3.75523	3.63655	3.49811	3.63678	3.56998	AVG		3.64124		2.76286	15.00000	O
1,1,2,2-Tetrachloroethane	0.90272	0.79783	0.83249	0.81785	0.85386	0.82404	AVG		0.83813		4.36243	15.00000	O
1,3,5-Trimethylbenzene	1.99843	2.33288	2.39228	2.38601	2.45763	2.41413	AVG		2.33023		7.18937	15.00000	O
2-Chlorotoluene	2.11454	2.13753	2.08486	2.09895	2.17156	2.15814	AVG		2.12760		1.59825	15.00000	O
1,2,3-Trichloropropane	0.77713	0.74487	0.74435	0.73642	0.75598	0.72448	AVG		0.74720		2.40786	15.00000	O
4-Chlorotoluene	2.26474	2.29449	2.24492	2.25838	2.31067	2.29470	AVG		2.27798		1.12314	15.00000	O
tert-Butylbenzene	1.80056	2.19069	2.26715	2.27609	2.36769	2.33943	AVG		2.20694		9.44420	15.00000	O
1,2,4-Trimethylbenzene	2.01253	2.41385	2.46926	2.47024	2.54274	2.52992	AVG		2.40642		8.24986	15.00000	O
P-Isopropyltoluene	1.96665	2.27913	2.37329	2.36184	2.48102	2.46890	AVG		2.32180		8.15369	15.00000	O
1,3-Dichlorobenzene	1.38765	1.34731	1.29022	1.28388	1.32804	1.31329	AVG		1.32506		2.91700	15.00000	O
1,4-Dichlorobenzene	1.55322	1.39429	1.32920	1.30632	1.35648	1.34006	AVG		1.37993		6.51149	15.00000	O
N-Butylbenzene	1.99254	2.20685	2.31578	2.32052	2.39223	2.41191	AVG		2.27330		6.83272	15.00000	O
sec-Butylbenzene	2.57051	2.93047	2.91619	2.88891	2.99468	2.95111	AVG		2.87531		5.33821	15.00000	O
1,2-Dichlorobenzene	1.17056	1.19885	1.21299	1.23236	1.29740	1.28670	AVG		1.23314		4.05421	15.00000	O
1,2-Dibromo-3-Chloropropane	0.15455	0.11956	0.13101	0.14051	0.15731	0.15647	AVG		0.14324		10.8991	15.00000	O
Hexachlorobutadiene	0.40420	0.36184	0.33754	0.32714	0.35822	0.35861	AVG		0.35792		7.41329	15.00000	O
1,2,4-Trichlorobenzene	0.62667	0.65777	0.70921	0.74267	0.81920	0.81607	AVG		0.72860		10.9522	15.00000	O
Naphthalene	3912	22533	121258	320798	796844	1088321	LNR	0.03616	1.76798		0.99742	0.99000	O
1,2,3-Trichlorobenzene	0.56208	0.56306	0.60879	0.59408	0.67003	0.65032	AVG		0.60806		7.34028	15.00000	O
Dibromofluoromethane	0.61493	0.62075	0.60854	0.61389	0.61115	0.60645	AVG		0.61262		0.83199	15.00000	
1,2-Dichloroethane-D4	0.87100	0.84545	0.82485	0.85246	0.79020	0.83104	AVG		0.83583		3.31204	15.00000	
Toluene-D8	1.21001	1.21776	1.21802	1.21797	1.21819	1.23018	AVG		1.21869		0.53093	15.00000	
P-Bromofluorobenzene	0.49809	0.49930	0.50437	0.50603	0.49257	0.51153	AVG		0.50198		1.33443	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
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Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3902
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-D
Lab File IDs : D1473.d D1472.d D1471.d D1470.d D1475.d D1474.d
Column ID:
Calibration Date(s): 22-MAY-18 08:30 22-MAY-18 11:28

	1.0000 Level 1	5.0000 Level 2	20.0000 Level 3	50.0000 Level 4	100.0000 Level 5	150.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Dichlorodifluoromethane	0.51580	0.72356	0.62043	0.56627	0.58824	0.60582	AVG		0.60335		11.4866	15.00000	O
Chloromethane	0.67451	0.76115	0.67184	0.55432	0.63418	0.60399	AVG		0.65000		10.8687	15.00000	O
Vinyl chloride	0.43568	0.59482	0.53318	0.45805	0.56871	0.52657	AVG		0.51950		11.9078	15.00000	O
Bromomethane	0.25828	0.30443	0.27747	0.25045	0.28578	0.28550	AVG		0.27699		7.14330	15.00000	O
Chloroethane	0.24054	0.33950	0.27518	0.24245	0.26030	0.24906	AVG		0.26784		13.9583	15.00000	O
Trichlorofluoromethane	0.80422	1.04271	0.89491	0.79005	0.87308	0.90987	AVG		0.88581		10.2561	15.00000	O
1,1-Dichloroethene	0.38399	0.43083	0.38009	0.34445	0.38990	0.37377	AVG		0.38384		7.28731	15.00000	O
Carbon Disulfide	0.97781	1.19015	1.09823	1.04107	1.18345	1.16932	AVG		1.11001		7.82284	15.00000	O
Freon-113	0.29949	0.29709	0.27783	0.26173	0.27974	0.27712	AVG		0.28217		4.98754	15.00000	O
Methylene Chloride	0.55109	0.50044	0.55140	0.52510	0.54843	0.53657	AVG		0.53551		3.73663	15.00000	O
Acetone	0.14734	0.19344	0.19466	0.17750	0.17554	0.15297	AVG		0.17357		11.4406	15.00000	O
trans-1,2-Dichloroethene	0.49005	0.56928	0.50202	0.47047	0.50955	0.49453	AVG		0.50598		6.66153	15.00000	O
Methyl tert-butyl ether	1.00471	1.33693	1.33343	1.35109	1.37890	1.40629	AVG		1.30189		11.3821	15.00000	O
1,1-Dichloroethane	0.90323	1.11102	1.01995	0.96159	1.01623	1.00525	AVG		1.00288		6.88019	15.00000	O
cis-1,2-Dichloroethene	0.45514	0.55643	0.52505	0.50671	0.54765	0.54641	AVG		0.52290		7.23056	15.00000	O
2,2-Dichloropropane	0.62148	0.79083	0.77077	0.73702	0.77017	0.78672	AVG		0.74617		8.57110	15.00000	O
Bromochloromethane	0.23062	0.28546	0.26670	0.26189	0.26911	0.25568	AVG		0.26158		6.93728	15.00000	O
Chloroform	0.98392	1.14173	1.07284	1.01758	1.06624	1.07491	AVG		1.05953		5.11614	15.00000	O
Carbon Tetrachloride	0.40149	0.51427	0.48345	0.45824	0.49186	0.49106	AVG		0.47340		8.35655	15.00000	O
1,1,1-Trichloroethane	0.81700	1.01185	0.92969	0.86437	0.94007	0.94425	AVG		0.91787		7.42066	15.00000	O
1,1-Dichloropropene	0.39206	0.50489	0.47684	0.44497	0.48597	0.47826	AVG		0.46383		8.65571	15.00000	O
2-Butanone	4217	34303	137251	334229	636292	943254	LNR	-0.09441	0.23515		0.99916	0.99000	O
Benzene	1.07773	1.33260	1.24236	1.15822	1.25114	1.22051	AVG		1.21376		7.17992	15.00000	O
1,2-Dichloroethane	0.64174	0.65358	0.58360	0.56465	0.54984	0.57575	AVG		0.59486		7.16287	15.00000	O
Trichloroethene	0.30983	0.38342	0.34636	0.32698	0.34134	0.33820	AVG		0.34102		7.18744	15.00000	O
Dibromomethane	0.19561	0.25124	0.23728	0.23478	0.22900	0.23854	AVG		0.23108		8.15711	15.00000	O
1,2-Dichloropropane	0.28167	0.35125	0.34231	0.32864	0.34946	0.34749	AVG		0.33347		7.99419	15.00000	O
Bromodichloromethane	0.39195	0.50429	0.48854	0.48587	0.50635	0.52902	AVG		0.48433		9.87391	15.00000	O
cis-1,3-dichloropropene	3088	22276	95333	243272	534714	804505	LNR	0.02367	0.62182		0.99948	0.99000	O
Toluene	0.68053	0.79490	0.74624	0.70217	0.74440	0.73918	AVG		0.73457		5.39853	15.00000	O
4-methyl-2-pentanone	8659	70664	281457	689700	1284853	1969251	LNR	-0.08250	0.30132		0.99842	0.99000	O
Tetrachloroethene	0.22834	0.30442	0.26636	0.25009	0.33819	0.26004	AVG		0.27457		14.5263	15.00000	O
trans-1,3-Dichloropropene	0.35972	0.48304	0.50632	0.52989	0.53526	0.55936	AVG		0.49560		14.4239	15.00000	O
1,1,2-Trichloroethane	0.23679	0.27477	0.26500	0.25688	0.25528	0.25864	AVG		0.25789		4.87111	15.00000	O
Dibromochloromethane	0.27862	0.36499	0.39344	0.40016	0.40775	0.41730	AVG		0.37704		13.6274	15.00000	O
1,3-Dichloropropane	0.51004	0.64041	0.63144	0.61886	0.60813	0.61717	AVG		0.60434		7.87269	15.00000	O
1,2-Dibromoethane	0.24682	0.31829	0.31837	0.31974	0.31204	0.32498	AVG		0.30671		9.66032	15.00000	O

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3902
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-D
Lab File IDs : D1473.d D1472.d D1471.d D1470.d D1475.d D1474.d
Column ID:
Calibration Date(s): 22-MAY-18 08:30 22-MAY-18 11:28

2-Hexanone	4621	46098	198827	488726	916459	1399368	LNR	-0.09400	0.23648		0.99861	0.99000	O
Chlorobenzene	0.90597	1.00781	0.92671	0.87673	0.90569	0.90079	AVG		0.92062		4.95295	15.00000	O
Ethylbenzene	1.46991	1.84896	1.67118	1.57039	1.64262	1.61722	AVG		1.63671		7.67374	15.00000	O
1,1,1,2-Tetrachloroethane	0.27902	0.36947	0.35046	0.34154	0.35522	0.35602	AVG		0.34196		9.39865	15.00000	O
m+p-Xylenes	1.03020	1.40347	1.30420	1.23117	1.25770	1.25574	AVG		1.24708		9.83389	15.00000	O
o-Xylene	0.91013	1.27864	1.29583	1.25164	1.32246	1.31722	AVG		1.22932		12.8946	15.00000	O
Styrene	4481	34748	142674	350105	768736	1149571	LNR	0.01136	0.97863		0.99980	0.99000	O
Bromoform	0.15996	0.20298	0.22688	0.24195	0.23457	0.24770	AVG		0.21901		15.0030	15.00000	W
Isopropylbenzene	2.01406	2.94282	2.84418	2.70173	2.84489	2.83912	AVG		2.69780		12.7393	15.00000	O
Bromobenzene	0.66010	0.80309	0.74087	0.71403	0.73043	0.73629	AVG		0.73080		6.31112	15.00000	O
N-Propylbenzene	3.22358	4.06050	3.70357	3.50392	3.63795	3.62239	AVG		3.62532		7.52188	15.00000	O
1,1,2,2-Tetrachloroethane	0.73246	0.93561	0.86212	0.84454	0.76801	0.80901	AVG		0.82529		8.74802	15.00000	O
1,3,5-Trimethylbenzene	1.86584	2.55789	2.48822	2.39176	2.44482	2.48047	AVG		2.37150		10.6961	15.00000	O
2-Chlorotoluene	1.87394	2.32425	2.21085	2.12035	2.17988	2.20405	AVG		2.15222		7.04470	15.00000	O
1,2,3-Trichloropropane	0.61178	0.86884	0.79886	0.77099	0.69444	0.72511	AVG		0.74500		11.9475	15.00000	O
4-Chlorotoluene	2.08075	2.50509	2.39038	2.29405	2.32338	2.33530	AVG		2.32149		6.01092	15.00000	O
tert-Butylbenzene	1.80375	2.30388	2.31256	2.23248	2.20927	2.34615	AVG		2.20135		9.15255	15.00000	O
1,2,4-Trimethylbenzene	1.68954	2.65570	2.57176	2.46048	2.55485	2.57442	AVG		2.41779		14.9788	15.00000	O
P-Isopropyltoluene	1.59100	2.45256	2.46485	2.33857	2.45784	2.47067	AVG		2.29592		15.1953	15.00000	W
1,3-Dichlorobenzene	1.25730	1.42859	1.33945	1.28245	1.31656	1.32238	AVG		1.32445		4.45510	15.00000	O
1,4-Dichlorobenzene	1.42469	1.48773	1.40531	1.31289	1.34752	1.34968	AVG		1.38797		4.59522	15.00000	O
N-Butylbenzene	1.67307	2.35854	2.39274	2.25019	2.38233	2.42127	AVG		2.24636		12.7750	15.00000	O
sec-Butylbenzene	2.09128	3.17230	3.01147	2.83114	2.97160	2.94640	AVG		2.83736		13.4582	15.00000	O
1,2-Dichlorobenzene	1.05212	1.31329	1.28026	1.23613	1.26241	1.29420	AVG		1.23973		7.71552	15.00000	O
1,2-Dibromo-3-Chloropropane	218	1954	9459	23976	48304	78813	LNR	0.02324	0.12863		0.99758	0.99000	O
Hexachlorobutadiene	0.34153	0.37859	0.35286	0.32740	0.34668	0.36033	AVG		0.35123		4.95855	15.00000	O
1,2,4-Trichlorobenzene	0.55157	0.71104	0.75025	0.75339	0.75827	0.78827	AVG		0.71880		11.9019	15.00000	O
Naphthalene	2799	24794	122493	311565	609067	964438	LNR	0.00753	1.58210		0.99865	0.99000	O
1,2,3-Trichlorobenzene	1440	11926	50056	115414	229664	364131	LNR	-0.00283	0.59416		0.99855	0.99000	O
Dibromofluoromethane	0.61326	0.60420	0.61658	0.61185	0.61651	0.62145	AVG		0.61398		0.94898	15.00000	
1,2-Dichloroethane-D4	0.91428	0.90607	0.88633	0.88564	0.86372	0.89576	AVG		0.89197		1.99340	15.00000	
Toluene-D8	1.23171	1.23641	1.21763	1.22845	1.25315	1.26063	AVG		1.23800		1.29742	15.00000	
P-Bromofluorobenzene	0.49074	0.49150	0.50439	0.50015	0.50333	0.51411	AVG		0.50070		1.75157	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228421-4
Analytical Date: 05/16/18 12:40
Lab File ID : D1328.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.60519	0.53303	0.53303	0.010	-11.92245	20.00000	Averaged
2	Chloromethane	0.65045	0.54891	0.54891	0.100	-15.61161	20.00000	Averaged
3	Vinyl chloride	0.50829	0.43637	0.43637	0.010	-14.14954	20.00000	Averaged
4	Bromomethane	0.26245	0.23425	0.23425	0.010	-10.74617	20.00000	Averaged
5	Chloroethane	0.23262	0.22738	0.22738	0.010	-2.25246	20.00000	Averaged
6	Trichlorofluoromethane	0.78861	0.78561	0.78561	0.010	-0.38159	20.00000	Averaged
9	1,1-Dichloroethene	0.33801	0.31379	0.31379	0.100	-7.16449	20.00000	Averaged
10	Carbon Disulfide	1.04529	1.02317	1.02317	0.010	-2.11594	20.00000	Averaged
11	Freon-113	0.29565	0.26661	0.26661	0.010	-9.82240	20.00000	Averaged
14	Methylene Chloride	0.56422	0.52059	0.52059	0.010	-7.73264	20.00000	Averaged
15	Acetone	0.15669	0.15702	0.15702	0.010	0.20446	20.00000	Averaged
17	trans-1,2-Dichloroethene	0.51620	0.44846	0.44846	0.010	-13.12190	20.00000	Averaged
19	Methyl tert-butyl ether	1.33505	1.26299	1.26299	0.010	-5.39692	20.00000	Averaged
25	1,1-Dichloroethane	0.96513	0.93797	0.93797	0.100	-2.81362	20.00000	Averaged
29	cis-1,2-Dichloroethene	0.54948	0.50149	0.50149	0.010	-8.73424	20.00000	Averaged
32	2,2-Dichloropropane	0.63584	0.64708	0.64708	0.010	1.76649	20.00000	Averaged
33	Bromochloromethane	0.27091	0.27305	0.27305	0.010	0.79009	20.00000	Averaged
34	Chloroform	1.01172	0.98547	0.98547	0.010	-2.59430	20.00000	Averaged
35	Carbon Tetrachloride	0.43090	0.42931	0.42931	0.010	-0.36991	20.00000	Averaged
38	1,1,1-Trichloroethane	0.83243	0.80782	0.80782	0.010	-2.95648	20.00000	Averaged
39	1,1-Dichloropropene	0.45737	0.42830	0.42830	0.010	-6.35534	20.00000	Averaged
40	2-Butanone	0.24292	0.24519	0.24519	0.010	0.93303	20.00000	Averaged
41	Benzene	1.23369	1.16635	1.16635	0.010	-5.45818	20.00000	Averaged
47	1,2-Dichloroethane	0.51571	0.53512	0.53512	0.010	3.76352	20.00000	Averaged
48	Trichloroethene	0.33634	0.32526	0.32526	0.010	-3.29443	20.00000	Averaged
50	Dibromomethane	0.22736	0.23347	0.23347	0.010	2.68479	20.00000	Averaged
51	1,2-Dichloropropane	0.33353	0.33342	0.33342	0.010	-0.03393	20.00000	Averaged
52	Bromodichloromethane	0.46224	0.48351	0.48351	0.010	4.60208	20.00000	Averaged
53	cis-1,3-dichloropropene	0.53778	0.57369	0.57369	0.010	6.67874	20.00000	Averaged
57	Toluene	0.75378	0.71044	0.71044	0.010	-5.75013	20.00000	Averaged
58	4-methyl-2-pentanone	0.30443	0.33067	0.33067	0.010	8.61868	20.00000	Averaged
59	Tetrachloroethene	0.27263	0.24162	0.24162	0.010	-11.37635	20.00000	Averaged
60	trans-1,3-Dichloropropene	0.46607	0.51111	0.51111	0.010	9.66344	20.00000	Averaged
61	1,1,2-Trichloroethane	0.26549	0.26781	0.26781	0.010	0.87185	20.00000	Averaged
62	Dibromochloromethane	0.37557	0.39008	0.39008	0.010	3.86230	20.00000	Averaged
63	1,3-Dichloropropane	0.61122	0.60305	0.60305	0.010	-1.33676	20.00000	Averaged
64	1,2-Dibromoethane	0.32012	0.32822	0.32822	0.010	2.53157	20.00000	Averaged
65	2-Hexanone	0.23077	0.24687	0.24687	0.010	6.97963	20.00000	Averaged
67	Chlorobenzene	0.92421	0.87029	0.87029	0.300	-5.83455	20.00000	Averaged
68	Ethylbenzene	1.58372	1.52744	1.52744	0.010	-3.55369	20.00000	Averaged
69	1,1,1,2-Tetrachloroethane	0.32933	0.32987	0.32987	0.010	0.16426	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228421-4
Analytical Date: 05/16/18 12:40
Lab File ID : D1328.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

	Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71	m+p-Xylenes	1.20403	1.19491	1.19491	0.010	-0.75766	20.00000	Averaged
72	o-Xylene	1.21487	1.22054	1.22054	0.010	0.46687	20.00000	Averaged
73	Styrene	0.91910	0.92417	0.92417	0.010	0.55170	20.00000	Averaged
74	Bromoform	50.00000	47.40218	0.23836	0.100	-5.19565	20.00000	Linear
75	Isopropylbenzene	2.65481	2.62134	2.62134	0.010	-1.26092	20.00000	Averaged
79	Bromobenzene	0.74765	0.71006	0.71006	0.010	-5.02755	20.00000	Averaged
80	N-Propylbenzene	3.47227	3.40901	3.40901	0.010	-1.82172	20.00000	Averaged
81	1,1,2,2-Tetrachloroethane	0.86973	0.84133	0.84133	0.300	-3.26616	20.00000	Averaged
82	1,3,5-Trimethylbenzene	2.30306	2.29349	2.29349	0.010	-0.41538	20.00000	Averaged
83	2-Chlorotoluene	2.07978	2.04979	2.04979	0.010	-1.44191	20.00000	Averaged
84	1,2,3-Trichloropropane	0.74898	0.76212	0.76212	0.010	1.75472	20.00000	Averaged
85	4-Chlorotoluene	2.20985	2.20690	2.20690	0.010	-0.13351	20.00000	Averaged
86	tert-Butylbenzene	2.16738	2.18181	2.18181	0.010	0.66563	20.00000	Averaged
88	1,2,4-Trimethylbenzene	2.38615	2.40040	2.40040	0.010	0.59731	20.00000	Averaged
89	P-Isopropyltoluene	2.22161	2.28489	2.28489	0.010	2.84839	20.00000	Averaged
90	1,3-Dichlorobenzene	1.33333	1.27266	1.27266	0.010	-4.55018	20.00000	Averaged
92	1,4-Dichlorobenzene	1.38362	1.31708	1.31708	0.010	-4.80934	20.00000	Averaged
93	N-Butylbenzene	2.07013	2.20955	2.20955	0.010	6.73505	20.00000	Averaged
94	sec-Butylbenzene	2.73458	2.75778	2.75778	0.010	0.84833	20.00000	Averaged
95	1,2-Dichlorobenzene	1.26487	1.23143	1.23143	0.010	-2.64331	20.00000	Averaged
96	1,2-Dibromo-3-Chloropropane	0.13815	0.14609	0.14609	0.010	5.74574	20.00000	Averaged
98	Hexachlorobutadiene	0.29715	0.31414	0.31414	0.010	5.71704	20.00000	Averaged
99	1,2,4-Trichlorobenzene	0.74393	0.74647	0.74647	0.010	0.34120	20.00000	Averaged
101	Naphthalene	50.00000	44.41119	1.59504	0.010	-11.17762	20.00000	Linear
102	1,2,3-Trichlorobenzene	0.60765	0.59154	0.59154	0.010	-2.65219	20.00000	Averaged
37	Dibromofluoromethane	0.58785	0.60162	0.60162	0.010	2.34136	20.00000	Averaged
45	1,2-Dichloroethane-D4	0.74328	0.83134	0.83134	0.010	11.84838	20.00000	Averaged
55	Toluene-D8	1.21935	1.22307	1.22307	0.010	0.30519	20.00000	Averaged
76	P-Bromofluorobenzene	0.48673	0.51370	0.51370	0.010	5.54087	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG228421-4
Lab File ID : D1328.d
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34

SDG: SL3902
Analytical Date: 05/16/18 12:40
Instrument ID: GCMS-D
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228421-5
Analytical Date: 05/16/18 23:06
Lab File ID : D1345.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

	Compound	$\overline{\text{RRF}}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.60519	0.59577	0.59577	0.010	-1.55610	20.00000	Averaged
2	Chloromethane	0.65045	0.56160	0.56160	0.100	-13.65956	20.00000	Averaged
3	Vinyl chloride	0.50829	0.48318	0.48318	0.010	-4.94131	20.00000	Averaged
4	Bromomethane	0.26245	0.21930	0.21930	0.010	-16.44063	20.00000	Averaged
5	Chloroethane	0.23262	0.24872	0.24872	0.010	6.92243	20.00000	Averaged
6	Trichlorofluoromethane	0.78861	0.91590	0.91590	0.010	16.14029	20.00000	Averaged
9	1,1-Dichloroethene	0.33801	0.35829	0.35829	0.100	6.00040	20.00000	Averaged
10	Carbon Disulfide	1.04529	1.15862	1.15862	0.010	10.84181	20.00000	Averaged
11	Freon-113	0.29565	0.29457	0.29457	0.010	-0.36322	20.00000	Averaged
14	Methylene Chloride	0.56422	0.53622	0.53622	0.010	-4.96242	20.00000	Averaged
15	Acetone	0.15669	0.16654	0.16654	0.010	6.28067	20.00000	Averaged
17	trans-1,2-Dichloroethene	0.51620	0.48525	0.48525	0.010	-5.99598	20.00000	Averaged
19	Methyl tert-butyl ether	1.33505	1.31029	1.31029	0.010	-1.85436	20.00000	Averaged
25	1,1-Dichloroethane	0.96513	1.01851	1.01851	0.100	5.53110	20.00000	Averaged
29	cis-1,2-Dichloroethene	0.54948	0.53058	0.53058	0.010	-3.44103	20.00000	Averaged
32	2,2-Dichloropropane	0.63584	0.55140	0.55140	0.010	-13.28030	20.00000	Averaged
33	Bromochloromethane	0.27091	0.28487	0.28487	0.010	5.15141	20.00000	Averaged
34	Chloroform	1.01172	1.06508	1.06508	0.010	5.27501	20.00000	Averaged
35	Carbon Tetrachloride	0.43090	0.47040	0.47040	0.010	9.16657	20.00000	Averaged
38	1,1,1-Trichloroethane	0.83243	0.90851	0.90851	0.010	9.14008	20.00000	Averaged
39	1,1-Dichloropropene	0.45737	0.46691	0.46691	0.010	2.08521	20.00000	Averaged
40	2-Butanone	0.24292	0.26046	0.26046	0.010	7.21776	20.00000	Averaged
41	Benzene	1.23369	1.22592	1.22592	0.010	-0.62938	20.00000	Averaged
47	1,2-Dichloroethane	0.51571	0.57183	0.57183	0.010	10.88148	20.00000	Averaged
48	Trichloroethene	0.33634	0.34633	0.34633	0.010	2.96928	20.00000	Averaged
50	Dibromomethane	0.22736	0.23990	0.23990	0.010	5.51493	20.00000	Averaged
51	1,2-Dichloropropane	0.33353	0.35175	0.35175	0.010	5.46243	20.00000	Averaged
52	Bromodichloromethane	0.46224	0.50853	0.50853	0.010	10.01494	20.00000	Averaged
53	cis-1,3-dichloropropene	0.53778	0.57683	0.57683	0.010	7.26184	20.00000	Averaged
57	Toluene	0.75378	0.74858	0.74858	0.010	-0.68944	20.00000	Averaged
58	4-methyl-2-pentanone	0.30443	0.34200	0.34200	0.010	12.33871	20.00000	Averaged
59	Tetrachloroethene	0.27263	0.26081	0.26081	0.010	-4.33492	20.00000	Averaged
60	trans-1,3-Dichloropropene	0.46607	0.52359	0.52359	0.010	12.34193	20.00000	Averaged
61	1,1,2-Trichloroethane	0.26549	0.26828	0.26828	0.010	1.05133	20.00000	Averaged
62	Dibromochloromethane	0.37557	0.40579	0.40579	0.010	8.04663	20.00000	Averaged
63	1,3-Dichloropropane	0.61122	0.63023	0.63023	0.010	3.11146	20.00000	Averaged
64	1,2-Dibromoethane	0.32012	0.33557	0.33557	0.010	4.82806	20.00000	Averaged
65	2-Hexanone	0.23077	0.26312	0.26312	0.010	14.02154	20.00000	Averaged
67	Chlorobenzene	0.92421	0.91981	0.91981	0.300	-0.47587	20.00000	Averaged
68	Ethylbenzene	1.58372	1.64374	1.64374	0.010	3.78959	20.00000	Averaged
69	1,1,1,2-Tetrachloroethane	0.32933	0.35771	0.35771	0.010	8.61906	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228421-5
Analytical Date: 05/16/18 23:06
Lab File ID : D1345.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71 m+p-Xylenes	1.20403	1.27359	1.27359	0.010	5.77717	20.00000	Averaged
72 o-Xylene	1.21487	1.31072	1.31072	0.010	7.89028	20.00000	Averaged
73 Styrene	0.91910	0.97457	0.97457	0.010	6.03437	20.00000	Averaged
74 Bromoform	50.00000	48.18603	0.24241	0.100	-3.62794	20.00000	Linear
75 Isopropylbenzene	2.65481	2.79038	2.79038	0.010	5.10645	20.00000	Averaged
79 Bromobenzene	0.74765	0.73090	0.73090	0.010	-2.23999	20.00000	Averaged
80 N-Propylbenzene	3.47227	3.63675	3.63675	0.010	4.73692	20.00000	Averaged
81 1,1,2,2-Tetrachloroethane	0.86973	0.85604	0.85604	0.300	-1.57414	20.00000	Averaged
82 1,3,5-Trimethylbenzene	2.30306	2.44729	2.44729	0.010	6.26252	20.00000	Averaged
83 2-Chlorotoluene	2.07978	2.15852	2.15852	0.010	3.78594	20.00000	Averaged
84 1,2,3-Trichloropropane	0.74898	0.77812	0.77812	0.010	3.89109	20.00000	Averaged
85 4-Chlorotoluene	2.20985	2.32031	2.32031	0.010	4.99836	20.00000	Averaged
86 tert-Butylbenzene	2.16738	2.31640	2.31640	0.010	6.87543	20.00000	Averaged
88 1,2,4-Trimethylbenzene	2.38615	2.52388	2.52388	0.010	5.77244	20.00000	Averaged
89 P-Isopropyltoluene	2.22161	2.38625	2.38625	0.010	7.41080	20.00000	Averaged
90 1,3-Dichlorobenzene	1.33333	1.32598	1.32598	0.010	-0.55162	20.00000	Averaged
92 1,4-Dichlorobenzene	1.38362	1.36379	1.36379	0.010	-1.43324	20.00000	Averaged
93 N-Butylbenzene	2.07013	2.33338	2.33338	0.010	12.71695	20.00000	Averaged
94 sec-Butylbenzene	2.73458	2.94270	2.94270	0.010	7.61064	20.00000	Averaged
95 1,2-Dichlorobenzene	1.26487	1.27796	1.27796	0.010	1.03542	20.00000	Averaged
96 1,2-Dibromo-3-Chloropropane	0.13815	0.14648	0.14648	0.010	6.03239	20.00000	Averaged
98 Hexachlorobutadiene	0.29715	0.32489	0.32489	0.010	9.33365	20.00000	Averaged
99 1,2,4-Trichlorobenzene	0.74393	0.75299	0.75299	0.010	1.21769	20.00000	Averaged
101 Naphthalene	50.00000	45.03403	1.61798	0.010	-9.93194	20.00000	Linear
102 1,2,3-Trichlorobenzene	0.60765	0.61231	0.61231	0.010	0.76657	20.00000	Averaged
37 Dibromofluoromethane	0.58785	0.62104	0.62104	0.010	5.64590	20.00000	Averaged
45 1,2-Dichloroethane-D4	0.74328	0.85996	0.85996	0.010	15.69889	20.00000	Averaged
55 Toluene-D8	1.21935	1.21661	1.21661	0.010	-0.22455	20.00000	Averaged
76 P-Bromofluorobenzene	0.48673	0.50961	0.50961	0.010	4.69906	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG228421-5
Lab File ID : D1345.d
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34

SDG: SL3902
Analytical Date: 05/16/18 23:06
Instrument ID: GCMS-D
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228566-4
Analytical Date: 05/17/18 12:12
Lab File ID : D1357.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/17/18 08:11 05/17/18 11:09
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.87127	0.78322	0.78322	0.010	-10.10668	20.00000	Averaged
2	Chloromethane	0.79934	0.72974	0.72974	0.100	-8.70625	20.00000	Averaged
3	Vinyl chloride	0.62623	0.60459	0.60459	0.010	-3.45519	20.00000	Averaged
4	Bromomethane	0.31688	0.31868	0.31868	0.010	0.56893	20.00000	Averaged
5	Chloroethane	0.29152	0.26669	0.26669	0.010	-8.51616	20.00000	Averaged
6	Trichlorofluoromethane	0.98352	0.84397	0.84397	0.010	-14.18918	20.00000	Averaged
9	1,1-Dichloroethene	0.36640	0.33223	0.33223	0.100	-9.32626	20.00000	Averaged
10	Carbon Disulfide	1.18124	1.13647	1.13647	0.010	-3.79025	20.00000	Averaged
11	Freon-113	0.30052	0.27766	0.27766	0.010	-7.60664	20.00000	Averaged
14	Methylene Chloride	0.55520	0.53818	0.53818	0.010	-3.06419	20.00000	Averaged
15	Acetone	0.16249	0.13811	0.13811	0.010	-15.00231	20.00000	Averaged
17	trans-1,2-Dichloroethene	0.50635	0.48779	0.48779	0.010	-3.66647	20.00000	Averaged
19	Methyl tert-butyl ether	1.31652	1.35366	1.35366	0.010	2.82101	20.00000	Averaged
25	1,1-Dichloroethane	1.01796	0.96712	0.96712	0.100	-4.99507	20.00000	Averaged
29	cis-1,2-Dichloroethene	0.53605	0.53085	0.53085	0.010	-0.96885	20.00000	Averaged
32	2,2-Dichloropropane	0.71237	0.68624	0.68624	0.010	-3.66741	20.00000	Averaged
33	Bromochloromethane	0.26831	0.28404	0.28404	0.010	5.86417	20.00000	Averaged
34	Chloroform	1.06581	1.00309	1.00309	0.010	-5.88459	20.00000	Averaged
35	Carbon Tetrachloride	0.47465	0.44139	0.44139	0.010	-7.00761	20.00000	Averaged
38	1,1,1-Trichloroethane	0.91927	0.84654	0.84654	0.010	-7.91156	20.00000	Averaged
39	1,1-Dichloropropene	0.47127	0.45343	0.45343	0.010	-3.78612	20.00000	Averaged
40	2-Butanone	0.24154	0.21888	0.21888	0.010	-9.37887	20.00000	Averaged
41	Benzene	1.22157	1.21655	1.21655	0.010	-0.41114	20.00000	Averaged
47	1,2-Dichloroethane	0.57229	0.51217	0.51217	0.010	-10.50467	20.00000	Averaged
48	Trichloroethene	0.35084	0.32482	0.32482	0.010	-7.41611	20.00000	Averaged
50	Dibromomethane	0.23166	0.22439	0.22439	0.010	-3.13693	20.00000	Averaged
51	1,2-Dichloropropane	0.33874	0.33652	0.33652	0.010	-0.65475	20.00000	Averaged
52	Bromodichloromethane	0.47995	0.46952	0.46952	0.010	-2.17225	20.00000	Averaged
53	cis-1,3-dichloropropene	50.00000	47.52119	0.56834	0.010	-4.95761	20.00000	Linear
57	Toluene	0.75606	0.73042	0.73042	0.010	-3.39119	20.00000	Averaged
58	4-methyl-2-pentanone	0.30792	0.29314	0.29314	0.010	-4.80219	20.00000	Averaged
59	Tetrachloroethene	0.26820	0.25681	0.25681	0.010	-4.24449	20.00000	Averaged
60	trans-1,3-Dichloropropene	0.48567	0.50544	0.50544	0.010	4.07070	20.00000	Averaged
61	1,1,2-Trichloroethane	0.26246	0.25452	0.25452	0.010	-3.02566	20.00000	Averaged
62	Dibromochloromethane	0.37319	0.38382	0.38382	0.010	2.84811	20.00000	Averaged
63	1,3-Dichloropropane	0.59838	0.58768	0.58768	0.010	-1.78866	20.00000	Averaged
64	1,2-Dibromoethane	0.31721	0.31183	0.31183	0.010	-1.69750	20.00000	Averaged
65	2-Hexanone	0.22567	0.22031	0.22031	0.010	-2.37537	20.00000	Averaged
67	Chlorobenzene	0.91734	0.89079	0.89079	0.300	-2.89460	20.00000	Averaged
68	Ethylbenzene	1.62552	1.57051	1.57051	0.010	-3.38448	20.00000	Averaged
69	1,1,1,2-Tetrachloroethane	0.33454	0.33284	0.33284	0.010	-0.50971	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228566-4
Analytical Date: 05/17/18 12:12
Lab File ID : D1357.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/17/18 08:11 05/17/18 11:09
Column ID:

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71 m+p-Xylenes	1.22828	1.20955	1.20955	0.010	-1.52462	20.00000	Averaged
72 o-Xylene	1.19457	1.24193	1.24193	0.010	3.96436	20.00000	Averaged
73 Styrene	0.88775	0.93794	0.93794	0.010	5.65357	20.00000	Averaged
74 Bromoform	0.21682	0.22343	0.22343	0.100	3.04932	20.00000	Averaged
75 Isopropylbenzene	2.68214	2.74498	2.74498	0.010	2.34261	20.00000	Averaged
79 Bromobenzene	0.73418	0.72151	0.72151	0.010	-1.72633	20.00000	Averaged
80 N-Propylbenzene	3.64124	3.51115	3.51115	0.010	-3.57279	20.00000	Averaged
81 1,1,2,2-Tetrachloroethane	0.83813	0.78379	0.78379	0.300	-6.48300	20.00000	Averaged
82 1,3,5-Trimethylbenzene	2.33023	2.36511	2.36511	0.010	1.49685	20.00000	Averaged
83 2-Chlorotoluene	2.12760	2.10429	2.10429	0.010	-1.09559	20.00000	Averaged
84 1,2,3-Trichloropropane	0.74720	0.69056	0.69056	0.010	-7.58077	20.00000	Averaged
85 4-Chlorotoluene	2.27798	2.24403	2.24403	0.010	-1.49026	20.00000	Averaged
86 tert-Butylbenzene	2.20694	2.25753	2.25753	0.010	2.29251	20.00000	Averaged
88 1,2,4-Trimethylbenzene	2.40642	2.46159	2.46159	0.010	2.29231	20.00000	Averaged
89 P-Isopropyltoluene	2.32180	2.37729	2.37729	0.010	2.39000	20.00000	Averaged
90 1,3-Dichlorobenzene	1.32506	1.30039	1.30039	0.010	-1.86222	20.00000	Averaged
92 1,4-Dichlorobenzene	1.37993	1.31535	1.31535	0.010	-4.67967	20.00000	Averaged
93 N-Butylbenzene	2.27330	2.27909	2.27909	0.010	0.25471	20.00000	Averaged
94 sec-Butylbenzene	2.87531	2.87397	2.87397	0.010	-0.04672	20.00000	Averaged
95 1,2-Dichlorobenzene	1.23314	1.23551	1.23551	0.010	0.19218	20.00000	Averaged
96 1,2-Dibromo-3-Chloropropane	0.14324	0.12405	0.12405	0.010	-13.39637	20.00000	Averaged
98 Hexachlorobutadiene	0.35792	0.32935	0.32935	0.010	-7.98362	20.00000	Averaged
99 1,2,4-Trichlorobenzene	0.72860	0.74098	0.74098	0.010	1.69934	20.00000	Averaged
101 Naphthalene	50.00000	44.89617	1.52358	0.010	-10.20767	20.00000	Linear
102 1,2,3-Trichlorobenzene	0.60806	0.56666	0.56666	0.010	-6.80780	20.00000	Averaged
37 Dibromofluoromethane	0.61262	0.60380	0.60380	0.010	-1.44011	20.00000	Averaged
45 1,2-Dichloroethane-D4	0.83583	0.77873	0.77873	0.010	-6.83226	20.00000	Averaged
55 Toluene-D8	1.21869	1.22939	1.22939	0.010	0.87829	20.00000	Averaged
76 P-Bromofluorobenzene	0.50198	0.49361	0.49361	0.010	-1.66749	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG228566-4
Lab File ID : D1357.d
Initial Calibration Date(s): 05/17/18 08:11 05/17/18 11:09

SDG: SL3902
Analytical Date: 05/17/18 12:12
Instrument ID: GCMS-D
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228566-5
Analytical Date: 05/17/18 22:34
Lab File ID : D1374.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/17/18 08:11 05/17/18 11:09
Column ID:

	Compound	$\overline{\text{RRF}}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.87127	0.85577	0.85577	0.010	-1.77889	20.00000	Averaged	
2	Chloromethane	0.79934	0.85212	0.85212	0.100	6.60348	20.00000	Averaged	
3	Vinyl chloride	0.62623	0.66040	0.66040	0.010	5.45542	20.00000	Averaged	
4	Bromomethane	0.31688	0.32989	0.32989	0.010	4.10452	20.00000	Averaged	
5	Chloroethane	0.29152	0.31922	0.31922	0.010	9.50474	20.00000	Averaged	
6	Trichlorofluoromethane	0.98352	1.02486	1.02486	0.010	4.20287	20.00000	Averaged	
9	1,1-Dichloroethene	0.36640	0.38697	0.38697	0.100	5.61290	20.00000	Averaged	
10	Carbon Disulfide	1.18124	1.33995	1.33995	0.010	13.43512	20.00000	Averaged	
11	Freon-113	0.30052	0.32605	0.32605	0.010	8.49553	20.00000	Averaged	
14	Methylene Chloride	0.55520	0.56930	0.56930	0.010	2.53947	20.00000	Averaged	
15	Acetone	0.16249	0.18227	0.18227	0.010	12.17422	20.00000	Averaged	
17	trans-1,2-Dichloroethene	0.50635	0.53417	0.53417	0.010	5.49377	20.00000	Averaged	
19	Methyl tert-butyl ether	1.31652	1.50297	1.50297	0.010	14.16186	20.00000	Averaged	
25	1,1-Dichloroethane	1.01796	1.11039	1.11039	0.100	9.07966	20.00000	Averaged	
29	cis-1,2-Dichloroethene	0.53605	0.57493	0.57493	0.010	7.25383	20.00000	Averaged	
32	2,2-Dichloropropane	0.71237	0.69443	0.69443	0.010	-2.51793	20.00000	Averaged	
33	Bromochloromethane	0.26831	0.30221	0.30221	0.010	12.63709	20.00000	Averaged	
34	Chloroform	1.06581	1.15231	1.15231	0.010	8.11591	20.00000	Averaged	
35	Carbon Tetrachloride	0.47465	0.52043	0.52043	0.010	9.64487	20.00000	Averaged	
38	1,1,1-Trichloroethane	0.91927	1.01003	1.01003	0.010	9.87315	20.00000	Averaged	
39	1,1-Dichloropropene	0.47127	0.50738	0.50738	0.010	7.66141	20.00000	Averaged	
40	2-Butanone	0.24154	0.28612	0.28612	0.010	18.45802	20.00000	Averaged	
41	Benzene	1.22157	1.31906	1.31906	0.010	7.98052	20.00000	Averaged	
47	1,2-Dichloroethane	0.57229	0.59682	0.59682	0.010	4.28662	20.00000	Averaged	
48	Trichloroethene	0.35084	0.37587	0.37587	0.010	7.13475	20.00000	Averaged	
50	Dibromomethane	0.23166	0.25139	0.25139	0.010	8.51708	20.00000	Averaged	
51	1,2-Dichloropropane	0.33874	0.36591	0.36591	0.010	8.02251	20.00000	Averaged	
52	Bromodichloromethane	0.47995	0.54055	0.54055	0.010	12.62718	20.00000	Averaged	
53	cis-1,3-dichloropropene	50.00000	51.56617	0.61815	0.010	3.13233	20.00000	Linear	
57	Toluene	0.75606	0.80662	0.80662	0.010	6.68749	20.00000	Averaged	
58	4-methyl-2-pentanone	0.30792	0.37461	0.37461	0.010	21.65796	20.00000	Averaged	*
59	Tetrachloroethene	0.26820	0.28165	0.28165	0.010	5.01674	20.00000	Averaged	
60	trans-1,3-Dichloropropene	0.48567	0.55898	0.55898	0.010	15.09436	20.00000	Averaged	
61	1,1,2-Trichloroethane	0.26246	0.28297	0.28297	0.010	7.81267	20.00000	Averaged	
62	Dibromochloromethane	0.37319	0.41993	0.41993	0.010	12.52408	20.00000	Averaged	
63	1,3-Dichloropropane	0.59838	0.64692	0.64692	0.010	8.11248	20.00000	Averaged	
64	1,2-Dibromoethane	0.31721	0.34754	0.34754	0.010	9.55995	20.00000	Averaged	
65	2-Hexanone	0.22567	0.28489	0.28489	0.010	26.24062	20.00000	Averaged	*
67	Chlorobenzene	0.91734	0.94367	0.94367	0.300	2.87008	20.00000	Averaged	
68	Ethylbenzene	1.62552	1.73170	1.73170	0.010	6.53154	20.00000	Averaged	
69	1,1,1,2-Tetrachloroethane	0.33454	0.36624	0.36624	0.010	9.47544	20.00000	Averaged	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228566-5
Analytical Date: 05/17/18 22:34
Lab File ID : D1374.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/17/18 08:11 05/17/18 11:09
Column ID:

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71 m+p-Xylenes	1.22828	1.35919	1.35919	0.010	10.65828	20.00000	Averaged
72 o-Xylene	1.19457	1.37620	1.37620	0.010	15.20490	20.00000	Averaged
73 Styrene	0.88775	1.01451	1.01451	0.010	14.27865	20.00000	Averaged
74 Bromoform	0.21682	0.25646	0.25646	0.100	18.28398	20.00000	Averaged
75 Isopropylbenzene	2.68214	3.02601	3.02601	0.010	12.82062	20.00000	Averaged
79 Bromobenzene	0.73418	0.75758	0.75758	0.010	3.18761	20.00000	Averaged
80 N-Propylbenzene	3.64124	3.88929	3.88929	0.010	6.81220	20.00000	Averaged
81 1,1,2,2-Tetrachloroethane	0.83813	0.90855	0.90855	0.300	8.40214	20.00000	Averaged
82 1,3,5-Trimethylbenzene	2.33023	2.61489	2.61489	0.010	12.21597	20.00000	Averaged
83 2-Chlorotoluene	2.12760	2.29557	2.29557	0.010	7.89496	20.00000	Averaged
84 1,2,3-Trichloropropane	0.74720	0.82896	0.82896	0.010	10.94136	20.00000	Averaged
85 4-Chlorotoluene	2.27798	2.44673	2.44673	0.010	7.40775	20.00000	Averaged
86 tert-Butylbenzene	2.20694	2.47710	2.47710	0.010	12.24175	20.00000	Averaged
88 1,2,4-Trimethylbenzene	2.40642	2.70669	2.70669	0.010	12.47748	20.00000	Averaged
89 P-Isopropyltoluene	2.32180	2.61191	2.61191	0.010	12.49473	20.00000	Averaged
90 1,3-Dichlorobenzene	1.32506	1.38303	1.38303	0.010	4.37423	20.00000	Averaged
92 1,4-Dichlorobenzene	1.37993	1.41472	1.41472	0.010	2.52117	20.00000	Averaged
93 N-Butylbenzene	2.27330	2.51229	2.51229	0.010	10.51285	20.00000	Averaged
94 sec-Butylbenzene	2.87531	3.15685	3.15685	0.010	9.79147	20.00000	Averaged
95 1,2-Dichlorobenzene	1.23314	1.32304	1.32304	0.010	7.28994	20.00000	Averaged
96 1,2-Dibromo-3-Chloropropane	0.14324	0.16448	0.16448	0.010	14.82990	20.00000	Averaged
98 Hexachlorobutadiene	0.35792	0.35732	0.35732	0.010	-0.16857	20.00000	Averaged
99 1,2,4-Trichlorobenzene	0.72860	0.80620	0.80620	0.010	10.65051	20.00000	Averaged
101 Naphthalene	50.00000	51.90702	1.77148	0.010	3.81403	20.00000	Linear
102 1,2,3-Trichlorobenzene	0.60806	0.66423	0.66423	0.010	9.23747	20.00000	Averaged
37 Dibromofluoromethane	0.61262	0.62620	0.62620	0.010	2.21700	20.00000	Averaged
45 1,2-Dichloroethane-D4	0.83583	0.87181	0.87181	0.010	4.30435	20.00000	Averaged
55 Toluene-D8	1.21869	1.22154	1.22154	0.010	0.23437	20.00000	Averaged
76 P-Bromofluorobenzene	0.50198	0.51487	0.51487	0.010	2.56782	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG228566-5
Lab File ID : D1374.d
Initial Calibration Date(s): 05/17/18 08:11 05/17/18 11:09

SDG: SL3902
Analytical Date: 05/17/18 22:34
Instrument ID: GCMS-D
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228859-4
Analytical Date: 05/22/18 12:26
Lab File ID : D1476.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/22/18 08:30 05/22/18 11:28
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.60335	0.56639	0.56639	0.010	-6.12593	20.00000	Averaged
2	Chloromethane	0.65000	0.61583	0.61583	0.100	-5.25712	20.00000	Averaged
3	Vinyl chloride	0.51950	0.53276	0.53276	0.010	2.55268	20.00000	Averaged
4	Bromomethane	0.27699	0.29542	0.29542	0.010	6.65713	20.00000	Averaged
5	Chloroethane	0.26784	0.26628	0.26628	0.010	-0.58048	20.00000	Averaged
6	Trichlorofluoromethane	0.88581	0.80725	0.80725	0.010	-8.86822	20.00000	Averaged
9	1,1-Dichloroethene	0.38384	0.36762	0.36762	0.100	-4.22461	20.00000	Averaged
10	Carbon Disulfide	1.11001	1.10777	1.10777	0.010	-0.20168	20.00000	Averaged
11	Freon-113	0.28217	0.26505	0.26505	0.010	-6.06726	20.00000	Averaged
14	Methylene Chloride	0.53551	0.55418	0.55418	0.010	3.48770	20.00000	Averaged
15	Acetone	0.17357	0.15359	0.15359	0.010	-11.51570	20.00000	Averaged
17	trans-1,2-Dichloroethene	0.50598	0.50003	0.50003	0.010	-1.17707	20.00000	Averaged
19	Methyl tert-butyl ether	1.30189	1.38052	1.38052	0.010	6.03962	20.00000	Averaged
25	1,1-Dichloroethane	1.00288	0.99647	0.99647	0.100	-0.63834	20.00000	Averaged
29	cis-1,2-Dichloroethene	0.52290	0.54002	0.54002	0.010	3.27397	20.00000	Averaged
32	2,2-Dichloropropane	0.74617	0.75204	0.75204	0.010	0.78722	20.00000	Averaged
33	Bromochloromethane	0.26158	0.26896	0.26896	0.010	2.82257	20.00000	Averaged
34	Chloroform	1.05953	1.04368	1.04368	0.010	-1.49676	20.00000	Averaged
35	Carbon Tetrachloride	0.47340	0.46638	0.46638	0.010	-1.48300	20.00000	Averaged
38	1,1,1-Trichloroethane	0.91787	0.90063	0.90063	0.010	-1.87846	20.00000	Averaged
39	1,1-Dichloropropene	0.46383	0.47069	0.47069	0.010	1.47843	20.00000	Averaged
40	2-Butanone	250	244	0.23380	0.010	-2.46207	20.00000	Linear
41	Benzene	1.21376	1.23170	1.23170	0.010	1.47835	20.00000	Averaged
47	1,2-Dichloroethane	0.59486	0.55670	0.55670	0.010	-6.41545	20.00000	Averaged
48	Trichloroethene	0.34102	0.33567	0.33567	0.010	-1.57029	20.00000	Averaged
50	Dibromomethane	0.23108	0.23280	0.23280	0.010	0.74760	20.00000	Averaged
51	1,2-Dichloropropane	0.33347	0.34445	0.34445	0.010	3.29219	20.00000	Averaged
52	Bromodichloromethane	0.48433	0.49694	0.49694	0.010	2.60221	20.00000	Averaged
53	cis-1,3-dichloropropene	50.00000	49.00451	0.59472	0.010	-1.99099	20.00000	Linear
57	Toluene	0.73457	0.73564	0.73564	0.010	0.14531	20.00000	Averaged
58	4-methyl-2-pentanone	250	257	0.31468	0.010	2.78491	20.00000	Linear
59	Tetrachloroethene	0.27457	0.25814	0.25814	0.010	-5.98425	20.00000	Averaged
60	trans-1,3-Dichloropropene	0.49560	0.53581	0.53581	0.010	8.11277	20.00000	Averaged
61	1,1,2-Trichloroethane	0.25789	0.26248	0.26248	0.010	1.77708	20.00000	Averaged
62	Dibromochloromethane	0.37704	0.40460	0.40460	0.010	7.30941	20.00000	Averaged
63	1,3-Dichloropropane	0.60434	0.62474	0.62474	0.010	3.37584	20.00000	Averaged
64	1,2-Dibromoethane	0.30671	0.32048	0.32048	0.010	4.49186	20.00000	Averaged
65	2-Hexanone	250	248	0.23902	0.010	-0.80393	20.00000	Linear
67	Chlorobenzene	0.92062	0.90351	0.90351	0.300	-1.85779	20.00000	Averaged
68	Ethylbenzene	1.63671	1.62304	1.62304	0.010	-0.83530	20.00000	Averaged
69	1,1,1,2-Tetrachloroethane	0.34196	0.34618	0.34618	0.010	1.23410	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228859-4
Analytical Date: 05/22/18 12:26
Lab File ID : D1476.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/22/18 08:30 05/22/18 11:28
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71 m+p-Xylenes	1.24708	1.25730	1.25730	0.010	0.81959	20.00000	Averaged
72 o-Xylene	1.22932	1.30251	1.30251	0.010	5.95344	20.00000	Averaged
73 Styrene	50.00000	50.00536	0.96761	0.010	0.01071	20.00000	Linear
74 Bromoform	0.21901	0.23561	0.23561	0.100	7.58087	20.00000	Averaged
75 Isopropylbenzene	2.69780	2.85327	2.85327	0.010	5.76286	20.00000	Averaged
79 Bromobenzene	0.73080	0.74955	0.74955	0.010	2.56582	20.00000	Averaged
80 N-Propylbenzene	3.62532	3.67155	3.67155	0.010	1.27542	20.00000	Averaged
81 1,1,2,2-Tetrachloroethane	0.82529	0.84353	0.84353	0.300	2.20996	20.00000	Averaged
82 1,3,5-Trimethylbenzene	2.37150	2.46349	2.46349	0.010	3.87898	20.00000	Averaged
83 2-Chlorotoluene	2.15222	2.20659	2.20659	0.010	2.52622	20.00000	Averaged
84 1,2,3-Trichloropropane	0.74500	0.74590	0.74590	0.010	0.12066	20.00000	Averaged
85 4-Chlorotoluene	2.32149	2.37820	2.37820	0.010	2.44294	20.00000	Averaged
86 tert-Butylbenzene	2.20135	2.35287	2.35287	0.010	6.88303	20.00000	Averaged
88 1,2,4-Trimethylbenzene	2.41779	2.57894	2.57894	0.010	6.66518	20.00000	Averaged
89 P-Isopropyltoluene	2.29592	2.45439	2.45439	0.010	6.90242	20.00000	Averaged
90 1,3-Dichlorobenzene	1.32445	1.33937	1.33937	0.010	1.12614	20.00000	Averaged
92 1,4-Dichlorobenzene	1.38797	1.37739	1.37739	0.010	-0.76241	20.00000	Averaged
93 N-Butylbenzene	2.24636	2.37696	2.37696	0.010	5.81410	20.00000	Averaged
94 sec-Butylbenzene	2.83736	2.95676	2.95676	0.010	4.20801	20.00000	Averaged
95 1,2-Dichlorobenzene	1.23973	1.28799	1.28799	0.010	3.89259	20.00000	Averaged
96 1,2-Dibromo-3-Chloropropane	50.00000	48.01260	0.12053	0.010	-3.97479	20.00000	Linear
98 Hexachlorobutadiene	0.35123	0.34422	0.34422	0.010	-1.99660	20.00000	Averaged
99 1,2,4-Trichlorobenzene	0.71880	0.78015	0.78015	0.010	8.53549	20.00000	Averaged
101 Naphthalene	50.00000	51.59517	1.62066	0.010	3.19035	20.00000	Linear
102 1,2,3-Trichlorobenzene	50.00000	50.97647	0.60744	0.010	1.95294	20.00000	Linear
37 Dibromofluoromethane	0.61398	0.61354	0.61354	0.010	-0.07141	20.00000	Averaged
45 1,2-Dichloroethane-D4	0.89197	0.84816	0.84816	0.010	-4.91191	20.00000	Averaged
55 Toluene-D8	1.23800	1.23946	1.23946	0.010	0.11856	20.00000	Averaged
76 P-Bromofluorobenzene	0.50070	0.49373	0.49373	0.010	-1.39315	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG228859-4
Lab File ID : D1476.d
Initial Calibration Date(s): 05/22/18 08:30 05/22/18 11:28

SDG: SL3902
Analytical Date: 05/22/18 12:26
Instrument ID: GCMS-D
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228859-5
Analytical Date: 05/22/18 22:57
Lab File ID : D1493.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/22/18 08:30 05/22/18 11:28
Column ID:

	Compound	$\overline{\text{RRF}}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.60335	0.60803	0.60803	0.010	0.77475	20.00000	Averaged	
2	Chloromethane	0.65000	0.56048	0.56048	0.100	-13.77297	20.00000	Averaged	
3	Vinyl chloride	0.51950	0.48757	0.48757	0.010	-6.14707	20.00000	Averaged	
4	Bromomethane	0.27699	0.25048	0.25048	0.010	-9.57100	20.00000	Averaged	
5	Chloroethane	0.26784	0.27630	0.27630	0.010	3.15991	20.00000	Averaged	
6	Trichlorofluoromethane	0.88581	0.97522	0.97522	0.010	10.09383	20.00000	Averaged	
9	1,1-Dichloroethene	0.38384	0.36845	0.36845	0.100	-4.00911	20.00000	Averaged	
10	Carbon Disulfide	1.11001	1.11719	1.11719	0.010	0.64695	20.00000	Averaged	
11	Freon-113	0.28217	0.29078	0.29078	0.010	3.05382	20.00000	Averaged	
14	Methylene Chloride	0.53551	0.52294	0.52294	0.010	-2.34570	20.00000	Averaged	
15	Acetone	0.17357	0.17428	0.17428	0.010	0.40556	20.00000	Averaged	
17	trans-1,2-Dichloroethene	0.50598	0.45828	0.45828	0.010	-9.42815	20.00000	Averaged	
19	Methyl tert-butyl ether	1.30189	1.28962	1.28962	0.010	-0.94266	20.00000	Averaged	
25	1,1-Dichloroethane	1.00288	1.01582	1.01582	0.100	1.29109	20.00000	Averaged	
29	cis-1,2-Dichloroethene	0.52290	0.50447	0.50447	0.010	-3.52455	20.00000	Averaged	
32	2,2-Dichloropropane	0.74617	0.57898	0.57898	0.010	-22.40609	20.00000	Averaged	*
33	Bromochloromethane	0.26158	0.26442	0.26442	0.010	1.08621	20.00000	Averaged	
34	Chloroform	1.05953	1.08935	1.08935	0.010	2.81420	20.00000	Averaged	
35	Carbon Tetrachloride	0.47340	0.49004	0.49004	0.010	3.51624	20.00000	Averaged	
38	1,1,1-Trichloroethane	0.91787	0.94005	0.94005	0.010	2.41601	20.00000	Averaged	
39	1,1-Dichloropropene	0.46383	0.46398	0.46398	0.010	0.03249	20.00000	Averaged	
40	2-Butanone	250	273	0.26137	0.010	9.26043	20.00000	Linear	
41	Benzene	1.21376	1.19460	1.19460	0.010	-1.57894	20.00000	Averaged	
47	1,2-Dichloroethane	0.59486	0.63791	0.63791	0.010	7.23649	20.00000	Averaged	
48	Trichloroethene	0.34102	0.35387	0.35387	0.010	3.76663	20.00000	Averaged	
50	Dibromomethane	0.23108	0.24755	0.24755	0.010	7.12981	20.00000	Averaged	
51	1,2-Dichloropropane	0.33347	0.34106	0.34106	0.010	2.27707	20.00000	Averaged	
52	Bromodichloromethane	0.48433	0.53046	0.53046	0.010	9.52423	20.00000	Averaged	
53	cis-1,3-dichloropropene	50.00000	48.26997	0.58559	0.010	-3.46006	20.00000	Linear	
57	Toluene	0.73457	0.73594	0.73594	0.010	0.18635	20.00000	Averaged	
58	4-methyl-2-pentanone	250	296	0.36225	0.010	18.57088	20.00000	Linear	
59	Tetrachloroethene	0.27457	0.25085	0.25085	0.010	-8.63923	20.00000	Averaged	
60	trans-1,3-Dichloropropene	0.49560	0.53873	0.53873	0.010	8.70283	20.00000	Averaged	
61	1,1,2-Trichloroethane	0.25789	0.27869	0.27869	0.010	8.06398	20.00000	Averaged	
62	Dibromochloromethane	0.37704	0.41141	0.41141	0.010	9.11366	20.00000	Averaged	
63	1,3-Dichloropropane	0.60434	0.63619	0.63619	0.010	5.26966	20.00000	Averaged	
64	1,2-Dibromoethane	0.30671	0.33826	0.33826	0.010	10.28829	20.00000	Averaged	
65	2-Hexanone	250	284	0.27352	0.010	13.78117	20.00000	Linear	
67	Chlorobenzene	0.92062	0.91541	0.91541	0.300	-0.56527	20.00000	Averaged	
68	Ethylbenzene	1.63671	1.64896	1.64896	0.010	0.74839	20.00000	Averaged	
69	1,1,1,2-Tetrachloroethane	0.34196	0.36276	0.36276	0.010	6.08458	20.00000	Averaged	

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228859-5
Analytical Date: 05/22/18 22:57
Lab File ID : D1493.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/22/18 08:30 05/22/18 11:28
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71 m+p-Xylenes	1.24708	1.29537	1.29537	0.010	3.87256	20.00000	Averaged
72 o-Xylene	1.22932	1.32068	1.32068	0.010	7.43151	20.00000	Averaged
73 Styrene	50.00000	49.86178	0.96480	0.010	-0.27643	20.00000	Linear
74 Bromoform	0.21901	0.24845	0.24845	0.100	13.44452	20.00000	Averaged
75 Isopropylbenzene	2.69780	2.76575	2.76575	0.010	2.51876	20.00000	Averaged
79 Bromobenzene	0.73080	0.72493	0.72493	0.010	-0.80399	20.00000	Averaged
80 N-Propylbenzene	3.62532	3.58249	3.58249	0.010	-1.18136	20.00000	Averaged
81 1,1,2,2-Tetrachloroethane	0.82529	0.85660	0.85660	0.300	3.79320	20.00000	Averaged
82 1,3,5-Trimethylbenzene	2.37150	2.44657	2.44657	0.010	3.16541	20.00000	Averaged
83 2-Chlorotoluene	2.15222	2.19449	2.19449	0.010	1.96404	20.00000	Averaged
84 1,2,3-Trichloropropane	0.74500	0.80446	0.80446	0.010	7.98091	20.00000	Averaged
85 4-Chlorotoluene	2.32149	2.35468	2.35468	0.010	1.42955	20.00000	Averaged
86 tert-Butylbenzene	2.20135	2.27522	2.27522	0.010	3.35572	20.00000	Averaged
88 1,2,4-Trimethylbenzene	2.41779	2.55933	2.55933	0.010	5.85427	20.00000	Averaged
89 P-Isopropyltoluene	2.29592	2.38032	2.38032	0.010	3.67625	20.00000	Averaged
90 1,3-Dichlorobenzene	1.32445	1.31876	1.31876	0.010	-0.43013	20.00000	Averaged
92 1,4-Dichlorobenzene	1.38797	1.36196	1.36196	0.010	-1.87379	20.00000	Averaged
93 N-Butylbenzene	2.24636	2.33993	2.33993	0.010	4.16562	20.00000	Averaged
94 sec-Butylbenzene	2.83736	2.88161	2.88161	0.010	1.55934	20.00000	Averaged
95 1,2-Dichlorobenzene	1.23973	1.27777	1.27777	0.010	3.06788	20.00000	Averaged
96 1,2-Dibromo-3-Chloropropane	50.00000	50.59800	0.12718	0.010	1.19600	20.00000	Linear
98 Hexachlorobutadiene	0.35123	0.32386	0.32386	0.010	-7.79313	20.00000	Averaged
99 1,2,4-Trichlorobenzene	0.71880	0.74690	0.74690	0.010	3.91004	20.00000	Averaged
101 Naphthalene	50.00000	52.33686	1.64413	0.010	4.67372	20.00000	Linear
102 1,2,3-Trichlorobenzene	50.00000	52.89891	0.63028	0.010	5.79782	20.00000	Linear
37 Dibromofluoromethane	0.61398	0.63468	0.63468	0.010	3.37209	20.00000	Averaged
45 1,2-Dichloroethane-D4	0.89197	0.98821	0.98821	0.010	10.79014	20.00000	Averaged
55 Toluene-D8	1.23800	1.25062	1.25062	0.010	1.01972	20.00000	Averaged
76 P-Bromofluorobenzene	0.50070	0.54229	0.54229	0.010	8.30536	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG228859-5
Lab File ID : D1493.d
Initial Calibration Date(s): 05/22/18 08:30 05/22/18 11:28

SDG: SL3902
Analytical Date: 05/22/18 22:57
Instrument ID: GCMS-D
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227999-4
Lab File ID : D1259.d

SDG: SL3902
Analytical Date: 05/10/18 08:36
Instrument ID: GCMS-D

		PENTAFLUOROBENZENE			1,4-DIFLUOROBENZENE			CHLOROBENZENE-D5		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	336775		7.32		538592		8.10		490295		11.54	
	Upper Limit	673550		7.48		1077184		8.26		980590		11.70	
	Lower Limit	168387.5		7.15		269296		7.93		245147.5		11.37	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG228421-4	277120		7.32		444991		8.10		414738		11.54	
Laboratory Control S	WG228421-1	287009		7.32		471055		8.10		425102		11.54	
Method Blank Sample	WG228421-2	258692		7.32		435671		8.10		395426		11.54	
CHAAP-TB-050418	SL3902-1	252248		7.32		420655		8.10		383971		11.54	
CHAAP-EB-050418-D	SL3902-14	251062		7.32		416977		8.10		380496		11.54	
CHAAP-19C-LGIA-DI	SL3902-2	226774		7.32		389060		8.10		354846		11.54	
CHAAP-19C-LGIA-DI	SL3902-4	229715		7.32		386275		8.10		352587		11.54	
CHAAP-19C-LGIA-DI	SL3902-6	224426		7.32		381983		8.10		348337		11.55	
Continuing Calibrati	WG228421-5	256348		7.32		420867		8.10		389349		11.54	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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P.O. Box 540, Scarborough, ME 04070
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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227999-4
Lab File ID : D1259.d

SDG: SL3902
Analytical Date: 05/10/18 08:36
Instrument ID: GCMS-D

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	249538		13.88	
	Upper Limit	499076		14.04	
	Lower Limit	124769		13.71	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG228421-4	213967		13.88	
Laboratory Control S	WG228421-1	218190		13.88	
Method Blank Sample	WG228421-2	192344		13.88	
CHAAP-TB-050418	SL3902-1	188187		13.88	
CHAAP-EB-050418-D	SL3902-14	187115		13.88	
CHAAP-19C-LGIA-DI	SL3902-2	173454		13.88	
CHAAP-19C-LGIA-DI	SL3902-4	174648		13.88	
CHAAP-19C-LGIA-DI	SL3902-6	172785		13.88	
Continuing Calibrati	WG228421-5	203879		13.88	

Area Upper Limit = +100% of internal standard area
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Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG228547-4
Lab File ID : D1351.d

SDG: SL3902
Analytical Date: 05/17/18 08:11
Instrument ID: GCMS-D

		PENTAFLUOROBENZENE			1,4-DIFLUOROBENZENE			CHLOROBENZENE-D5		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	265598		7.32		436302		8.10		399232		11.54	
	Upper Limit	531196		7.48		872604		8.26		798464		11.70	
	Lower Limit	132799		7.15		218151		7.93		199616		11.37	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG228566-4	319060		7.32		512826		8.10		467060		11.55	
Laboratory Control S	WG228566-1	313553		7.32		507874		8.10		455386		11.55	
Method Blank Sample	WG228566-2	287163		7.32		470146		8.10		418916		11.55	
CHAAP-19C-LGIA-DI	SL3902-8	247147		7.32		407834		8.11		377497		11.55	
CHAAP-19C-LGIA-DI	SL3902-10	239968		7.32		404846		8.11		367158		11.55	
CHAAP-19C-LGIA-DI	SL3902-12	214445		7.32		362666		8.10		333513		11.54	
Matrix Spike	WG228566-6	244070		7.32		394408		8.10		370197		11.54	
Matrix Spike Duplica	WG228566-7	257393		7.32		421552		8.10		384093		11.54	
Continuing Calibrati	WG228566-5	256958		7.32		421207		8.10		392656		11.54	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG228547-4
Lab File ID : D1351.d

SDG: SL3902
Analytical Date: 05/17/18 08:11
Instrument ID: GCMS-D

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	207228		13.88	
	Upper Limit	414456		14.04	
	Lower Limit	103614		13.71	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG228566-4	236950		13.88	
Laboratory Control S	WG228566-1	229479		13.88	
Method Blank Sample	WG228566-2	208569		13.89	
CHAAP-19C-LGIA-DI	SL3902-8	183738		13.89	
CHAAP-19C-LGIA-DI	SL3902-10	181101		13.89	
CHAAP-19C-LGIA-DI	SL3902-12	165030		13.88	
Matrix Spike	WG228566-6	194033		13.88	
Matrix Spike Duplica	WG228566-7	200014		13.88	
Continuing Calibrati	WG228566-5	203031		13.88	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
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RT Lower Limit = - 10 seconds of internal standard RT

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG228847-4
Lab File ID : D1470.d

SDG: SL3902
Analytical Date: 05/22/18 08:30
Instrument ID: GCMS-D

		PENTAFLUOROBENZENE			1,4-DIFLUOROBENZENE			CHLOROBENZENE-D5		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	262859		7.32		420311		8.10		375750		11.54	
	Upper Limit	525718		7.48		840622		8.26		751500		11.70	
	Lower Limit	131429.5		7.15		210155.5		7.93		187875		11.37	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG228859-4	285924		7.32		456854		8.10		409420		11.55	
Laboratory Control S	WG228859-1	292824		7.32		466113		8.10		412871		11.55	
Method Blank Sample	WG228859-2	264819		7.32		430134		8.11		375644		11.55	
CHAAP-19C-LGIA-DI	SL3902-12DL	214949		7.32		352532		8.10		317574		11.54	
Continuing Calibrati	WG228859-5	215742		7.32		346333		8.10		322559		11.54	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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P.O. Box 540, Scarborough, ME 04070
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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG228847-4
Lab File ID : D1470.d

SDG: SL3902
Analytical Date: 05/22/18 08:30
Instrument ID: GCMS-D

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	190800		13.88	
	Upper Limit	381600		14.04	
	Lower Limit	95400		13.71	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG228859-4	204850		13.89	
Laboratory Control S	WG228859-1	208475		13.89	
Method Blank Sample	WG228859-2	183358		13.89	
CHAAP-19C-LGIA-DI	SL3902-12DL	154528		13.88	
Continuing Calibrati	WG228859-5	170769		13.88	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-2RA
Client ID: CHAAP-19C-LGIA-DPT10
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: N8672.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 09-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227901

Analysis Date: 23-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 24-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.098	ug/L	1	.2	0.20	0.063	0.098
2-Methylnaphthalene	U	0.098	ug/L	1	.2	0.20	0.075	0.098
Acenaphthylene	U	0.098	ug/L	1	.2	0.20	0.053	0.098
Acenaphthene	U	0.098	ug/L	1	.2	0.20	0.063	0.098
Fluorene	U	0.098	ug/L	1	.2	0.20	0.060	0.098
Phenanthrene	U	0.098	ug/L	1	.2	0.20	0.050	0.098
Anthracene	U	0.098	ug/L	1	.2	0.20	0.043	0.098
Fluoranthene	U	0.098	ug/L	1	.2	0.20	0.072	0.098
Pyrene	U	0.098	ug/L	1	.2	0.20	0.058	0.098
Benzo(a)anthracene	U	0.098	ug/L	1	.2	0.20	0.045	0.098
Chrysene	U	0.098	ug/L	1	.2	0.20	0.035	0.098
Benzo(b)Fluoranthene	J	0.18	ug/L	1	.2	0.20	0.087	0.098
Benzo(k)fluoranthene	U	0.098	ug/L	1	.2	0.20	0.048	0.098
Benzo(a)pyrene	U	0.098	ug/L	1	.2	0.20	0.065	0.098
Indeno(1,2,3-cd)pyrene	U	0.098	ug/L	1	.2	0.20	0.051	0.098
Dibenzo(a,h)anthracene	U	0.098	ug/L	1	.2	0.20	0.069	0.098
Benzo(g,h,i)perylene	U	0.098	ug/L	1	.2	0.20	0.064	0.098
2-Methylnaphthalene-D10		85.1	%					
Fluorene-D10		83.5	%					
Pyrene-D10		84.4	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-4RA
Client ID: CHAAP-19C-LGIA-DPT09
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: N8673.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 09-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227901

Analysis Date: 23-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 24-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.099	ug/L	1	.2	0.20	0.063	0.099
2-Methylnaphthalene	U	0.099	ug/L	1	.2	0.20	0.076	0.099
Acenaphthylene	U	0.099	ug/L	1	.2	0.20	0.053	0.099
Acenaphthene	U	0.099	ug/L	1	.2	0.20	0.063	0.099
Fluorene	U	0.099	ug/L	1	.2	0.20	0.060	0.099
Phenanthrene	U	0.099	ug/L	1	.2	0.20	0.050	0.099
Anthracene	U	0.099	ug/L	1	.2	0.20	0.044	0.099
Fluoranthene	U	0.099	ug/L	1	.2	0.20	0.072	0.099
Pyrene	U	0.099	ug/L	1	.2	0.20	0.058	0.099
Benzo(a)anthracene	U	0.099	ug/L	1	.2	0.20	0.046	0.099
Chrysene	U	0.099	ug/L	1	.2	0.20	0.036	0.099
Benzo(b)Fluoranthene	J	0.19	ug/L	1	.2	0.20	0.088	0.099
Benzo(k)fluoranthene	U	0.099	ug/L	1	.2	0.20	0.048	0.099
Benzo(a)pyrene	U	0.099	ug/L	1	.2	0.20	0.065	0.099
Indeno(1,2,3-cd)pyrene	U	0.099	ug/L	1	.2	0.20	0.051	0.099
Dibenzo(a,h)anthracene	U	0.099	ug/L	1	.2	0.20	0.069	0.099
Benzo(g,h,i)perylene	U	0.099	ug/L	1	.2	0.20	0.064	0.099
2-Methylnaphthalene-D10		85.4	%					
Fluorene-D10		82.5	%					
Pyrene-D10		86.4	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-6RA
Client ID: CHAAP-19C-LGIA-DPT08
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: N8674.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 09-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227901

Analysis Date: 23-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 24-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.078	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.055	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.062	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.045	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.074	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.060	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.047	0.10
Chrysene	U	0.10	ug/L	1	.2	0.20	0.037	0.10
Benzo(b)Fluoranthene		0.20	ug/L	1	.2	0.20	0.091	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.050	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.067	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.053	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.071	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
2-Methylnaphthalene-D10		85.0	%					
Fluorene-D10		83.6	%					
Pyrene-D10		88.4	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-8RA
Client ID: CHAAP-19C-LGIA-DPT07
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: N8675.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 09-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227901

Analysis Date: 23-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 24-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
2-Methylnaphthalene	U	0.095	ug/L	1	.2	0.19	0.073	0.095
Acenaphthylene	U	0.095	ug/L	1	.2	0.19	0.051	0.095
Acenaphthene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
Fluorene	U	0.095	ug/L	1	.2	0.19	0.058	0.095
Phenanthrene	U	0.095	ug/L	1	.2	0.19	0.048	0.095
Anthracene	U	0.095	ug/L	1	.2	0.19	0.042	0.095
Fluoranthene	U	0.095	ug/L	1	.2	0.19	0.070	0.095
Pyrene	U	0.095	ug/L	1	.2	0.19	0.056	0.095
Benzo(a)anthracene	U	0.095	ug/L	1	.2	0.19	0.044	0.095
Chrysene	U	0.095	ug/L	1	.2	0.19	0.034	0.095
Benzo(b)Fluoranthene	J	0.18	ug/L	1	.2	0.19	0.085	0.095
Benzo(k)fluoranthene	U	0.095	ug/L	1	.2	0.19	0.047	0.095
Benzo(a)pyrene	U	0.095	ug/L	1	.2	0.19	0.063	0.095
Indeno(1,2,3-cd)pyrene	U	0.095	ug/L	1	.2	0.19	0.050	0.095
Dibenzo(a,h)anthracene	U	0.095	ug/L	1	.2	0.19	0.067	0.095
Benzo(g,h,i)perylene	U	0.095	ug/L	1	.2	0.19	0.062	0.095
2-Methylnaphthalene-D10		84.7	%					
Fluorene-D10		85.0	%					
Pyrene-D10		82.4	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-10RA
Client ID: CHAAP-19C-LGIA-DPT107
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: N8676.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 09-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227901

Analysis Date: 23-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 24-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.21	0.066	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.21	0.079	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.21	0.056	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.21	0.066	0.10
Fluorene	U	0.10	ug/L	1	.2	0.21	0.063	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.21	0.052	0.10
Anthracene	U	0.10	ug/L	1	.2	0.21	0.045	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.21	0.075	0.10
Pyrene	U	0.10	ug/L	1	.2	0.21	0.061	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.21	0.047	0.10
Chrysene	U	0.10	ug/L	1	.2	0.21	0.037	0.10
Benzo(b)Fluoranthene	J	0.20	ug/L	1	.2	0.21	0.092	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.21	0.050	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.21	0.068	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.21	0.054	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.21	0.072	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.21	0.067	0.10
2-Methylnaphthalene-D10		86.7	%					
Fluorene-D10		86.3	%					
Pyrene-D10		90.9	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-12RA
Client ID: CHAAP-19C-LGIA-DPT06
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: N8677.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 09-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227901

Analysis Date: 23-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 24-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.061	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.046	0.10
Chrysene	U	0.10	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	J	0.19	ug/L	1	.2	0.20	0.089	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	UM	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene-D10		71.1	%					
Fluorene-D10		74.7	%					
Pyrene-D10		71.8	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-14RA
Client ID: CHAAP-EB-050418-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: N8678.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 09-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227901

Analysis Date: 23-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 24-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
2-Methylnaphthalene	U	0.097	ug/L	1	.2	0.19	0.075	0.097
Acenaphthylene	U	0.097	ug/L	1	.2	0.19	0.052	0.097
Acenaphthene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
Fluorene	U	0.097	ug/L	1	.2	0.19	0.059	0.097
Phenanthrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Anthracene	U	0.097	ug/L	1	.2	0.19	0.043	0.097
Fluoranthene	U	0.097	ug/L	1	.2	0.19	0.071	0.097
Pyrene	U	0.097	ug/L	1	.2	0.19	0.057	0.097
Benzo(a)anthracene	U	0.097	ug/L	1	.2	0.19	0.045	0.097
Chrysene	U	0.097	ug/L	1	.2	0.19	0.035	0.097
Benzo(b)Fluoranthene		0.20	ug/L	1	.2	0.19	0.086	0.097
Benzo(k)fluoranthene	U	0.097	ug/L	1	.2	0.19	0.048	0.097
Benzo(a)pyrene	U	0.097	ug/L	1	.2	0.19	0.064	0.097
Indeno(1,2,3-cd)pyrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Dibenzo(a,h)anthracene	U	0.097	ug/L	1	.2	0.19	0.068	0.097
Benzo(g,h,i)perylene	U	0.097	ug/L	1	.2	0.19	0.063	0.097
2-Methylnaphthalene-D10		86.3	%					
Fluorene-D10		85.2	%					
Pyrene-D10		94.2	%					

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Report of Analytical Results

Client:
Lab ID: WG227901-1RA
Client ID: Method Blank Sample
Project:
SDG: SL3902
Lab File ID: N8644.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227901

Analysis Date: 22-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 24-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.061	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.046	0.10
Chrysene	J	0.060	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene-D10		89.5	%					
Fluorene-D10		88.6	%					
Pyrene-D10		99.1	%					

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** AQ
Lab Code: KAS **SDG:** SL3902

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
CHAAP-19C-LGIA-DPT10	SL3902-10RA		86.7		86.3		90.9	
CHAAP-19C-LGIA-DPT06	SL3902-12RA		71.1		74.7		71.8	
CHAAP-EB-050418-DPT	SL3902-14RA		86.3		85.2		94.2	
CHAAP-19C-LGIA-DPT10	SL3902-2RA		85.1		83.5		84.4	
CHAAP-19C-LGIA-DPT09	SL3902-4RA		85.4		82.5		86.4	
CHAAP-19C-LGIA-DPT08	SL3902-6RA		85.0		83.6		88.4	
CHAAP-19C-LGIA-DPT07	SL3902-8RA		84.7		85.0		82.4	
Method Blank Sample	WG227901-1RA		89.5		88.6		99.1	
Laboratory Control S	WG227901-2RA		88.3		85.8		93.0	
Matrix Spike	WG227901-3RA		81.7		80.9		84.4	
Matrix Spike Duplica	WG227901-4RA		77.3		76.7		78.5	

		QC Limits
FLO	FLUORENE-D10	29-120
PYR	PYRENE-D10	53-166
2MN	2-METHYLNAPHTHALENE-D10	43-120

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227901-2RA
Client ID: LCS
Project:
SDG: SL3902
LCS File ID: N8645.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227901

Analysis Date: 22-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 24-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Naphthalene	88.5	2.00	1.77	ug/L	43-120
2-Methylnaphthalene	85.0	2.00	1.70	ug/L	39-120
Acenaphthylene	83.5	2.00	1.67	ug/L	35-121
Acenaphthene	89.0	2.00	1.78	ug/L	48-120
Fluorene	88.0	2.00	1.76	ug/L	50-120
Phenanthrene	93.0	2.00	1.86	ug/L	53-120
Anthracene	86.0	2.00	1.72	ug/L	53-120
Fluoranthene	93.0	2.00	1.86	ug/L	58-120
Pyrene	92.5	2.00	1.85	ug/L	53-121
Benzo(a)anthracene	95.0	2.00	1.90	ug/L	59-120
Chrysene	91.0	2.00	1.82	ug/L	57-120
Benzo(b)Fluoranthene	91.5	2.00	1.83	ug/L	53-126
Benzo(k)fluoranthene	85.0	2.00	1.70	ug/L	54-125
Benzo(a)pyrene	87.0	2.00	1.74	ug/L	53-120
Indeno(1,2,3-cd)pyrene	87.5	2.00	1.75	ug/L	48-130
Dibenzo(a,h)anthracene	79.5	2.00	1.59	ug/L	44-131
Benzo(g,h,i)perylene	93.5	2.00	1.87	ug/L	44-128
2-Methylnaphthalene-D10	88.3				43-120
Fluorene-D10	85.8				29-120
Pyrene-D10	93.0				53-166

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MS/MSD Recovery Report

MS ID: WG227901-3RA
MSD ID: WG227901-4RA
Sample ID: SL3902-12
Client ID: CHAAP-19C-LGIA-DPT06
Project:
SDG: SL3902
MS File ID: N8679.D

Received Date:
Extract Date: 09-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227901
Report Date: 24-MAY-18
MSD File ID: N8680.D

Analysis Date: 23-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Naphthalene	1.92	1.90	ug/L	U0.10	1.6	1.4	81.1	76.1	7	20	43-120
2-Methylnaphthalene	1.92	1.90	ug/L	U0.10	1.5	1.5	79.6	76.6	5	20	39-120
Acenaphthylene	1.92	1.90	ug/L	U0.10	1.4	1.4	74.9	71.9	5	20	35-121
Acenaphthene	1.92	1.90	ug/L	U0.10	1.5	1.4	79.0	75.6	5	20	48-120
Fluorene	1.92	1.90	ug/L	U0.10	1.5	1.4	79.6	75.6	6	20	50-120
Phenanthrene	1.92	1.90	ug/L	U0.10	1.6	1.5	84.2	76.6	10	20	53-120
Anthracene	1.92	1.90	ug/L	U0.10	1.6	1.4	80.6	73.5	10	20	53-120
Fluoranthene	1.92	1.90	ug/L	U0.10	1.8	1.6	91.5	83.0	11	20	58-120
Pyrene	1.92	1.90	ug/L	U0.10	1.6	1.5	84.2	77.7	9	20	53-121
Benzo(a)anthracene	1.92	1.90	ug/L	U0.10	1.8	1.7	95.2	87.7	9	20	59-120
Chrysene	1.92	1.90	ug/L	U0.10	1.6	1.5	84.8	77.2	10	20	57-120
Benzo(b)Fluoranthene	1.92	1.90	ug/L	J0.19	1.7	1.6	79.4	72.2	9	20	53-126
Benzo(k)fluoranthene	1.92	1.90	ug/L	U0.10	1.4	1.2	71.8	63.5	13	20	54-125
Benzo(a)pyrene	1.92	1.90	ug/L	U0.10	1.3	1.1	66.0	57.8	14	20	53-120
Indeno(1,2,3-cd)pyrene	1.92	1.90	ug/L	UM0.10	0.96	0.86	50.2	44.9*	12	20	48-130
Dibenzo(a,h)anthracene	1.92	1.90	ug/L	U0.10	1.8	1.5	92.0	77.7	18	20	44-131
Benzo(g,h,i)perylene	1.92	1.90	ug/L	U0.10	1.4	1.2	71.8	60.9	17	20	44-128
2-Methylnaphthalene-D10							81.7	77.3			43-120
Fluorene-D10							80.9	76.7			29-120
Pyrene-D10							84.4	78.5			53-166

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : N8644.D
Instrument ID : GCMS-N
Matrix : AQ

SDG : SL3902
Lab Sample ID : WG227901-1RA
Date Extracted : 09-MAY-18
Date Analyzed : 22-MAY-18
Time Analyzed : 18:28

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG227901-2RA	N8645.D	05/22/18	18:59
CHAAP-19C-LGIA-DPT10	SL3902-2RA	N8672.D	05/23/18	18:14
CHAAP-19C-LGIA-DPT09	SL3902-4RA	N8673.D	05/23/18	18:46
CHAAP-19C-LGIA-DPT08	SL3902-6RA	N8674.D	05/23/18	19:18
CHAAP-19C-LGIA-DPT07	SL3902-8RA	N8675.D	05/23/18	19:51
CHAAP-19C-LGIA-DPT107	SL3902-10RA	N8676.D	05/23/18	20:23
CHAAP-19C-LGIA-DPT06	SL3902-12RA	N8677.D	05/23/18	20:55
CHAAP-EB-050418-DPT	SL3902-14RA	N8678.D	05/23/18	21:27
Matrix Spike	WG227901-3RA	N8679.D	05/23/18	21:59
Matrix Spike Duplica	WG227901-4RA	N8680.D	05/23/18	22:31

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Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : ND521.D
Instrument ID : GCMS-N

SDG : SL3902
Date Analyzed : 22-MAY-18
Time Analyzed : 14:01

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	42.4		
68	Less than 2.0% of mass 69	0.7	1.58	1
69	Less than 100.0% of mass 198	45.7		
70	Less than 2.0% of mass 69	0.2	0.47	1
127	40.0 - 60.0% of mass 198	59.9		
197	Less than 1.0% of mass 198	0.4		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	7.3		
275	10.0 - 30.0% of mass 198	23.8		
365	1.0 - 100.0% of mass 198	3.0		
441	0.0 - 100.0% of mass 443	9.8	81.09	2
442	40.0 - 100.0% of mass 198	66.0		
443	17.0 - 23.0% of mass 442	12.0	18.24	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG228848-4	N8636.D	05/22/18	14:18
Initial Calibration	WG228848-2	N8637.D	05/22/18	14:49
Initial Calibration	WG228848-3	N8638.D	05/22/18	15:20
Initial Calibration	WG228848-5	N8639.D	05/22/18	15:51
Initial Calibration	WG228848-6	N8640.D	05/22/18	16:23
Initial Calibration	WG228848-7	N8641.D	05/22/18	16:54
Independent Source	WG228848-8	N8642.D	05/22/18	17:25
Method Blank Sample	WG227901-1RA	N8644.D	05/22/18	18:28
Laboratory Control S	WG227901-2RA	N8645.D	05/22/18	18:59
Continuing Calibrati	WG228848-9	N8657.D	05/23/18	01:24

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Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : ND522.D
Instrument ID : GCMS-N

SDG : SL3902
Date Analyzed : 23-MAY-18
Time Analyzed : 09:06

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	43.8		
68	Less than 2.0% of mass 69	0.6	1.40	1
69	Less than 100.0% of mass 198	45.2		
70	Less than 2.0% of mass 69	0.3	0.60	1
127	40.0 - 60.0% of mass 198	59.9		
197	Less than 1.0% of mass 198	0.2		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.5		
275	10.0 - 30.0% of mass 198	22.4		
365	1.0 - 100.0% of mass 198	2.8		
441	0.0 - 100.0% of mass 443	8.6	74.11	2
442	40.0 - 100.0% of mass 198	60.0		
443	17.0 - 23.0% of mass 442	11.6	19.27	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG228910-4	N8660.D	05/23/18	09:22
Initial Calibration	WG228910-2	N8661.D	05/23/18	09:55
Initial Calibration	WG228910-3	N8662.D	05/23/18	10:26
Initial Calibration	WG228910-5	N8663.D	05/23/18	10:58
Initial Calibration	WG228910-6	N8664.D	05/23/18	11:29
Initial Calibration	WG228910-7	N8665.D	05/23/18	12:01
Independent Source	WG228910-8	N8666.D	05/23/18	12:32

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Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : ND523.D
Instrument ID : GCMS-N

SDG : SL3902
Date Analyzed : 23-MAY-18
Time Analyzed : 15:21

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	37.6		
68	Less than 2.0% of mass 69	0.4	0.98	1
69	Less than 100.0% of mass 198	41.9		
70	Less than 2.0% of mass 69	0.3	0.63	1
127	40.0 - 60.0% of mass 198	56.6		
197	Less than 1.0% of mass 198	0.6		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.5		
275	10.0 - 30.0% of mass 198	23.2		
365	1.0 - 100.0% of mass 198	2.7		
441	0.0 - 100.0% of mass 443	9.5	72.59	2
442	40.0 - 100.0% of mass 198	65.6		
443	17.0 - 23.0% of mass 442	13.1	19.93	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG228941-2	N8667.D	05/23/18	15:37
CHAAP-19C-LGIA-DPT10	SL3902-2RA	N8672.D	05/23/18	18:14
CHAAP-19C-LGIA-DPT09	SL3902-4RA	N8673.D	05/23/18	18:46
CHAAP-19C-LGIA-DPT08	SL3902-6RA	N8674.D	05/23/18	19:18
CHAAP-19C-LGIA-DPT07	SL3902-8RA	N8675.D	05/23/18	19:51
CHAAP-19C-LGIA-DPT107	SL3902-10RA	N8676.D	05/23/18	20:23
CHAAP-19C-LGIA-DPT06	SL3902-12RA	N8677.D	05/23/18	20:55
CHAAP-EB-050418-DPT	SL3902-14RA	N8678.D	05/23/18	21:27
Matrix Spike	WG227901-3RA	N8679.D	05/23/18	21:59
Matrix Spike Duplica	WG227901-4RA	N8680.D	05/23/18	22:31
Continuing Calibrati	WG228941-3	N8688.D	05/24/18	02:51

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3902
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-N
Lab File IDs : N8637.D N8638.D N8636.D N8639.D N8640.D N8641.D
Column ID:
Calibration Date(s): 22-MAY-18 14:18, 22-MAY-18 16:54

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Crv					Max	
	0.200000(	0.500000(	2.0000	7.0000	10.0000	15.0000	New	b	m1	m2	%RSD	%RSD	
Naphthalene	0.79987	0.92143	0.95524	0.90518	0.92255	0.86404	AVG		0.89472		6.16188	15.00000	O
2-Methylnaphthalene	0.56523	0.61210	0.59015	0.57187	0.58413	0.55947	AVG		0.58049		3.31769	15.00000	O
Acenaphthylene	1.80423	1.88356	2.02391	1.90674	1.95922	1.83575	AVG		1.90223		4.23483	15.00000	O
Acenaphthene	1.21376	1.21092	1.29177	1.20374	1.26406	1.18376	AVG		1.22800		3.33927	15.00000	O
Fluorene	1.24561	1.26227	1.31832	1.27038	1.31239	1.27367	AVG		1.28044		2.24898	15.00000	O
Phenanthrene	0.99881	1.00376	1.10004	1.07663	1.07734	1.03003	AVG		1.04777		4.06913	15.00000	O
Anthracene	1.09425	1.07368	1.11125	1.07216	1.07147	1.00396	AVG		1.07113		3.40835	15.00000	O
Fluoranthene	0.88630	0.92649	0.99155	1.01730	1.04093	0.98812	AVG		0.97512		5.94506	15.00000	O
Pyrene	2.80880	2.86948	2.82867	2.36164	2.21997	2.24978	AVG		2.55639		12.1326[illegible]	15.00000	O
Benzo(a)anthracene	1.13960	1.15169	1.22459	1.27598	1.31608	1.28593	AVG		1.23231		5.95810	15.00000	O
Chrysene	1.78910	1.52942	1.46296	1.30642	1.34988	1.29036	AVG		1.45469		12.95061	15.00000	O
Benzo(b)fluoranthene	1.05363	1.14046	1.16928	1.32974	1.38451	1.41453	AVG		1.24869		11.80199	15.00000	O
Benzo(k)fluoranthene	2.44055	2.25970	1.84777	1.82278	1.80955	1.73185	AVG		1.98537		14.65027	15.00000	O
Benzo(a)pyrene	1.16491	1.18858	1.13735	1.23445	1.26419	1.25192	AVG		1.20690		4.22557	15.00000	O
Indeno(1,2,3-cd)pyrene	3901	8463	51591	242259	386389	528114	LNR	0.08115	0.52035		0.99720	0.99000	O
Dibenzo(a,h)anthracene	2914	5089	36627	154710	263920	364914	LNR	0.22688	0.66300		0.99797	0.99000	O
Benzo(g,h,i)perylene	0.75516	0.77859	0.90311	0.95217	0.95533	0.93336	AVG		0.87962		10.18531	15.00000	O
2-Methylnaphthalene-D10	0.45470	0.43230	0.47686	0.44849	0.46738	0.43090	AVG		0.45177		4.09016	15.00000	
Fluorene-D10	0.96612	0.96678	0.97892	0.93524	0.96574	0.93528	AVG		0.95801		1.91023	15.00000	
Pyrene-D10	1.71920	1.68678	1.71336	1.47670	1.42144	1.37418	AVG		1.56528		10.1189(	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

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P.O. Box 540, Scarborough, ME 04070
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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3902
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-N
Lab File IDs : N8661.D N8662.D N8660.D N8663.D N8664.D N8665.D
Column ID:
Calibration Date(s): 23-MAY-18 09:22, 23-MAY-18 12:01

	0.200000(Level 1	0.500000(Level 2	2.0000 Level 3	7.0000 Level 4	10.0000 Level 5	15.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Naphthalene	0.75785	0.92145	0.92351	0.91780	0.88917	0.88117	AVG		0.88182		7.17676	15.00000	O
2-Methylnaphthalene	0.52621	0.62471	0.56698	0.57952	0.57055	0.55596	AVG		0.57066		5.65424	15.00000	O
Acenaphthylene	1.72299	1.82603	1.90312	1.90366	1.87638	1.92709	AVG		1.85988		4.05651	15.00000	O
Acenaphthene	1.15347	1.22692	1.23329	1.20634	1.19295	1.18608	AVG		1.19984		2.43893	15.00000	O
Fluorene	1.18557	1.24333	1.24451	1.27568	1.29219	1.26876	AVG		1.25167		2.98933	15.00000	O
Phenanthrene	0.97379	1.00238	1.07555	1.08883	1.04874	1.06922	AVG		1.04309		4.35571	15.00000	O
Anthracene	1.09409	1.03680	1.02761	1.08816	1.03292	1.02716	AVG		1.05112		2.97259	15.00000	O
Fluoranthene	0.85631	0.88906	0.95788	1.07404	0.98209	1.01184	AVG		0.96187		8.31056	15.00000	O
Pyrene	2.82984	2.63265	2.59447	2.16108	2.16953	2.08729	AVG		2.41248		12.89342	15.00000	O
Benzo(a)anthracene	0.94254	1.01870	1.15342	1.28135	1.23358	1.28569	AVG		1.15255		12.44712	15.00000	O
Chrysene	15107	40185	131701	767415	831416	1186510	LNR	-0.12115	1.33293		0.99981	0.99000	O
Benzo(b)fluoranthene	2757	9313	48036	417885	428001	754824	QUA	0.20673	0.79870	-0.00384	0.99602	0.99000	O
Benzo(k)fluoranthene	2.57611	2.11253	2.07025	1.84119	1.85863	1.72016	AVG		2.02981		15.06736	15.00000	W(
Benzo(a)pyrene	1.45894	1.14262	1.14170	1.24055	1.23419	1.26944	AVG		1.24791		9.31801	15.00000	O
Indeno(1,2,3-cd)pyrene	2353	6863	36422	244115	311656	506100	QUA	0.14628	2.39705	-0.06194	0.99876	0.99000	O
Dibenzo(a,h)anthracene	1384	4708	24261	159082	191643	338498	QUA	0.08538	2.03417	-0.03978	0.99993	0.99000	O
Benzo(g,h,i)perylene	0.75338	0.73534	0.86724	0.89879	0.96860	0.97316	AVG		0.86609		11.86986	15.00000	O
2-Methylnaphthalene-D10	0.41530	0.48718	0.45602	0.46143	0.44859	0.43648	AVG		0.45083		5.37333	15.00000	
Fluorene-D10	0.90546	0.93737	0.93054	0.94255	0.92852	0.93329	AVG		0.92962		1.38279	15.00000	
Pyrene-D10	1.75693	1.56379	1.60297	1.34591	1.35671	1.28231	AVG		1.48477		12.45383	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228848-9
Analytical Date: 05/23/18 01:24
Lab File ID : N8657.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 05/22/18 14:18 05/22/18 16:54
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
27 Naphthalene	0.89472	0.93935	0.93935	0.010	4.98831	20.00000	Averaged
33 2-Methylnaphthalene	0.58049	0.58803	0.58803	0.010	1.29960	20.00000	Averaged
45 Acenaphthylene	1.90223	1.98900	1.98900	0.010	4.56144	20.00000	Averaged
48 Acenaphthene	1.22800	1.28579	1.28579	0.010	4.70618	20.01000	Averaged
56 Fluorene	1.28044	1.29522	1.29522	0.010	1.15430	20.00000	Averaged
66 Phenanthrene	1.04777	1.09766	1.09766	0.010	4.76156	20.00000	Averaged
67 Anthracene	1.07113	1.06681	1.06681	0.010	-0.40310	20.00000	Averaged
70 Fluoranthene	0.97512	0.96035	0.96035	0.010	-1.51441	20.01000	Averaged
72 Pyrene	2.55639	2.73580	2.73580	0.010	7.01815	20.00000	Averaged
75 Benzo(a)anthracene	1.23231	1.23852	1.23852	0.010	0.50412	20.00000	Averaged
77 Chrysene	1.45469	1.40852	1.40852	0.010	-3.17415	20.00000	Averaged
80 Benzo(b)fluoranthene	1.24869	1.13611	1.13611	0.010	-9.01608	20.00000	Averaged
81 Benzo(k)fluoranthene	1.98537	2.00000	2.00000	0.010	0.73702	20.00000	Averaged
82 Benzo(a)pyrene	1.20690	1.15312	1.15312	0.010	-4.45614	20.01000	Averaged
84 Indeno(1,2,3-cd)pyrene	2.00000	1.86029	0.46711	0.010	-6.98545	20.00000	Linear
85 Dibenzo(a,h)anthracene	2.00000	1.86548	0.55823	0.010	-6.72618	20.00000	Linear
86 Benzo(g,h,i)perylene	0.87962	0.97509	0.97509	0.010	10.85406	20.00000	Averaged
32 2-Methylnaphthalene-D10	0.45177	0.47565	0.47565	0.010	5.28649	20.00000	Averaged
55 Fluorene-D10	0.95801	0.96935	0.96935	0.010	1.18351	20.00000	Averaged
71 Pyrene-D10	1.56528	1.69826	1.69826	0.010	8.49571	20.00000	Averaged

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228941-2
Analytical Date: 05/23/18 15:37
Lab File ID : N8667.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 05/23/18 09:22 05/23/18 12:01
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
27 Naphthalene	0.88182	0.89157	0.89157	0.010	1.10486	20.00000	Averaged
33 2-Methylnaphthalene	0.57066	0.55230	0.55230	0.010	-3.21703	20.00000	Averaged
45 Acenaphthylene	1.85988	1.93013	1.93013	0.010	3.77725	20.00000	Averaged
48 Acenaphthene	1.19984	1.22426	1.22426	0.010	2.03488	20.01000	Averaged
56 Fluorene	1.25167	1.26281	1.26281	0.010	0.89004	20.00000	Averaged
66 Phenanthrene	1.04309	1.06498	1.06498	0.010	2.09934	20.00000	Averaged
67 Anthracene	1.05112	1.03421	1.03421	0.010	-1.60897	20.00000	Averaged
70 Fluoranthene	0.96187	1.00742	1.00742	0.010	4.73596	20.01000	Averaged
72 Pyrene	2.41248	2.19128	2.19128	0.010	-9.16878	20.00000	Averaged
75 Benzo(a)anthracene	1.15255	1.17899	1.17899	0.010	2.29431	20.00000	Averaged
77 Chrysene	2.00000	1.98458	1.38724	0.010	-0.77112	20.00000	Linear
80 Benzo(b)fluoranthene	2.00000	1.99918	1.16428	0.010	-0.04117	20.00000	Quadratic
81 Benzo(k)fluoranthene	2.02981	1.81663	1.81663	0.010	-10.50267	20.00000	Averaged
82 Benzo(a)pyrene	1.24791	1.17546	1.17546	0.010	-5.80527	20.01000	Averaged
84 Indeno(1,2,3-cd)pyrene	2.00000	2.32415	0.47495	0.010	16.20755	20.00000	Quadratic
85 Dibenzo(a,h)anthracene	2.00000	2.04465	0.49791	0.010	2.23237	20.00000	Quadratic
86 Benzo(g,h,i)perylene	0.86609	0.91096	0.91096	0.010	5.18108	20.00000	Averaged
32 2-Methylnaphthalene-D10	0.45083	0.44153	0.44153	0.010	-2.06299	20.00000	Averaged
55 Fluorene-D10	0.92962	0.94510	0.94510	0.010	1.66492	20.00000	Averaged
71 Pyrene-D10	1.48477	1.32608	1.32608	0.010	-10.68813	20.00000	Averaged

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228941-3
Analytical Date: 05/24/18 02:51
Lab File ID : N8688.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 05/23/18 09:22 05/23/18 12:01
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
27 Naphthalene	0.88182	0.89842	0.89842	0.010	1.88214	20.00000	Averaged	
33 2-Methylnaphthalene	0.57066	0.56337	0.56337	0.010	-1.27642	20.00000	Averaged	
45 Acenaphthylene	1.85988	1.90047	1.90047	0.010	2.18245	20.00000	Averaged	
48 Acenaphthene	1.19984	1.19529	1.19529	0.010	-0.37950	20.01000	Averaged	
56 Fluorene	1.25167	1.25901	1.25901	0.010	0.58630	20.00000	Averaged	
66 Phenanthrene	1.04309	1.06401	1.06401	0.010	2.00635	20.00000	Averaged	
67 Anthracene	1.05112	1.03348	1.03348	0.010	-1.67805	20.00000	Averaged	
70 Fluoranthene	0.96187	1.01447	1.01447	0.010	5.46902	20.01000	Averaged	
72 Pyrene	2.41248	2.21152	2.21152	0.010	-8.32972	20.00000	Averaged	
75 Benzo(a)anthracene	1.15255	1.20152	1.20152	0.010	4.24935	20.00000	Averaged	
77 Chrysene	2.00000	1.87597	1.31486	0.010	-6.20144	20.00000	Linear	
80 Benzo(b)fluoranthene	2.00000	2.02685	1.18210	0.010	1.34257	20.00000	Quadratic	
81 Benzo(k)fluoranthene	2.02981	1.67063	1.67063	0.010	-17.69519	20.00000	Averaged	
82 Benzo(a)pyrene	1.24791	1.18371	1.18371	0.010	-5.14412	20.01000	Averaged	
84 Indeno(1,2,3-cd)pyrene	2.00000	1.52751	0.30003	0.010	-23.62470	20.00000	Quadratic	*
85 Dibenzo(a,h)anthracene	2.00000	2.70666	0.67049	0.010	35.33298	20.00000	Quadratic	*
86 Benzo(g,h,i)perylene	0.86609	1.00683	1.00683	0.010	16.25113	20.00000	Averaged	
32 2-Methylnaphthalene-D10	0.45083	0.46075	0.46075	0.010	2.19931	20.00000	Averaged	
55 Fluorene-D10	0.92962	0.96630	0.96630	0.010	3.94581	20.00000	Averaged	
71 Pyrene-D10	1.48477	1.39973	1.39973	0.010	-5.72762	20.00000	Averaged	

*** = Compound out of QC criteria**

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Katahdin
ANALYTICAL SERVICES

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG228848-4
Lab File ID : N8636.D

SDG: SL3902
Analytical Date: 05/22/18 14:18
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	53740		7.47		177171		9.10		73557		11.43	
	Upper Limit	107480		7.64		354342		9.27		147114		11.60	
	Lower Limit	26870		7.30		88585.5		8.93		36778.5		11.27	
Client Sample ID	Lab Sample ID												
Method Blank Sample	WG227901-1RA	46075		7.48		150702		9.10		61276		11.44	
Laboratory Control S	WG227901-2RA	47961		7.47		161713		9.10		68604		11.43	
Continuing Calibrati	WG228848-9	46587		7.47		151160		9.10		62341		11.43	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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ANALYTICAL SERVICES

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG228848-4
Lab File ID : N8636.D

SDG: SL3902
Analytical Date: 05/22/18 14:18
Instrument ID: GCMS-N

		PHENANTHRENE-D10			CHRYSENE-D12			PERYLENE-D12		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	112762		13.42		40569		17.22		23975		20.24	
	Upper Limit	225524		13.59		81138		17.38		47950		20.41	
	Lower Limit	56381		13.25		20284.5		17.05		11987.5		20.08	
Client Sample ID	Lab Sample ID												
Method Blank Sample	WG227901-1RA	102718		13.42		35900		17.23		18331		20.23	
Laboratory Control S	WG227901-2RA	105234		13.42		39755		17.22		22388		20.23	
Continuing Calibrati	WG228848-9	91066		13.42		32905		17.23		18532		20.26	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

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* Values outside of QC limits.

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG228910-4
Lab File ID : N8660.D

SDG: SL3902
Analytical Date: 05/23/18 09:22
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	49533		7.47		159597		9.10		66847		11.43	
	Upper Limit	99066		7.64		319194		9.27		133694		11.60	
	Lower Limit	24766.5		7.30		79798.5		8.93		33423.5		11.27	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG228941-2	58316		7.48		192142		9.10		76875		11.43	
CHAAP-19C-LGIA-DI	SL3902-2RA	59062		7.48		195386		9.11		83301		11.43	
CHAAP-19C-LGIA-DI	SL3902-4RA	58687		7.47		200773		9.10		87885		11.43	
CHAAP-19C-LGIA-DI	SL3902-6RA	56860		7.47		192209		9.10		82884		11.43	
CHAAP-19C-LGIA-DI	SL3902-8RA	58768		7.47		203433		9.10		88437		11.43	
CHAAP-19C-LGIA-DI	SL3902-10RA	60068		7.47		203538		9.10		87269		11.43	
CHAAP-19C-LGIA-DI	SL3902-12RA	65480		7.47		225260		9.10		95578		11.43	
CHAAP-EB-050418-D	SL3902-14RA	55673		7.47		190357		9.10		84312		11.43	
Matrix Spike	WG227901-3RA	56968		7.47		198983		9.10		89333		11.43	
Matrix Spike Duplica	WG227901-4RA	60651		7.47		209620		9.10		93449		11.43	
Continuing Calibrati	WG228941-3	59643		7.47		203418		9.10		87535		11.43	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG228910-4
Lab File ID : N8660.D

SDG: SL3902
Analytical Date: 05/23/18 09:22
Instrument ID: GCMS-N

		PHENANTHRENE-D10			CHRYSENE-D12			PERYLENE-D12		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	97537		13.42		37300		17.23		20220		20.26	
	Upper Limit	195074		13.59		74600		17.39		40440		20.42	
	Lower Limit	48768.5		13.25		18650		17.06		10110		20.09	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG228941-2	118415		13.42		57971		17.23		34723		20.24	
CHAAP-19C-LGIA-DI	SL3902-2RA	139844		13.42		57823		17.23		34169		20.23	
CHAAP-19C-LGIA-DI	SL3902-4RA	146428		13.42		61400		17.23		35386		20.23	
CHAAP-19C-LGIA-DI	SL3902-6RA	134140		13.42		53921		17.22		32725		20.23	
CHAAP-19C-LGIA-DI	SL3902-8RA	146854		13.42		68894		17.22		41646	*	20.23	
CHAAP-19C-LGIA-DI	SL3902-10RA	137390		13.42		54225		17.23		30660		20.23	
CHAAP-19C-LGIA-DI	SL3902-12RA	156052		13.42		73069		17.22		47129	*	20.23	
CHAAP-EB-050418-D	SL3902-14RA	136563		13.42		50927		17.22		28754		20.23	
Matrix Spike	WG227901-3RA	146597		13.42		63324		17.22		35248		20.23	
Matrix Spike Duplica	WG227901-4RA	156361		13.41		66453		17.22		36359		20.23	
Continuing Calibrati	WG228941-3	139905		13.41		65689		17.22		38044		20.23	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-2
Client ID: CHAAP-19C-LGIA-DPT10
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: HLE10304.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		92.4	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-4
Client ID: CHAAP-19C-LGIA-DPT09
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: HLE10305.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		93.9	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-6
Client ID: CHAAP-19C-LGIA-DPT08
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: HLE10306.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		94.0	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-8
Client ID: CHAAP-19C-LGIA-DPT07
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: HLE10307.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		94.3	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-10
Client ID: CHAAP-19C-LGIA-DPT107
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: HLE10308.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		93.8	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-12
Client ID: CHAAP-19C-LGIA-DPT06
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: HLE10309.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	UM	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		89.6	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-14
Client ID: CHAAP-EB-050418-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: HLE10310.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		93.2	%					

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Report of Analytical Results

Client:
Lab ID: WG227925-1
Client ID: Method Blank Sample
Project:
SDG: SL3902
Lab File ID: HLE10282.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		90.7	%					

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** AQ
Lab Code: KAS **SDG:** SL3902

Client Sample ID	Lab Sample ID	Col. ID	DNB	#
CHAAP-19C-LGIA-DPT10	SL3902-10	B	93.8	
CHAAP-19C-LGIA-DPT06	SL3902-12	B	89.6	
CHAAP-EB-050418-DPT	SL3902-14	B	93.2	
CHAAP-19C-LGIA-DPT10	SL3902-2	B	92.4	
CHAAP-19C-LGIA-DPT09	SL3902-4	B	93.9	
CHAAP-19C-LGIA-DPT08	SL3902-6	B	94.0	
CHAAP-19C-LGIA-DPT07	SL3902-8	B	94.3	
Method Blank Sample	WG227925-1	B	90.7	
Laboratory Control S	WG227925-2	B	94.5	
Matrix Spike	WG227925-3	B	93.4	
Matrix Spike Duplica	WG227925-4	B	94.4	

		QC Limits
DNB	1,2-DINITROBENZENE	83-120

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227925-2
Client ID: LCS
Project:
SDG: SL3902
LCS File ID: HLE10283.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
HMX	101.	5.00	5.04	ug/L	65-135
RDX	103.	5.00	5.16	ug/L	68-130
1,3,5-Trinitrobenzene	106.	5.00	5.29	ug/L	73-125
1,3-Dinitrobenzene	105.	5.00	5.24	ug/L	78-120
Tetryl	122.	5.00	6.11	ug/L	64-128
Nitrobenzene	98.8	5.00	4.94	ug/L	65-134
2,4,6-Trinitrotoluene	109.	5.00	5.44	ug/L	71-123
4-Am-DNT	111.	5.00	5.53	ug/L	76-125
2-Am-DNT	106.	5.00	5.29	ug/L	79-120
2,6-Dinitrotoluene	101.	5.00	5.06	ug/L	77-127
2,4-Dinitrotoluene	107.	5.00	5.33	ug/L	78-120
2-Nitrotoluene	105.	5.00	5.24	ug/L	70-127
4-Nitrotoluene	107.	5.00	5.35	ug/L	71-127
3-Nitrotoluene	102.	5.00	5.09	ug/L	73-125
Nitroglycerin	98.5	20.0	19.7	ug/L	74-127
PETN	96.5	20.0	19.3	ug/L	73-127
1,2-Dinitrobenzene	94.5				83-120

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MS/MSD Recovery Report

MS ID: WG227925-3
MSD ID: WG227925-4
Sample ID: SL3902-12
Client ID: CHAAP-19C-LGIA-DPT06
Project:
SDG: SL3902
MS File ID: HLE10284.D

Received Date:
Extract Date: 09-MAY-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG227925
Report Date: 23-MAY-18
MSD File ID: HLE10285.D

Analysis Date: 10-MAY-18
Analyst: AAB
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
HMX	5.00	5.00	ug/L	U0.12	5.0	5.2	101.	103.	2	20	65-135
RDX	5.00	5.00	ug/L	U0.12	5.1	5.1	101.	102.	0	20	68-130
1,3,5-Trinitrobenzene	5.00	5.00	ug/L	U0.12	5.1	5.3	103.	106.	3	20	73-125
1,3-Dinitrobenzene	5.00	5.00	ug/L	U0.12	5.1	5.3	102.	106.	4	20	78-120
Tetryl	5.00	5.00	ug/L	U0.12	5.7	5.9	113.	118.	4	20	64-128
Nitrobenzene	5.00	5.00	ug/L	U0.12	4.9	5.1	98.0	102.	4	20	65-134
2,4,6-Trinitrotoluene	5.00	5.00	ug/L	U0.12	5.2	5.4	105.	109.	4	20	71-123
4-Am-DNT	5.00	5.00	ug/L	U0.12	5.4	5.5	107.	110.	2	20	76-125
2-Am-DNT	5.00	5.00	ug/L	U0.12	5.2	5.3	103.	106.	2	20	79-120
2,6-Dinitrotoluene	5.00	5.00	ug/L	U0.12	4.9	5.2	98.8	103.	4	20	77-127
2,4-Dinitrotoluene	5.00	5.00	ug/L	U0.12	5.2	5.4	104.	108.	3	20	78-120
2-Nitrotoluene	5.00	5.00	ug/L	U0.12	5.0	5.4	99.4	108.	8	20	70-127
4-Nitrotoluene	5.00	5.00	ug/L	UM0.12	5.7	6.5	113.	130.*	14	20	71-127
3-Nitrotoluene	5.00	5.00	ug/L	U0.12	4.6	5.4	92.0	107.	15	20	73-125
Nitroglycerin	20.0	20.0	ug/L	U2.0	18.	18.	91.0	91.0	0	20	74-127
PETN	20.0	20.0	ug/L	U2.0	19.	20.	97.0	100.	3	20	73-127
1,2-Dinitrobenzene							93.4	94.4			83-120

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLE10282.D
Instrument ID : HPLC02
Matrix : AQ

SDG : SL3902
Lab Sample ID : WG227925-1
Date Extracted : 09-MAY-18
Date Analyzed : 10-MAY-18
Time Analyzed : 08:08

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG227925-2	HLE10283.	05/10/18	08:39
Matrix Spike	WG227925-3	HLE10284.	05/10/18	09:10
Matrix Spike Duplica	WG227925-4	HLE10285.	05/10/18	09:41
CHAAP-19C-LGIA-DPT10	SL3902-2	HLE10304.	05/10/18	19:30
CHAAP-19C-LGIA-DPT09	SL3902-4	HLE10305.	05/10/18	20:01
CHAAP-19C-LGIA-DPT08	SL3902-6	HLE10306.	05/10/18	20:32
CHAAP-19C-LGIA-DPT07	SL3902-8	HLE10307.	05/10/18	21:03
CHAAP-19C-LGIA-DPT107	SL3902-10	HLE10308.	05/10/18	21:34
CHAAP-19C-LGIA-DPT06	SL3902-12	HLE10309.	05/10/18	22:05
CHAAP-EB-050418-DPT	SL3902-14	HLE10310.	05/10/18	22:36

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3902
Project : Cornhusker Army Ammunition Plant
Instrument ID: HPLC02
Lab File IDs : HLC10037.D,HLC10036.D,HLC10035.D,HLC10034.D,HLC10033.D,HLC10032.D,HLC10031.D
Calibration Date(s): 20-MAR-18 14:54, 20-MAR-18 18:05

	0.025000(Level 1	0.050000(Level 2	0.100000(Level 3	0.250000(Level 4	0.500000(Level 5	1.0000 Level 6	2.0000 Level 7		New Crv	b	m1	%RSD	Max %RSD	
NITROGLYCERIN	5440	5685	5280	5392	5454	5917	5425		AVG		5513	3.90686	20.00000	O
PETN	3020	2970	2465	3064	2834	3010	2768		AVG		2876	7.31282	15.00000	O

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3902
Project : Cornhusker Army Ammunition Plant
Instrument ID: HPLC02
Lab File IDs : HLC10037.D HLC10036.D HLC10035.D HLC10034.D HLC10033.D HLC10032.D HLC10031.D
Calibration Date(s): 20-MAR-18 14:54 20-MAR-18 18:05

	0.025000 Level 1	0.050000 Level 2	0.100000 Level 3	0.250000 Level 4	0.500000 Level 5	1.0000 Level 6	2.0000 Level 7		New Crv	b	m1	%RSD	Max %RSD	
HMX	5320	5440	5140	5296	5378	5810	5351		AVG		5391	3.83807	20.00000	O
RDX	75.00000	225	466	1287	2694	5888	10895		LNR	0.00587	5552	0.99828	0.99000	O
1,3,5-trinitrobenzene	3240	3680	3770	3628	3744	4074	3686		AVG		3689	6.66990	20.00000	O
1,3-dinitrobenzene	6680	7280	7410	7508	7512	8198	7518		AVG		7444	5.99405	20.00000	O
TETRYL	2240	2660	2530	2424	2550	2797	2541		AVG		2535	6.90733	20.00000	O
nitrobenzene	6760	6820	6610	6736	6892	7418	6831		AVG		6867	3.77157	20.00000	O
2,4,6-trinitrotoluene	2600	2520	2510	2460	2478	2672	2445		AVG		2526	3.24744	20.00000	O
4-AM-DNT	4200	4040	4240	4260	4366	4695	4318		AVG		4303	4.68155	20.00000	O
2-AM-DNT	5360	5700	5640	5720	5838	6280	5787		AVG		5761	4.78978	20.00000	O
2,6-dinitrotoluene	101	175	345	733	1390	3147	5661		LNR	-0.01275	2869	0.99714	0.99000	O
2,4-dinitrotoluene	4280	4700	4560	4552	4620	5008	4610		AVG		4619	4.68458	20.00000	O
2-nitrotoluene	2520	2760	2900	2944	2952	3214	2937		AVG		2890	7.31192	20.00000	O
4-nitrotoluene	2280	1980	2350	2484	2298	2635	2370		AVG		2342	8.60342	20.00000	O
3-nitrotoluene	3360	3180	3390	3404	3136	3585	3225		AVG		3326	4.69272	20.00000	O
1,2-dinitrobenzene	4680	4500	4480	4532	4640	4978	4582		AVG		4627	3.69030	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG227995-1
Lab File ID : HLE10281.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3902
Analytical Date: 05/10/18 06:58
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150 NITROGLYCERIN	5513	5322	0.010	-3.46798	20.00000	Averaged
155 PETN	2876	3040	0.010	5.69089	20.00000	Averaged

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG227995-1
Analytical Date: 05/10/18 06:58
Lab File ID : HLE10281.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{\text{RRF}}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5336	5336	0.010	-1.01366	20.00000	Averaged
4	RDX	0.50000	0.49310	5410	0.010	-1.37968	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3810	3810	0.010	3.28402	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7616	7616	0.010	2.31451	20.00000	Averaged
7	nitrobenzene	6867	6754	6754	0.010	-1.64044	20.00000	Averaged
9	TETRYL	2535	2780	2780	0.010	9.68324	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2538	2538	0.010	0.46086	20.00000	Averaged
11	4-AM-DNT	4303	4360	4360	0.010	1.33139	20.00000	Averaged
12	2-AM-DNT	5761	5886	5886	0.010	2.17483	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.49028	2886	0.010	-1.94471	20.00000	Linear
14	2,4-dinitrotoluene	4619	4730	4730	0.010	2.41420	20.00000	Averaged
15	2-nitrotoluene	2890	2970	2970	0.010	2.78341	20.00000	Averaged
16	4-nitrotoluene	2342	2428	2428	0.010	3.65311	20.00000	Averaged
17	3-nitrotoluene	3326	3314	3314	0.010	-0.35009	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4808	4808	0.010	3.90220	20.00000	Averaged

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG227995-2
Lab File ID : HLE10292.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3902
Analytical Date: 05/10/18 13:18
Instrument ID: HPLC02
Column ID: A

Compound	$\overline{RRF}$/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150 NITROGLYCERIN	5513	5222	0.010	-5.28181	20.00000	Averaged
155 PETN	2876	2999	0.010	4.28260	20.00000	Averaged

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG227995-2
Lab File ID : HLE10292.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3902
Analytical Date: 05/10/18 13:18
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5236	5236	0.010	-2.86873	20.00000	Averaged
4	RDX	0.25000	0.24381	5284	0.010	-2.47473	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3772	3772	0.010	2.25389	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7564	7564	0.010	1.61594	20.00000	Averaged
7	nitrobenzene	6867	6608	6608	0.010	-3.76666	20.00000	Averaged
9	TETRYL	2535	2568	2568	0.010	1.31890	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2484	2484	0.010	-1.67661	20.00000	Averaged
11	4-AM-DNT	4303	4248	4248	0.010	-1.27162	20.00000	Averaged
12	2-AM-DNT	5761	5736	5736	0.010	-0.42901	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.23267	2816	0.010	-6.93393	20.00000	Linear
14	2,4-dinitrotoluene	4619	4628	4628	0.010	0.20569	20.00000	Averaged
15	2-nitrotoluene	2890	2944	2944	0.010	1.88362	20.00000	Averaged
16	4-nitrotoluene	2342	2628	2628	0.010	12.19125	20.00000	Averaged
17	3-nitrotoluene	3326	3584	3584	0.010	7.76864	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4732	4732	0.010	2.25982	20.00000	Averaged

*** = Compound out of QC criteria**

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P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG227995-3
Lab File ID : HLE10303.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3902
Analytical Date: 05/10/18 18:59
Instrument ID: HPLC02
Column ID: A

Compound	$\overline{\text{RRF}}$/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150 NITROGLYCERIN	5513	5328	0.010	-3.35915	20.00000	Averaged
155 PETN	2876	3035	0.010	5.53441	20.00000	Averaged

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG227995-3
Analytical Date: 05/10/18 18:59
Lab File ID : HLE10303.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5354	5354	0.010	-0.67975	20.00000	Averaged
4	RDX	0.50000	0.49526	5434	0.010	-0.94738	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3856	3856	0.010	4.53102	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7674	7674	0.010	3.09369	20.00000	Averaged
7	nitrobenzene	6867	6742	6742	0.010	-1.81519	20.00000	Averaged
9	TETRYL	2535	2748	2748	0.010	8.42070	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2542	2542	0.010	0.61919	20.00000	Averaged
11	4-AM-DNT	4303	4382	4382	0.010	1.84269	20.00000	Averaged
12	2-AM-DNT	5761	5900	5900	0.010	2.41785	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.49028	2886	0.010	-1.94471	20.00000	Linear
14	2,4-dinitrotoluene	4619	4732	4732	0.010	2.45751	20.00000	Averaged
15	2-nitrotoluene	2890	2980	2980	0.010	3.12948	20.00000	Averaged
16	4-nitrotoluene	2342	2468	2468	0.010	5.36074	20.00000	Averaged
17	3-nitrotoluene	3326	3338	3338	0.010	0.37157	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4828	4828	0.010	4.33440	20.00000	Averaged

*** = Compound out of QC criteria**

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P.O. Box 540, Scarborough, ME 04070
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ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG227995-4
Lab File ID : HLE10311.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL3902
Analytical Date: 05/10/18 23:07
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
150 NITROGLYCERIN	5513	5249	0.010	-4.79207	20.00000	Averaged
155 PETN	2876	2971	0.010	3.30897	20.00000	Averaged

*** = Compound out of QC criteria**

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ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG227995-4
Analytical Date: 05/10/18 23:07
Lab File ID : HLE10311.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	$\overline{\text{RRF}}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5300	5300	0.010	-1.68149	20.00000	Averaged
4	RDX	0.25000	0.24615	5336	0.010	-1.53810	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3816	3816	0.010	3.44667	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7536	7536	0.010	1.23978	20.00000	Averaged
7	nitrobenzene	6867	6648	6648	0.010	-3.18413	20.00000	Averaged
9	TETRYL	2535	2824	2824	0.010	11.41923	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2476	2476	0.010	-1.99327	20.00000	Averaged
11	4-AM-DNT	4303	4304	4304	0.010	0.02988	20.00000	Averaged
12	2-AM-DNT	5761	5812	5812	0.010	0.89027	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.23894	2888	0.010	-4.42405	20.00000	Linear
14	2,4-dinitrotoluene	4619	4680	4680	0.010	1.33160	20.00000	Averaged
15	2-nitrotoluene	2890	2928	2928	0.010	1.32991	20.00000	Averaged
16	4-nitrotoluene	2342	2344	2344	0.010	0.06709	20.00000	Averaged
17	3-nitrotoluene	3326	3184	3184	0.010	-4.25911	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4764	4764	0.010	2.95135	20.00000	Averaged

*** = Compound out of QC criteria**

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Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
SDG : SL3902
Project : Cornhusker Army Ammunition Plant
Column ID : B
Instrument ID : HPLC02

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	DNB	
Initial Calibration	WG225143-7	03/20/18	14:54	8.575	
Initial Calibration	WG225143-6	03/20/18	15:26	8.57	
Initial Calibration	WG225143-5	03/20/18	15:58	8.57	
Initial Calibration	WG225143-4	03/20/18	16:30	8.57	
Initial Calibration	WG225143-3	03/20/18	17:01	8.57	
Initial Calibration	WG225143-2	03/20/18	17:33	8.574	
Initial Calibration	WG225143-1	03/20/18	18:05	8.587	
Independent Source	WG225143-8	03/20/18	18:37		
Continuing Calibrati	WG227995-1	05/10/18	06:58	8.54	
Method Blank Sample	WG227925-1	05/10/18	08:08	8.554	
Laboratory Control S	WG227925-2	05/10/18	08:39	8.547	
Matrix Spike	WG227925-3	05/10/18	09:10	8.549	
Matrix Spike Duplica	WG227925-4	05/10/18	09:41	8.542	
Continuing Calibrati	WG227995-2	05/10/18	13:18	8.546	
Continuing Calibrati	WG227995-3	05/10/18	18:59	8.532	
CHAAP-19C-LGIA-DPT10	SL3902-2	05/10/18	19:30	8.54	
CHAAP-19C-LGIA-DPT09	SL3902-4	05/10/18	20:01	8.535	
CHAAP-19C-LGIA-DPT08	SL3902-6	05/10/18	20:32	8.534	
CHAAP-19C-LGIA-DPT07	SL3902-8	05/10/18	21:03	8.532	
CHAAP-19C-LGIA-DPT10	SL3902-10	05/10/18	21:34	8.532	
CHAAP-19C-LGIA-DPT06	SL3902-12	05/10/18	22:05	8.517	
CHAAP-EB-050418-DPT	SL3902-14	05/10/18	22:36	8.533	
Continuing Calibrati	WG227995-4	05/10/18	23:07	8.522	

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Tel:(207) 874-2400 Fax:(207) 775-4029
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INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT10

Matrix: WATER **SDG Name:** SL3902

Percent Solids: 0.00 **Lab Sample ID:** SL3902-002

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	7000			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.37	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	10			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	137			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.34	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	378000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	38.8			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	3.95			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	14.6			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	14500			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	11.9			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	65000			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1410			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	17.7			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	20100			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	0.73	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	278000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.063	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	17.6			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	79.4			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT10-FF

Matrix: WATER **SDG Name:** SL3902

Percent Solids: 0.00 **Lab Sample ID:** SL3902-003

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	9.5	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.11	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	9.1			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	36.7			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	374000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	2.1	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.44	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	2.68	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	6230			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	63600			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1360			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	1.3	J		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	18200			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	0.58	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	274000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	0.73	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	9.3	J		MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT09

Matrix: WATER **SDG Name:** SL3902

Percent Solids: 0.00 **Lab Sample ID:** SL3902-004

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	4730			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.29	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	12			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	104			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.20	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.071	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	346000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	28.6			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	2.68			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	14.4			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	11600			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	7.88			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	64600			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1320			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	11.9			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	18500			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	0.49	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	288000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	13.1			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	51.0			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT09-FF

Matrix: WATER **SDG Name:** SL3902

Percent Solids: 0.00 **Lab Sample ID:** SL3902-005

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	8.9	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.062	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	11			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	30.9			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	336000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	1.6	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.37	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.98	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	5300			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	62300			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1250			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	0.90	J		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	16700			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	0.84	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	283000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	4.0	U		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	11			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT08

Matrix: WATER **SDG Name:** SL3902

Percent Solids: 0.00 **Lab Sample ID:** SL3902-006

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	6800			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.36	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	14			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	234			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.342	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	326000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	40.3			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	3.59			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	15.6			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	13300			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	14.5			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	60000			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1230			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	16.1			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	18600			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	1.6	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	268000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.072	J		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	18.5			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	44.2			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT08-FF

Matrix: WATER **SDG Name:** SL3902

Percent Solids: 0.00 **Lab Sample ID:** SL3902-007

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	9.0	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.085	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	13			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	28.6			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	327000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	2.22	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.43	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.3	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	4400			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	59000			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1170			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	1.4	J		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	17100			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	0.41	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	271000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	4.0	U		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	6.7	J		MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT07

Matrix: WATER **SDG Name:** SL3902

Percent Solids: 0.00 **Lab Sample ID:** SL3902-008

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	4870			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.20	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	11			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	132			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.24	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.079	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	352000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	32.1			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	2.03			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	13.0			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	9110			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	6.51			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	67000			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1460			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	10.2			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	18800			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	0.75	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	296000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	9.14			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	62.0			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT07-FF

Matrix: WATER **SDG Name:** SL3902

Percent Solids: 0.00 **Lab Sample ID:** SL3902-009

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	9.0	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.083	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	9.4			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	33.4			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.036	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	360000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	2.1	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.42	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.2	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	4060			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	68000			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1460			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	1.4	J		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	18100			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.5	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	303000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	4.0	U		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	18			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT107

Matrix: WATER **SDG Name:** SL3902

Percent Solids: 0.00 **Lab Sample ID:** SL3902-010

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	4160			MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.20	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	10			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	118			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.20	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.034	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	363000			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	36.9			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	2.02			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	12.6			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	8960			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	6.58			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	67000			MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1480			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	12.8			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	19300			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	3.0	U		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	296000			MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	8.16			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	64.7			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT107-FF

Matrix: WATER **SDG Name:** SL3902

Percent Solids: 0.00 **Lab Sample ID:** SL3902-011

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	8.6	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.50	U		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	9.2			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	31.6			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	345000			MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	2.0	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.40	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.3	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	3750			MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	64100			MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1390			MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	1.4	J		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	17400			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	1.4	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	290000			MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	4.0	U		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	17			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT06

Matrix: WATER **SDG Name:** SL3902

Percent Solids: 0.00 **Lab Sample ID:** SL3902-012

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	9370		NA	MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.35	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	12			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	176			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.386	J		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.28	J		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	370000		NA	MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	45.0			MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	3.77			MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	22.2			MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	13300			MS	5	100	13	60
7439-92-1	LEAD, TOTAL	13.4			MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	74900		NA	MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	1420		A	MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	18.8			MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	21100			MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	0.49	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	325000		N	MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	20.8			MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	112			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT06-FF

Matrix: WATER **SDG Name:** SL3902

Percent Solids: 0.00 **Lab Sample ID:** SL3902-013

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, DISSOLVED	9.7	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, DISSOLVED	0.12	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, DISSOLVED	9.0			MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, DISSOLVED	30.4			MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, DISSOLVED	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, DISSOLVED	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, DISSOLVED	351000		NA	MS	5	100	21	80
7440-47-3	CHROMIUM, DISSOLVED	2.1	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, DISSOLVED	0.52	J		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, DISSOLVED	1.5	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, DISSOLVED	3340		NA	MS	5	100	13	60
7439-92-1	LEAD, DISSOLVED	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, DISSOLVED	68800		NA	MS	5	100	8.0	80
7439-96-5	MANGANESE, DISSOLVED	1310		NA	MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, DISSOLVED	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, DISSOLVED	1.95	J		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, DISSOLVED	18100			MS	5	1000	31	400
7782-49-2	SELENIUM, DISSOLVED	0.29	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, DISSOLVED	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, DISSOLVED	312000		NA	MS	5	1000	19	400
7440-28-0	THALLIUM, DISSOLVED	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, DISSOLVED	0.83	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, DISSOLVED	15			MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-EB-050418-DPT

Matrix: WATER **SDG Name:** SL3902

Percent Solids: 0.00 **Lab Sample ID:** SL3902-014

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	12	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.10	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	4.0	U		MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	0.56	J		MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	140			MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	1.4	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	0.30	U		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	0.90	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	58	J		MS	5	100	13	60
7439-92-1	LEAD, TOTAL	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	24	J		MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	0.81	J		MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	1.2	U		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	71	J		MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	3.0	U		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	92	J		MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	4.0	U		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	8.0	U		MS	5	10	3.9	8.0

Comments:

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Concentration Units: ug/L

SAMPLE: ICV

File: HLE09A May 09, 2018 9:14

Analyte	True	Found	%R (1)
MERCURY	6.0	6.38	106.3

SAMPLE: CCV

File: HLE09A May 09, 2018 9:20

Analyte	True	Found	%R (1)
MERCURY	5.0	4.97	99.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Concentration Units: ug/L

SAMPLE: CCV

File: HLE09A May 09, 2018 9:44

Analyte	True	Found	%R (1)
MERCURY	5.0	5.09	101.8

SAMPLE: CCV

File: HLE09A May 09, 2018 10:10

Analyte	True	Found	%R (1)
MERCURY	5.0	5.07	101.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Concentration Units: ug/L

SAMPLE: CCV

File: HLE09A May 09, 2018 10:56

Analyte	True	Found	%R (1)
MERCURY	5.0	5.08	101.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Concentration Units: ug/L

SAMPLE: ICV

File: JLE16B May 16, 2018 19:07

Analyte	True	Found	%R (1)
ALUMINUM	400.0	402.70	100.7
ANTIMONY	20.0	20.09	100.4
ARSENIC	20.0	19.70	98.5
BARIUM	20.0	20.05	100.3
BERYLLIUM	20.0	19.54	97.7
CADMIUM	20.0	19.95	99.8
CALCIUM	4000.0	4007.00	100.2
CHROMIUM	20.0	19.38	96.9
COBALT	20.0	19.79	98.9
COPPER	20.0	19.76	98.8
IRON	4000.0	3994.00	99.9
MAGNESIUM	4000.0	3975.00	99.4
MANGANESE	20.0	19.70	98.5
MOLYBDENUM	40.0	38.65	96.6
NICKEL	20.0	19.62	98.1
POTASSIUM	4000.0	3916.00	97.9
SELENIUM	20.0	19.94	99.7
SILVER	20.0	19.97	99.8
SODIUM	4000.0	3953.00	98.8
THALLIUM	20.0	20.05	100.3
VANADIUM	20.0	19.73	98.7
ZINC	20.0	20.32	101.6

SAMPLE: CCV

File: JLE16B May 16, 2018 19:51

Analyte	True	Found	%R (1)
ALUMINUM	500.0	496.60	99.3
ANTIMONY	25.0	25.31	101.2
ARSENIC	25.0	24.60	98.4
BARIUM	25.0	25.06	100.2
BERYLLIUM	25.0	25.14	100.6
CADMIUM	25.0	24.63	98.5
CALCIUM	5000.0	5004.00	100.1
CHROMIUM	25.0	24.38	97.5
COBALT	25.0	24.46	97.8
COPPER	25.0	24.85	99.4
IRON	5000.0	4934.00	98.7
MAGNESIUM	5000.0	5005.00	100.1
MANGANESE	25.0	24.81	99.2
MOLYBDENUM	25.0	24.57	98.3
NICKEL	25.0	24.53	98.1
POTASSIUM	5000.0	4992.00	99.8
SELENIUM	25.0	24.50	98.0
SILVER	25.0	24.69	98.8
SODIUM	5000.0	4933.00	98.7
THALLIUM	25.0	24.65	98.6
VANADIUM	25.0	24.59	98.4
ZINC	25.0	25.43	101.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Concentration Units: ug/L

SAMPLE: CCV

File: JLE16B May 16, 2018 20:39

Analyte	True	Found	%R (1)
ALUMINUM	500.0	492.40	98.5
ANTIMONY	25.0	25.03	100.1
ARSENIC	25.0	24.54	98.2
BARIUM	25.0	25.12	100.5
BERYLLIUM	25.0	24.79	99.2
CADMIUM	25.0	24.81	99.2
CALCIUM	5000.0	4923.00	98.5
CHROMIUM	25.0	24.43	97.7
COBALT	25.0	24.61	98.4
COPPER	25.0	24.76	99.0
IRON	5000.0	4908.00	98.2
MAGNESIUM	5000.0	5026.00	100.5
MANGANESE	25.0	24.54	98.2
MOLYBDENUM	25.0	24.50	98.0
NICKEL	25.0	24.86	99.4
POTASSIUM	5000.0	4892.00	97.8
SELENIUM	25.0	24.67	98.7
SILVER	25.0	24.59	98.4
SODIUM	5000.0	4925.00	98.5
THALLIUM	25.0	24.49	98.0
VANADIUM	25.0	24.37	97.5
ZINC	25.0	25.15	100.6

SAMPLE: CCV

File: JLE16B May 16, 2018 21:29

Analyte	True	Found	%R (1)
ALUMINUM	500.0	496.80	99.4
ANTIMONY	25.0	25.21	100.8
ARSENIC	25.0	24.85	99.4
BARIUM	25.0	25.12	100.5
BERYLLIUM	25.0	24.90	99.6
CADMIUM	25.0	24.95	99.8
CALCIUM	5000.0	4981.00	99.6
CHROMIUM	25.0	24.63	98.5
COBALT	25.0	24.49	98.0
COPPER	25.0	24.77	99.1
IRON	5000.0	4984.00	99.7
MAGNESIUM	5000.0	5046.00	100.9
MANGANESE	25.0	24.83	99.3
MOLYBDENUM	25.0	24.74	99.0
NICKEL	25.0	24.75	99.0
POTASSIUM	5000.0	4976.00	99.5
SELENIUM	25.0	24.81	99.2
SILVER	25.0	24.70	98.8
SODIUM	5000.0	5007.00	100.1
THALLIUM	25.0	24.66	98.6
VANADIUM	25.0	24.77	99.1
ZINC	25.0	25.07	100.3

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Concentration Units: ug/L

SAMPLE: CCV

File: JLE16B May 16, 2018 22:19

Analyte	True	Found	%R (1)
ALUMINUM	500.0	492.30	98.5
ANTIMONY	25.0	25.09	100.4
ARSENIC	25.0	24.55	98.2
BARIUM	25.0	25.31	101.2
BERYLLIUM	25.0	24.19	96.8
CADMIUM	25.0	24.43	97.7
CALCIUM	5000.0	5003.00	100.1
CHROMIUM	25.0	24.53	98.1
COBALT	25.0	24.60	98.4
COPPER	25.0	24.69	98.8
IRON	5000.0	4916.00	98.3
MAGNESIUM	5000.0	5021.00	100.4
MANGANESE	25.0	24.66	98.6
MOLYBDENUM	25.0	24.19	96.8
NICKEL	25.0	24.81	99.2
POTASSIUM	5000.0	4969.00	99.4
SELENIUM	25.0	24.60	98.4
SILVER	25.0	24.49	98.0
SODIUM	5000.0	4987.00	99.7
THALLIUM	25.0	24.26	97.0
VANADIUM	25.0	24.54	98.2
ZINC	25.0	24.96	99.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Concentration Units: ug/L

SAMPLE: ICV

File: JLE17B May 17, 2018 17:09

Analyte	True	Found	%R (1)
ALUMINUM	400.0	401.10	100.3
ANTIMONY	20.0	20.13	100.6
ARSENIC	20.0	19.81	99.0
BARIUM	20.0	19.99	99.9
BERYLLIUM	20.0	19.42	97.1
CADMIUM	20.0	19.58	97.9
CALCIUM	4000.0	3944.00	98.6
CHROMIUM	20.0	19.60	98.0
COBALT	20.0	19.89	99.5
COPPER	20.0	19.69	98.5
IRON	4000.0	3950.00	98.8
LEAD	20.0	19.39	97.0
MAGNESIUM	4000.0	3948.00	98.7
MANGANESE	20.0	19.53	97.7
MOLYBDENUM	40.0	37.78	94.5
NICKEL	20.0	19.74	98.7
POTASSIUM	4000.0	3938.00	98.5
SELENIUM	20.0	20.26	101.3
SILVER	20.0	19.50	97.5
SODIUM	4000.0	3901.00	97.5
THALLIUM	20.0	19.90	99.5
VANADIUM	20.0	19.68	98.4
ZINC	20.0	20.05	100.3

SAMPLE: CCV

File: JLE17B May 17, 2018 17:51

Analyte	True	Found	%R (1)
ALUMINUM	500.0	499.90	100.0
ANTIMONY	25.0	25.70	102.8
ARSENIC	25.0	25.35	101.4
BARIUM	25.0	25.53	102.1
BERYLLIUM	25.0	24.50	98.0
CADMIUM	25.0	24.72	98.9
CALCIUM	5000.0	5057.00	101.1
CHROMIUM	25.0	25.16	100.6
COBALT	25.0	25.37	101.5
COPPER	25.0	25.20	100.8
IRON	5000.0	5038.00	100.8
LEAD	25.0	25.34	101.4
MAGNESIUM	5000.0	5079.00	101.6
MANGANESE	25.0	25.42	101.7
MOLYBDENUM	25.0	24.48	97.9
NICKEL	25.0	25.33	101.3
POTASSIUM	5000.0	4953.00	99.1
SELENIUM	25.0	26.08	104.3
SILVER	25.0	25.00	100.0
SODIUM	5000.0	5084.00	101.7
THALLIUM	25.0	25.60	102.4
VANADIUM	25.0	25.37	101.5
ZINC	25.0	25.33	101.3

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Concentration Units: ug/L

SAMPLE: CCV

File: JLE17B May 17, 2018 18:39

Analyte	True	Found	%R (1)
ALUMINUM	500.0	508.60	101.7
ANTIMONY	25.0	25.14	100.6
ARSENIC	25.0	25.34	101.4
BARIUM	25.0	25.24	101.0
BERYLLIUM	25.0	25.50	102.0
CADMIUM	25.0	25.10	100.4
CALCIUM	5000.0	5008.00	100.2
CHROMIUM	25.0	25.07	100.3
COBALT	25.0	25.01	100.0
COPPER	25.0	24.82	99.3
IRON	5000.0	5037.00	100.7
LEAD	25.0	25.18	100.7
MAGNESIUM	5000.0	5136.00	102.7
MANGANESE	25.0	25.00	100.0
MOLYBDENUM	25.0	24.79	99.2
NICKEL	25.0	24.94	99.8
POTASSIUM	5000.0	4996.00	99.9
SELENIUM	25.0	25.38	101.5
SILVER	25.0	25.26	101.0
SODIUM	5000.0	5008.00	100.2
THALLIUM	25.0	25.15	100.6
VANADIUM	25.0	25.20	100.8
ZINC	25.0	24.99	100.0

SAMPLE: CCV

File: JLE17B May 17, 2018 19:28

Analyte	True	Found	%R (1)
ALUMINUM	500.0	509.40	101.9
ANTIMONY	25.0	25.40	101.6
ARSENIC	25.0	25.23	100.9
BARIUM	25.0	25.56	102.2
BERYLLIUM	25.0	24.73	98.9
CADMIUM	25.0	25.37	101.5
CALCIUM	5000.0	5082.00	101.6
CHROMIUM	25.0	25.10	100.4
COBALT	25.0	25.14	100.6
COPPER	25.0	25.17	100.7
IRON	5000.0	5056.00	101.1
LEAD	25.0	25.07	100.3
MAGNESIUM	5000.0	5168.00	103.4
MANGANESE	25.0	25.12	100.5
MOLYBDENUM	25.0	24.90	99.6
NICKEL	25.0	25.07	100.3
POTASSIUM	5000.0	5026.00	100.5
SELENIUM	25.0	24.80	99.2
SILVER	25.0	25.43	101.7
SODIUM	5000.0	5135.00	102.7
THALLIUM	25.0	25.47	101.9
VANADIUM	25.0	25.19	100.8
ZINC	25.0	25.19	100.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Concentration Units: ug/L

SAMPLE: CCV

File: JLE17B May 17, 2018 20:17

Analyte	True	Found	%R (1)
ALUMINUM	500.0	505.30	101.1
ANTIMONY	25.0	25.36	101.4
ARSENIC	25.0	25.14	100.6
BARIUM	25.0	25.69	102.8
BERYLLIUM	25.0	25.11	100.4
CADMIUM	25.0	25.21	100.8
CALCIUM	5000.0	5047.00	100.9
CHROMIUM	25.0	25.07	100.3
COBALT	25.0	25.00	100.0
COPPER	25.0	25.22	100.9
IRON	5000.0	5025.00	100.5
LEAD	25.0	25.35	101.4
MAGNESIUM	5000.0	5137.00	102.7
MANGANESE	25.0	25.19	100.8
MOLYBDENUM	25.0	24.99	100.0
NICKEL	25.0	24.91	99.6
POTASSIUM	5000.0	4978.00	99.6
SELENIUM	25.0	24.65	98.6
SILVER	25.0	25.37	101.5
SODIUM	5000.0	5055.00	101.1
THALLIUM	25.0	25.46	101.8
VANADIUM	25.0	25.11	100.4
ZINC	25.0	24.99	100.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Concentration Units: ug/L

SAMPLE: PQL

File: HLE09A May 09, 2018 09:18

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.17	85.0

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Concentration Units: ug/L

SAMPLE: PQL

File: JLE16B May 16, 2018 19:15

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	19.46	97.3
ANTIMONY	0.2	0.20	100.0
ARSENIC	1.0	0.84	84.0
BARIUM	0.4	0.42	105.0
BERYLLIUM	0.2	0.20	100.0
CADMIUM	0.2	0.21	105.0
CALCIUM	20.0	19.64	98.2
CHROMIUM	1.0	0.93	93.0
COBALT	0.2	0.19	95.0
COPPER	0.6	0.60	100.0
IRON	20.0	21.01	105.1
MAGNESIUM	20.0	19.55	97.8
MANGANESE	0.4	0.41	102.5
MOLYBDENUM	1.0	0.96	96.0
NICKEL	0.4	0.40	100.0
POTASSIUM	200.0	200.30	100.2
SELENIUM	1.0	1.02	102.0
SILVER	0.2	0.19	95.0
SODIUM	200.0	207.90	104.0
THALLIUM	0.2	0.18	90.0
VANADIUM	1.0	0.98	98.0
ZINC	2.0	2.08	104.0

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Concentration Units: ug/L

SAMPLE: PQL

File: JLE17B May 17, 2018 17:16

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	20.29	101.4
ANTIMONY	0.2	0.22	110.0
ARSENIC	1.0	0.92	92.0
BARIUM	0.4	0.41	102.5
BERYLLIUM	0.2	0.19	95.0
CADMIUM	0.2	0.20	100.0
CALCIUM	20.0	19.44	97.2
CHROMIUM	1.0	0.95	95.0
COBALT	0.2	0.21	105.0
COPPER	0.6	0.58	96.7
IRON	20.0	19.37	96.9
LEAD	0.2	0.22	110.0
MAGNESIUM	20.0	20.31	101.5
MANGANESE	0.4	0.43	107.5
MOLYBDENUM	1.0	0.96	96.0
NICKEL	0.4	0.42	105.0
POTASSIUM	200.0	198.20	99.1
SELENIUM	1.0	1.27	127.0•
SILVER	0.2	0.20	100.0
SODIUM	200.0	210.30	105.2
THALLIUM	0.2	0.21	105.0
VANADIUM	1.0	1.00	100.0
ZINC	2.0	2.31	115.5

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Concentration Units: ug/L

SAMPLE: ICB

File: HLE09A May 09, 2018 9:16

Analyte	Result	C
MERCURY	-0.038	U

SAMPLE: CCB

File: HLE09A May 09, 2018 9:23

Analyte	Result	C
MERCURY	-0.025	U

SAMPLE: CCB

File: HLE09A May 09, 2018 9:46

Analyte	Result	C
MERCURY	-0.039	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Concentration Units: ug/L

SAMPLE: CCB

File: HLE09A May 09, 2018 10:12

Analyte	Result	C
MERCURY	0.025	U

SAMPLE: CCB

File: HLE09A May 09, 2018 10:58

Analyte	Result	C
MERCURY	0.025	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Concentration Units: ug/L

SAMPLE: ICB
File: JLE16B May 16, 2018 19:11

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.010	J
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	-0.098	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.063	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.004	J
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE16B May 16, 2018 19:55

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.014	J
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.048	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE16B May 16, 2018 20:43

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.011	J
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.005	J
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.047	J
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.028	J
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	8.437	J
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	5.113	J
THALLIUM	-0.010	U
VANADIUM	-0.070	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Concentration Units: ug/L

SAMPLE: CCB

File: JLE16B May 16, 2018 21:33

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.010	J
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.005	J
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.070	J
IRON	5.150	J
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	8.499	J
SELENIUM	0.470	U
SILVER	0.003	J
SODIUM	4.400	U
THALLIUM	-0.016	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB

File: JLE16B May 16, 2018 22:23

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.008	J
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	6.181	J
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
THALLIUM	-0.012	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Concentration Units: ug/L

SAMPLE: ICB
File: JLE17B May 17, 2018 17:12

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.015	J
ARSENIC	-0.222	U
BARIUM	0.075	U
BERYLLIUM	0.005	J
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
LEAD	0.021	J
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.056	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.004	J
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLE17B May 17, 2018 17:55

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.019	J
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
LEAD	0.014	J
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.043	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.102	J
ZINC	0.270	U

SAMPLE: CCB
File: JLE17B May 17, 2018 18:43

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.017	J
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.050	J
IRON	4.300	U
LEAD	0.010	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Concentration Units: ug/L

SAMPLE: CCB

File: JLE17B May 17, 2018 19:32

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.014	J
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	J
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
LEAD	0.010	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.552	J
THALLIUM	0.008	U
VANADIUM	0.073	J
ZINC	0.270	U

SAMPLE: CCB

File: JLE17B May 17, 2018 20:21

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.014	J
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.006	J
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	5.519	J
LEAD	0.026	J
MAGNESIUM	1.300	U
MANGANESE	0.027	J
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	15.920	J
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.550	J
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWLE08HGW1

Matrix: WATER **SDG Name:** SL3902

QC Batch ID: LE08HGW1

Concentration Units : ug/L

Analyte	RESULT	C
MERCURY	0.10	U

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWLE08IMW1

Matrix: WATER **SDG Name:** SL3902

QC Batch ID: LE08IMW1

Concentration Units : ug/L

Analyte	RESULT	C
ALUMINUM	6.5	J
ANTIMONY	0.50	U
ARSENIC	4.0	U
BARIUM	1.0	U
BERYLLIUM	0.20	U
CADMIUM	0.20	U
CALCIUM	80	U
CHROMIUM	4.0	U
COBALT	0.30	U
COPPER	2.0	U
IRON	60	U
LEAD	0.50	U
MAGNESIUM	11	J
MANGANESE	1.0	U
NICKEL	1.2	U
POTASSIUM	400	U
SELENIUM	3.0	U
SILVER	0.40	U
SODIUM	19	J
THALLIUM	0.40	U
VANADIUM	4.0	U
ZINC	8.0	U

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Concentration Units: ug/L

SAMPLE: ICSA

File: JLE16B May 16, 2018 19:23

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	92650.00	92.7
ANTIMONY	0	0.05	
ARSENIC	0	-0.10	
BARIUM	0	0.10	
BERYLLIUM	0	0.00	
CADMIUM	0	0.02	
CALCIUM	100000.00	93910.00	93.9
CHROMIUM	0	0.76	
COBALT	0	0.07	
COPPER	0	0.88	
IRON	100000.00	89580.00	89.6
MAGNESIUM	100000.00	91230.00	91.2
MANGANESE	0	0.39	
MOLYBDENUM	2000.00	1903.00	95.2
NICKEL	0	-0.32	
POTASSIUM	100000.00	95730.00	95.7
SELENIUM	0	-0.04	
SILVER	0	0.02	
SODIUM	100000.00	92480.00	92.5
THALLIUM	0	-0.01	
VANADIUM	0	0.13	
ZINC	0	2.08	

SAMPLE: ICSAB

File: JLE16B May 16, 2018 19:27

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	93460.00	93.5
ANTIMONY	20.00	20.42	100.0
ARSENIC	20.00	19.80	100.0
BARIUM	21.00	20.48	95.2
BERYLLIUM	20.00	20.30	100.0
CADMIUM	20.00	18.40	90.0
CALCIUM	100000.00	93740.00	93.7
CHROMIUM	20.00	19.86	100.0
COBALT	20.00	18.82	95.0
COPPER	20.00	19.10	95.0
IRON	100000.00	90900.00	90.9
MAGNESIUM	100000.00	92770.00	92.8
MANGANESE	20.00	19.54	100.0
MOLYBDENUM	2000.00	1920.00	96.0
NICKEL	20.00	18.27	90.0
POTASSIUM	100000.00	95520.00	95.5
SELENIUM	20.00	19.27	95.0
SILVER	20.00	18.16	90.0
SODIUM	100000.00	93190.00	93.2
THALLIUM	20.00	20.64	105.0
VANADIUM	20.00	19.75	100.0
ZINC	20.00	20.27	100.0

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Concentration Units: ug/L

SAMPLE: ICSA

File: JLE17B May 17, 2018 17:24

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	92940.00	92.9
ANTIMONY	0	0.05	
ARSENIC	0	0.13	
BARIUM	0	0.07	
BERYLLIUM	0	0.00	
CADMIUM	0	-0.01	
CALCIUM	100000.00	93360.00	93.4
CHROMIUM	0	0.86	
COBALT	0	0.09	
COPPER	0	0.95	
IRON	100000.00	90840.00	90.8
LEAD	0	0.07	
MAGNESIUM	100000.00	92720.00	92.7
MANGANESE	0	0.40	
MOLYBDENUM	2000.00	1870.00	93.5
NICKEL	0	-0.31	
POTASSIUM	100000.00	96370.00	96.4
SELENIUM	0	0.46	
SILVER	0	0.02	
SODIUM	100000.00	94480.00	94.5
THALLIUM	0	0.00	
VANADIUM	0	0.26	
ZINC	0	2.27	

SAMPLE: ICSAB

File: JLE17B May 17, 2018 17:28

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	96030.00	96.0
ANTIMONY	20.00	20.79	105.0
ARSENIC	20.00	20.73	105.0
BARIUM	21.00	20.83	100.0
BERYLLIUM	20.00	20.79	105.0
CADMIUM	20.00	19.06	95.0
CALCIUM	100000.00	96330.00	96.3
CHROMIUM	20.00	20.85	105.0
COBALT	20.00	20.03	100.0
COPPER	20.00	20.20	100.0
IRON	100000.00	93130.00	93.1
LEAD	20.00	21.31	105.0
MAGNESIUM	100000.00	97020.00	97.0
MANGANESE	20.00	20.19	100.0
MOLYBDENUM	2000.00	1922.00	96.1
NICKEL	20.00	19.05	95.0
POTASSIUM	100000.00	98580.00	98.6
SELENIUM	20.00	20.21	100.0
SILVER	20.00	18.90	95.0
SODIUM	100000.00	97960.00	98.0
THALLIUM	20.00	21.45	105.0
VANADIUM	20.00	20.84	105.0
ZINC	20.00	20.96	105.0

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT06S

Matrix: WATER **SDG Name:** SL3902

Percent Solids: 0.00 **Lab Sample ID:** SL3902-012P

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	12100		9370		2000	136.0	N	84	117	MS
ANTIMONY, TOTAL	91.5		0.35	J	100	91.2		85	117	MS
ARSENIC, TOTAL	110		12		100	98.5		84	116	MS
BARIUM, TOTAL	2160		176		2000	99.3		86	114	MS
BERYLLIUM, TOTAL	48.7		0.386	J	50	96.7		83	121	MS
CADMIUM, TOTAL	241		0.28	J	250	96.3		87	115	MS
CALCIUM, TOTAL	368000		370000		2500	-76.0	N	87	118	MS
CHROMIUM, TOTAL	234		45.0		200	94.4		85	116	MS
COBALT, TOTAL	497		3.77		500	98.7		86	115	MS
COPPER, TOTAL	259		22.2		250	94.8		85	118	MS
IRON, TOTAL	14300		13300		1000	102.5		87	118	MS
LEAD, TOTAL	118		13.4		100	105.1		88	115	MS
MAGNESIUM, TOTAL	78500		74900		5000	72.0	N	83	118	MS
MANGANESE, TOTAL	1930		1420		500	102.7		87	115	MS
MERCURY, TOTAL	1.02		0.10	U	1	102.3		82	119	CV
NICKEL, TOTAL	494		18.8		500	95.1		85	117	MS
POTASSIUM, TOTAL	31000		21100		10000	98.5		87	115	MS
SELENIUM, TOTAL	96.4		0.49	J	100	95.9		80	120	MS
SILVER, TOTAL	47.9		0.40	U	50	95.9		85	116	MS
SODIUM, TOTAL	335000		325000		7500	136.7	N	85	117	MS
THALLIUM, TOTAL	102		0.40	U	100	101.6		82	116	MS
VANADIUM, TOTAL	530		20.8		500	101.9		86	115	MS
ZINC, TOTAL	582		112		500	94.0		83	119	MS

Comments:

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT06S

Matrix: WATER **SDG Name:** SL3902

Percent Solids: 0.00 **Lab Sample ID:** SL3902-012S

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	11500		9370		2000	105.3		84	117	MS
ANTIMONY, TOTAL	90.2		0.35	J	100	89.8		85	117	MS
ARSENIC, TOTAL	111		12		100	99.3		84	116	MS
BARIUM, TOTAL	2190		176		2000	100.5		86	114	MS
BERYLLIUM, TOTAL	48.5		0.386	J	50	96.3		83	121	MS
CADMIUM, TOTAL	239		0.28	J	250	95.4		87	115	MS
CALCIUM, TOTAL	367000		370000		2500	-102.0	N	87	118	MS
CHROMIUM, TOTAL	234		45.0		200	94.5		85	116	MS
COBALT, TOTAL	486		3.77		500	96.4		86	115	MS
COPPER, TOTAL	257		22.2		250	93.9		85	118	MS
IRON, TOTAL	14500		13300		1000	116.5		87	118	MS
LEAD, TOTAL	119		13.4		100	105.8		88	115	MS
MAGNESIUM, TOTAL	77400		74900		5000	50.0	N	83	118	MS
MANGANESE, TOTAL	1930		1420		500	101.4		87	115	MS
MERCURY, TOTAL	1.05		0.10	U	1	105.4		82	119	CV
NICKEL, TOTAL	497		18.8		500	95.7		85	117	MS
POTASSIUM, TOTAL	30200		21100		10000	90.8		87	115	MS
SELENIUM, TOTAL	98.6		0.49	J	100	98.1		80	120	MS
SILVER, TOTAL	48.6		0.40	U	50	97.1		85	116	MS
SODIUM, TOTAL	331000		325000		7500	79.3	N	85	117	MS
THALLIUM, TOTAL	101		0.40	U	100	101.4		82	116	MS
VANADIUM, TOTAL	532		20.8		500	102.3		86	115	MS
ZINC, TOTAL	585		112		500	94.6		83	119	MS

Comments:

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT06-FFS

Matrix: WATER **SDG Name:** SL3902

Percent Solids: 0.00 **Lab Sample ID:** SL3902-013P

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, DISSOLVED	2000		9.7	J	2000	99.8		84	117	MS
ANTIMONY, DISSOLVED	102		0.12	J	100	102.3		85	117	MS
ARSENIC, DISSOLVED	110		9.0		100	100.9		84	116	MS
BARIUM, DISSOLVED	2060		30.4		2000	101.3		86	114	MS
BERYLLIUM, DISSOLVED	47.3		0.20	U	50	94.7		83	121	MS
CADMIUM, DISSOLVED	235		0.20	U	250	93.9		87	115	MS
CALCIUM, DISSOLVED	375000		351000		2500	970.0	N	87	118	MS
CHROMIUM, DISSOLVED	192		2.1	J	200	95.2		85	116	MS
COBALT, DISSOLVED	492		0.52	J	500	98.2		86	115	MS
COPPER, DISSOLVED	239		1.5	J	250	95.2		85	118	MS
IRON, DISSOLVED	4530		3340		1000	119.3	N	87	118	MS
LEAD, DISSOLVED	106		0.50	U	100	105.5		88	115	MS
MAGNESIUM, DISSOLVED	78800		68800		5000	201.0	N	83	118	MS
MANGANESE, DISSOLVED	1890		1310		500	115.4	N	87	115	MS
MERCURY, DISSOLVED	0.999		0.10	U	1	99.9		82	119	CV
NICKEL, DISSOLVED	476		1.95	J	500	94.9		85	117	MS
POTASSIUM, DISSOLVED	28800		18100		10000	107.5		87	115	MS
SELENIUM, DISSOLVED	95.4		0.29	J	100	95.1		80	120	MS
SILVER, DISSOLVED	47.2		0.40	U	50	94.3		85	116	MS
SODIUM, DISSOLVED	344000		312000		7500	422.0	N	85	117	MS
THALLIUM, DISSOLVED	101		0.40	U	100	100.7		82	116	MS
VANADIUM, DISSOLVED	514		0.83	J	500	102.6		86	115	MS
ZINC, DISSOLVED	482		15		500	93.3		83	119	MS

Comments:

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT06-FFS

Matrix: WATER **SDG Name:** SL3902

Percent Solids: 0.00 **Lab Sample ID:** SL3902-013S

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, DISSOLVED	2010		9.7	J	2000	100.2		84	117	MS
ANTIMONY, DISSOLVED	101		0.12	J	100	101.3		85	117	MS
ARSENIC, DISSOLVED	110		9.0		100	100.6		84	116	MS
BARIUM, DISSOLVED	2040		30.4		2000	100.3		86	114	MS
BERYLLIUM, DISSOLVED	48.3		0.20	U	50	96.6		83	121	MS
CADMIUM, DISSOLVED	234		0.20	U	250	93.7		87	115	MS
CALCIUM, DISSOLVED	369000		351000		2500	722.0	N	87	118	MS
CHROMIUM, DISSOLVED	191		2.1	J	200	94.5		85	116	MS
COBALT, DISSOLVED	490		0.52	J	500	97.9		86	115	MS
COPPER, DISSOLVED	237		1.5	J	250	94.0		85	118	MS
IRON, DISSOLVED	4440		3340		1000	109.6		87	118	MS
LEAD, DISSOLVED	102		0.50	U	100	102.6		88	115	MS
MAGNESIUM, DISSOLVED	77200		68800		5000	169.0	N	83	118	MS
MANGANESE, DISSOLVED	1850		1310		500	107.7		87	115	MS
MERCURY, DISSOLVED	1.03		0.10	U	1	103.3		82	119	CV
NICKEL, DISSOLVED	474		1.95	J	500	94.4		85	117	MS
POTASSIUM, DISSOLVED	28600		18100		10000	105.5		87	115	MS
SELENIUM, DISSOLVED	96.2		0.29	J	100	96.0		80	120	MS
SILVER, DISSOLVED	46.8		0.40	U	50	93.6		85	116	MS
SODIUM, DISSOLVED	330000		312000		7500	242.7	N	85	117	MS
THALLIUM, DISSOLVED	100		0.40	U	100	100.2		82	116	MS
VANADIUM, DISSOLVED	508		0.83	J	500	101.5		86	115	MS
ZINC, DISSOLVED	480		15		500	92.9		83	119	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT06S

Matrix: WATER **SDG Name:** SL3902

Percent Solids: 0.00 **Lab Sample ID:** SL3902-012A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	2000		1870		200	65.5	A	80	120	MS
ANTIMONY, TOTAL	2.10		0.069	J	2	101.4		80	120	MS
ARSENIC, TOTAL	12.4		2.5		10	98.8		80	120	MS
BARIUM, TOTAL	39.5		35.1		4	109.5		80	120	MS
BERYLLIUM, TOTAL	2.14		0.0773	J	2	103.2		80	120	MS
CADMIUM, TOTAL	2.03		0.056	J	2	98.9		80	120	MS
CALCIUM, TOTAL	72100		74100		200	-1015.0	A	80	120	MS
CHROMIUM, TOTAL	18.8		8.99		10	97.8		80	120	MS
COBALT, TOTAL	2.70		0.754		2	97.4		80	120	MS
COPPER, TOTAL	10.2		4.43		6	95.8		80	120	MS
IRON, TOTAL	2830		2660		200	86.0		80	120	MS
LEAD, TOTAL	4.78		2.67		2	105.4		80	120	MS
MAGNESIUM, TOTAL	14600		15000		200	-175.0	A	80	120	MS
MANGANESE, TOTAL	292		284		4	187.5	A	80	120	MS
MERCURY, TOTAL	0.892		0.013	U	1	89.2		80	120	CV
NICKEL, TOTAL	7.38		3.77		4	90.3		80	120	MS
POTASSIUM, TOTAL	6090		4230		2000	93.1		80	120	MS
SELENIUM, TOTAL	10.0		0.098	J	10	99.0		80	120	MS
SILVER, TOTAL	1.94		0.010	U	2	97.2		80	120	MS
SODIUM, TOTAL	66700		64900		2000	90.0		80	120	MS
THALLIUM, TOTAL	2.02		0.012	U	2	101.2		80	120	MS
VANADIUM, TOTAL	14.2		4.16		10	100.3		80	120	MS
ZINC, TOTAL	41.8		22.4		20	97.1		80	120	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT06-FFS

Matrix: WATER **SDG Name:** SL3902

Percent Solids: 0.00 **Lab Sample ID:** SL3902-013A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, DISSOLVED	214		1.9	J	200	106.0		80	120	MS
ANTIMONY, DISSOLVED	2.12		0.024	J	2	104.7		80	120	MS
ARSENIC, DISSOLVED	12.5		1.8		10	107.1		80	120	MS
BARIUM, DISSOLVED	10.3		6.07		4	106.3		80	120	MS
BERYLLIUM, DISSOLVED	2.07		0.0067	U	2	103.6		80	120	MS
CADMIUM, DISSOLVED	1.96		0.0059	U	2	98.1		80	120	MS
CALCIUM, DISSOLVED	71400		70300		200	565.0	A	80	120	MS
CHROMIUM, DISSOLVED	10.6		0.42	J	10	101.6		80	120	MS
COBALT, DISSOLVED	2.11		0.10	J	2	100.6		80	120	MS
COPPER, DISSOLVED	6.12		0.31	J	6	96.9		80	120	MS
IRON, DISSOLVED	910		668		200	121.2	A	80	120	MS
LEAD, DISSOLVED	2.01		0.015	U	2	100.6		80	120	MS
MAGNESIUM, DISSOLVED	14800		13800		200	510.0	A	80	120	MS
MANGANESE, DISSOLVED	271		263		4	200.0	A	80	120	MS
MERCURY, DISSOLVED	0.901		0.013	U	1	90.1		80	120	CV
NICKEL, DISSOLVED	4.40		0.391	J	4	100.3		80	120	MS
POTASSIUM, DISSOLVED	5720		3620		2000	104.8		80	120	MS
SELENIUM, DISSOLVED	10.1		0.058	J	10	100.1		80	120	MS
SILVER, DISSOLVED	1.95		0.010	U	2	97.4		80	120	MS
SODIUM, DISSOLVED	67300		62300		2000	248.5	A	80	120	MS
THALLIUM, DISSOLVED	2.17		0.012	U	2	108.3		80	120	MS
VANADIUM, DISSOLVED	10.3		0.17	J	10	101.6		80	120	MS
ZINC, DISSOLVED	22.4		2.9		20	97.5		80	120	MS

Comments:

5D

SPIKE DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT06

Matrix: WATER **SDG Name:** SL3902

Percent Solids: 0.00 **Lab Sample ID:** SL3902-012

Concentration Units : ug/L

Analyte	Control Limits	Spike Result	C	Spike Dup. Result	C	RPD	Q	M
ALUMINUM, TOTAL		11500		12100		5.2		MS
ANTIMONY, TOTAL		90.2		91.5		1.5		MS
ARSENIC, TOTAL		111		110		0.8		MS
BARIUM, TOTAL		2190		2160		1.2		MS
BERYLLIUM, TOTAL		48.5		48.7		0.4		MS
CADMIUM, TOTAL		239		241		0.9		MS
CALCIUM, TOTAL		367000		368000		0.2		MS
CHROMIUM, TOTAL		234		234		0.1		MS
COBALT, TOTAL		486		497		2.4		MS
COPPER, TOTAL		257		259		0.8		MS
IRON, TOTAL		14500		14300		1.0		MS
LEAD, TOTAL		119		118		0.6		MS
MAGNESIUM, TOTAL		77400		78500		1.4		MS
MANGANESE, TOTAL		1930		1930		0.3		MS
MERCURY, TOTAL		1.05		1.02		3.0		CV
NICKEL, TOTAL		497		494		0.6		MS
POTASSIUM, TOTAL		30200		31000		2.5		MS
SELENIUM, TOTAL		98.6		96.4		2.3		MS
SILVER, TOTAL		48.6		47.9		1.3		MS
SODIUM, TOTAL		331000		335000		1.3		MS
THALLIUM, TOTAL		101		102		0.1		MS
VANADIUM, TOTAL		532		530		0.4		MS
ZINC, TOTAL		585		582		0.5		MS

Comments:

5D

SPIKE DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT06-FF

Matrix: WATER **SDG Name:** SL3902

Percent Solids: 0.00 **Lab Sample ID:** SL3902-013

Concentration Units : ug/L

Analyte	Control Limits	Spike Result	C	Spike Dup. Result	C	RPD	Q	M
ALUMINUM, DISSOLVED		2010		2000		0.4		MS
ANTIMONY, DISSOLVED		101		102		1.0		MS
ARSENIC, DISSOLVED		110		110		0.3		MS
BARIUM, DISSOLVED		2040		2060		1.0		MS
BERYLLIUM, DISSOLVED		48.3		47.3		2.0		MS
CADMIUM, DISSOLVED		234		235		0.2		MS
CALCIUM, DISSOLVED		369000		375000		1.7		MS
CHROMIUM, DISSOLVED		191		192		0.7		MS
COBALT, DISSOLVED		490		492		0.4		MS
COPPER, DISSOLVED		237		239		1.2		MS
IRON, DISSOLVED		4440		4530		2.2		MS
LEAD, DISSOLVED		102		106		2.8		MS
MAGNESIUM, DISSOLVED		77200		78800		2.0		MS
MANGANESE, DISSOLVED		1850		1890		2.1		MS
MERCURY, DISSOLVED		1.03		0.999		3.3		CV
NICKEL, DISSOLVED		474		476		0.5		MS
POTASSIUM, DISSOLVED		28600		28800		0.7		MS
SELENIUM, DISSOLVED		96.2		95.4		0.9		MS
SILVER, DISSOLVED		46.8		47.2		0.7		MS
SODIUM, DISSOLVED		330000		344000		4.0		MS
THALLIUM, DISSOLVED		100		101		0.4		MS
VANADIUM, DISSOLVED		508		514		1.1		MS
ZINC, DISSOLVED		480		482		0.4		MS

Comments:

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWLE08HGW1

Matrix: WATER **SDG Name:** SL3902

QC Batch ID: LE08HGW1

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	5.00	5.20	104.0	82	119

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWLE08IMW1

Matrix: WATER **SDG Name:** SL3902

QC Batch ID: LE08IMW1

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	2000	2120	105.8	84	117
ANTIMONY	100	105	105.2	85	117
ARSENIC	100	104	103.8	84	116
BARIUM	2000	2080	103.9	86	114
BERYLLIUM	50.0	48.4	96.8	83	121
CADMIUM	250	256	102.3	87	115
CALCIUM	2500	2460	98.4	87	118
CHROMIUM	200	200	99.9	85	116
COBALT	500	525	105.1	86	115
COPPER	250	252	100.8	85	118
IRON	1000	1020	101.8	87	118
LEAD	100	104	104.3	88	115
MAGNESIUM	5000	5000	100.1	83	118
MANGANESE	500	517	103.4	87	115
NICKEL	500	510	101.9	85	117
POTASSIUM	10000	10100	100.9	87	115
SELENIUM	100	101	100.8	80	120
SILVER	50.0	52.0	104.0	85	116
SODIUM	7500	7700	102.7	85	117
THALLIUM	100	103	103.0	82	116
VANADIUM	500	520	104.1	86	115
ZINC	500	504	100.8	83	119

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT06L

Matrix: WATER **SDG Name:** SL3902

Lab Sample ID: SL3902-012L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, TOTAL	1870		1930		3.2		MS
ANTIMONY, TOTAL	0.069	J	0.084	J	21.7		MS
ARSENIC, TOTAL	2.5		2.3	U	100.0		MS
BARIUM, TOTAL	35.1		36.8		4.8		MS
BERYLLIUM, TOTAL	0.0773	J	0.075	J	3.0		MS
CADMIUM, TOTAL	0.056	J	0.053	J	5.4		MS
CALCIUM, TOTAL	74100		75800		2.3		MS
CHROMIUM, TOTAL	8.99		9.33		3.8		MS
COBALT, TOTAL	0.754		0.793	J	5.2		MS
COPPER, TOTAL	4.43		4.94		11.5		MS
IRON, TOTAL	2660		2810		5.6		MS
LEAD, TOTAL	2.67		2.67		0.0		MS
MAGNESIUM, TOTAL	15000		15500		3.3		MS
MANGANESE, TOTAL	284		304		7.0		MS
MERCURY, TOTAL	0.013	U	0.065	U			CV
NICKEL, TOTAL	3.77		3.91		3.7		MS
POTASSIUM, TOTAL	4230		4270		0.9		MS
SELENIUM, TOTAL	0.098	J	0.19	U	100.0		MS
SILVER, TOTAL	0.010	U	0.050	U			MS
SODIUM, TOTAL	64900		66200		2.0		MS
THALLIUM, TOTAL	0.012	U	0.060	U			MS
VANADIUM, TOTAL	4.16		3.6	J	13.5		MS
ZINC, TOTAL	22.4		24		7.1		MS

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-19C-LGIA-DPT06-FFL

Matrix: WATER **SDG Name:** SL3902

Lab Sample ID: SL3902-013L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, DISSOLVED	1.9	J	4.4	U	100.0		MS
ANTIMONY, DISSOLVED	0.024	J	0.055	U	100.0		MS
ARSENIC, DISSOLVED	1.8		2.3	U	100.0		MS
BARIUM, DISSOLVED	6.07		6.10		0.5		MS
BERYLLIUM, DISSOLVED	0.0067	U	0.034	U			MS
CADMIUM, DISSOLVED	0.0059	U	0.031	J			MS
CALCIUM, DISSOLVED	70300		72800		3.6		MS
CHROMIUM, DISSOLVED	0.42	J	0.25	J	40.5		MS
COBALT, DISSOLVED	0.10	J	0.082	J	18.0		MS
COPPER, DISSOLVED	0.31	J	0.25	J	19.4		MS
IRON, DISSOLVED	668		700		4.8		MS
LEAD, DISSOLVED	0.015	U	0.075	U			MS
MAGNESIUM, DISSOLVED	13800		15000		8.7		MS
MANGANESE, DISSOLVED	263		278		5.7		MS
MERCURY, DISSOLVED	0.013	U	0.065	U			CV
NICKEL, DISSOLVED	0.391	J	0.52	J	33.0		MS
POTASSIUM, DISSOLVED	3620		3650		0.8		MS
SELENIUM, DISSOLVED	0.058	J	0.19	U	100.0		MS
SILVER, DISSOLVED	0.010	U	0.050	U			MS
SODIUM, DISSOLVED	62300		64300		3.2		MS
THALLIUM, DISSOLVED	0.012	U	0.060	U			MS
VANADIUM, DISSOLVED	0.17	J	0.50	U	100.0		MS
ZINC, DISSOLVED	2.9		3.9	U	100.0		MS

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 4/6/2018

Concentration Units: ug/L

Analyte	PQL/LOQ	IDL	M
MERCURY	0.20	0.025	CV

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/15/2018

Concentration Units: ug/L

Analyte	PQL/LOQ	IDL	M
ALUMINUM	20	1.9	MS
ANTIMONY	0.20	0.0056	MS
ARSENIC	1.0	0.18	MS
BARIUM	0.40	0.075	MS
BERYLLIUM	0.20	0.0037	MS
CADMIUM	0.20	0.0069	MS
CALCIUM	20	5.3	MS
CHROMIUM	1.0	0.062	MS
COBALT	0.20	0.0062	MS
COPPER	0.60	0.030	MS
IRON	20	4.3	MS
LEAD	0.20	0.010	MS
MAGNESIUM	20	1.3	MS
MANGANESE	0.40	0.021	MS
MOLYBDENUM	1.0	0.034	MS
NICKEL	0.40	0.018	MS
POTASSIUM	200	7.9	MS
SELENIUM	1.0	0.47	MS
SILVER	0.20	0.0030	MS
SODIUM	200	4.4	MS
THALLIUM	0.20	0.0084	MS
VANADIUM	1.0	0.063	MS
ZINC	2.0	0.27	MS

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 2/9/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
MERCURY	0.10	ug/L	CV	SW846 7470A / SW846 7470A

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ALUMINUM	8.0	ug/L	MS	SW846 3010A / SW846 6020A
ANTIMONY	0.10	ug/L	MS	SW846 3010A / SW846 6020A
ARSENIC	0.80	ug/L	MS	SW846 3010A / SW846 6020A
BARIUM	0.20	ug/L	MS	SW846 3010A / SW846 6020A
BERYLLIUM	0.040	ug/L	MS	SW846 3010A / SW846 6020A
CADMIUM	0.040	ug/L	MS	SW846 3010A / SW846 6020A
CALCIUM	16	ug/L	MS	SW846 3010A / SW846 6020A
CHROMIUM	0.80	ug/L	MS	SW846 3010A / SW846 6020A
COBALT	0.060	ug/L	MS	SW846 3010A / SW846 6020A
COPPER	0.40	ug/L	MS	SW846 3010A / SW846 6020A
IRON	12	ug/L	MS	SW846 3010A / SW846 6020A
LEAD	0.10	ug/L	MS	SW846 3010A / SW846 6020A
MAGNESIUM	16	ug/L	MS	SW846 3010A / SW846 6020A
MANGANESE	0.20	ug/L	MS	SW846 3010A / SW846 6020A
NICKEL	0.24	ug/L	MS	SW846 3010A / SW846 6020A
POTASSIUM	80	ug/L	MS	SW846 3010A / SW846 6020A
SELENIUM	0.60	ug/L	MS	SW846 3010A / SW846 6020A
SILVER	0.080	ug/L	MS	SW846 3010A / SW846 6020A
SODIUM	80	ug/L	MS	SW846 3010A / SW846 6020A
THALLIUM	0.080	ug/L	MS	SW846 3010A / SW846 6020A
VANADIUM	0.80	ug/L	MS	SW846 3010A / SW846 6020A
ZINC	1.6	ug/L	MS	SW846 3010A / SW846 6020A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 2/9/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
MERCURY	0.013	ug/L	CV	SW846 7470A / SW846 7470A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.88	ug/L	MS	SW846 3010A / SW846 6020A
ANTIMONY	0.011	ug/L	MS	SW846 3010A / SW846 6020A
ARSENIC	0.45	ug/L	MS	SW846 3010A / SW846 6020A
BARIUM	0.054	ug/L	MS	SW846 3010A / SW846 6020A
BERYLLIUM	0.0067	ug/L	MS	SW846 3010A / SW846 6020A
CADMIUM	0.0059	ug/L	MS	SW846 3010A / SW846 6020A
CALCIUM	4.1	ug/L	MS	SW846 3010A / SW846 6020A
CHROMIUM	0.044	ug/L	MS	SW846 3010A / SW846 6020A
COBALT	0.012	ug/L	MS	SW846 3010A / SW846 6020A
COPPER	0.037	ug/L	MS	SW846 3010A / SW846 6020A
IRON	2.6	ug/L	MS	SW846 3010A / SW846 6020A
LEAD	0.015	ug/L	MS	SW846 3010A / SW846 6020A
MAGNESIUM	1.6	ug/L	MS	SW846 3010A / SW846 6020A
MANGANESE	0.070	ug/L	MS	SW846 3010A / SW846 6020A
NICKEL	0.030	ug/L	MS	SW846 3010A / SW846 6020A
POTASSIUM	6.1	ug/L	MS	SW846 3010A / SW846 6020A
SELENIUM	0.037	ug/L	MS	SW846 3010A / SW846 6020A
SILVER	0.010	ug/L	MS	SW846 3010A / SW846 6020A
SODIUM	3.7	ug/L	MS	SW846 3010A / SW846 6020A
THALLIUM	0.012	ug/L	MS	SW846 3010A / SW846 6020A
VANADIUM	0.10	ug/L	MS	SW846 3010A / SW846 6020A
ZINC	0.78	ug/L	MS	SW846 3010A / SW846 6020A

ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/31/2018

Concentration Units: ug/L

Analyte	Integration Time (sec)	Linear Range	M
ALUMINUM	0.01	200000	MS
ANTIMONY	0.10	1000	MS
ARSENIC	0.30	1000	MS
BARIUM	0.10	2000	MS
BERYLLIUM	0.30	100	MS
CADMIUM	0.10	1000	MS
CALCIUM	0.03	200000	MS
CHROMIUM	0.10	2000	MS
COBALT	0.10	1000	MS
COPPER	0.10	2000	MS
IRON	0.03	100000	MS
LEAD	0.10	2000	MS
MAGNESIUM	0.05	200000	MS
MANGANESE	0.10	2000	MS
MOLYBDENUM	0.10	1000	MS
NICKEL	0.10	1000	MS
POTASSIUM	0.01	200000	MS
SELENIUM	0.30	1000	MS
SILVER	0.10	100	MS
SODIUM	0.01	200000	MS
THALLIUM	0.10	1000	MS
VANADIUM	0.10	1000	MS
ZINC	0.10	2000	MS

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LE08HGW1

Matrix: WATER **SDG Name:** SL3902

Method: CV **Prep Date:** 05/08/2018

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWLE08HGW1	LCSWLE08HGW1	0.025	0.025	
PBWLE08HGW1	PBWLE08HGW1	0.025	0.025	
CHAAP-19C-LGIA-DPT10	SL3902-002	0.025	0.025	D
CHAAP-19C-LGIA-DPT10-FF	SL3902-003	0.025	0.025	A
CHAAP-19C-LGIA-DPT09	SL3902-004	0.025	0.025	D
CHAAP-19C-LGIA-DPT09-FF	SL3902-005	0.025	0.025	A
CHAAP-19C-LGIA-DPT08	SL3902-006	0.025	0.025	D
CHAAP-19C-LGIA-DPT08-FF	SL3902-007	0.025	0.025	A
CHAAP-19C-LGIA-DPT07	SL3902-008	0.025	0.025	D
CHAAP-19C-LGIA-DPT07-FF	SL3902-009	0.025	0.025	A
CHAAP-19C-LGIA-DPT107	SL3902-010	0.025	0.025	D
CHAAP-19C-LGIA-DPT107-FF	SL3902-011	0.025	0.025	A
CHAAP-19C-LGIA-DPT06	SL3902-012	0.025	0.025	J
CHAAP-19C-LGIA-DPT06P	SL3902-012P	0.025	0.025	J
CHAAP-19C-LGIA-DPT06S	SL3902-012S	0.025	0.025	J
CHAAP-19C-LGIA-DPT06-FF	SL3902-013	0.025	0.025	A
CHAAP-19C-LGIA-DPT06-FFP	SL3902-013P	0.025	0.025	A
CHAAP-19C-LGIA-DPT06-FFS	SL3902-013S	0.025	0.025	A
CHAAP-EB-050418-DPT	SL3902-014	0.025	0.025	D

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LE08IMW1

Matrix: WATER **SDG Name:** SL3902

Method: MS **Prep Date:** 05/08/2018

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWLE08IMW1	LCSWLE08IMW1	0.05	0.05	
PBWLE08IMW1	PBWLE08IMW1	0.05	0.05	
CHAAP-19C-LGIA-DPT10	SL3902-002	0.05	0.05	D
CHAAP-19C-LGIA-DPT10-FF	SL3902-003	0.05	0.05	A
CHAAP-19C-LGIA-DPT09	SL3902-004	0.05	0.05	D
CHAAP-19C-LGIA-DPT09-FF	SL3902-005	0.05	0.05	A
CHAAP-19C-LGIA-DPT08	SL3902-006	0.05	0.05	D
CHAAP-19C-LGIA-DPT08-FF	SL3902-007	0.05	0.05	A
CHAAP-19C-LGIA-DPT07	SL3902-008	0.05	0.05	D
CHAAP-19C-LGIA-DPT07-FF	SL3902-009	0.05	0.05	A
CHAAP-19C-LGIA-DPT107	SL3902-010	0.05	0.05	D
CHAAP-19C-LGIA-DPT107-FF	SL3902-011	0.05	0.05	A
CHAAP-19C-LGIA-DPT06	SL3902-012	0.05	0.05	J
CHAAP-19C-LGIA-DPT06P	SL3902-012P	0.05	0.05	J
CHAAP-19C-LGIA-DPT06S	SL3902-012S	0.05	0.05	J
CHAAP-19C-LGIA-DPT06-FF	SL3902-013	0.05	0.05	A
CHAAP-19C-LGIA-DPT06-FFP	SL3902-013P	0.05	0.05	A
CHAAP-19C-LGIA-DPT06-FFS	SL3902-013S	0.05	0.05	A
CHAAP-EB-050418-DPT	SL3902-014	0.05	0.05	D

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Instrument ID: CETAC M6100 **File Name:** HLE09A

Date: 5/9/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	9:01	Hg
Standard #1 (0.2 ppb		1	9:03	Hg
Standard #2 (0.5 ppb		1	9:06	Hg
Standard #3 (1.0 ppb		1	9:08	Hg
Standard #4 (5.0 ppb		1	9:10	Hg
Standard #5 (10.0 pp		1	9:12	Hg
ICV		1	9:14	HG
ICB		1	9:16	HG
PQL		1	9:18	HG
CCV		1	9:20	HG
CCB		1	9:23	HG
PBWLE08HGW1		1	9:25	HG
LCSWLE08HGW1		1	9:27	HG
SL3902-002	CHAAP-19C-LGIA-DPT10	1	9:29	HG
SL3902-003	CHAAP-19C-LGIA-DPT10-FF	1	9:31	HG
SL3902-004	CHAAP-19C-LGIA-DPT09	1	9:33	HG
SL3902-005	CHAAP-19C-LGIA-DPT09-FF	1	9:35	HG
SL3902-006	CHAAP-19C-LGIA-DPT08	1	9:37	HG
SL3902-007	CHAAP-19C-LGIA-DPT08-FF	1	9:40	HG
SL3902-008	CHAAP-19C-LGIA-DPT07	1	9:42	HG
CCV		1	9:44	HG
CCB		1	9:46	HG
SL3902-009	CHAAP-19C-LGIA-DPT07-FF	1	9:48	HG
SL3902-010	CHAAP-19C-LGIA-DPT107	1	9:50	HG
SL3902-011	:HAAP-19C-LGIA-DPT107-FF	1	9:52	HG
SL3902-012	CHAAP-19C-LGIA-DPT06	1	9:55	HG
SL3902-012L	CHAAP-19C-LGIA-DPT06L	5	9:57	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Instrument ID: CETAC M6100 **File Name:** HLE09A

Date: 5/9/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
SL3902-012A	CHAAP-19C-LGIA-DPT06A	1	9:59	HG
SL3902-012S	CHAAP-19C-LGIA-DPT06S	1	10:01	HG
SL3902-012P	CHAAP-19C-LGIA-DPT06P	1	10:03	HG
SL3902-013	CHAAP-19C-LGIA-DPT06-FF	1	10:05	HG
SL3902-013L	:HAAP-19C-LGIA-DPT06-FFL	5	10:07	HG
CCV		1	10:10	HG
CCB		1	10:12	HG
SL3902-013A	HAAP-19C-LGIA-DPT06-FFA	1	10:14	HG
SL3902-013S	HAAP-19C-LGIA-DPT06-FFS	1	10:16	HG
SL3902-013P	HAAP-19C-LGIA-DPT06-FFP	1	10:30	HG
SL3902-014	CHAAP-EB-050418-DPT	1	10:41	HG
ZZZZZZ		1	10:43	
ZZZZZZ		1	10:45	
ZZZZZZ		1	10:47	
ZZZZZZ		1	10:50	
ZZZZZZ		1	10:52	
ZZZZZZ		1	10:54	
CCV		1	10:56	HG
CCB		1	10:58	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE16B

Date: 5/16/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
6020 TUNE		1	16:29	
200.8 TUNE		1	16:31	
Cal Blank		1	19:00	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std		1	19:03	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICV		1	19:07	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICB		1	19:11	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
PQL		1	19:15	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	19:19	
ICSA		1	19:23	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSAB		1	19:27	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	19:31	
ZZZZZZ		1	19:35	
ZZZZZZ		1	19:39	
ZZZZZZ		1	19:43	
ZZZZZZ		1	19:47	
CCV		1	19:51	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	19:55	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl V Zn
PBWLE08IMW1		5	19:59	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na Tl V Zn
LCSWLE08IMW1		5	20:03	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na Tl V Zn
SL3902-002	CHAAP-19C-LGIA-DPT10	5	20:07	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na Tl V Zn
SL3902-003	CHAAP-19C-LGIA-DPT10-FF	5	20:11	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na Tl V Zn
SL3902-004	CHAAP-19C-LGIA-DPT09	5	20:15	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na Tl V Zn
SL3902-005	CHAAP-19C-LGIA-DPT09-FF	5	20:19	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na Tl V Zn
SL3902-006	CHAAP-19C-LGIA-DPT08	5	20:23	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na Tl V Zn
SL3902-007	CHAAP-19C-LGIA-DPT08-FF	5	20:27	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na Tl V Zn
SL3902-008	CHAAP-19C-LGIA-DPT07	5	20:31	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	20:35	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE16B

Date: 5/16/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements																												
CCV		1	20:39	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn							
CCB		1	20:43	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn							
SL3902-009	CHAAP-19C-LGIA-DPT07-FF	5	20:47	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn		Ni	K	Se	Ag	Na	Tl	V	Zn							
SL3902-010	CHAAP-19C-LGIA-DPT107	5	20:51	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn		Ni	K	Se	Ag	Na	Tl	V	Zn							
SL3902-011	CHAAP-19C-LGIA-DPT107-FF	5	20:56	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn		Ni	K	Se	Ag	Na	Tl	V	Zn							
SL3902-012	CHAAP-19C-LGIA-DPT06	5	21:00	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn		Ni	K	Se	Ag	Na	Tl	V	Zn							
SL3902-012L	CHAAP-19C-LGIA-DPT06L	25	21:04	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn		Ni	K	Se	Ag	Na	Tl	V	Zn							
SL3902-012A	CHAAP-19C-LGIA-DPT06A	5	21:08	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn		Ni	K	Se	Ag	Na	Tl	V	Zn							
SL3902-012S	CHAAP-19C-LGIA-DPT06S	5	21:12	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn		Ni	K	Se	Ag	Na	Tl	V	Zn							
SL3902-012P	CHAAP-19C-LGIA-DPT06P	5	21:16	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn		Ni	K	Se	Ag	Na	Tl	V	Zn							
SL3902-013	CHAAP-19C-LGIA-DPT06-FF	5	21:20	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn		Ni	K	Se	Ag	Na	Tl	V	Zn							
ZZZZZZ		1	21:25																													
CCV		1	21:29	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn							
CCB		1	21:33	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn							
SL3902-013L	CHAAP-19C-LGIA-DPT06-FFL	25	21:37	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn		Ni	K	Se	Ag	Na	Tl	V	Zn							
ZZZZZZ		5	21:41																													
SL3902-013S	HAAP-19C-LGIA-DPT06-FFS	5	21:46	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn		Ni	K	Se	Ag	Na	Tl	V	Zn							
SL3902-013P	HAAP-19C-LGIA-DPT06-FFP	5	21:50	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn		Ni	K	Se	Ag	Na	Tl	V	Zn							
SL3902-014	CHAAP-EB-050418-DPT	5	21:54	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn		Ni	K	Se	Ag	Na	Tl	V	Zn							
ZZZZZZ		1	21:58																													
ZZZZZZ		5	22:02																													
ZZZZZZ		5	22:07																													
ZZZZZZ		5	22:11																													
ZZZZZZ		1	22:15																													
CCV		1	22:19	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn							
CCB		1	22:23	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn							

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE17B

Date: 5/17/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
6020 TUNE		1	14:58	
200.8 TUNE		1	15:01	
Cal Blank		1	17:01	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std		1	17:05	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICV		1	17:09	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICB		1	17:12	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
PQL		1	17:16	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	17:20	
ICSA		1	17:24	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSAB		1	17:28	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	17:32	
ZZZZZZ		1	17:36	
ZZZZZZ		1	17:39	
ZZZZZZ		1	17:43	
ZZZZZZ		1	17:47	
CCV		1	17:51	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	17:55	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
PBWLE08IMW1		5	17:59	Pb
LCSWLE08IMW1		5	18:03	Pb
SL3902-002	CHAAP-19C-LGIA-DPT10	5	18:07	Pb
SL3902-003	CHAAP-19C-LGIA-DPT10-FF	5	18:11	Pb
SL3902-004	CHAAP-19C-LGIA-DPT09	5	18:15	Pb
SL3902-005	CHAAP-19C-LGIA-DPT09-FF	5	18:19	Pb
SL3902-006	CHAAP-19C-LGIA-DPT08	5	18:23	Pb
SL3902-007	CHAAP-19C-LGIA-DPT08-FF	5	18:27	Pb
SL3902-008	CHAAP-19C-LGIA-DPT07	5	18:31	Pb
ZZZZZZ		1	18:35	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL3902

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLE17B

Date: 5/17/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
CCV		1	18:39	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	18:43	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SL3902-009	CHAAP-19C-LGIA-DPT07-FF	5	18:47	Pb
SL3902-010	CHAAP-19C-LGIA-DPT107	5	18:51	Pb
SL3902-011	CHAAP-19C-LGIA-DPT107-FF	5	18:55	Pb
SL3902-012	CHAAP-19C-LGIA-DPT06	5	18:59	Pb
SL3902-012L	CHAAP-19C-LGIA-DPT06L	25	19:03	Pb
SL3902-012A	CHAAP-19C-LGIA-DPT06A	5	19:07	Pb
SL3902-012S	CHAAP-19C-LGIA-DPT06S	5	19:11	Pb
SL3902-012P	CHAAP-19C-LGIA-DPT06P	5	19:15	Pb
SL3902-013	CHAAP-19C-LGIA-DPT06-FF	5	19:19	Pb
ZZZZZZ		1	19:24	
CCV		1	19:28	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	19:32	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SL3902-013L	HAAP-19C-LGIA-DPT06-FFL	25	19:36	Pb
SL3902-013A	HAAP-19C-LGIA-DPT06-FFA	5	19:40	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL3902-013S	HAAP-19C-LGIA-DPT06-FFS	5	19:44	Pb
SL3902-013P	HAAP-19C-LGIA-DPT06-FFP	5	19:48	Pb
SL3902-014	CHAAP-EB-050418-DPT	5	19:52	Pb
ZZZZZZ		1	19:56	
ZZZZZZ		5	20:01	
ZZZZZZ		5	20:05	
ZZZZZZ		5	20:09	
ZZZZZZ		1	20:13	
CCV		1	20:17	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	20:21	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn

VOLATILES DATA

QC Summary Section

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** AQ
Lab Code: KAS **SDG:** SL3902

Client Sample ID	Lab Sample ID	Col. ID	BFB	#	DBF	#	DCA	#	TOL	#
CHAAP-TB-050418	SL3902-1		99.5		106.		119.		99.6	
CHAAP-19C-LGIA-DPT10	SL3902-10		96.4		103.		109.		99.6	
CHAAP-19C-LGIA-DPT06	SL3902-12		99.2		109.		118.		100.	
CHAAP-19C-LGIA-DPT06	SL3902-12DL		99.0		107.		115.		101.	
CHAAP-EB-050418-DPT	SL3902-14		99.3		106.		118.		98.0	
CHAAP-19C-LGIA-DPT10	SL3902-2		100.		111.		128.	*	99.5	
CHAAP-19C-LGIA-DPT09	SL3902-4		101.		110.		125.	*	100.	
CHAAP-19C-LGIA-DPT08	SL3902-6		101.		110.		127.	*	100.	
CHAAP-19C-LGIA-DPT07	SL3902-8		98.0		102.		106.		99.2	
Laboratory Control S	WG228421-1		101.		104.		110.		99.7	
Method Blank Sample	WG228421-2		98.7		108.		119.		99.2	
Laboratory Control S	WG228566-1		96.4		97.3		91.3		99.4	
Method Blank Sample	WG228566-2		95.6		97.1		98.4		98.4	
Matrix Spike	WG228566-6		105.		101.		106.		101.	
Matrix Spike Duplica	WG228566-7		101.		100.		103.		99.8	
Laboratory Control S	WG228859-1		97.7		98.5		92.2		101.	
Method Blank Sample	WG228859-2		95.3		99.5		100.		98.4	

		QC Limits
TOL	TOLUENE-D8	89-120
DCA	1,2-DICHLOROETHANE-D4	81-120
DBF	DIBROMOFLUOROMETHANE	80-120
BFB	P-BROMOFLUOROBENZENE	85-120

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : D1331.D
Instrument ID : GCMS-D
Heated Purge : No

SDG : SL3902
Lab Sample ID : WG228421-2
Date Analyzed : 16-MAY-18
Time Analyzed : 14:47

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG228421-1	D1329.D	05/16/18	13:32
CHAAP-TB-050418	SL3902-1	D1332.D	05/16/18	15:23
CHAAP-EB-050418-DPT	SL3902-14	D1333.D	05/16/18	15:58
CHAAP-19C-LGIA-DPT10	SL3902-2	D1342.D	05/16/18	21:19
CHAAP-19C-LGIA-DPT09	SL3902-4	D1343.D	05/16/18	21:55
CHAAP-19C-LGIA-DPT08	SL3902-6	D1344.D	05/16/18	22:30

Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : D1360.D
Instrument ID : GCMS-D
Heated Purge : No

SDG : SL3902
Lab Sample ID : WG228566-2
Date Analyzed : 17-MAY-18
Time Analyzed : 14:16

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG228566-1	D1358.D	05/17/18	12:58
CHAAP-19C-LGIA-DPT07	SL3902-8	D1363.D	05/17/18	16:03
CHAAP-19C-LGIA-DPT107	SL3902-10	D1364.D	05/17/18	16:38
CHAAP-19C-LGIA-DPT06	SL3902-12	D1371.D	05/17/18	20:47
Matrix Spike	WG228566-6	D1372.D	05/17/18	21:22
Matrix Spike Duplica	WG228566-7	D1373.D	05/17/18	21:58

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : D1479.D
Instrument ID : GCMS-D
Heated Purge : No

SDG : SL3902
Lab Sample ID : WG228859-2
Date Analyzed : 22-MAY-18
Time Analyzed : 14:37

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG228859-1	D1477.D	05/22/18	13:18
CHAAP-19C-LGIA-DPT06	SL3902-12DL	D1483.D	05/22/18	17:00

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB173A.D
Instrument ID : GCMS-D

SDG : SL3902
Date Analyzed : 10-MAY-18
Time Analyzed : 07:31
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	20.5		
75	30.0 - 60.0% of mass 95	50.9		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.3		
173	Less than 2.0% of mass 174	0.4	0.51	1
174	Greater than 50.0% of mass 95	73.1		
175	5.0 - 9.0% of mass 174	4.9	6.77	1
176	95.0 - 101.0% of mass 174	70.3	96.24	1
177	5.0 - 9.0% of mass 176	5.1	7.24	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG227999-4	D1259.D	05/10/18	08:36
Initial Calibration	WG227999-3	D1260.D	05/10/18	09:12
Initial Calibration	WG227999-2	D1261.D	05/10/18	09:47
Initial Calibration	WG227999-1	D1262.D	05/10/18	10:22
Initial Calibration	WG227999-6	D1263.D	05/10/18	10:58
Initial Calibration	WG227999-5	D1264.D	05/10/18	11:34

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB179A.D
Instrument ID : GCMS-D

SDG : SL3902
Date Analyzed : 16-MAY-18
Time Analyzed : 12:14
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	23.3		
75	30.0 - 60.0% of mass 95	55.0		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	7.2		
173	Less than 2.0% of mass 174	0.0	0.0	1
174	Greater than 50.0% of mass 95	67.0		
175	5.0 - 9.0% of mass 174	5.3	7.95	1
176	95.0 - 101.0% of mass 174	67.0	100.09	1
177	5.0 - 9.0% of mass 176	5.1	7.58	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG228421-4	D1328.D	05/16/18	12:40
Laboratory Control S	WG228421-1	D1329.D	05/16/18	13:32
Method Blank Sample	WG228421-2	D1331.D	05/16/18	14:47
CHAAP-TB-050418	SL3902-1	D1332.D	05/16/18	15:23
CHAAP-EB-050418-DPT	SL3902-14	D1333.D	05/16/18	15:58
CHAAP-19C-LGIA-DPT10	SL3902-2	D1342.D	05/16/18	21:19
CHAAP-19C-LGIA-DPT09	SL3902-4	D1343.D	05/16/18	21:55
CHAAP-19C-LGIA-DPT08	SL3902-6	D1344.D	05/16/18	22:30
Continuing Calibrati	WG228421-5	D1345.D	05/16/18	23:06

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB180A.D
Instrument ID : GCMS-D

SDG : SL3902
Date Analyzed : 17-MAY-18
Time Analyzed : 07:31
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	22.7		
75	30.0 - 60.0% of mass 95	57.3		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.8		
173	Less than 2.0% of mass 174	0.2	0.34	1
174	Greater than 50.0% of mass 95	70.7		
175	5.0 - 9.0% of mass 174	5.4	7.60	1
176	95.0 - 101.0% of mass 174	68.0	96.27	1
177	5.0 - 9.0% of mass 176	4.1	6.06	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG228547-4	D1351.D	05/17/18	08:11
Initial Calibration	WG228547-3	D1352.D	05/17/18	08:47
Initial Calibration	WG228547-2	D1353.D	05/17/18	09:22
Initial Calibration	WG228547-1	D1354.D	05/17/18	09:58
Initial Calibration	WG228547-6	D1355.D	05/17/18	10:34
Initial Calibration	WG228547-5	D1356.D	05/17/18	11:09

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB181.D
Instrument ID : GCMS-D

SDG : SL3902
Date Analyzed : 17-MAY-18
Time Analyzed : 11:45
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	21.0		
75	30.0 - 60.0% of mass 95	52.5		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	7.0		
173	Less than 2.0% of mass 174	0.6	0.85	1
174	Greater than 50.0% of mass 95	70.6		
175	5.0 - 9.0% of mass 174	5.5	7.87	1
176	95.0 - 101.0% of mass 174	69.4	98.35	1
177	5.0 - 9.0% of mass 176	4.7	6.74	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG228566-4	D1357.D	05/17/18	12:12
Laboratory Control S	WG228566-1	D1358.D	05/17/18	12:58
Independent Source	WG228566-8	D1358A.D	05/17/18	12:58
Method Blank Sample	WG228566-2	D1360.D	05/17/18	14:16
CHAAP-19C-LGIA-DPT07	SL3902-8	D1363.D	05/17/18	16:03
CHAAP-19C-LGIA-DPT107	SL3902-10	D1364.D	05/17/18	16:38
CHAAP-19C-LGIA-DPT06	SL3902-12	D1371.D	05/17/18	20:47
Matrix Spike	WG228566-6	D1372.D	05/17/18	21:22
Matrix Spike Duplica	WG228566-7	D1373.D	05/17/18	21:58
Continuing Calibrati	WG228566-5	D1374.D	05/17/18	22:34

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB188A.D
Instrument ID : GCMS-D

SDG : SL3902
Date Analyzed : 22-MAY-18
Time Analyzed : 08:04
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	22.1		
75	30.0 - 60.0% of mass 95	52.7		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.7		
173	Less than 2.0% of mass 174	0.2	0.30	1
174	Greater than 50.0% of mass 95	67.4		
175	5.0 - 9.0% of mass 174	4.5	6.74	1
176	95.0 - 101.0% of mass 174	64.1	95.08	1
177	5.0 - 9.0% of mass 176	4.3	6.65	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG228847-4	D1470.D	05/22/18	08:30
Initial Calibration	WG228847-3	D1471.D	05/22/18	09:06
Initial Calibration	WG228847-2	D1472.D	05/22/18	09:42
Initial Calibration	WG228847-1	D1473.D	05/22/18	10:17
Initial Calibration	WG228847-6	D1474.D	05/22/18	10:53
Initial Calibration	WG228847-5	D1475.D	05/22/18	11:28

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P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : DB189A.D
Instrument ID : GCMS-D

SDG : SL3902
Date Analyzed : 22-MAY-18
Time Analyzed : 12:02
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	20.3		
75	30.0 - 60.0% of mass 95	53.9		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	5.9		
173	Less than 2.0% of mass 174	0.4	0.53	1
174	Greater than 50.0% of mass 95	66.4		
175	5.0 - 9.0% of mass 174	5.1	7.67	1
176	95.0 - 101.0% of mass 174	64.0	96.33	1
177	5.0 - 9.0% of mass 176	4.6	7.14	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG228859-4	D1476.D	05/22/18	12:26
Laboratory Control S	WG228859-1	D1477.D	05/22/18	13:18
Independent Source	WG228859-6	D1477A.D	05/22/18	13:18
Method Blank Sample	WG228859-2	D1479.D	05/22/18	14:37
CHAAP-19C-LGIA-DPT06	SL3902-12DL	D1483.D	05/22/18	17:00
Continuing Calibrati	WG228859-5	D1493.D	05/22/18	22:57

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P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227999-4
Lab File ID : D1259.d

SDG: SL3902
Analytical Date: 05/10/18 08:36
Instrument ID: GCMS-D

		PENTAFLUOROBENZENE			1,4-DIFLUOROBENZENE			CHLOROBENZENE-D5		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	336775		7.32		538592		8.10		490295		11.54	
	Upper Limit	673550		7.48		1077184		8.26		980590		11.70	
	Lower Limit	168387.5		7.15		269296		7.93		245147.5		11.37	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG228421-4	277120		7.32		444991		8.10		414738		11.54	
Laboratory Control S	WG228421-1	287009		7.32		471055		8.10		425102		11.54	
Method Blank Sample	WG228421-2	258692		7.32		435671		8.10		395426		11.54	
CHAAP-TB-050418	SL3902-1	252248		7.32		420655		8.10		383971		11.54	
CHAAP-EB-050418-D	SL3902-14	251062		7.32		416977		8.10		380496		11.54	
CHAAP-19C-LGIA-DI	SL3902-2	226774		7.32		389060		8.10		354846		11.54	
CHAAP-19C-LGIA-DI	SL3902-4	229715		7.32		386275		8.10		352587		11.54	
CHAAP-19C-LGIA-DI	SL3902-6	224426		7.32		381983		8.10		348337		11.55	
Continuing Calibrati	WG228421-5	256348		7.32		420867		8.10		389349		11.54	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG227999-4
Lab File ID : D1259.d

SDG: SL3902
Analytical Date: 05/10/18 08:36
Instrument ID: GCMS-D

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	249538		13.88	
	Upper Limit	499076		14.04	
	Lower Limit	124769		13.71	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG228421-4	213967		13.88	
Laboratory Control S	WG228421-1	218190		13.88	
Method Blank Sample	WG228421-2	192344		13.88	
CHAAP-TB-050418	SL3902-1	188187		13.88	
CHAAP-EB-050418-D	SL3902-14	187115		13.88	
CHAAP-19C-LGIA-DI	SL3902-2	173454		13.88	
CHAAP-19C-LGIA-DI	SL3902-4	174648		13.88	
CHAAP-19C-LGIA-DI	SL3902-6	172785		13.88	
Continuing Calibrati	WG228421-5	203879		13.88	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
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Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG228547-4
Lab File ID : D1351.d

SDG: SL3902
Analytical Date: 05/17/18 08:11
Instrument ID: GCMS-D

		PENTAFLUOROBENZENE			1,4-DIFLUOROBENZENE			CHLOROBENZENE-D5		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	265598		7.32		436302		8.10		399232		11.54	
	Upper Limit	531196		7.48		872604		8.26		798464		11.70	
	Lower Limit	132799		7.15		218151		7.93		199616		11.37	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG228566-4	319060		7.32		512826		8.10		467060		11.55	
Laboratory Control S	WG228566-1	313553		7.32		507874		8.10		455386		11.55	
Method Blank Sample	WG228566-2	287163		7.32		470146		8.10		418916		11.55	
CHAAP-19C-LGIA-DI	SL3902-8	247147		7.32		407834		8.11		377497		11.55	
CHAAP-19C-LGIA-DI	SL3902-10	239968		7.32		404846		8.11		367158		11.55	
CHAAP-19C-LGIA-DI	SL3902-12	214445		7.32		362666		8.10		333513		11.54	
Matrix Spike	WG228566-6	244070		7.32		394408		8.10		370197		11.54	
Matrix Spike Duplica	WG228566-7	257393		7.32		421552		8.10		384093		11.54	
Continuing Calibrati	WG228566-5	256958		7.32		421207		8.10		392656		11.54	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG228547-4
Lab File ID : D1351.d

SDG: SL3902
Analytical Date: 05/17/18 08:11
Instrument ID: GCMS-D

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	207228		13.88	
	Upper Limit	414456		14.04	
	Lower Limit	103614		13.71	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG228566-4	236950		13.88	
Laboratory Control S	WG228566-1	229479		13.88	
Method Blank Sample	WG228566-2	208569		13.89	
CHAAP-19C-LGIA-DI	SL3902-8	183738		13.89	
CHAAP-19C-LGIA-DI	SL3902-10	181101		13.89	
CHAAP-19C-LGIA-DI	SL3902-12	165030		13.88	
Matrix Spike	WG228566-6	194033		13.88	
Matrix Spike Duplica	WG228566-7	200014		13.88	
Continuing Calibrati	WG228566-5	203031		13.88	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

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600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG228847-4
Lab File ID : D1470.d

SDG: SL3902
Analytical Date: 05/22/18 08:30
Instrument ID: GCMS-D

		PENTAFLUOROBENZENE			1,4-DIFLUOROBENZENE			CHLOROBENZENE-D5		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	262859		7.32		420311		8.10		375750		11.54	
	Upper Limit	525718		7.48		840622		8.26		751500		11.70	
	Lower Limit	131429.5		7.15		210155.5		7.93		187875		11.37	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG228859-4	285924		7.32		456854		8.10		409420		11.55	
Laboratory Control S	WG228859-1	292824		7.32		466113		8.10		412871		11.55	
Method Blank Sample	WG228859-2	264819		7.32		430134		8.11		375644		11.55	
CHAAP-19C-LGIA-DI	SL3902-12DL	214949		7.32		352532		8.10		317574		11.54	
Continuing Calibrati	WG228859-5	215742		7.32		346333		8.10		322559		11.54	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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P.O. Box 540, Scarborough, ME 04070
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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG228847-4
Lab File ID : D1470.d

SDG: SL3902
Analytical Date: 05/22/18 08:30
Instrument ID: GCMS-D

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	190800		13.88	
	Upper Limit	381600		14.04	
	Lower Limit	95400		13.71	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG228859-4	204850		13.89	
Laboratory Control S	WG228859-1	208475		13.89	
Method Blank Sample	WG228859-2	183358		13.89	
CHAAP-19C-LGIA-DI	SL3902-12DL	154528		13.88	
Continuing Calibrati	WG228859-5	170769		13.88	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Sample Data Section

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-1
Client ID: CHAAP-TB-050418
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1332.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-1
Client ID: CHAAP-TB-050418
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1332.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		106.	%					
1,2-Dichloroethane-d4		119.	%					
Toluene-d8		99.6	%					
P-Bromofluorobenzene		99.5	%					

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Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1332.d
Report Date: 21-May-2018 14:26

Katahdin Analytical Services

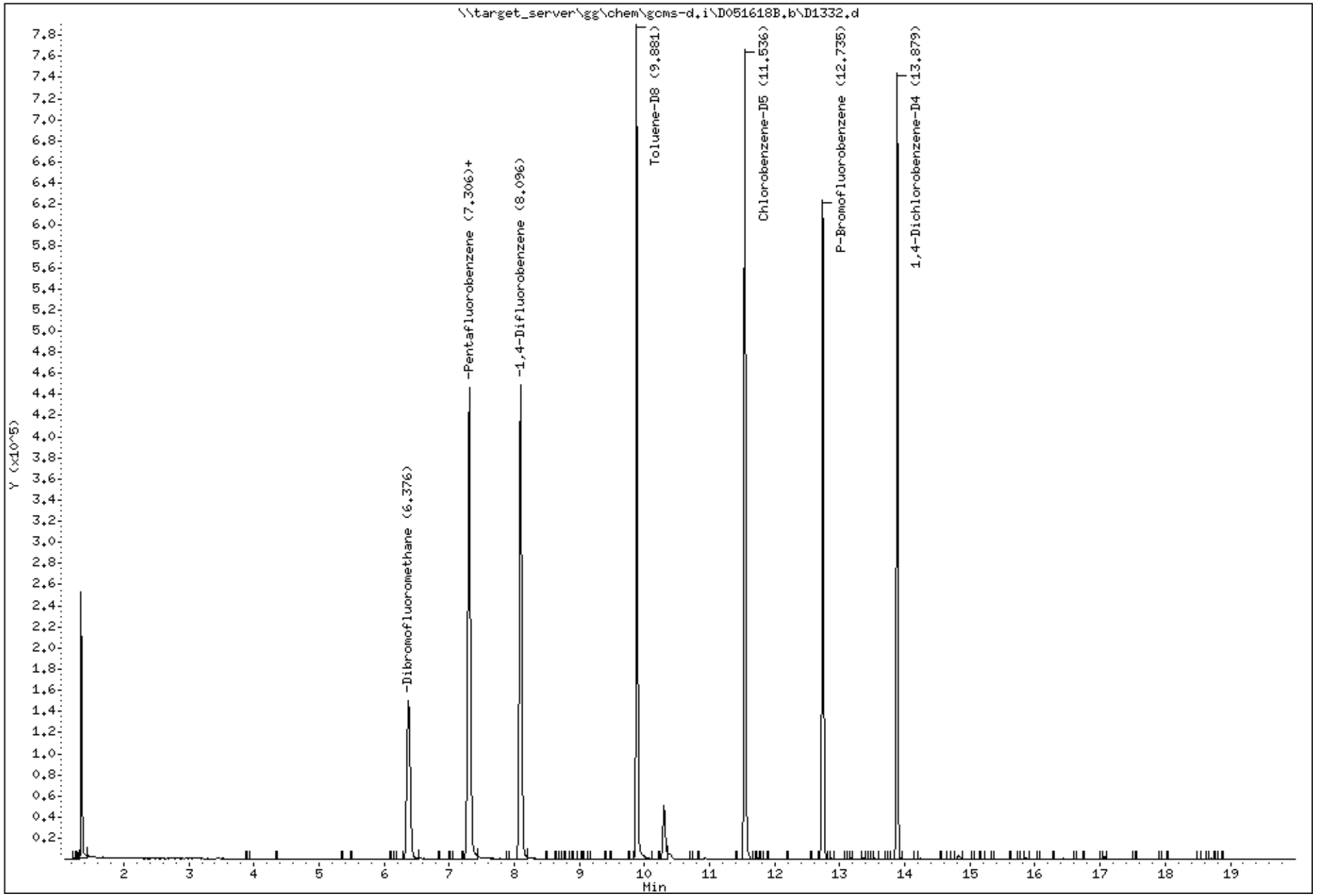
Data file : \\target_server\gg\chem\gcms-d.i\D051618B.b\D1332.d
Lab Smp Id: SL3902-1
Inj Date : 16-MAY-2018 15:23 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : SL3902-1
Misc Info : WG228421,WG227999-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-d.i\D051618B.b\D8A05(21)D.m
Meth Date : 21-May-2018 14:24 gcms-d.i Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$ 37 Dibromofluoromethane	113	6.376	6.376	(0.872)	157958	53.2617	53.3	
* 42 Pentafluorobenzene	168	7.315	7.315	(1.000)	252248	50.0000		
$ 45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	223096	59.4954	59.5	
* 49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	420655	50.0000		
$ 55 Toluene-D8	98	9.881	9.881	(1.220)	510969	49.8091	49.8	
* 66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	383971	50.0000		
$ 76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	203700	49.7444	49.7	
* 91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	188187	50.0000		

Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1332.d
Date : 16-MAY-2018 15:23
Client ID:
Instrument: gcms-d.i
Sample Info: SL3902-1



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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-2
Client ID: CHAAP-19C-LGIA-DPT10
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1342.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-2
Client ID: CHAAP-19C-LGIA-DPT10
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1342.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		111.	%					
1,2-Dichloroethane-d4	*	128.	%					
Toluene-d8		99.5	%					
P-Bromofluorobenzene		100.	%					

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Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1342.d
Report Date: 21-May-2018 14:26

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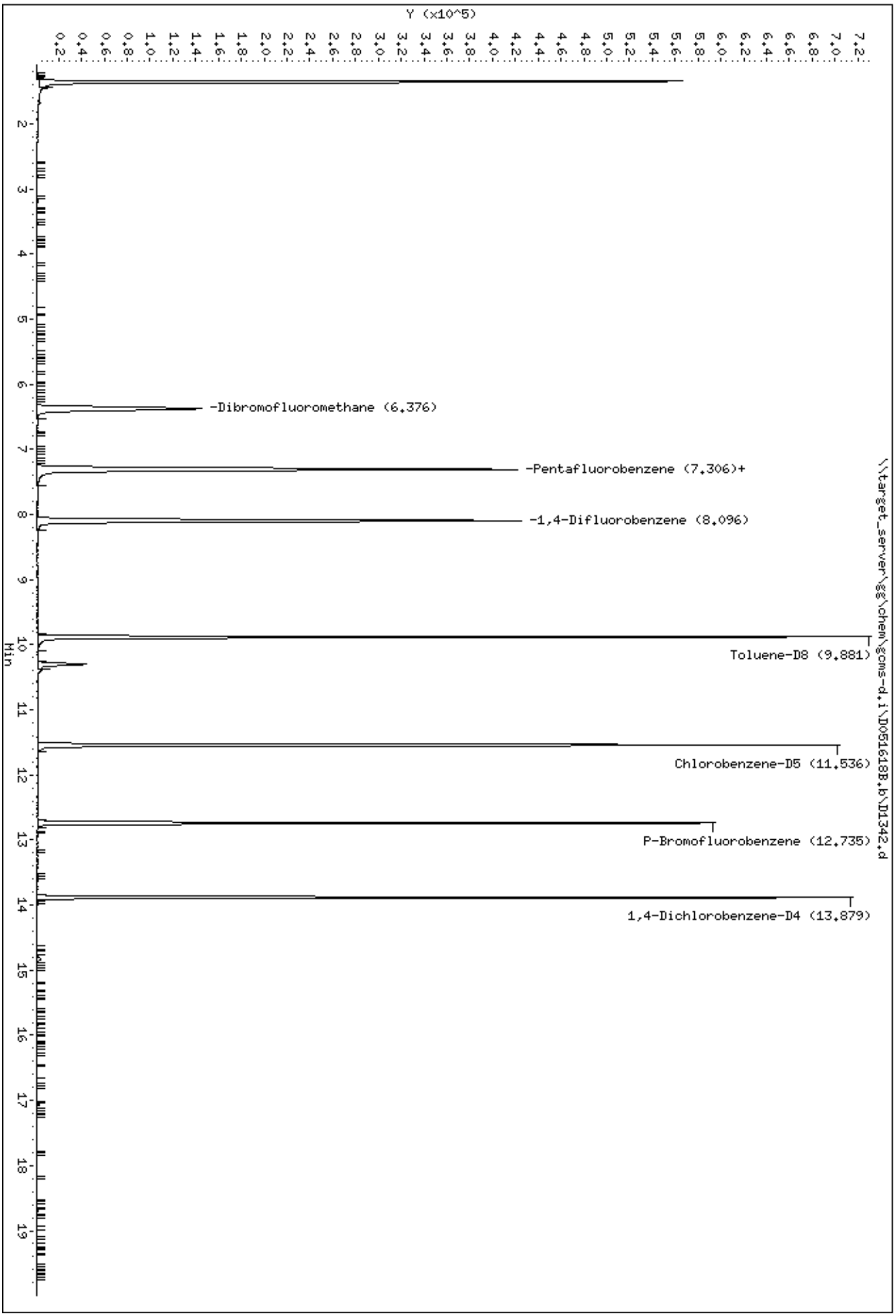
Data file : \\target_server\gg\chem\gcms-d.i\D051618B.b\D1342.d
Lab Smp Id: SL3902-2
Inj Date : 16-MAY-2018 21:19 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : SL3902-2
Misc Info : WG228421,WG227999-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-d.i\D051618B.b\D8A05(21)D.m
Meth Date : 21-May-2018 14:24 gcms-d.i Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$ 37 Dibromofluoromethane	113	6.376	6.376	(0.872)	147662	55.3830	55.4	
* 42 Pentafluorobenzene	168	7.315	7.315	(1.000)	226774	50.0000		
$ 45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	215428	63.9040	63.9	
* 49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	389060	50.0000		
$ 55 Toluene-D8	98	9.881	9.881	(1.220)	472112	49.7587	49.8	
* 66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	354846	50.0000		
$ 76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	190180	50.2143	50.2	
* 91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	173454	50.0000		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Date : 16-MAY-2018 21:19
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Sample Info: SL3902-2
Instrument: gcms-d.i
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Min
-Dibromofluoromethane (6.376)
-Pentafluorobenzene (7.306)+
-1,4-Difluorobenzene (8.096)
Toluene-D8 (9.881)
Chlorobenzene-D5 (11.536)
P-Bromofluorobenzene (12.735)
1,4-Dichlorobenzene-D4 (13.879)
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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-4
Client ID: CHAAP-19C-LGIA-DPT09
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1343.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-4
Client ID: CHAAP-19C-LGIA-DPT09
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1343.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		110.	%					
1,2-Dichloroethane-d4	*	125.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		101.	%					

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Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1343.d
Report Date: 21-May-2018 14:26

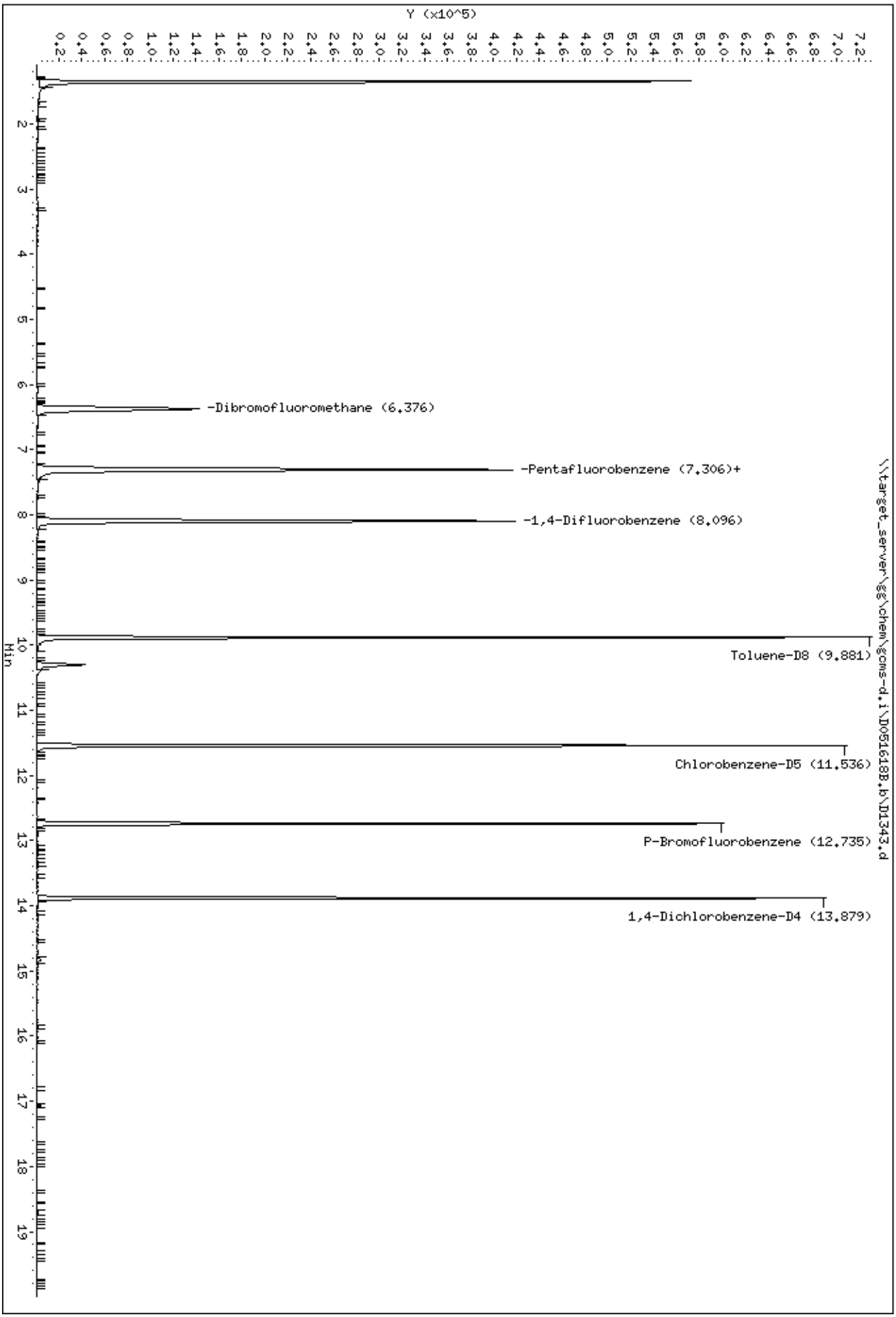
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051618B.b\D1343.d
Lab Smp Id: SL3902-4
Inj Date : 16-MAY-2018 21:55 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : SL3902-4
Misc Info : WG228421,WG227999-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-d.i\D051618B.b\D8A05(21)D.m
Meth Date : 21-May-2018 14:24 gcms-d.i Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 16
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$ 37 Dibromofluoromethane	113	6.376	6.376	(0.872)	148238	54.8873	54.9	
* 42 Pentafluorobenzene	168	7.315	7.315	(1.000)	229715	50.0000		
$ 45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	213123	62.4108	62.4	
* 49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	386275	50.0000		
$ 55 Toluene-D8	98	9.881	9.881	(1.220)	471855	50.0902	50.1	
* 66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	352587	50.0000		
$ 76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	189277	50.3362	50.3	
* 91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	174648	50.0000		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Date : 16-MAY-2018 21:55
Client ID:
Sample Info: SL3902-4
Instrument: gcms-d.i
Y (x10^5)
Min
-Dibromofluoromethane (6.376)
-Pentafluorobenzene (7.306)+
-1,4-Difluorobenzene (8.096)
Toluene-D8 (9.881)
Chlorobenzene-D5 (11.536)
P-Bromofluorobenzene (12.735)
1,4-Dichlorobenzene-D4 (13.879)
\\target_server\gg\chem\gcms-d.i\D051618B.b\D1343.d

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-6
Client ID: CHAAP-19C-LGIA-DPT08
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1344.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-6
Client ID: CHAAP-19C-LGIA-DPT08
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1344.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		110.	%					
1,2-Dichloroethane-d4	*	127.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		101.	%					

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Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1344.d
Report Date: 21-May-2018 14:26

Katahdin Analytical Services

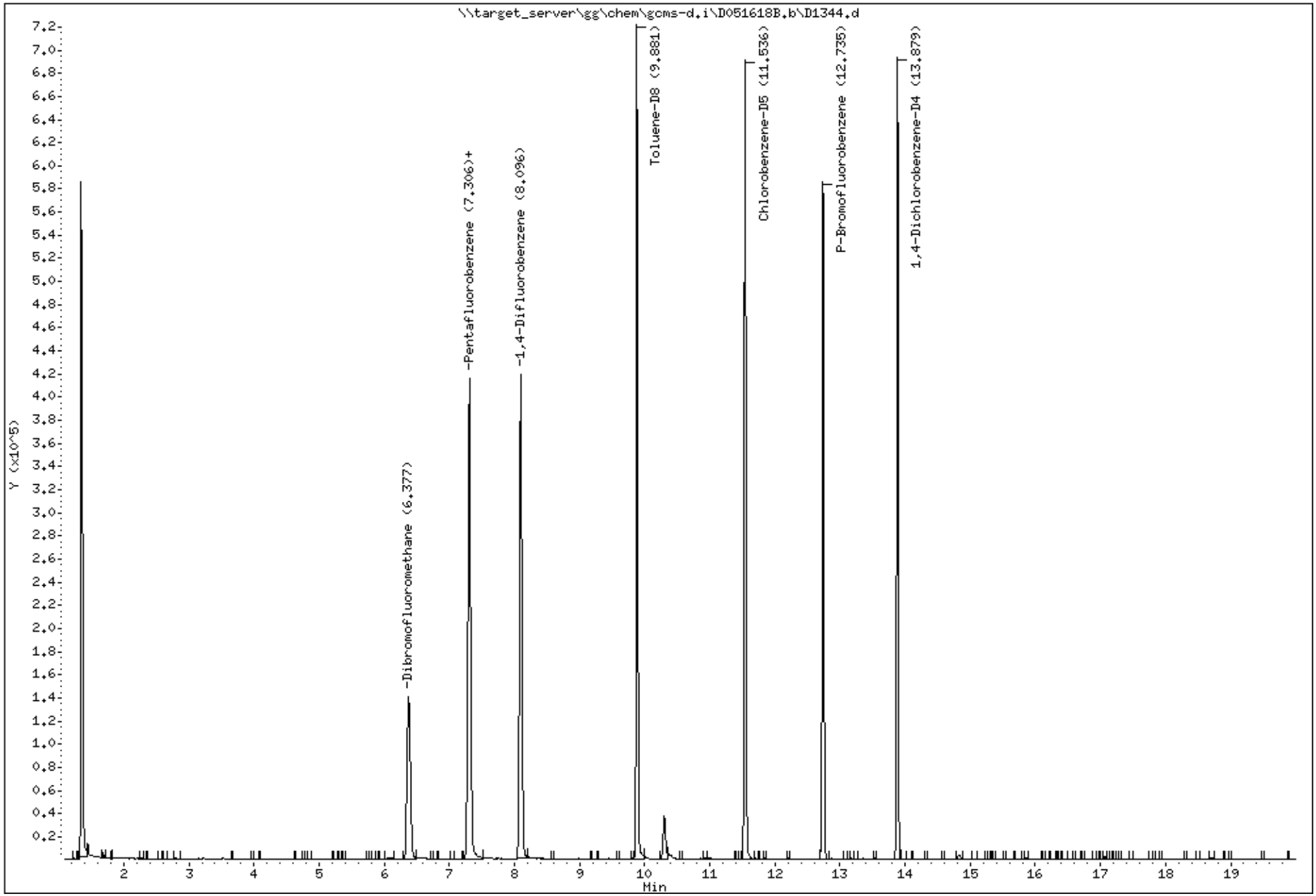
Data file : \\target_server\gg\chem\gcms-d.i\D051618B.b\D1344.d
Lab Smp Id: SL3902-6
Inj Date : 16-MAY-2018 22:30 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : SL3902-6
Misc Info : WG228421,WG227999-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-d.i\D051618B.b\D8A05(21)D.m
Meth Date : 21-May-2018 14:24 gcms-d.i Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 17
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$ 37 Dibromofluoromethane	113	6.376	6.376	(0.872)	145599	55.1806	55.2	
* 42 Pentafluorobenzene	168	7.315	7.315	(1.000)	224426	50.0000		
$ 45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	212198	63.6044	63.6	
* 49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	381983	50.0000		
$ 55 Toluene-D8	98	9.881	9.881	(1.220)	465691	49.9913	50.0	
* 66 Chlorobenzene-D5	117	11.545	11.536	(1.000)	348337	50.0000		
$ 76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	187428	50.4045	50.4	
* 91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	172785	50.0000		

Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1344.d
Date : 16-MAY-2018 22:30
Client ID:
Instrument: gcms-d.i
Sample Info: SL3902-6



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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-8
Client ID: CHAAP-19C-LGIA-DPT07
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1363.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		5.4	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-8
Client ID: CHAAP-19C-LGIA-DPT07
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1363.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		102.	%					
1,2-Dichloroethane-d4		106.	%					
Toluene-d8		99.2	%					
P-Bromofluorobenzene		98.0	%					

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Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1363.d
Report Date: 21-May-2018 14:32

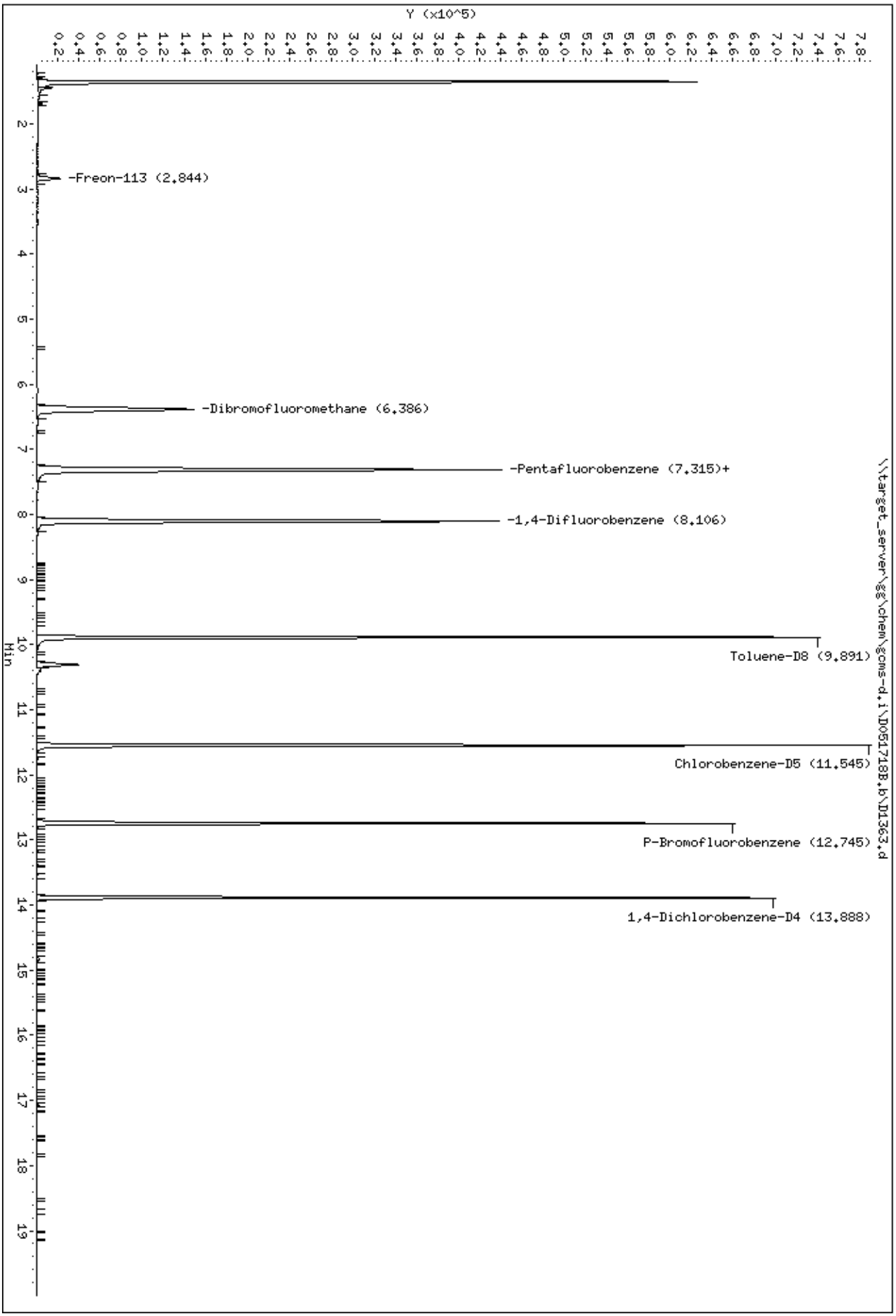
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051718B.b\D1363.d
Lab Smp Id: SL3902-8 Client Smp ID: HAAP-19C-LGIA-DPT07
Inj Date : 17-MAY-2018 16:03 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : SL3902-8
Misc Info : WG228566,WG228547-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051718B.b\D8A05(22)D.m
Meth Date : 21-May-2018 14:29 gcms-d.i Quant Type: ISTD
Cal Date : 17-MAY-2018 11:09 Cal File: D1356.d
Als bottle: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	11 Freon-113	151	2.843	2.834	(0.388)	8039	5.41184	5.4	
$	37 Dibromofluoromethane	113	6.385	6.376	(0.872)	154865	51.1421	51.1	
*	42 Pentafluorobenzene	168	7.324	7.315	(1.000)	247147	50.0000		
$	45 1,2-Dichloroethane-D4	65	7.306	7.297	(0.997)	219560	53.1432	53.1	
*	49 1,4-Difluorobenzene	114	8.105	8.096	(1.000)	407834	50.0000		
$	55 Toluene-D8	98	9.890	9.881	(1.220)	493133	49.6087	49.6	
*	66 Chlorobenzene-D5	117	11.545	11.536	(1.000)	377497	50.0000		
$	76 P-Bromofluorobenzene	95	12.744	12.735	(1.572)	200568	48.9848	49.0	
*	91 1,4-Dichlorobenzene-D4	152	13.888	13.879	(1.000)	183738	50.0000		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Date : 17-MAY-2018 16:03
Client ID: HAAP-19C-LCIA-DPT07
Sample Info: SL3902-8
Instrument: gcms-d.i
\\target_server\gg\chem\gcms-d.i\D051718B.b\D1363.d
Y (x10^5)
Min
-Freon-113 (2.844)
-Dibromofluoromethane (6.386)
-Pentafluorobenzene (7.315)+
-1,4-Difluorobenzene (8.106)
Toluene-D8 (9.891)
Chlorobenzene-D5 (11.545)
P-Bromofluorobenzene (12.745)
1,4-Dichlorobenzene-D4 (13.888)

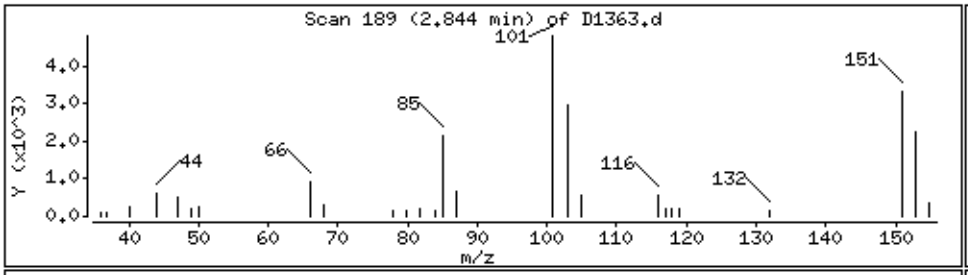
Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1363.d

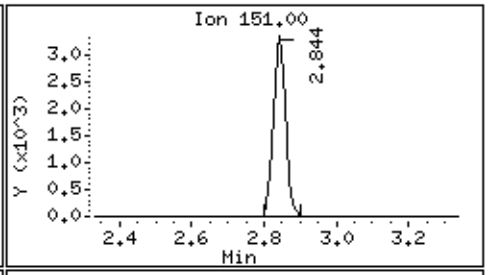
Date : 17-MAY-2018 16:03

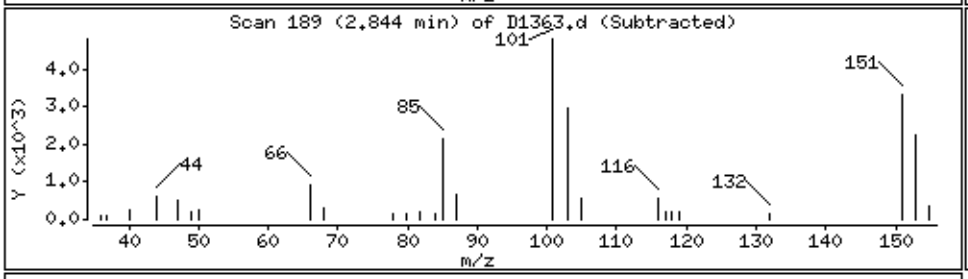
Client ID: HAAP-19C-LGIA-DPT07 Instrument: gcms-d.i

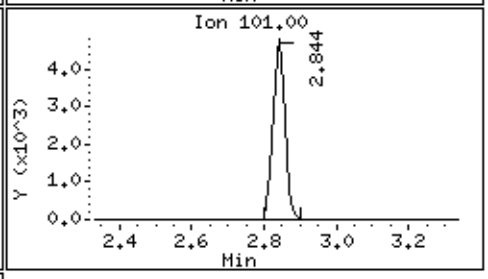
Sample Info: SL3902-8

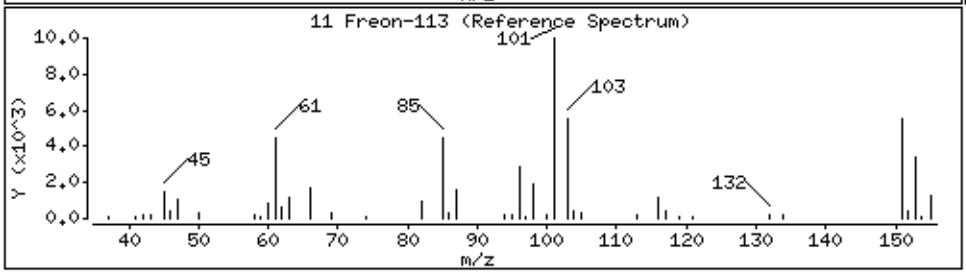
11 Freon-113 Concentration: 5.4 ug/l











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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-10
Client ID: CHAAP-19C-LGIA-DPT107
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1364.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		5.7	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-10
Client ID: CHAAP-19C-LGIA-DPT107
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1364.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		103.	%					
1,2-Dichloroethane-d4		109.	%					
Toluene-d8		99.6	%					
P-Bromofluorobenzene		96.4	%					

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Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1364.d
Report Date: 21-May-2018 14:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051718B.b\D1364.d
Lab Smp Id: SL3902-10 Client Smp ID: HAAP-19C-LGIA-DPT10
Inj Date : 17-MAY-2018 16:38 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : SL3902-10
Misc Info : WG228566,WG228547-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051718B.b\D8A05(22)D.m
Meth Date : 21-May-2018 14:29 gcms-d.i Quant Type: ISTD
Cal Date : 17-MAY-2018 11:09 Cal File: D1356.d
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	11 Freon-113	151	2.843	2.834	(0.389)	8220	5.69924	5.7	
$	37 Dibromofluoromethane	113	6.385	6.376	(0.873)	151793	51.6272	51.6	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	239968	50.0000		
$	45 1,2-Dichloroethane-D4	65	7.305	7.297	(0.999)	219484	54.7141	54.7	
*	49 1,4-Difluorobenzene	114	8.105	8.096	(1.000)	404846	50.0000		
$	55 Toluene-D8	98	9.890	9.881	(1.220)	491246	49.7836	49.8	
*	66 Chlorobenzene-D5	117	11.545	11.536	(1.000)	367158	50.0000		
$	76 P-Bromofluorobenzene	95	12.744	12.735	(1.572)	195834	48.1816	48.2	
*	91 1,4-Dichlorobenzene-D4	152	13.887	13.879	(1.000)	181101	50.0000		

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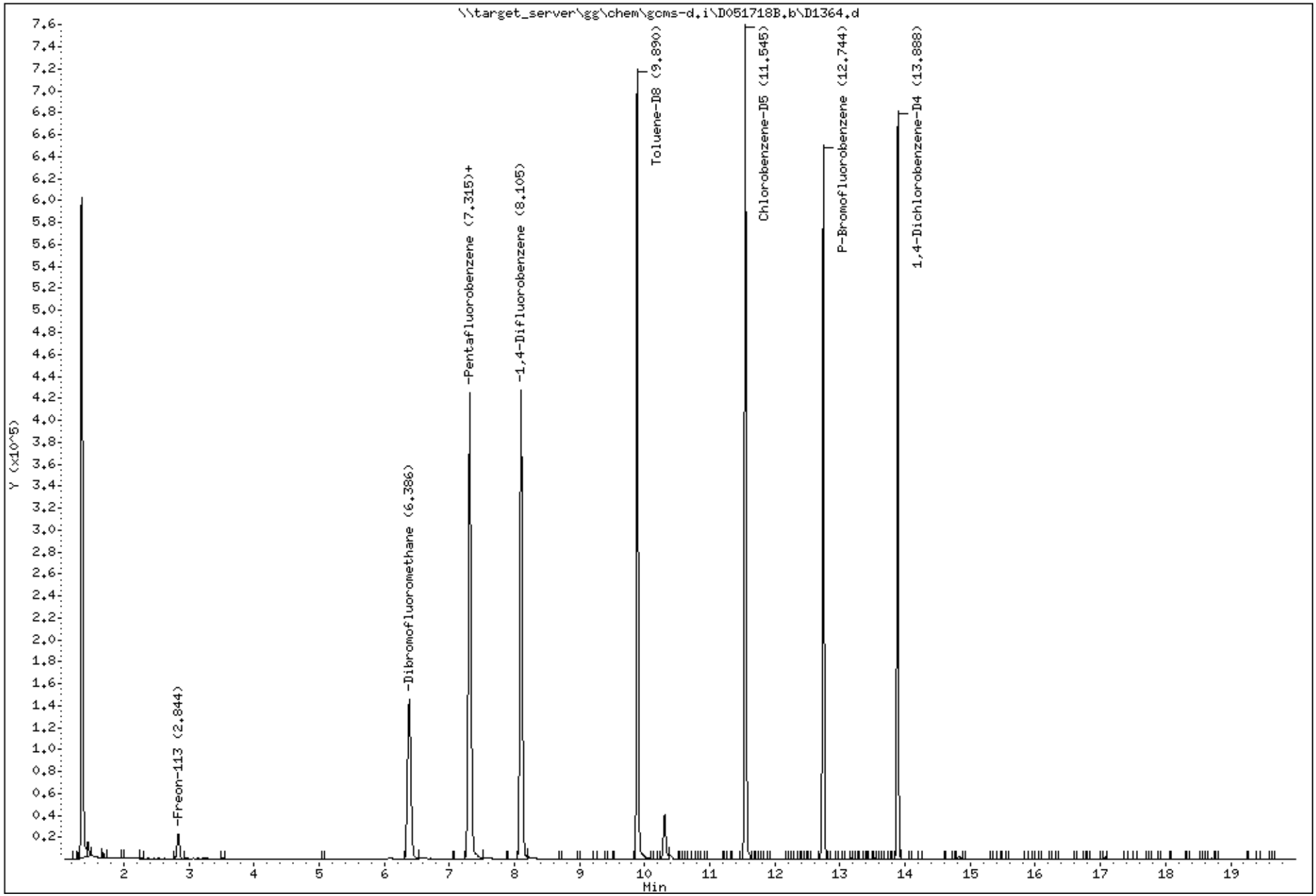
Client ID: HAAP-19C-LGIA-DPT10 Instrument: gcms-d.i
Sample Info: SL3902-10



Katahdin Analytical Services 1000046

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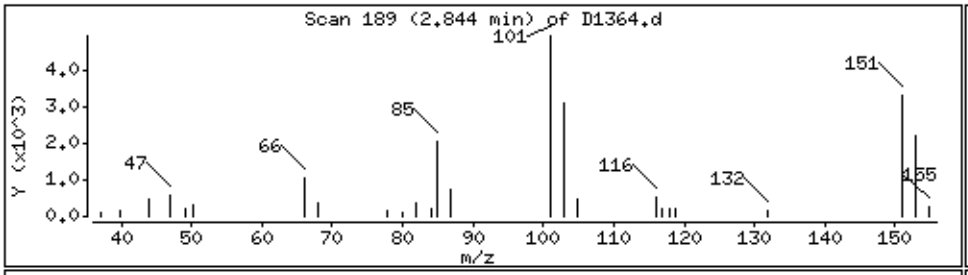
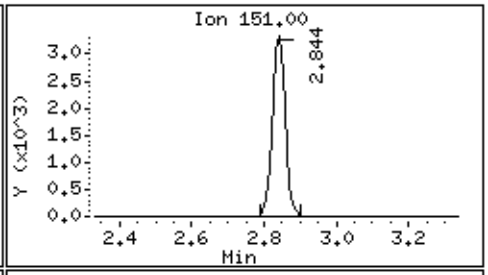
Date : 17-MAY-2018 16:38

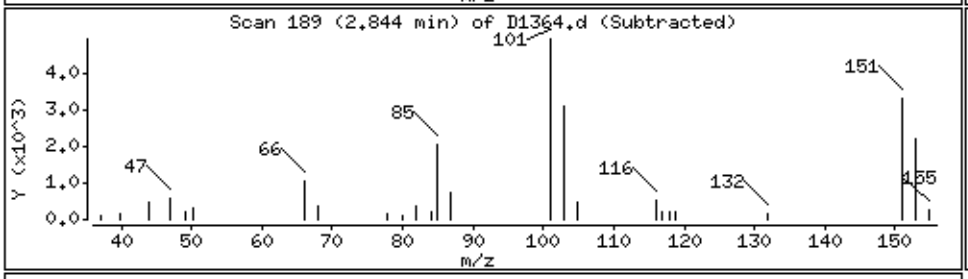
Client ID: HAAP-19C-LGIA-DPT10 Instrument: gcms-d.i

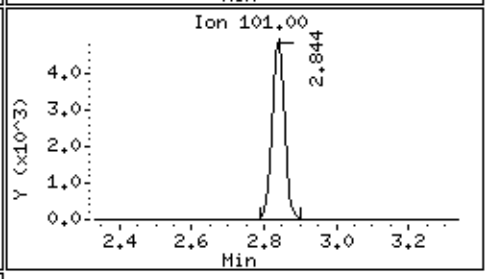
Sample Info: SL3902-10

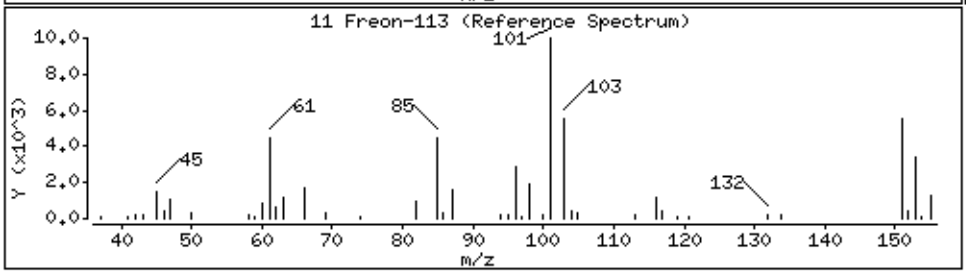
11 Freon-113 Concentration: 5.7 ug/l











Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-12
Client ID: CHAAP-19C-LGIA-DPT06
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1371.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	EMM	620	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-12
Client ID: CHAAP-19C-LGIA-DPT06
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1371.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	J	1.6	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		109.	%					
1,2-Dichloroethane-d4		118.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		99.2	%					

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Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1371.d
Report Date: 21-May-2018 14:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051718B.b\D1371.d
Lab Smp Id: SL3902-12 Client Smp ID: HAAP-19C-LGIA-DPT06
Inj Date : 17-MAY-2018 20:47 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : SL3902-12
Misc Info : WG228566,WG228547-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051718B.b\D8A05(22)D.m
Meth Date : 21-May-2018 14:29 gcms-d.i Quant Type: ISTD
Cal Date : 17-MAY-2018 11:09 Cal File: D1356.d
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

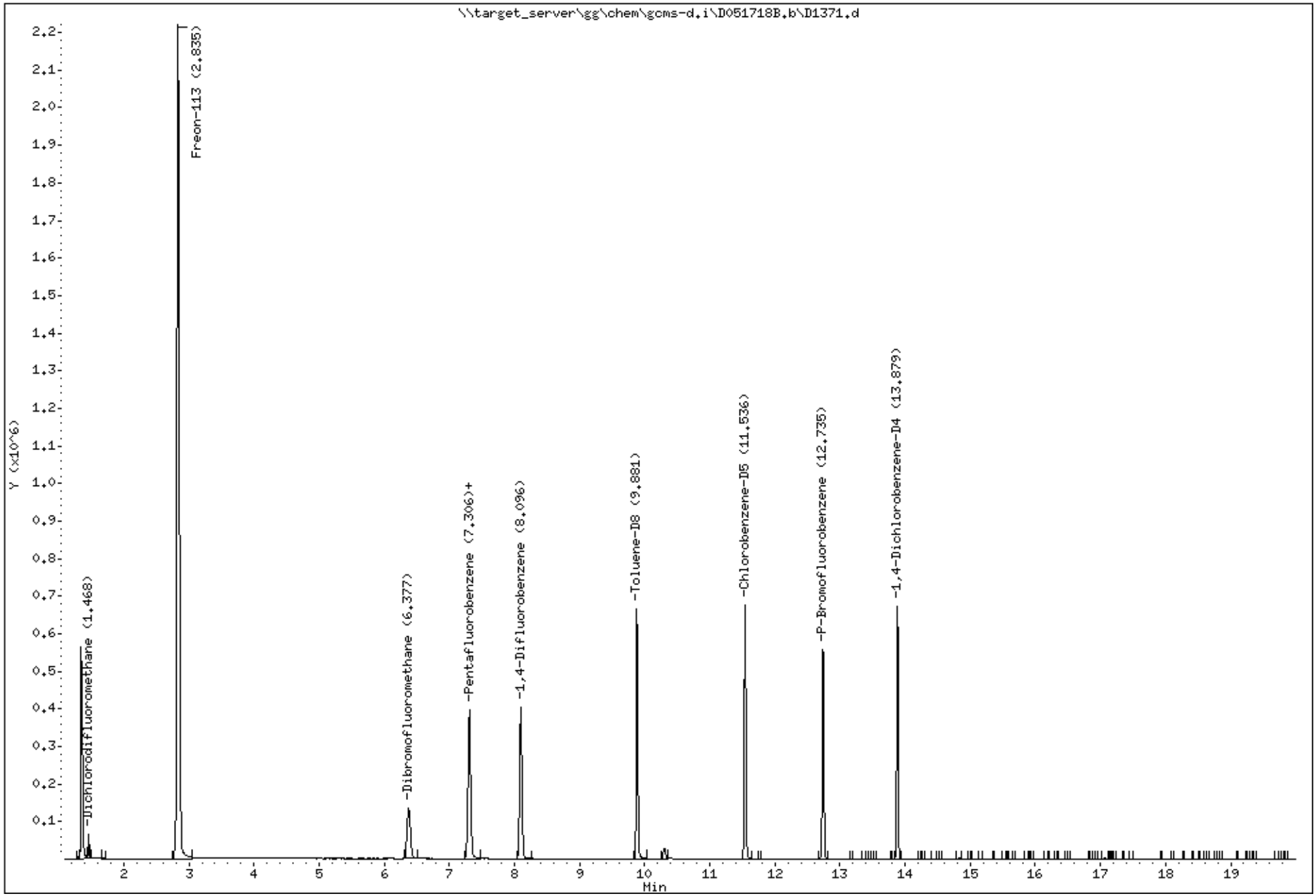
Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.468	1.486	(0.201)	6010	1.60833	1.6	
11	Freon-113	151	2.834	2.834	(0.387)	804856	624.454	624(A)	
$ 37	Dibromofluoromethane	113	6.376	6.376	(0.872)	143183	54.4949	54.5	
* 42	Pentafluorobenzene	168	7.315	7.315	(1.000)	214445	50.0000		
$ 45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	211832	59.0915	59.1	
* 49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	362666	50.0000		
$ 55	Toluene-D8	98	9.881	9.881	(1.220)	444601	50.2969	50.3	
* 66	Chlorobenzene-D5	117	11.535	11.536	(1.000)	333513	50.0000		
$ 76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	180670	49.6206	49.6	
* 91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	165030	50.0000		

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1371.d
Date : 17-MAY-2018 20:47
Client ID: HAAP-19C-LGIA-DPT06 Instrument: gcms-d.i
Sample Info: SL3902-12



Katahdin Analytical Services 1000051

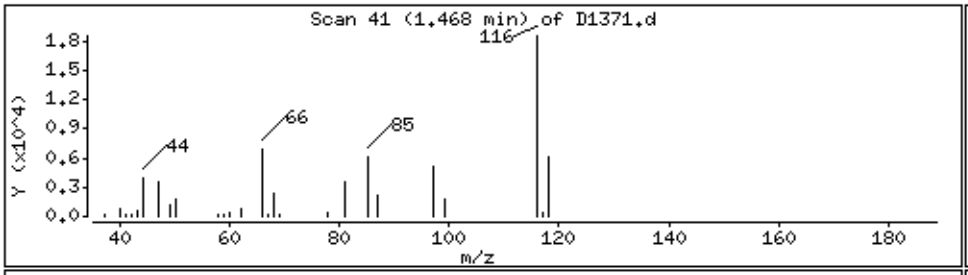
Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1371.d

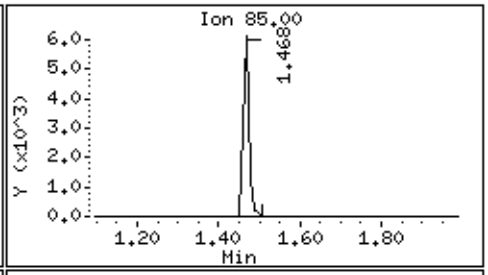
Date : 17-MAY-2018 20:47

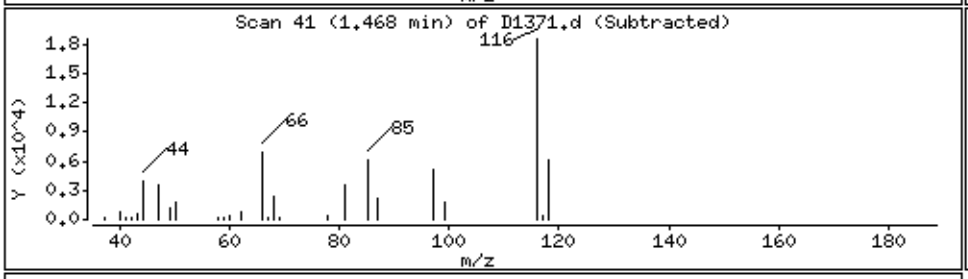
Client ID: HAAP-19C-LGIA-DPT06 Instrument: gcms-d.i

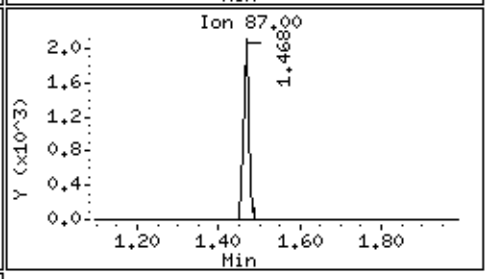
Sample Info: SL3902-12

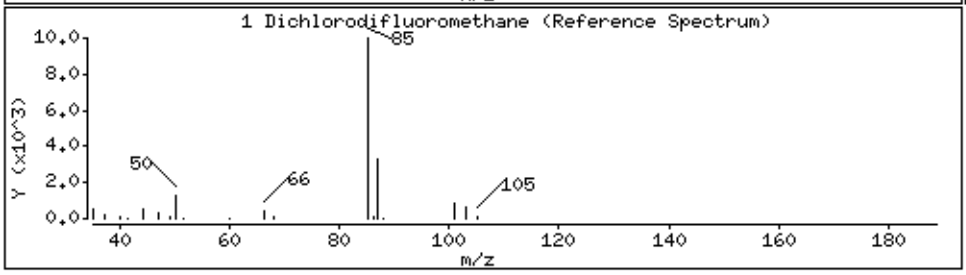
1 Dichlorodifluoromethane Concentration: 1.6 ug/l



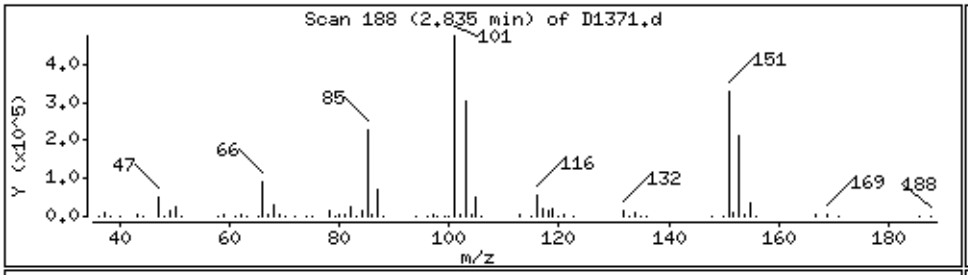


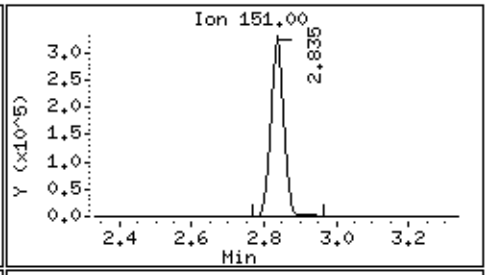


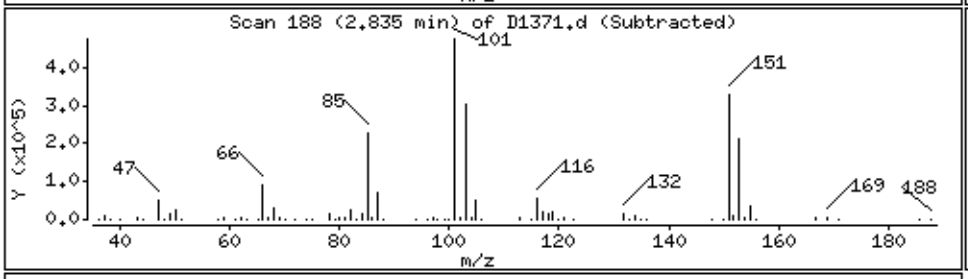


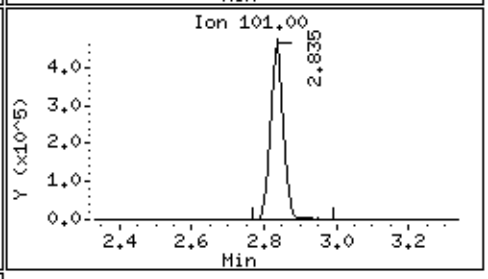


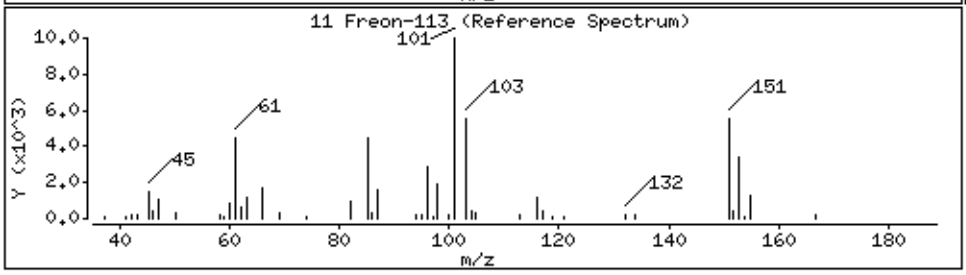
11 Freon-113 Concentration: 624 ug/l











Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-12DL
Client ID: CHAAP-19C-LGIA-DPT06
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1483.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 22-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228859

Analysis Date: 22-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	5.0	ug/L	10	1	10.	1.9	5.0
1,1,1-Trichloroethane	U	5.0	ug/L	10	1	10.	2.0	5.0
1,1,2,2-Tetrachloroethane	U	5.0	ug/L	10	1	10.	3.8	5.0
Freon-113	MM	490	ug/L	10	1	10.	3.1	5.0
1,1,2-Trichloroethane	U	5.0	ug/L	10	1	10.	3.3	5.0
1,1-Dichloroethane	U	5.0	ug/L	10	1	10.	2.1	5.0
1,1-Dichloroethene	U	5.0	ug/L	10	1	10.	3.5	5.0
1,1-Dichloropropene	U	5.0	ug/L	10	1	10.	2.1	5.0
1,2,3-Trichlorobenzene	U	5.0	ug/L	10	1	10.	2.7	5.0
1,2,3-Trichloropropane	U	5.0	ug/L	10	1	10.	1.9	5.0
1,2,4-Trichlorobenzene	U	5.0	ug/L	10	1	10.	3.7	5.0
1,2,4-Trimethylbenzene	U	5.0	ug/L	10	1	10.	1.9	5.0
1,2-Dibromo-3-Chloropropane	U	5.0	ug/L	10	1	10.	5.0	5.0
1,2-Dichlorobenzene	U	5.0	ug/L	10	1	10.	1.5	5.0
1,2-Dichloroethane	U	5.0	ug/L	10	1	10.	2.0	5.0
1,2-Dichloropropane	U	5.0	ug/L	10	1	10.	2.5	5.0
1,3,5-Trimethylbenzene	U	5.0	ug/L	10	1	10.	2.0	5.0
1,3-Dichlorobenzene	U	5.0	ug/L	10	1	10.	2.6	5.0
1,3-Dichloropropane	U	5.0	ug/L	10	1	10.	2.2	5.0
1,4-Dichlorobenzene	U	5.0	ug/L	10	1	10.	2.4	5.0
2,2-Dichloropropane	U	5.0	ug/L	10	1	10.	2.5	5.0
2-Butanone	U	25	ug/L	10	5	50.	13.	25.
2-Chlorotoluene	U	5.0	ug/L	10	1	10.	2.0	5.0
2-Hexanone	U	25	ug/L	10	5	50.	17.	25.
4-Chlorotoluene	U	5.0	ug/L	10	1	10.	2.6	5.0
P-Isopropyltoluene	U	5.0	ug/L	10	1	10.	2.5	5.0
4-Methyl-2-Pentanone	U	25	ug/L	10	5	50.	13.	25.
Acetone	U	25	ug/L	10	5	50.	22.	25.
Benzene	U	5.0	ug/L	10	1	10.	2.6	5.0
Bromobenzene	U	5.0	ug/L	10	1	10.	2.4	5.0
Bromoform	U	5.0	ug/L	10	1	10.	2.3	5.0
Bromomethane	U	10	ug/L	10	2	20.	4.9	10.
Carbon Disulfide	U	5.0	ug/L	10	1	10.	2.5	5.0
Carbon Tetrachloride	U	5.0	ug/L	10	1	10.	2.2	5.0
Chlorobenzene	U	5.0	ug/L	10	1	10.	2.2	5.0

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-12DL
Client ID: CHAAP-19C-LGIA-DPT06
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1483.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 22-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228859

Analysis Date: 22-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	5.0	ug/L	10	1	10.	2.1	5.0
Dibromochloromethane	U	5.0	ug/L	10	1	10.	3.0	5.0
Chloroethane	U	10	ug/L	10	2	20.	5.5	10.
Chloroform	U	5.0	ug/L	10	1	10.	3.2	5.0
Chloromethane	U	10	ug/L	10	2	20.	3.6	10.
cis-1,2-Dichloroethene	U	5.0	ug/L	10	1	10.	2.1	5.0
cis-1,3-Dichloropropene	U	5.0	ug/L	10	1	10.	1.9	5.0
Dibromomethane	U	5.0	ug/L	10	1	10.	4.6	5.0
Bromodichloromethane	U	5.0	ug/L	10	1	10.	3.3	5.0
Dichlorodifluoromethane	U	10	ug/L	10	2	20.	2.4	10.
Ethylbenzene	U	5.0	ug/L	10	1	10.	2.1	5.0
1,2-Dibromoethane	U	5.0	ug/L	10	1	10.	2.2	5.0
Hexachlorobutadiene	U	7.5	ug/L	10	1	10.	5.2	7.5
Isopropylbenzene	U	5.0	ug/L	10	1	10.	2.3	5.0
Methyl tert-butyl Ether	U	5.0	ug/L	10	1	10.	3.6	5.0
Methylene Chloride	U	25	ug/L	10	5	50.	11.	25.
m+p-Xylenes	U	10	ug/L	10	2	20.	5.9	10.
Naphthalene	U	5.0	ug/L	10	1	10.	3.0	5.0
N-Butylbenzene	U	5.0	ug/L	10	1	10.	2.3	5.0
N-Propylbenzene	U	5.0	ug/L	10	1	10.	2.6	5.0
o-Xylene	U	5.0	ug/L	10	1	10.	2.5	5.0
sec-Butylbenzene	U	5.0	ug/L	10	1	10.	2.1	5.0
Styrene	U	5.0	ug/L	10	1	10.	2.3	5.0
tert-Butylbenzene	U	5.0	ug/L	10	1	10.	3.1	5.0
Tetrachloroethene	U	5.0	ug/L	10	1	10.	4.0	5.0
Toluene	U	5.0	ug/L	10	1	10.	2.7	5.0
trans-1,2-Dichloroethene	U	5.0	ug/L	10	1	10.	2.5	5.0
trans-1,3-Dichloropropene	U	5.0	ug/L	10	1	10.	2.0	5.0
Trichloroethene	U	5.0	ug/L	10	1	10.	2.8	5.0
Trichlorofluoromethane	U	10	ug/L	10	2	20.	2.4	10.
Vinyl Chloride	U	10	ug/L	10	2	20.	2.5	10.
Dibromofluoromethane		107.	%					
1,2-Dichloroethane-d4		115.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		99.0	%					

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Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1483.d
Report Date: 23-May-2018 11:35

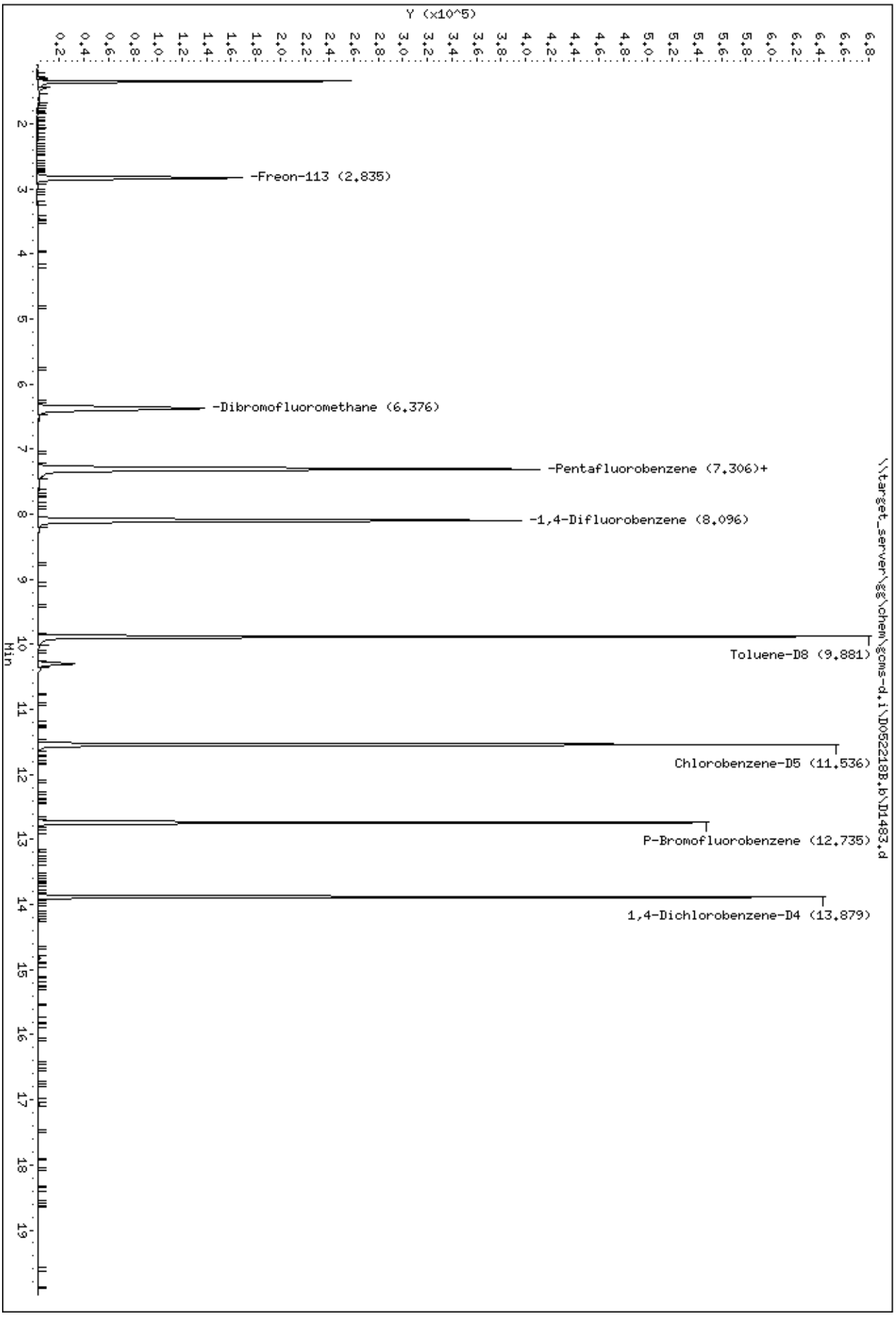
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D052218B.b\D1483.d
Lab Smp Id: SL3902-12DL Client Smp ID: HAAP-19C-LGIA-DPT06
Inj Date : 22-MAY-2018 17:00 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : SL3902-12DL
Misc Info : WG228859,WG228847-4
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-d.i\D052218B.b\D8A05(23)D.m
Meth Date : 23-May-2018 11:33 gcms-d.i Quant Type: ISTD
Cal Date : 22-MAY-2018 11:28 Cal File: D1475.d
Als bottle: 8
Dil Factor: 10.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	10.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	11 Freon-113	151	2.834	2.835	(0.387)	59949	49.4211	494	
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	141322	53.5418	53.5	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	214949	50.0000		
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	221138	57.6698	57.7	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	352532	50.0000		
$	55 Toluene-D8	98	9.881	9.881	(1.220)	441238	50.5505	50.6	
*	66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	317574	50.0000		
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	174759	49.5030	49.5	
*	91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	154528	50.0000		


Y (x10^5)
Min
-Freon-113 (2.835)
-Dibromofluoromethane (6.376)
-Pentafluorobenzene (7.306)+
-1,4-Difluorobenzene (8.096)
Toluene-D8 (9.881)
Chlorobenzene-D5 (11.536)
P-Bromofluorobenzene (12.735)
1,4-Dichlorobenzene-D4 (13.879)
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Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1483.d
Date : 22-MAY-2018 17:00
Client ID: HAAP-19C-LGIA-DPT06
Sample Info: SL3902-12DL
Instrument: gcms-d.i

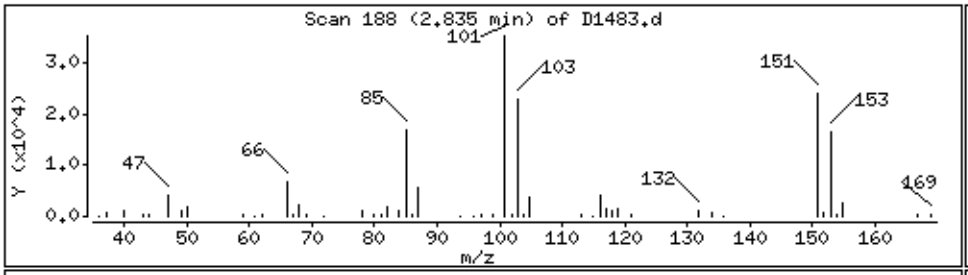
Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1483.d

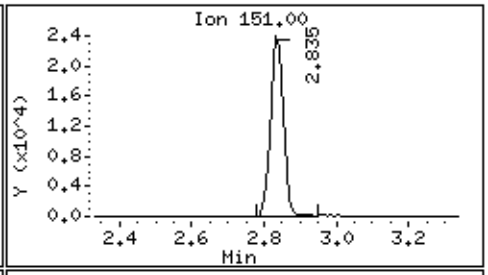
Date : 22-MAY-2018 17:00

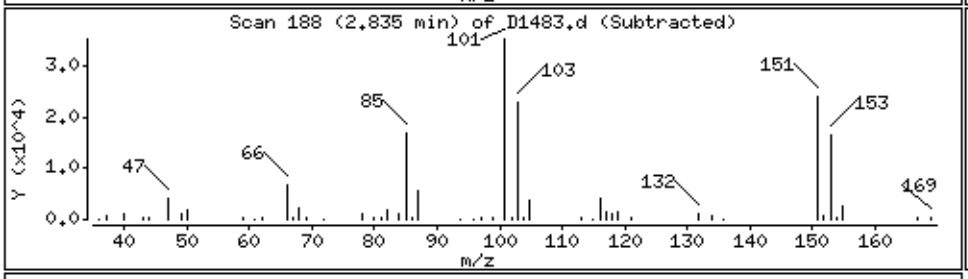
Client ID: HAAP-19C-LGIA-DPT06 Instrument: gcms-d.i

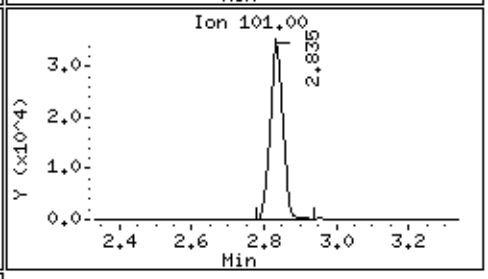
Sample Info: SL3902-12DL

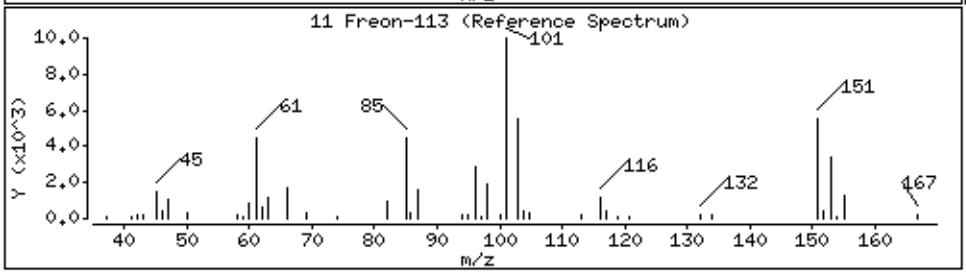
11 Freon-113 Concentration: 494 ug/l











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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-14
Client ID: CHAAP-EB-050418-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1333.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone		8.2	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-14
Client ID: CHAAP-EB-050418-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: D1333.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	J	0.39	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		106.	%					
1,2-Dichloroethane-d4		118.	%					
Toluene-d8		98.0	%					
P-Bromofluorobenzene		99.3	%					

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Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1333.d
Report Date: 21-May-2018 14:26

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051618B.b\D1333.d
Lab Smp Id: SL3902-14
Inj Date : 16-MAY-2018 15:58 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : SL3902-14
Misc Info : WG228421,WG227999-4
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-d.i\D051618B.b\D8A05(21)D.m
Meth Date : 21-May-2018 14:24 gcms-d.i Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

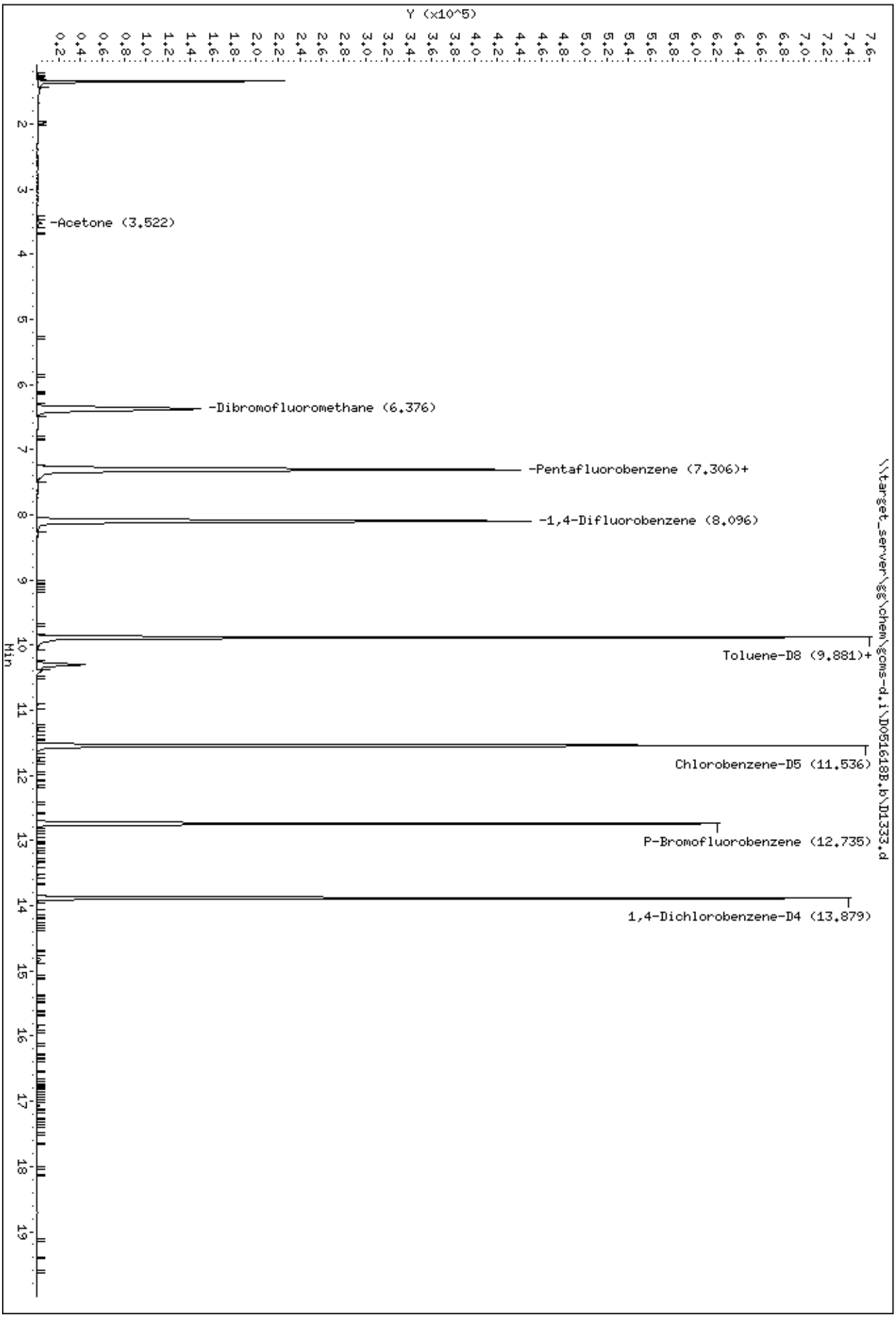
Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	15 Acetone	43	3.522	3.522	(0.482)	6487	8.24477	8.2	
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	155833	52.7934	52.8	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	251062	50.0000		
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	221097	59.2408	59.2	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	416977	50.0000		
$	55 Toluene-D8	98	9.881	9.881	(1.220)	498514	49.0237	49.0	
	57 Toluene	92	9.936	9.937	(1.227)	2445	0.38895	0.39(a)	
*	66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	380496	50.0000		
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	201471	49.6340	49.6	
*	91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	187115	50.0000		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).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Client ID:
Sample Info: SL3902-14
Instrument: gcms-d.i
Y (x10^5)
Min
-Acetone (3.522)
-Dibromofluoromethane (6.376)
-Pentafluorobenzene (7.306)+
-1,4-Difluorobenzene (8.096)
Toluene-D8 (9.881)+
Chlorobenzene-D5 (11.536)
P-Bromofluorobenzene (12.735)
1,4-Dichlorobenzene-D4 (13.879)
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Date : 16-MAY-2018 15:58

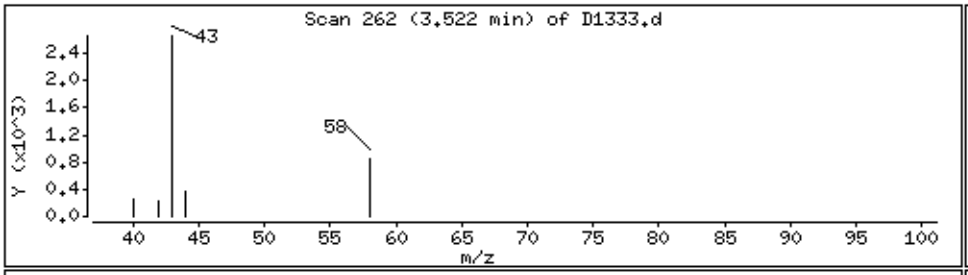
Client ID:

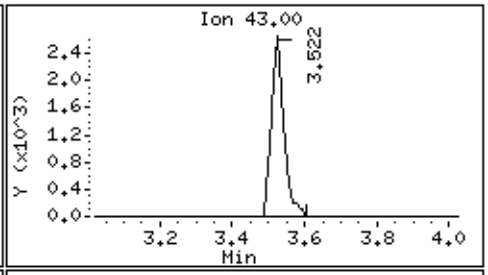
Instrument: gcms-d.i

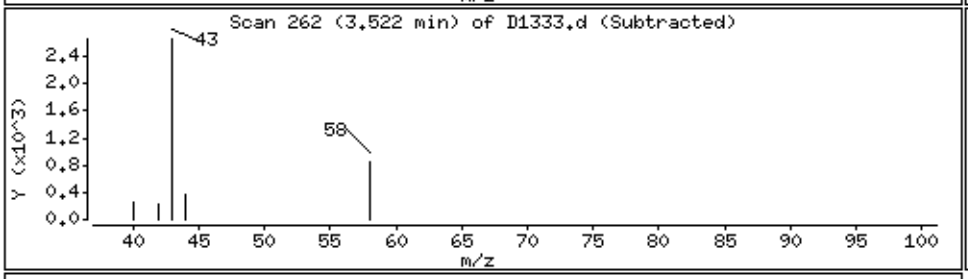
Sample Info: SL3902-14

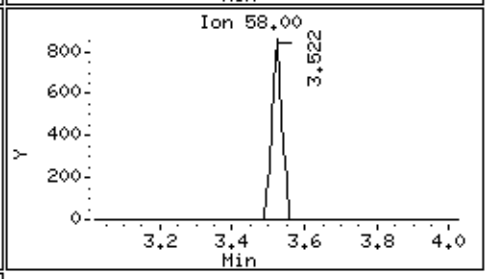
15 Acetone

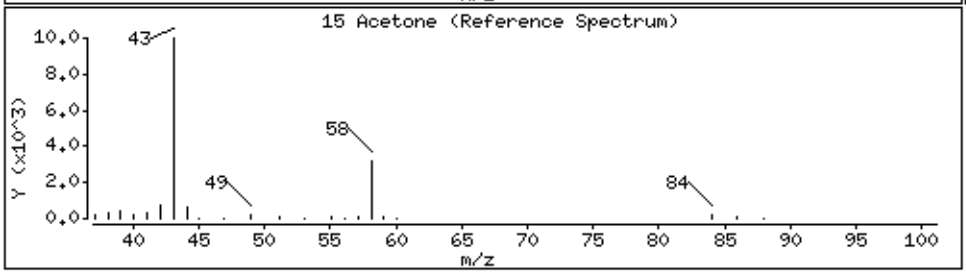
Concentration: 8.2 ug/l





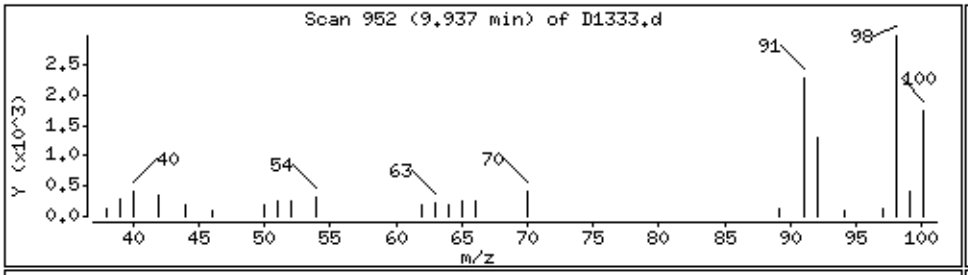


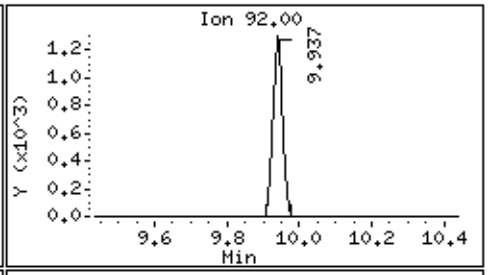


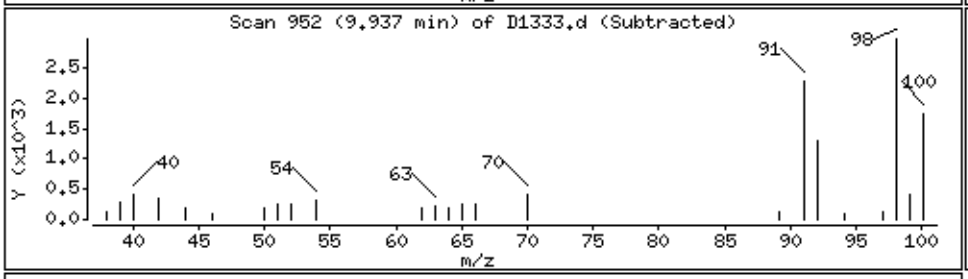


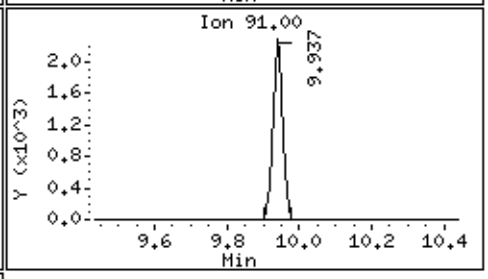
57 Toluene

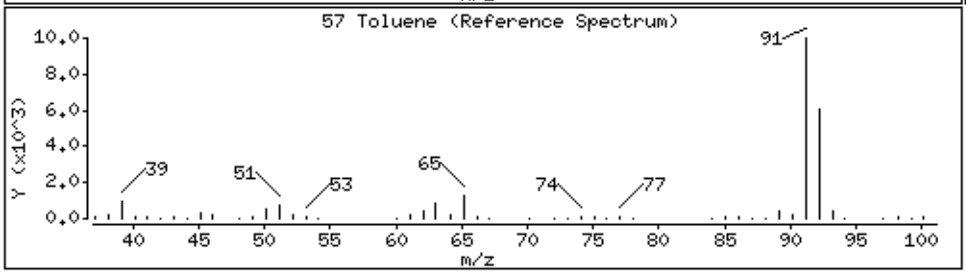
Concentration: 0.39 ug/l











Standards Data Section

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SL3902
Project : Cornhusker Army Ammunition Plant **Instrument ID:** GCMS-D
Lab File IDs : D1262.d D1261.d D1260.d D1259.d D1264.d D1263.d **Column ID:**
Calibration Date(s): 10-MAY-18 08:36 10-MAY-18 11:34

	1.0000 Level 1	5.0000 Level 2	20.0000 Level 3	50.0000 Level 4	100.0000 Level 5	150.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Dichlorodifluoromethane	0.56036	0.59912	0.62483	0.60950	0.62453	0.61277	AVG		0.60519		3.96777	15.00000	O
Chloromethane	0.71127	0.68264	0.67802	0.59645	0.63672	0.59762	AVG		0.65045		7.33830	15.00000	O
Vinyl chloride	0.46959	0.49687	0.51239	0.48848	0.56664	0.51577	AVG		0.50829		6.52407	15.00000	O
Bromomethane	0.30260	0.26788	0.26498	0.23963	0.24674	0.25289	AVG		0.26245		8.53203	15.00000	O
Chloroethane	0.23847	0.26206	0.25226	0.22731	0.18302	+++++	AVG		0.23262		13.2063	15.00000	O
Trichlorofluoromethane	0.76041	0.78015	0.80338	0.79947	0.79324	0.79504	AVG		0.78861		2.01768	15.00000	O
1,1-Dichloroethene	0.34469	0.32839	0.33955	0.33016	0.34879	0.33647	AVG		0.33801		2.36567	15.00000	O
Carbon Disulfide	0.99826	0.97103	1.06246	1.03232	1.12397	1.08371	AVG		1.04529		5.38727	15.00000	O
Freon-113	0.30122	0.29262	0.30001	0.28888	0.30027	0.29087	AVG		0.29565		1.84828	15.00000	O
Methylene Chloride	0.61362	0.55548	0.57546	0.53776	0.55687	0.54615	AVG		0.56422		4.83685	15.00000	O
Acetone	0.17382	0.14952	0.15679	0.15230	0.15231	0.15542	AVG		0.15669		5.59790	15.00000	O
trans-1,2-Dichloroethene	0.53235	0.50919	0.52822	0.49421	0.53192	0.50130	AVG		0.51620		3.25004	15.00000	O
Methyl tert-butyl ether	1.17857	1.21878	1.34740	1.37229	1.46092	1.43232	AVG		1.33505		8.53040	15.00000	O
1,1-Dichloroethane	0.96520	0.94646	0.98243	0.94643	0.99564	0.95460	AVG		0.96513		2.09263	15.00000	O
cis-1,2-Dichloroethene	0.54551	0.52174	0.56593	0.53592	0.57367	0.55414	AVG		0.54948		3.49762	15.00000	O
2,2-Dichloropropane	0.51306	0.56999	0.66803	0.68445	0.69207	0.68747	AVG		0.63584		11.9021	15.00000	O
Bromochloromethane	0.25010	0.27752	0.28551	0.27723	0.28805	0.24706	AVG		0.27091		6.58674	15.00000	O
Chloroform	1.04357	0.98020	1.02330	0.98855	1.03325	1.00142	AVG		1.01172		2.51944	15.00000	O
Carbon Tetrachloride	0.37895	0.39537	0.44336	0.44346	0.46738	0.45689	AVG		0.43090		8.22438	15.00000	O
1,1,1-Trichloroethane	0.78735	0.78923	0.84489	0.82921	0.88442	0.85946	AVG		0.83243		4.65205	15.00000	O
1,1-Dichloropropene	0.43243	0.43097	0.47757	0.45493	0.48549	0.46283	AVG		0.45737		4.94117	15.00000	O
2-Butanone	0.21658	0.23388	0.24827	0.25015	0.25362	0.25502	AVG		0.24292		6.15404	15.00000	O
Benzene	1.19928	1.19823	1.27774	1.22214	1.26810	1.23664	AVG		1.23369		2.73880	15.00000	O
1,2-Dichloroethane	0.59710	0.48606	0.51110	0.51053	0.49204	0.49744	AVG		0.51571		7.96933	15.00000	O
Trichloroethene	0.33988	0.33083	0.34805	0.33016	0.34010	0.32904	AVG		0.33634		2.24769	15.00000	O
Dibromomethane	0.21127	0.21183	0.23563	0.23446	0.23435	0.23663	AVG		0.22736		5.40021	15.00000	O
1,2-Dichloropropane	0.30665	0.31790	0.34807	0.33817	0.34525	0.34515	AVG		0.33353		5.14493	15.00000	O
Bromodichloromethane	0.43827	0.41371	0.47751	0.46910	0.48560	0.48922	AVG		0.46224		6.47849	15.00000	O
cis-1,3-dichloropropene	0.40927	0.46214	0.57360	0.58801	0.60037	0.59327	AVG		0.53778		15.1155	15.00000	W
Toluene	0.76506	0.74235	0.77132	0.74148	0.76806	0.73442	AVG		0.75378		2.13553	15.00000	O
4-methyl-2-pentanone	0.26774	0.29231	0.32726	0.32637	0.30872	0.30419	AVG		0.30443		7.36532	15.00000	O
Tetrachloroethene	0.26361	0.27417	0.27963	0.26259	0.28530	0.27048	AVG		0.27263		3.27508	15.00000	O
trans-1,3-Dichloropropene	0.35692	0.40341	0.49142	0.51215	0.51535	0.51716	AVG		0.46607		14.7546	15.00000	O
1,1,2-Trichloroethane	0.26522	0.25564	0.26624	0.27058	0.26863	0.26663	AVG		0.26549		1.95539	15.00000	O
Dibromochloromethane	0.30045	0.33006	0.38445	0.40073	0.41646	0.42129	AVG		0.37557		13.1454	15.00000	O
1,3-Dichloropropane	0.57494	0.59960	0.63036	0.61601	0.62439	0.62201	AVG		0.61122		3.37716	15.00000	O
1,2-Dibromoethane	0.29121	0.29925	0.32787	0.33305	0.33514	0.33418	AVG		0.32012		6.12463	15.00000	O

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3902
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-D
Lab File IDs : D1262.d D1261.d D1260.d D1259.d D1264.d D1263.d
Column ID:
Calibration Date(s): 10-MAY-18 08:36 10-MAY-18 11:34

2-Hexanone	0.17592	0.21419	0.24851	0.25061	0.24841	0.24695	AVG		0.23077		13.0938	15.00000	O
Chlorobenzene	0.94896	0.92088	0.94262	0.89588	0.93169	0.90524	AVG		0.92421		2.25981	15.00000	O
Ethylbenzene	1.53365	1.56731	1.65724	1.56248	1.61363	1.56803	AVG		1.58372		2.79162	15.00000	O
1,1,1,2-Tetrachloroethane	0.28742	0.30973	0.34276	0.33853	0.35068	0.34685	AVG		0.32933		7.64384	15.00000	O
m+p-Xylenes	1.11930	1.22345	1.27593	1.20484	1.22419	1.17647	AVG		1.20403		4.37803	15.00000	O
o-Xylene	1.03413	1.15571	1.29155	1.24563	1.29555	1.26663	AVG		1.21487		8.40901	15.00000	O
Styrene	0.72024	0.89322	0.98448	0.96404	0.99464	0.95801	AVG		0.91910		11.2786	15.00000	O
Bromoform	1584	9268	45859	120673	252742	364795	LNR	0.02359	0.25784		0.99968	0.99000	O
Isopropylbenzene	2.17850	2.61226	2.81289	2.72321	2.87585	2.72617	AVG		2.65481		9.41391	15.00000	O
Bromobenzene	0.75667	0.73016	0.76879	0.73878	0.76032	0.73115	AVG		0.74765		2.19406	15.00000	O
N-Propylbenzene	3.29934	3.43179	3.63045	3.44994	3.61382	3.40826	AVG		3.47227		3.66998	15.00000	O
1,1,2,2-Tetrachloroethane	0.85905	0.85152	0.88887	0.86825	0.88535	0.86536	AVG		0.86973		1.68771	15.00000	O
1,3,5-Trimethylbenzene	2.06442	2.25303	2.42670	2.33047	2.44030	2.30345	AVG		2.30306		5.96370	15.00000	O
2-Chlorotoluene	1.97476	2.02601	2.17288	2.08126	2.16779	2.05598	AVG		2.07978		3.78004	15.00000	O
1,2,3-Trichloropropane	0.75585	0.73651	0.76927	0.75552	0.74559	0.73112	AVG		0.74898		1.87631	15.00000	O
4-Chlorotoluene	2.13480	2.15903	2.31262	2.19625	2.27703	2.17938	AVG		2.20985		3.16148	15.00000	O
tert-Butylbenzene	1.84017	2.12417	2.30255	2.21466	2.31209	2.21065	AVG		2.16738		8.05122	15.00000	O
1,2,4-Trimethylbenzene	2.04309	2.33581	2.54040	2.41743	2.55079	2.42936	AVG		2.38615		7.81732	15.00000	O
P-Isopropyltoluene	1.82971	2.14413	2.36353	2.27462	2.40797	2.30971	AVG		2.22161		9.54932	15.00000	O
1,3-Dichlorobenzene	1.37362	1.31865	1.35917	1.29679	1.35357	1.29820	AVG		1.33333		2.48399	15.00000	O
1,4-Dichlorobenzene	1.50533	1.35595	1.40068	1.33379	1.38029	1.32567	AVG		1.38362		4.76389	15.00000	O
N-Butylbenzene	1.81494	1.96843	2.16719	2.10347	2.22662	2.14011	AVG		2.07013		7.33830	15.00000	O
sec-Butylbenzene	2.44542	2.68142	2.87797	2.75294	2.90061	2.74913	AVG		2.73458		6.01129	15.00000	O
1,2-Dichlorobenzene	1.21625	1.20840	1.30227	1.26609	1.31735	1.27885	AVG		1.26487		3.51843	15.00000	O
1,2-Dibromo-3-Chloropropane	0.11325	0.11876	0.13743	0.14316	0.15391	0.16240	AVG		0.13815		13.9524	15.00000	O
Hexachlorobutadiene	0.33751	0.28488	0.29239	0.27408	0.30171	0.29236	AVG		0.29715		7.33877	15.00000	O
1,2,4-Trichlorobenzene	0.68629	0.68828	0.75962	0.74157	0.80620	0.78164	AVG		0.74393		6.57699	15.00000	O
Naphthalene	5588	33699	172641	424409	938571	1336967	LNR	0.02224	1.84187		0.99939	0.99000	O
1,2,3-Trichlorobenzene	0.55970	0.58317	0.62336	0.60235	0.64596	0.63136	AVG		0.60765		5.30849	15.00000	O
Dibromofluoromethane	0.59327	0.58023	0.58757	0.58775	0.58840	0.58990	AVG		0.58785		0.72990	15.00000	
1,2-Dichloroethane-D4	0.76439	0.74846	0.73661	0.74720	0.71646	0.74655	AVG		0.74328		2.13794	15.00000	
Toluene-D8	1.21612	1.19459	1.22020	1.22926	1.22849	1.22746	AVG		1.21935		1.08305	15.00000	
P-Bromofluorobenzene	0.48224	0.47486	0.49316	0.48863	0.48436	0.49716	AVG		0.48673		1.64465	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Report Date: 18-May-2018 12:22

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa02236
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: WG228096-9
Level: LOW Operator: JSS
Data Type: MS DATA SampleType: LCS
SpikeList File: IND_CHECK.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-d.i\D051118.b\D8A05(21)D.m
Misc Info: WG228096,WG227999-4,SL3807-5

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	1	Dichlorodifluorome	50.0	70.3	140.69*	80-120
	2	Chloromethane	50.0	56.4	112.89	80-120
	3	Vinyl chloride	50.0	56.0	111.99	80-120
	4	Bromomethane	50.0	49.8	99.69	80-120
	5	Chloroethane	50.0	55.5	111.05	80-120
	6	Trichlorofluoromet	50.0	51.4	102.80	80-120
	7	Diethyl Ether	50.0	49.9	99.88	80-120
	8	Tertiary-butyl alc	250	242	96.63	80-120
	9	1,1-Dichloroethene	50.0	49.1	98.17	80-120
	10	Carbon Disulfide	50.0	49.8	99.50	80-120
	11	Freon-113	50.0	48.6	97.15	80-120
	12	Iodomethane	50.0	54.1	108.26	80-120
	13	Acrolein	250	239	95.77	80-120
	14	Methylene Chloride	50.0	47.8	95.62	80-120
	15	Acetone	50.0	47.9	95.75	80-120
	16	Isobutyl Alcohol	1000	879	87.89	80-120
	17	trans-1,2-Dichloro	50.0	48.6	97.15	80-120
	18	Allyl Chloride	50.0	51.5	102.93	80-120
	19	Methyl tert-butyl	50.0	49.1	98.18	80-120
	20	Acetonitrile	500	467	93.50	80-120
	21	Di-isopropyl ether	50.0	52.0	104.07	80-120
	22	Chloroprene	50.0	51.1	102.12	80-120
	23	Propionitrile	500	475	94.99	80-120
	24	Methacrylonitrile	500	485	96.94	80-120
	25	1,1-Dichloroethane	50.0	52.7	105.45	80-120
	26	Acrylonitrile	250	237	94.91	80-120
	27	Ethyl tertiary-but	50.0	53.5	106.97	80-120
	28	Vinyl Acetate	50.0	55.3	110.64	80-120
	29	cis-1,2-Dichloroet	50.0	49.7	99.49	80-120
M	30	1,2-Dichloroethyle	100	98.3	98.32	80-120
	31	Methyl Methacrylat	50.0	47.7	95.39	80-120
	32	2,2-Dichloropropan	50.0	57.8	115.72	80-120
	33	Bromochloromethane	50.0	51.2	102.35	80-120
	34	Chloroform	50.0	49.3	98.58	80-120
	35	Carbon Tetrachlori	50.0	51.9	103.73	80-120
	36	Tetrahydrofuran	50.0	45.9	91.83	80-120
	38	1,1,1-Trichloroeth	50.0	50.0	100.01	80-120
	39	1,1-Dichloropropen	50.0	50.9	101.85	80-120
	40	2-Butanone	50.0	47.9	95.83	80-120
	41	Benzene	50.0	50.1	100.13	80-120

Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Report Date: 18-May-2018 12:22

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	43	Cyclohexane	50.0	49.8	99.63	80-120
	44	Ethyl Methacrylate	50.0	44.8	89.64	80-120
	46	Tertiary-amyl meth	50.0	51.9	103.83	80-120
	47	1,2-Dichloroethane	50.0	47.8	95.53	80-120
	48	Trichloroethene	50.0	49.2	98.46	80-120
	50	Dibromomethane	50.0	49.5	98.92	80-120
	51	1,2-Dichloropropan	50.0	50.8	101.57	80-120
	52	Bromodichlorometha	50.0	51.6	103.18	80-120
	53	cis-1,3-dichloropr	50.0	51.4	102.79	80-120
	54	1,4-Dioxane	1000	836	83.56	80-120
	56	2-Chloroethylvinyl	50.0	49.7	99.40	80-120
	57	Toluene	50.0	49.7	99.42	80-120
	58	4-methyl-2-pentano	50.0	48.4	96.92	80-120
	59	Tetrachloroethene	50.0	50.0	100.12	80-120
	60	trans-1,3-Dichloro	50.0	54.9	109.80	80-120
	61	1,1,2-Trichloroeth	50.0	48.3	96.62	80-120
	62	Dibromochlorometha	50.0	51.8	103.71	80-120
	63	1,3-Dichloropropan	50.0	46.3	92.56	80-120
	64	1,2-Dibromoethane	50.0	48.8	97.71	80-120
	65	2-Hexanone	50.0	48.9	97.85	80-120
	67	Chlorobenzene	50.0	48.3	96.62	80-120
	152	1-Chlorohexane	50.0	0.00	0.00*	80-120
	68	Ethylbenzene	50.0	49.0	98.07	80-120
	69	1,1,1,2-Tetrachlor	50.0	50.4	100.76	80-120
M	70	Xylenes (total)	150	149	99.28	80-120
	71	m+p-Xylenes	100	98.9	98.87	80-120
	72	o-Xylene	50.0	50.0	100.10	80-120
	73	Styrene	50.0	51.2	102.34	80-120
	74	Bromoform	50.0	46.1	92.24	80-120
	75	Isopropylbenzene	50.0	53.7	107.46	80-120
	77	cis-1,4-Dichloro-2	50.0	47.4	94.92	80-120
	78	trans-1,4-Dichloro	50.0	46.1	92.30	80-120
	79	Bromobenzene	50.0	48.3	96.54	80-120
	80	N-Propylbenzene	50.0	49.8	99.62	80-120
	81	1,1,2,2-Tetrachlor	50.0	47.2	94.32	80-120
	82	1,3,5-Trimethylben	50.0	50.5	101.02	80-120
	83	2-Chlorotoluene	50.0	49.7	99.47	80-120
	84	1,2,3-Trichloropro	50.0	45.1	90.28	80-120
	85	4-Chlorotoluene	50.0	50.0	100.01	80-120
	86	tert-Butylbenzene	50.0	50.4	100.73	80-120
	87	Pentachloroethane	50.0	50.8	101.66	80-120
	88	1,2,4-Trimethylben	50.0	50.6	101.25	80-120
	89	P-Isopropyltoluene	50.0	51.7	103.39	80-120
	90	1,3-Dichlorobenzen	50.0	48.5	96.95	80-120
	92	1,4-Dichlorobenzen	50.0	47.0	94.04	80-120
	93	N-Butylbenzene	50.0	52.1	104.25	80-120
	94	sec-Butylbenzene	50.0	50.4	100.89	80-120
	95	1,2-Dichlorobenzen	50.0	48.6	97.14	80-120
	96	1,2-Dibromo-3-Chlo	50.0	47.1	94.24	80-120
	97	1,3,5-Trichloroben	50.0	50.1	100.21	80-120
	98	Hexachlorobutadien	50.0	47.3	94.67	80-120
	99	1,2,4-Trichloroben	50.0	49.8	99.60	80-120
	100	1,2,3-Trimethylben	50.0	50.7	101.32	80-120
	101	Naphthalene	50.0	43.6	87.15	80-120

Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Report Date: 18-May-2018 12:22

SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
102 1,2,3-Trichloroben	50.0	47.5	95.05	80-120
103 Methyl Acetate	50.0	43.4	86.80	80-120
104 Methylcyclohexane	50.0	51.4	102.89	80-120
M 153 Total Alkylbenzene	350	356	101.59	80-120

SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$ 37 Dibromofluorometha	50.0	50.0	100.00	68-128
$ 45 1,2-Dichloroethane	50.0	49.1	98.15	67-135
$ 55 Toluene-D8	50.0	50.5	101.05	65-128
$ 76 P-Bromofluorobenze	50.0	50.6	101.19	56-133

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1259.d
Report Date: 15-May-2018 13:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051018.b\D1259.d
Lab Smp Id: WG227999-4
Inj Date : 10-MAY-2018 08:36
Operator : JSS   Inst ID: gcms-d.i
Smp Info : WG227999-4
Misc Info :
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-d.i\D051018.b\D8A05(21)D.m
Meth Date : 10-May-2018 14:53 jsampson   Quant Type: ISTD
Cal Date : 10-MAY-2018 08:36   Cal File: D1259.d
Als bottle: 2   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	205265	50.0000	50.0	
2	Chloromethane	50	1.663	1.663	(0.227)	200868	50.0000	50.0	
3	Vinyl chloride	62	1.728	1.728	(0.236)	164507	50.0000	50.0	
4	Bromomethane	94	2.025	2.025	(0.277)	80701	50.0000	50.0	
5	Chloroethane	64	2.137	2.137	(0.292)	76551	50.0000	50.0	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	269243	50.0000	50.0	
7	Diethyl Ether	59	2.583	2.583	(0.353)	88081	50.0000	50.0	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	57486	250.000	250	
9	1,1-Dichloroethene	96	2.788	2.788	(0.381)	111190	50.0000	50.0	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	347658	50.0000	50.0	
11	Freon-113	151	2.834	2.835	(0.387)	97287	50.0000	50.0	
12	Iodomethane	142	2.936	2.937	(0.401)	117174	50.0000	50.0	
13	Acrolein	56	3.159	3.160	(0.432)	148286	250.000	250	
14	Methylene Chloride	84	3.448	3.448	(0.471)	181105	50.0000	50.0	
15	Acetone	43	3.522	3.522	(0.482)	256461	250.000	250	
16	Isobutyl Alcohol	43	7.603	7.604	(1.039)	130741	1000.00	1000	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	166437	50.0000	50.0	
18	Allyl Chloride	41	3.317	3.318	(0.454)	261537	50.0000	50.0	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	462152	50.0000	50.0	
20	Acetonitrile	39	4.135	4.136	(0.565)	47913	500.000	500	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	556590	50.0000	50.0	
22	Chloroprene	53	4.479	4.480	(0.612)	273657	50.0000	50.0	
23	Propionitrile	54	7.148	7.148	(0.977)	249358	500.000	500	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1259.d
Report Date: 15-May-2018 13:58

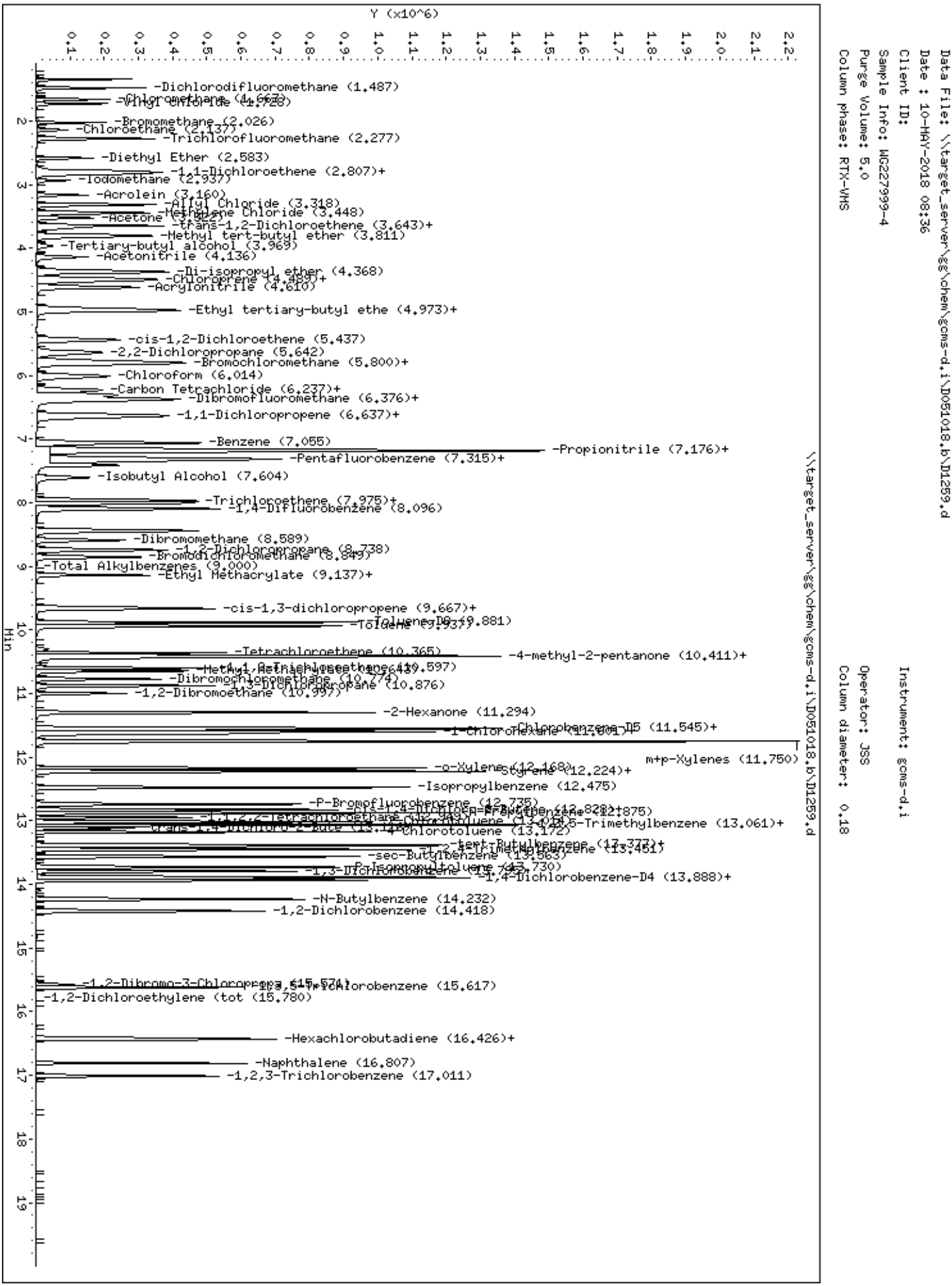
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.185	7.185	(0.982)	1135416	500.000	500	
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	318734	50.0000	50.0	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	293845	250.000	250	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	480909	50.0000	50.0	
	28	Vinyl Acetate	43	4.981	4.982	(0.615)	414877	50.0000	50.0	
	29	cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	180483	50.0000	50.0	
M	30	1,2-Dichloroethylene (total)	96				346920	50.0000	100	
	31	Methyl Methacrylate	41	10.643	10.643	(1.315)	163385	50.0000	50.0	
	32	2,2-Dichloropropane	77	5.642	5.642	(0.771)	230506	50.0000	50.0	
	33	Bromochloromethane	128	5.809	5.809	(0.794)	93363	50.0000	50.0	
	34	Chloroform	83	6.013	6.014	(0.822)	332919	50.0000	50.0	
	35	Carbon Tetrachloride	117	6.236	6.237	(0.770)	238844	50.0000	50.0	
	36	Tetrahydrofuran	42	6.302	6.302	(0.861)	254617	250.000	250	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	197939	50.0000	50.0	
	38	1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	279256	50.0000	50.0	
	39	1,1-Dichloropropene	75	6.627	6.627	(0.819)	245020	50.0000	50.0	
	40	2-Butanone	43	6.655	6.655	(0.910)	421224	250.000	250	
	41	Benzene	78	7.055	7.055	(0.871)	658237	50.0000	50.0	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	336775	50.0000		
	43	Cyclohexane	56	5.790	5.791	(0.792)	280807	50.0000	50.0	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	123543	50.0000	50.0	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	251639	50.0000	50.0	
	46	Tertiary-amyl methyl ether	73	7.333	7.334	(1.003)	393838	50.0000	50.0	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	274965	50.0000	50.0	
	48	Trichloroethene	95	8.003	8.003	(0.989)	177822	50.0000	50.0	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	538592	50.0000		
	50	Dibromomethane	93	8.588	8.589	(1.061)	126276	50.0000	50.0	
	51	1,2-Dichloropropane	63	8.737	8.738	(1.079)	182136	50.0000	50.0	
	52	Bromodichloromethane	83	8.858	8.859	(1.094)	252656	50.0000	50.0	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	316695	50.0000	50.0	
	54	1,4-Dioxane	88	9.137	9.137	(1.129)	30855	1000.00	1000	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	662072	50.0000	50.0	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	115077	50.0000	50.0	
	57	Toluene	92	9.936	9.937	(1.227)	399355	50.0000	50.0	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	878900	250.000	250	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	128749	50.0000	50.0	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	275842	50.0000	50.0	
	61	1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	145731	50.0000	50.0	
	62	Dibromochloromethane	129	10.773	10.774	(0.934)	196474	50.0000	50.0	
	63	1,3-Dichloropropane	76	10.875	10.876	(0.943)	302025	50.0000	50.0	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	179377	50.0000	50.0	
	65	2-Hexanone	43	11.294	11.294	(0.979)	614370	250.000	250	
*	66	Chlorobenzene-D5	117	11.535	11.536	(1.000)	490295	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.002)	439244	50.0000	50.0	
	152	1-Chlorohexane	91	11.600	11.601	(1.006)	766077	50.0000	(a)	
	68	Ethylbenzene	91	11.600	11.601	(1.006)	766077	50.0000	50.0	
	69	1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	165978	50.0000	50.0	
M	70	Xylenes (total)	106				1792184	150.000	150	
	71	m+p-Xylenes	91	11.749	11.750	(1.019)	1181457	100.000	100	
	72	o-Xylene	91	12.168	12.168	(1.055)	610727	50.0000	50.0	
	73	Styrene	104	12.223	12.224	(1.060)	472662	50.0000	50.0	
	74	Bromoform	173	12.233	12.233	(1.060)	120673	50.0000	50.0	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	679544	50.0000	50.0	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	263172	50.0000	50.0	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1259.d
Report Date: 15-May-2018 13:58

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
77	cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	71457	50.0000	50.0	
78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	57450	50.0000	50.0	
79	Bromobenzene	156	12.828	12.828	(0.924)	184354	50.0000	50.0	
80	N-Propylbenzene	91	12.874	12.875	(0.928)	860890	50.0000	50.0	
81	1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	216662	50.0000	50.0	
82	1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	581540	50.0000	50.0	
83	2-Chlorotoluene	91	13.014	13.014	(0.938)	519353	50.0000	50.0	
84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	188530	50.0000	50.0	
85	4-Chlorotoluene	91	13.172	13.172	(0.949)	548049	50.0000	50.0	
86	tert-Butylbenzene	119	13.376	13.377	(0.964)	552641	50.0000	50.0	
87	Pentachloroethane	117	13.395	13.395	(0.965)	134768	50.0000	50.0	
88	1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	603241	50.0000	50.0	
89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	567605	50.0000	50.0	
90	1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	323599	50.0000	50.0	
* 91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	249538	50.0000		
92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	332832	50.0000	50.0	
93	N-Butylbenzene	91	14.231	14.232	(1.025)	524896	50.0000	50.0	
94	sec-Butylbenzene	105	13.562	13.563	(0.977)	686964	50.0000	50.0	
95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	315938	50.0000	50.0	
96	1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	35723	50.0000	50.0	
97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	213333	50.0000	50.0	
98	Hexachlorobutadiene	225	16.416	16.416	(1.183)	68393	50.0000	50.0	
99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	185050	50.0000	50.0	
100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	606167	50.0000	50.0	
101	Naphthalene	128	16.806	16.806	(1.211)	424409	50.0000	50.0	
102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	150309	50.0000	50.0	
103	Methyl Acetate	43	3.689	3.690	(0.504)	151020	50.0000	50.0	
104	Methylcyclohexane	83	7.966	7.966	(1.089)	267359	50.0000	50.0	
M 153	Total Alkylbenzenes	100				4377777	50.0000	350	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1259.d
Date : 10-MAY-2018 08:36
Client ID:
Sample Info: WG227999-4
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)
-Vinyl Chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.137)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.583)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.522)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.437)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)+
-Dibromofluoromethane (6.376)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.055)
-Propionitrile (7.176)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.604)
-Trichloroethene (7.975)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.849)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.881)
-Toluene (9.937)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-1,1,2-Trichloroethene (10.597)
-Methyl Methacrylate (10.643)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-1-Chlorohexane (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-cis-1,4-Dichloro-2-Butene (12.829)+
-1,1,2,2-Tetrachloroethane (12.949)
-2-Chlorotoluene (13.016)
-1,2,5-Trimethylbenzene (13.061)+
-trans-1,4-Dichloro-2-Bute (13.146)
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.377)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.563)
-P-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.742)
-1,4-Dichlorobenzene-D4 (13.888)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropa (15.571)
-1,3,5-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)
\\target_server\gg\chem\gcms-d.i\D051018.b\D1259.d

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1260.d
Report Date: 15-May-2018 13:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051018.b\D1260.d
Lab Smp Id: WG227999-3
Inj Date : 10-MAY-2018 09:12 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG227999-3
Misc Info : WG227906,WG227571-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051018.b\D8A05(21)D.m
Meth Date : 10-May-2018 14:53 jsampson Quant Type: ISTD
Cal Date : 10-MAY-2018 09:12 Cal File: D1260.d
Als bottle: 3 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	84413	20.0000	20.2	
2	Chloromethane	50	1.663	1.663	(0.227)	91598	20.0000	21.3	
3	Vinyl chloride	62	1.737	1.728	(0.238)	69223	20.0000	20.5	
4	Bromomethane	94	2.025	2.025	(0.277)	35798	20.0000	21.0	
5	Chloroethane	64	2.146	2.137	(0.293)	34079	20.0000	21.0	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	108535	20.0000	20.0	
7	Diethyl Ether	59	2.583	2.583	(0.353)	36055	20.0000	20.2	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	24219	100.000	102	
9	1,1-Dichloroethene	96	2.788	2.788	(0.381)	45872	20.0000	20.3	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	143535	20.0000	20.3	
11	Freon-113	151	2.834	2.835	(0.387)	40531	20.0000	20.4	
12	Iodomethane	142	2.936	2.937	(0.401)	39174	20.0000	18.2	
13	Acrolein	56	3.169	3.160	(0.433)	59975	100.000	100	
14	Methylene Chloride	84	3.448	3.448	(0.471)	77743	20.0000	20.7	
15	Acetone	43	3.522	3.522	(0.482)	105910	100.000	101	
16	Isobutyl Alcohol	43	7.603	7.604	(1.039)	53334	400.000	403	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	71361	20.0000	20.7	
18	Allyl Chloride	41	3.317	3.318	(0.454)	106956	20.0000	20.2	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	182030	20.0000	19.8	
20	Acetonitrile	39	4.136	4.136	(0.565)	19176	200.000	200	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	225154	20.0000	20.1	
22	Chloroprene	53	4.479	4.480	(0.612)	112767	20.0000	20.3	
23	Propionitrile	54	7.148	7.148	(0.977)	102465	200.000	202	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1260.d
Report Date: 15-May-2018 13:58

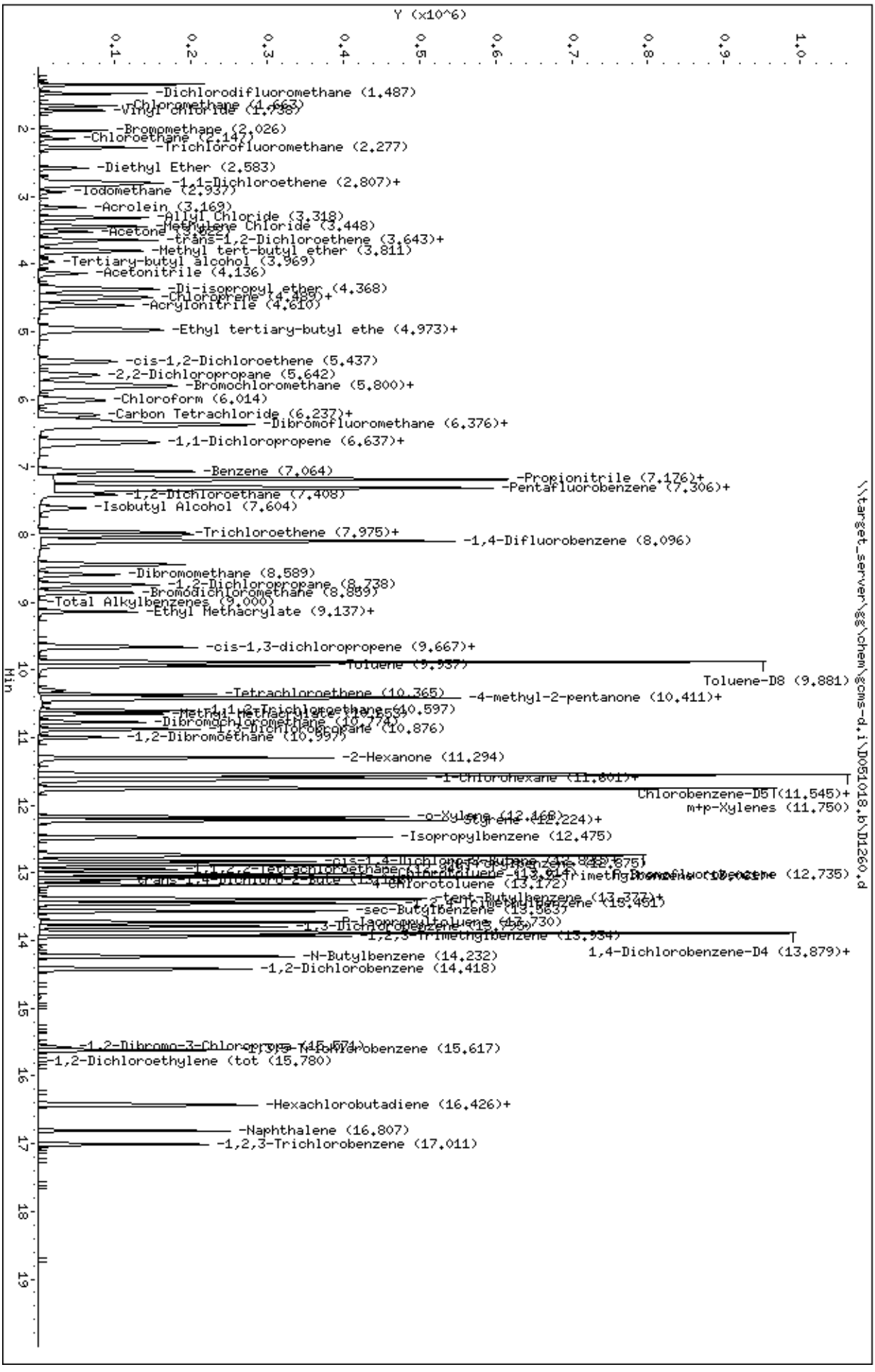
							AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	24 Methacrylonitrile	41	7.185	7.185	(0.982)	468996	200.000	203	
	25 1,1-Dichloroethane	63	4.517	4.517	(0.617)	132724	20.0000	20.4	
	26 Acrylonitrile	52	4.610	4.610	(0.630)	119222	100.000	100	
	27 Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	187993	20.0000	19.7	
	28 Vinyl Acetate	43	4.981	4.982	(0.615)	160831	20.0000	19.6	
	29 cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	76455	20.0000	20.5	
M	30 1,2-Dichloroethylene (total)	96				147816	20.0000	41.2	
	31 Methyl Methacrylate	41	10.643	10.643	(1.315)	62346	20.0000	19.4	
	32 2,2-Dichloropropane	77	5.642	5.642	(0.771)	90249	20.0000	19.8	
	33 Bromochloromethane	128	5.818	5.809	(0.795)	38571	20.0000	20.3	
	34 Chloroform	83	6.013	6.014	(0.822)	138245	20.0000	20.3	
	35 Carbon Tetrachloride	117	6.227	6.237	(0.769)	96214	20.0000	20.0	
	36 Tetrahydrofuran	42	6.311	6.302	(0.863)	101489	100.000	99.7	
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	198446	50.0000	50.0	
	38 1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	114142	20.0000	20.2	
	39 1,1-Dichloropropene	75	6.627	6.627	(0.819)	103638	20.0000	20.5	
	40 2-Butanone	43	6.655	6.655	(0.910)	167706	100.000	99.6	
	41 Benzene	78	7.064	7.055	(0.873)	277282	20.0000	20.4	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	337743	50.0000		
	43 Cyclohexane	56	5.790	5.791	(0.792)	117727	20.0000	20.4	
	44 Ethyl Methacrylate	69	9.137	9.137	(1.129)	47502	20.0000	19.5	
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	248784	50.0000	49.6	
	46 Tertiary-amyl methyl ether	73	7.343	7.334	(1.004)	152422	20.0000	19.6	
	47 1,2-Dichloroethane	62	7.408	7.408	(0.915)	110914	20.0000	20.0	
	48 Trichloroethene	95	8.003	8.003	(0.989)	75531	20.0000	20.5	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	542524	50.0000		
	50 Dibromomethane	93	8.588	8.589	(1.061)	51134	20.0000	20.0	
	51 1,2-Dichloropropane	63	8.737	8.738	(1.079)	75534	20.0000	20.3	
	52 Bromodichloromethane	83	8.858	8.859	(1.094)	103624	20.0000	20.2	
	53 cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	124476	20.0000	19.8	
	54 1,4-Dioxane	88	9.137	9.137	(1.129)	15064	400.000	438	
$	55 Toluene-D8	98	9.881	9.881	(1.220)	661986	50.0000	49.8	
	56 2-Chloroethylvinylether	63	9.639	9.639	(1.191)	45950	20.0000	19.9	
	57 Toluene	92	9.936	9.937	(1.227)	167383	20.0000	20.4	
	58 4-methyl-2-pentanone	43	10.411	10.411	(1.286)	355093	100.000	100	
	59 Tetrachloroethene	164	10.364	10.365	(0.898)	55209	20.0000	20.6	
	60 trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	106643	20.0000	19.6	
	61 1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	57777	20.0000	19.8	
	62 Dibromochloromethane	129	10.773	10.774	(0.934)	75905	20.0000	19.6	
	63 1,3-Dichloropropane	76	10.875	10.876	(0.943)	124456	20.0000	20.2	
	64 1,2-Dibromoethane	107	10.996	10.997	(1.358)	71151	20.0000	19.8	
	65 2-Hexanone	43	11.294	11.294	(0.979)	245331	100.000	99.6	
*	66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	493594	50.0000		
	67 Chlorobenzene	112	11.554	11.555	(1.002)	186108	20.0000	20.5	
	152 1-Chlorohexane	91	11.600	11.601	(1.006)	327201	20.0000	(a)	
	68 Ethylbenzene	91	11.600	11.601	(1.006)	327201	20.0000	20.6	
	69 1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	67674	20.0000	20.1	
M	70 Xylenes (total)	106				758834	60.0000	61.5	
	71 m+p-Xylenes	91	11.749	11.750	(1.019)	503834	40.0000	41.1	
	72 o-Xylene	91	12.168	12.168	(1.055)	255000	20.0000	20.4	
	73 Styrene	104	12.223	12.224	(1.060)	194373	20.0000	20.2	
	74 Bromoform	173	12.233	12.233	(1.060)	45859	20.0000	19.4	
	75 Isopropylbenzene	105	12.474	12.475	(0.899)	284164	20.0000	20.3	
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	267550	50.0000	50.2	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1260.d
Report Date: 15-May-2018 13:58

		QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
Compounds									
77	cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	26464	20.0000	19.1	
78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	21890	20.0000	19.4	
79	Bromobenzene	156	12.828	12.828	(0.924)	77665	20.0000	20.4	
80	N-Propylbenzene	91	12.874	12.875	(0.928)	366755	20.0000	20.5	
81	1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	89795	20.0000	20.2	
82	1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	245150	20.0000	20.4	
83	2-Chlorotoluene	91	13.014	13.014	(0.938)	219509	20.0000	20.4	
84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	77713	20.0000	20.2	
85	4-Chlorotoluene	91	13.172	13.172	(0.949)	233626	20.0000	20.5	
86	tert-Butylbenzene	119	13.376	13.377	(0.964)	232608	20.0000	20.4	
87	Pentachloroethane	117	13.395	13.395	(0.965)	54517	20.0000	20.0	
88	1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	256636	20.0000	20.5	
89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	238769	20.0000	20.4	
90	1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	137306	20.0000	20.5	
* 91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	252555	50.0000		
92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	141500	20.0000	20.5	
93	N-Butylbenzene	91	14.231	14.232	(1.025)	218934	20.0000	20.3	
94	sec-Butylbenzene	105	13.562	13.563	(0.977)	290738	20.0000	20.4	
95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	131558	20.0000	20.3	
96	1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	13883	20.0000	19.6	
97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	88974	20.0000	20.3	
98	Hexachlorobutadiene	225	16.416	16.416	(1.183)	29538	20.0000	20.6	
99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	76738	20.0000	20.2	
100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	252128	20.0000	20.3	
101	Naphthalene	128	16.806	16.806	(1.211)	172641	20.0000	20.0	
102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	62973	20.0000	20.3	
103	Methyl Acetate	43	3.689	3.690	(0.504)	59535	20.0000	19.8	
104	Methylcyclohexane	83	7.966	7.966	(1.089)	108970	20.0000	20.2	
M 153	Total Alkylbenzenes	100				1849590	20.0000	143	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).



Data File: \\target_server\gg\chem\gcms-d,i\D051018.b\D1260.d
Date : 10-MAY-2018 09:12
Client ID:
Sample Info: WG227999-3
Purge Volume: 5.0
Column phase: RTX-VMS

Instrument: gcms-d,i
Operator: JSS
Column diameter: 0.18

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1261.d
Report Date: 15-May-2018 13:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051018.b\D1261.d
Lab Smp Id: WG227999-2
Inj Date : 10-MAY-2018 09:47 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG227999-2
Misc Info : WG227906,WG227571-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051018.b\D8A05(21)D.m
Meth Date : 10-May-2018 14:53 jsampson Quant Type: ISTD
Cal Date : 10-MAY-2018 09:47 Cal File: D1261.d
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	20386	5.00000	4.9	
2	Chloromethane	50	1.663	1.663	(0.227)	23228	5.00000	5.2	
3	Vinyl chloride	62	1.728	1.728	(0.236)	16907	5.00000	5.0	
4	Bromomethane	94	2.025	2.025	(0.277)	9115	5.00000	5.2	
5	Chloroethane	64	2.146	2.137	(0.293)	8917	5.00000	5.3	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	26546	5.00000	4.9	
7	Diethyl Ether	59	2.583	2.583	(0.353)	8541	5.00000	4.8	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.543)	5201	25.0000	22.8	
9	1,1-Dichloroethene	96	2.788	2.788	(0.381)	11174	5.00000	4.9	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	33041	5.00000	4.8	
11	Freon-113	151	2.834	2.835	(0.387)	9957	5.00000	5.0	
12	Iodomethane	142	2.936	2.937	(0.401)	7675	5.00000	3.9	
13	Acrolein	56	3.169	3.160	(0.433)	13775	25.0000	23.6	
14	Methylene Chloride	84	3.448	3.448	(0.471)	18901	5.00000	5.0	
15	Acetone	43	3.522	3.522	(0.482)	25439	25.0000	24.4	
16	Isobutyl Alcohol	43	7.612	7.604	(1.041)	10042	100.000	82.1	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	17326	5.00000	5.0	
18	Allyl Chloride	41	3.318	3.318	(0.454)	24958	5.00000	4.8	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	41471	5.00000	4.6	
20	Acetonitrile	39	4.136	4.136	(0.565)	5235	50.0000	52.7	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	51510	5.00000	4.7	
22	Chloroprene	53	4.480	4.480	(0.612)	27045	5.00000	4.9	
23	Propionitrile	54	7.148	7.148	(0.977)	25000	50.0000	49.3	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1261.d
Report Date: 15-May-2018 13:58

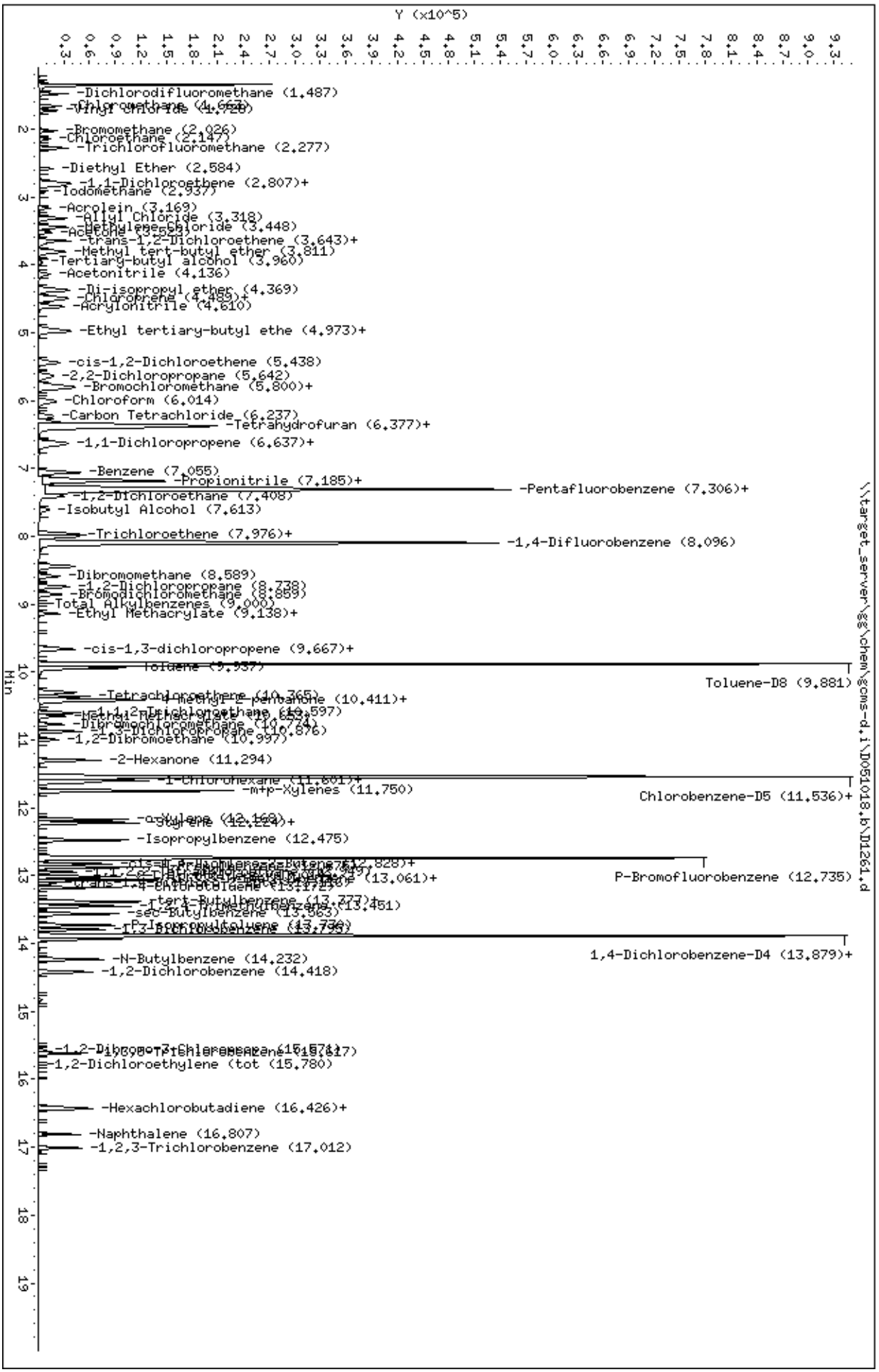
			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.185	7.185	(0.982)	113134	50.0000	49.0	
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	32205	5.00000	4.9	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	28279	25.0000	24.1	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	41609	5.00000	4.5	
	28	Vinyl Acetate	43	4.991	4.982	(0.616)	35205	5.00000	4.4(T)	
	29	cis-1,2-Dichloroethene	96	5.446	5.437	(0.745)	17753	5.00000	4.8	
M	30	1,2-Dichloroethylene (total)	96				35079	5.00000	9.8	
	31	Methyl Methacrylate	41	10.652	10.643	(1.316)	13467	5.00000	4.4	
	32	2,2-Dichloropropane	77	5.642	5.642	(0.771)	19395	5.00000	4.4	
	33	Bromochloromethane	128	5.818	5.809	(0.795)	9443	5.00000	5.0	
	34	Chloroform	83	6.014	6.014	(0.822)	33353	5.00000	4.9	
	35	Carbon Tetrachloride	117	6.237	6.237	(0.770)	21838	5.00000	4.6	
	36	Tetrahydrofuran	42	6.320	6.302	(0.864)	21606	25.0000	22.2	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	197433	50.0000	49.6	
	38	1,1,1-Trichloroethane	97	6.385	6.376	(0.873)	26855	5.00000	4.8	
	39	1,1-Dichloropropene	75	6.627	6.627	(0.819)	23804	5.00000	4.7	
	40	2-Butanone	43	6.655	6.655	(0.910)	39791	25.0000	24.0	
	41	Benzene	78	7.064	7.055	(0.873)	66183	5.00000	4.9	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	340267	50.0000		
	43	Cyclohexane	56	5.800	5.791	(0.793)	25832	5.00000	4.6	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	9701	5.00000	4.2	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	254675	50.0000	50.3	
	46	Tertiary-amyl methyl ether	73	7.343	7.334	(1.004)	34327	5.00000	4.6	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	26847	5.00000	4.8	
	48	Trichloroethene	95	8.003	8.003	(0.989)	18273	5.00000	4.9	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	552341	50.0000		
	50	Dibromomethane	93	8.589	8.589	(1.061)	11700	5.00000	4.6	
	51	1,2-Dichloropropane	63	8.747	8.738	(1.080)	17559	5.00000	4.7	
	52	Bromodichloromethane	83	8.858	8.859	(1.094)	22851	5.00000	4.6	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	25526	5.00000	4.3	
	54	1,4-Dioxane	88	9.146	9.137	(1.130)	3134	100.000	92.8	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	659819	50.0000	49.2	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	9432	5.00000	4.3	
	57	Toluene	92	9.937	9.937	(1.227)	41003	5.00000	4.9	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	80728	25.0000	23.2	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	13430	5.00000	5.0	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	22282	5.00000	4.3	
	61	1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	14120	5.00000	4.8	
	62	Dibromochloromethane	129	10.773	10.774	(0.934)	16168	5.00000	4.4	
	63	1,3-Dichloropropane	76	10.876	10.876	(0.943)	29371	5.00000	4.9	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	16529	5.00000	4.7	
	65	2-Hexanone	43	11.294	11.294	(0.979)	52460	25.0000	22.5	
*	66	Chlorobenzene-D5	117	11.536	11.536	(1.000)	489845	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.002)	45109	5.00000	5.0	
	152	1-Chlorohexane	91	11.601	11.601	(1.006)	76774	5.00000	(a)	
	68	Ethylbenzene	91	11.601	11.601	(1.006)	76774	5.00000	4.9	
	69	1,1,1,2-Tetrachloroethane	131	11.629	11.629	(1.008)	15172	5.00000	4.7	
M	70	Xylenes (total)	106				176472	15.0000	14.6	
	71	m+p-Xylenes	91	11.749	11.750	(1.019)	119860	10.0000	9.9	
	72	o-Xylene	91	12.168	12.168	(1.055)	56612	5.00000	4.7	
	73	Styrene	104	12.223	12.224	(1.060)	43754	5.00000	4.7	
	74	Bromoform	173	12.233	12.233	(1.060)	9268	5.00000	4.2	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	65417	5.00000	4.8	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	262284	50.0000	48.9	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1261.d
Report Date: 15-May-2018 13:58

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	77 cis-1,4-Dichloro-2-Butene	53	12.818	12.810	(0.924)	5618	5.00000	4.4	
	78 trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	4670	5.00000	4.4	
	79 Bromobenzene	156	12.828	12.828	(0.924)	18285	5.00000	4.9	
	80 N-Propylbenzene	91	12.874	12.875	(0.928)	85940	5.00000	4.9	
	81 1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.933)	21324	5.00000	4.9	
	82 1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	56421	5.00000	4.8	
	83 2-Chlorotoluene	91	13.014	13.014	(0.938)	50736	5.00000	4.8	
	84 1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	18444	5.00000	4.9	
	85 4-Chlorotoluene	91	13.172	13.172	(0.949)	54067	5.00000	4.8	
	86 tert-Butylbenzene	119	13.376	13.377	(0.964)	53194	5.00000	4.8	
	87 Pentachloroethane	117	13.395	13.395	(0.965)	12263	5.00000	4.7	
	88 1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	58494	5.00000	4.8	
	89 P-Isopropyltoluene	119	13.730	13.730	(0.989)	53694	5.00000	4.7	
	90 1,3-Dichlorobenzene	146	13.795	13.795	(0.994)	33022	5.00000	5.0	
*	91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	250423	50.0000		
	92 1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	33956	5.00000	5.0	
	93 N-Butylbenzene	91	14.232	14.232	(1.025)	49294	5.00000	4.7	
	94 sec-Butylbenzene	105	13.562	13.563	(0.977)	67149	5.00000	4.8	
	95 1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	30261	5.00000	4.8	
	96 1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	2974	5.00000	4.5	
	97 1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	20445	5.00000	4.8	
	98 Hexachlorobutadiene	225	16.416	16.416	(1.183)	7134	5.00000	5.0	
	99 1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	17236	5.00000	4.7	
	100 1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	60106	5.00000	4.9	
	101 Naphthalene	128	16.807	16.806	(1.211)	33699	5.00000	4.2	
	102 1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	14604	5.00000	4.8	
	103 Methyl Acetate	43	3.689	3.690	(0.504)	14486	5.00000	4.8	
	104 Methylcyclohexane	83	7.966	7.966	(1.089)	25302	5.00000	4.8	
M	153 Total Alkylbenzenes	100				424186	5.00000	33.6	

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).


Y (x10^5)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.662)
-Vinyl Chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.169)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.522)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.960)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.369)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.438)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)
-Tetrahydrofuran (6.377)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.055)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.306)+
-1,2-Dichloroethane (7.408)
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.976)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.859)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.667)+
-Toluene (9.937)
Toluene-D8 (9.881)
-Tetrachloroethene (10.365)
-4-Methyl-2-pentanone (10.411)+
-trans-1,3-Dichloropropene (10.597)
-Ethyl Methacrylate (10.652)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-1-Chlorohexane (11.601)+
-m+p-Xylenes (11.750)
Chlorobenzene-D5 (11.536)+
-o-Xylene (12.169)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
P-Bromofluorobenzene (12.735)
-trans-1,4-Chlorotoluene (13.061)+
-tert-Butylbenzene (13.277)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.563)
-p-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.795)
1,4-Dichlorobenzene-D4 (13.879)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.571)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)
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Instrument: gcms-d.i
Operator: JSS
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Report Date: 15-May-2018 13:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051018.b\D1262.d
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Inj Date : 10-MAY-2018 10:22 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG227999-1
Misc Info : WG227906,WG227571-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051018.b\D8A05(21)D.m
Meth Date : 10-May-2018 14:53 jsampson Quant Type: ISTD
Cal Date : 10-MAY-2018 10:22 Cal File: D1262.d
Als bottle: 5 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	3661	1.00000	0.94(a)	
2	Chloromethane	50	1.663	1.663	(0.227)	4647	1.00000	1.1	
3	Vinyl chloride	62	1.737	1.728	(0.238)	3068	1.00000	0.95(a)	
4	Bromomethane	94	2.025	2.025	(0.277)	1977	1.00000	1.1	
5	Chloroethane	64	2.155	2.137	(0.295)	1558	1.00000	0.97(a)	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	4968	1.00000	0.97(a)	
7	Diethyl Ether	59	2.583	2.583	(0.353)	1616	1.00000	0.96(a)	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	904	5.00000	4.3(a)	
9	1,1-Dichloroethene	96	2.788	2.788	(0.381)	2252	1.00000	1.0	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	6522	1.00000	0.98(a)	
11	Freon-113	151	2.834	2.835	(0.387)	1968	1.00000	1.0	
12	Iodomethane	142	2.936	2.937	(0.401)	1352	1.00000	0.77(Ta)	
13	Acrolein	56	3.169	3.160	(0.433)	2399	5.00000	4.4(a)	
14	Methylene Chloride	84	3.448	3.448	(0.471)	4009	1.00000	1.1(a)	
15	Acetone	43	3.522	3.522	(0.482)	5678	5.00000	5.5	
16	Isobutyl Alcohol	43	7.622	7.604	(1.042)	1874	20.0000	16.8(a)	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	3478	1.00000	1.0	
18	Allyl Chloride	41	3.317	3.318	(0.454)	4226	1.00000	0.88(a)	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	7700	1.00000	0.92(a)	
20	Acetonitrile	39	4.145	4.136	(0.567)	834	10.0000	9.0(a)	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	8582	1.00000	0.85(a)	
22	Chloroprene	53	4.489	4.480	(0.614)	4419	1.00000	0.87(a)	
23	Propionitrile	54	7.147	7.148	(0.977)	4357	10.0000	9.2(a)	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1262.d
Report Date: 15-May-2018 13:58

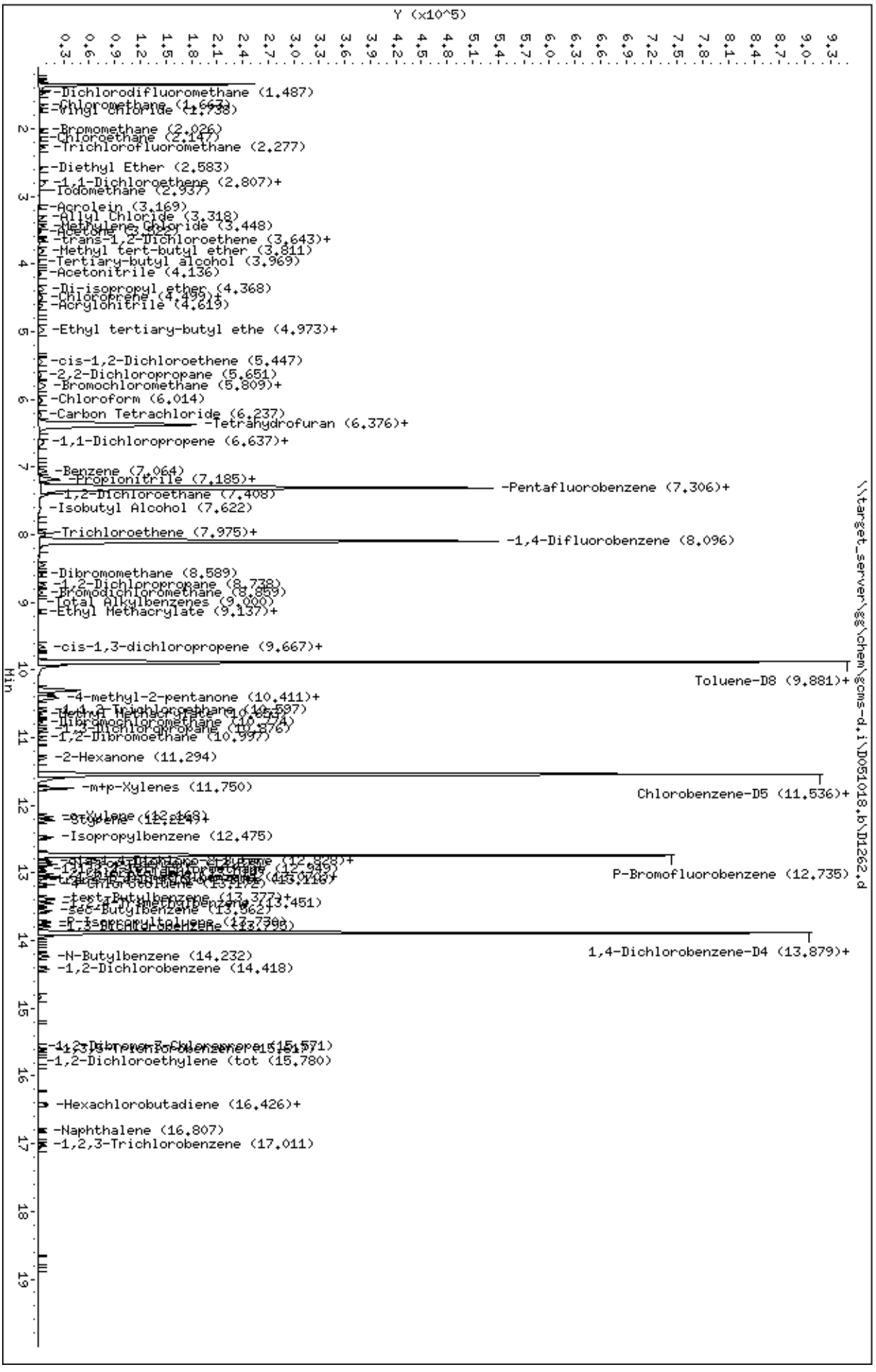
			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.185	7.185	(0.982)	19831	10.0000	9.2(a)	
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	6306	1.00000	1.0	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	4888	5.00000	4.5(a)	
	27	Ethyl tertiary-butyl ether	59	4.972	4.963	(0.680)	6769	1.00000	0.82(a)	
	28	Vinyl Acetate	43	4.991	4.982	(0.616)	6222	1.00000	0.86(a)	
	29	cis-1,2-Dichloroethene	96	5.446	5.437	(0.745)	3564	1.00000	1.0	
M	30	1,2-Dichloroethylene (total)	96				7042	1.00000	2.0	
	31	Methyl Methacrylate	41	10.652	10.643	(1.316)	1876	1.00000	0.70(a)	
	32	2,2-Dichloropropane	77	5.641	5.642	(0.771)	3352	1.00000	0.84(a)	
	33	Bromochloromethane	128	5.809	5.809	(0.794)	1634	1.00000	0.92(a)	
	34	Chloroform	83	6.013	6.014	(0.822)	6818	1.00000	1.0	
	35	Carbon Tetrachloride	117	6.227	6.237	(0.769)	4025	1.00000	0.91(a)	
	36	Tetrahydrofuran	42	6.320	6.302	(0.864)	4032	5.00000	4.5(a)	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	193802	50.0000	50.5	
	38	1,1,1-Trichloroethane	97	6.385	6.376	(0.873)	5144	1.00000	0.97(a)	
	39	1,1-Dichloropropene	75	6.627	6.627	(0.819)	4593	1.00000	0.96(a)	
	40	2-Butanone	43	6.664	6.655	(0.911)	7075	5.00000	4.6(a)	
	41	Benzene	78	7.064	7.055	(0.873)	12738	1.00000	0.98(a)	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	326667	50.0000		
	43	Cyclohexane	56	5.790	5.791	(0.792)	4742	1.00000	0.91(a)	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	1453	1.00000	0.72(a)	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	249701	50.0000	51.0	
	46	Tertiary-amyl methyl ether	73	7.343	7.334	(1.004)	6032	1.00000	0.87(a)	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	6342	1.00000	1.1	
	48	Trichloroethene	95	8.003	8.003	(0.989)	3610	1.00000	1.0	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	531069	50.0000		
	50	Dibromomethane	93	8.588	8.589	(1.061)	2244	1.00000	0.95(a)	
	51	1,2-Dichloropropane	63	8.737	8.738	(1.079)	3257	1.00000	0.94(Ta)	
	52	Bromodichloromethane	83	8.858	8.859	(1.094)	4655	1.00000	0.97(a)	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	4347	1.00000	0.80(a)	
	54	1,4-Dioxane	88	9.156	9.137	(1.131)	335	20.0000	11.7(a)	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	645843	50.0000	50.0	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	1470	1.00000	0.75(a)	
	57	Toluene	92	9.936	9.937	(1.227)	8126	1.00000	1.0	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	14219	5.00000	4.4(a)	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	2569	1.00000	0.98(a)	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	3791	1.00000	0.81(a)	
	61	1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	2817	1.00000	1.0	
	62	Dibromochloromethane	129	10.773	10.774	(0.934)	2928	1.00000	0.85(a)	
	63	1,3-Dichloropropane	76	10.875	10.876	(0.943)	5603	1.00000	0.95(a)	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	3093	1.00000	0.93(Ta)	
	65	2-Hexanone	43	11.294	11.294	(0.979)	8572	5.00000	4.0(a)	
*	66	Chlorobenzene-D5	117	11.535	11.536	(1.000)	487270	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.002)	9248	1.00000	1.0	
	152	1-Chlorohexane	91	11.600	11.601	(1.006)	14946	1.00000	(a)	
	68	Ethylbenzene	91	11.600	11.601	(1.006)	14946	1.00000	0.97(a)	
	69	1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	2801	1.00000	0.90(a)	
M	70	Xylenes (total)	106				31894	5.00000	2.7(a)	
	71	m+p-Xylenes	91	11.749	11.750	(1.019)	21816	2.00000	1.8(a)	
	72	o-Xylene	91	12.168	12.168	(1.055)	10078	1.00000	0.88(a)	
	73	Styrene	104	12.223	12.224	(1.060)	7019	1.00000	0.81(a)	
	74	Bromoform	173	12.233	12.233	(1.060)	1584	1.00000	0.78(Ta)	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	10618	1.00000	0.84(a)	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	256101	50.0000	49.7	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1262.d
Report Date: 15-May-2018 13:58

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	77 cis-1,4-Dichloro-2-Butene	53	12.818	12.810	(0.924)	853	1.00000	0.74(a)	
	78 trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	659	1.00000	0.70(a)	
	79 Bromobenzene	156	12.828	12.828	(0.924)	3688	1.00000	1.0	
	80 N-Propylbenzene	91	12.874	12.875	(0.928)	16081	1.00000	0.96(a)	
	81 1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	4187	1.00000	0.99(a)	
	82 1,3,5-Trimethylbenzene	105	13.069	13.061	(0.942)	10062	1.00000	0.91(a)	
	83 2-Chlorotoluene	91	13.014	13.014	(0.938)	9625	1.00000	0.96(a)	
	84 1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	3684	1.00000	1.0	
	85 4-Chlorotoluene	91	13.172	13.172	(0.949)	10405	1.00000	0.97(a)	
	86 tert-Butylbenzene	119	13.376	13.377	(0.964)	8969	1.00000	0.87(a)	
	87 Pentachloroethane	117	13.385	13.395	(0.964)	2228	1.00000	0.90(a)	
	88 1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	9958	1.00000	0.88(a)	
	89 P-Isopropyltoluene	119	13.729	13.730	(0.989)	8918	1.00000	0.85(a)	
	90 1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	6695	1.00000	1.0	
*	91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	243700	50.0000		
	92 1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	7337	1.00000	1.1	
	93 N-Butylbenzene	91	14.231	14.232	(1.025)	8846	1.00000	0.90(a)	
	94 sec-Butylbenzene	105	13.562	13.563	(0.977)	11919	1.00000	0.91(a)	
	95 1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	5928	1.00000	0.97(a)	
	96 1,2-Dibromo-3-Chloropropane	75	15.579	15.571	(1.123)	552	1.00000	0.88(a)	
	97 1,3,5-Trichlorobenzene	180	15.616	15.617	(1.125)	3851	1.00000	0.94(a)	
	98 Hexachlorobutadiene	225	16.416	16.416	(1.183)	1645	1.00000	1.1	
	99 1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	3345	1.00000	0.95(a)	
	100 1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	10485	1.00000	0.91(a)	
	101 Naphthalene	128	16.806	16.806	(1.211)	5588	1.00000	0.78(a)	
	102 1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	2728	1.00000	0.94(a)	
	103 Methyl Acetate	43	3.699	3.690	(0.506)	2933	1.00000	1.0	
	104 Methylcyclohexane	83	7.966	7.966	(1.089)	4349	1.00000	0.88(a)	
M	153 Total Alkylbenzenes	100				74753	1.00000	6.3(a)	

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).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Date : 10-MAY-2018 10:22
Client ID:
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Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051018.b\D1262.d
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)
-Vinyl chloride (1.738)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.583)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.169)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.522)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.499)+
-Acrylonitrile (4.619)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.447)
-2,2-Dichloropropane (5.651)
-Bromochloromethane (5.809)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)
-Tetrahydrofuran (6.376)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.064)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.306)+
-1,2-Dichloroethane (7.408)
-Isobutyl Alcohol (7.622)
-Trichloroethene (7.975)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.859)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
Toluene-D8 (9.881)+
-4-methyl-2-pentanone (10.411)+
-1,1,2-Trichloroethane (10.597)
-Dibromochloromethane (10.777)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-m+p-Xylenes (11.750)
Chlorobenzene-D5 (11.536)+
-o-Xylene (12.168)
-Styrene (12.214)+
-Isopropylbenzene (12.475)
P-Bromofluorobenzene (12.735)
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.377)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.662)+
-P-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.796)
1,4-Dichlorobenzene-D4 (13.879)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.571)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)

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Report Date: 15-May-2018 13:58

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Data file : \\target_server\gg\chem\gcms-d.i\D051018.b\D1263.d
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Operator : JSS Inst ID: gcms-d.i
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Misc Info : WG227906,WG227571-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051018.b\D8A05(21)D.m
Meth Date : 10-May-2018 14:53 jsampson Quant Type: ISTD
Cal Date : 10-MAY-2018 10:58 Cal File: D1263.d
Als bottle: 6 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	596950	150.000	153(A)	
2	Chloromethane	50	1.653	1.663	(0.226)	582189	150.000	137	
3	Vinyl chloride	62	1.728	1.728	(0.236)	502451	150.000	156(A)	
4	Bromomethane	94	2.025	2.025	(0.277)	246357	150.000	143	
5	Chloroethane	64	2.118	2.137	(0.290)	96313	150.000	60.5	
6	Trichlorofluoromethane	101	2.267	2.277	(0.310)	774508	150.000	151(A)	
7	Diethyl Ether	59	2.583	2.583	(0.353)	261729	150.000	156(A)	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	179580	750.000	837(A)	
9	1,1-Dichloroethene	96	2.778	2.788	(0.380)	327785	150.000	150(A)	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	1055732	150.000	158(A)	
11	Freon-113	151	2.825	2.835	(0.386)	283360	150.000	148	
12	Iodomethane	142	2.936	2.937	(0.401)	353876	150.000	190(A)	
13	Acrolein	56	3.159	3.160	(0.432)	429690	750.000	789(A)	
14	Methylene Chloride	84	3.448	3.448	(0.471)	532048	150.000	145	
15	Acetone	43	3.522	3.522	(0.482)	757058	750.000	740	
16	Isobutyl Alcohol	43	7.612	7.604	(1.041)	422162	3000.00	3610(A)	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	488356	150.000	146	
18	Allyl Chloride	41	3.317	3.318	(0.454)	761617	150.000	157(A)	
19	Methyl tert-butyl ether	73	3.801	3.811	(0.520)	1395338	150.000	164(A)	
20	Acetonitrile	39	4.135	4.136	(0.565)	141782	1500.00	1530(A)	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	1654918	150.000	162(A)	
22	Chloroprene	53	4.479	4.480	(0.612)	801519	150.000	156(A)	
23	Propionitrile	54	7.157	7.148	(0.978)	711090	1500.00	1510(A)	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1263.d
Report Date: 15-May-2018 13:58

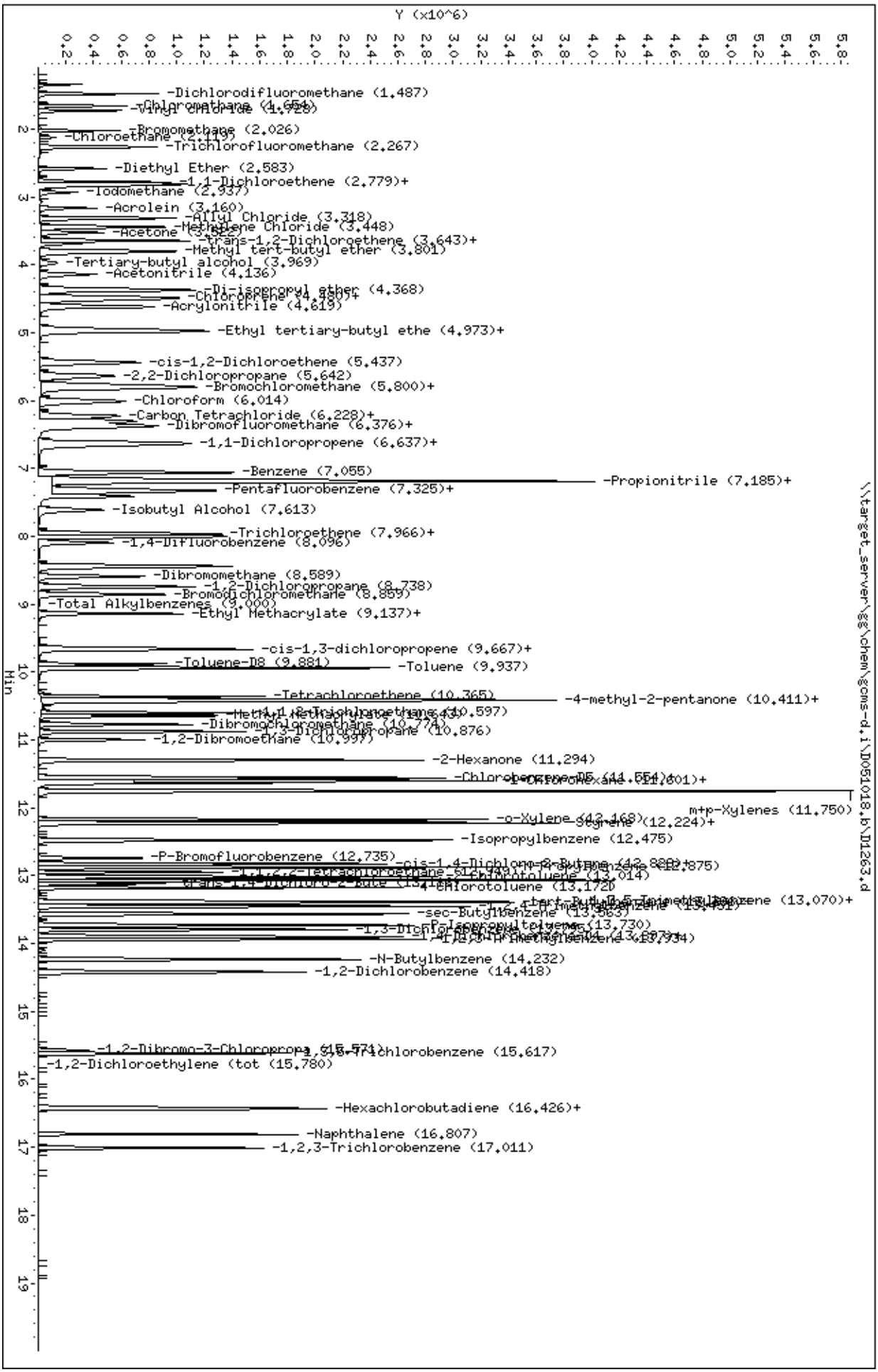
								AMOUNTS		
			QUANT SIG					CAL-AMT	ON-COL	
	Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.185	7.185	(0.982)	3043255	1500.00	1430	
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	929949	150.000	149	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	850904	750.000	778(A)	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	1441762	150.000	169(A)	
	28	Vinyl Acetate	43	4.981	4.982	(0.615)	1224109	150.000	165(A)	
	29	cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	539834	150.000	153(A)	
M	30	1,2-Dichloroethylene (total)	96				1028190	150.000	299	
	31	Methyl Methacrylate	41	10.643	10.643	(1.315)	485465	150.000	174(A)	
	32	2,2-Dichloropropane	77	5.641	5.642	(0.771)	669718	150.000	165(A)	
	33	Bromochloromethane	128	5.818	5.809	(0.795)	240684	150.000	138	
	34	Chloroform	83	6.013	6.014	(0.822)	975563	150.000	149	
	35	Carbon Tetrachloride	117	6.227	6.237	(0.769)	723663	150.000	162(A)	
	36	Tetrahydrofuran	42	6.302	6.302	(0.861)	777215	750.000	841(A)	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	191556	50.0000	50.2	
	38	1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	837274	150.000	157(A)	
	39	1,1-Dichloropropene	75	6.618	6.627	(0.817)	733072	150.000	154(A)	
	40	2-Butanone	43	6.655	6.655	(0.910)	1242200	750.000	794(A)	
	41	Benzene	78	7.055	7.055	(0.871)	1958717	150.000	151(A)	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	324727	50.0000		
	43	Cyclohexane	56	5.790	5.791	(0.792)	837903	150.000	159(A)	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	383044	150.000	181(A)	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	242426	50.0000	49.9	
	46	Tertiary-amyl methyl ether	73	7.333	7.334	(1.003)	1198082	150.000	169(A)	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	787889	150.000	143	
	48	Trichloroethene	95	8.003	8.003	(0.989)	521163	150.000	147	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	527967	50.0000		
	50	Dibromomethane	93	8.588	8.589	(1.061)	374803	150.000	157(A)	
	51	1,2-Dichloropropane	63	8.737	8.738	(1.079)	546690	150.000	156(A)	
	52	Bromodichloromethane	83	8.858	8.859	(1.094)	774878	150.000	160(A)	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	939678	150.000	169(A)	
	54	1,4-Dioxane	88	9.137	9.137	(1.129)	95377	3000.00	3280(A)	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	648059	50.0000	50.4	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	329670	150.000	166(A)	
	57	Toluene	92	9.936	9.937	(1.227)	1163242	150.000	147	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	2409037	750.000	752(A)	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	382704	150.000	150(A)	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	819126	150.000	170(A)	
	61	1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	422318	150.000	151(A)	
	62	Dibromochloromethane	129	10.773	10.774	(0.933)	596085	150.000	172(A)	
	63	1,3-Dichloropropane	76	10.875	10.876	(0.942)	880095	150.000	153(A)	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	529310	150.000	158(A)	
	65	2-Hexanone	43	11.294	11.294	(0.978)	1747072	750.000	815(A)	
*	66	Chlorobenzene-D5	117	11.545	11.536	(1.000)	471640	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.001)	1280841	150.000	147	
	152	1-Chlorohexane	91	11.600	11.601	(1.005)	2218644	150.000	(a)	
	68	Ethylbenzene	91	11.600	11.601	(1.005)	2218644	150.000	149	
	69	1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.007)	490768	150.000	160(A)	
M	70	Xylenes (total)	106				5121409	150.000	453	
	71	m+p-Xylenes	91	11.749	11.750	(1.018)	3329230	300.000	294	
	72	o-Xylene	91	12.168	12.168	(1.054)	1792179	150.000	158(A)	
	73	Styrene	104	12.223	12.224	(1.059)	1355504	150.000	159(A)	
	74	Bromoform	173	12.233	12.233	(1.060)	364795	150.000	178(A)	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	1997184	150.000	157(A)	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	262483	50.0000	51.0	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1263.d
Report Date: 15-May-2018 13:58

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	77 cis-1,4-Dichloro-2-Butene	53	12.818	12.810	(0.924)	209478	150.000	174(A)	
	78 trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	171762	150.000	175(A)	
	79 Bromobenzene	156	12.828	12.828	(0.924)	535640	150.000	147	
	80 N-Propylbenzene	91	12.874	12.875	(0.928)	2496882	150.000	148	
	81 1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	633959	150.000	150	
	82 1,3,5-Trimethylbenzene	105	13.069	13.061	(0.942)	1687500	150.000	152(A)	
	83 2-Chlorotoluene	91	13.014	13.014	(0.938)	1506202	150.000	150	
	84 1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	535615	150.000	146	
	85 4-Chlorotoluene	91	13.172	13.172	(0.949)	1596605	150.000	149	
	86 tert-Butylbenzene	119	13.376	13.377	(0.964)	1619517	150.000	155(A)	
	87 Pentachloroethane	117	13.395	13.395	(0.965)	393081	150.000	157(A)	
	88 1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	1779741	150.000	155(A)	
	89 P-Isopropyltoluene	119	13.729	13.730	(0.989)	1692088	150.000	159(A)	
	90 1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	951059	150.000	146	
*	91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	244199	50.0000		
	92 1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	971183	150.000	144	
	93 N-Butylbenzene	91	14.231	14.232	(1.025)	1567839	150.000	157(A)	
	94 sec-Butylbenzene	105	13.562	13.563	(0.977)	2014003	150.000	153(A)	
	95 1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	936882	150.000	153(A)	
	96 1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	118972	150.000	180(A)	
	97 1,3,5-Trichlorobenzene	180	15.616	15.617	(1.125)	641806	150.000	156(A)	
	98 Hexachlorobutadiene	225	16.416	16.416	(1.183)	214181	150.000	148	
	99 1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	572626	150.000	160(A)	
	100 1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	1769441	150.000	152(A)	
	101 Naphthalene	128	16.806	16.806	(1.211)	1336967	150.000	177(A)	
	102 1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	462534	150.000	158(A)	
	103 Methyl Acetate	43	3.689	3.690	(0.504)	448089	150.000	155(A)	
	104 Methylcyclohexane	83	7.966	7.966	(1.089)	779075	150.000	157(A)	
M	153 Total Alkylbenzenes	100				12857570	150.000	1080	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.


Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1263.d
Date : 10-MAY-2018 10:58
Client ID:
Sample Info: WG227999-6
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
Y (x10^6)
Min
\\target_server\gg\chem\gcms-d.i\D051018.b\D1263.d
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.654)
-Vinyl Chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.119)
-Trichlorofluoromethane (2.267)
-Diethyl Ether (2.583)
-1,1-Dichloroethene (2.779)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.522)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.801)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.490)+
-Acrylonitrile (4.619)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.437)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.228)+
-Dibromofluoromethane (6.376)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.055)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.325)+
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.966)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.859)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.881)
-Toluene (9.937)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.554)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-1,1,2,2-Tetrachloroethane (12.875)
-4-Chlorotoluene (13.014)
-1,4-Dichloro-2-Butene (13.172)
-sec-Butylbenzene (13.363)
-1,3-Dichlorobenzene (13.730)
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropa (15.571)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1264.d
Report Date: 15-May-2018 13:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051018.b\D1264.d
Lab Smp Id: WG227999-5
Inj Date : 10-MAY-2018 11:34 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG227999-5
Misc Info : WG227906,WG227571-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051018.b\D8A05(21)D.m
Meth Date : 10-May-2018 14:53 jsampson Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 7 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	428172	100.000	103	
2	Chloromethane	50	1.654	1.663	(0.226)	436527	100.000	97.9	
3	Vinyl chloride	62	1.728	1.728	(0.236)	388483	100.000	111	
4	Bromomethane	94	2.025	2.025	(0.277)	169161	100.000	94.0	
5	Chloroethane	64	2.128	2.137	(0.291)	125474	100.000	78.7	
6	Trichlorofluoromethane	101	2.267	2.277	(0.310)	543831	100.000	100	
7	Diethyl Ether	59	2.583	2.583	(0.353)	184378	100.000	103	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.543)	131872	500.000	567	
9	1,1-Dichloroethene	96	2.778	2.788	(0.380)	239123	100.000	103	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	770578	100.000	108	
11	Freon-113	151	2.825	2.835	(0.386)	205859	100.000	102	
12	Iodomethane	142	2.936	2.937	(0.401)	240672	100.000	118	
13	Acrolein	56	3.160	3.160	(0.432)	305343	500.000	525	
14	Methylene Chloride	84	3.448	3.448	(0.471)	381783	100.000	98.7	
15	Acetone	43	3.522	3.522	(0.482)	522103	500.000	486	
16	Isobutyl Alcohol	43	7.612	7.604	(1.041)	305026	2000.00	2380	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	364680	100.000	103	
18	Allyl Chloride	41	3.318	3.318	(0.454)	547847	100.000	106	
19	Methyl tert-butyl ether	73	3.801	3.811	(0.520)	1001586	100.000	109	
20	Acetonitrile	39	4.136	4.136	(0.565)	98620	1000.00	1010	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	1184032	100.000	108	
22	Chloroprene	53	4.480	4.480	(0.612)	582365	100.000	106	
23	Propionitrile	54	7.148	7.148	(0.977)	508139	1000.00	1020	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1264.d
Report Date: 15-May-2018 13:58

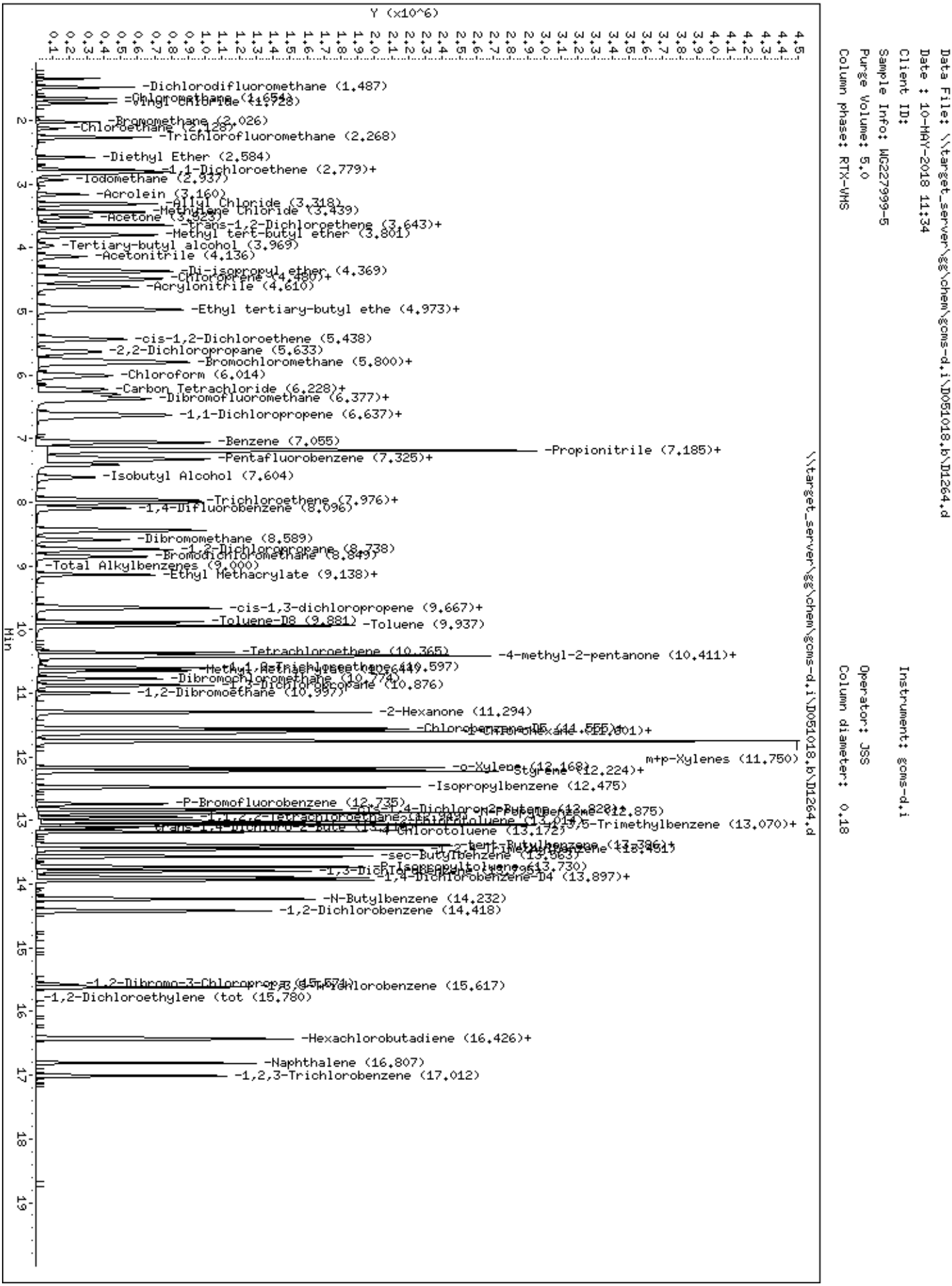
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.185	7.185	(0.982)	2174411	1000.00	976	
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	682598	100.000	103	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	605528	500.000	520	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	1039801	100.000	113	
	28	Vinyl Acetate	43	4.982	4.982	(0.615)	854749	100.000	108	
	29	cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	393301	100.000	104	
M	30	1,2-Dichloroethylene (total)	96				757981	100.000	207	
	31	Methyl Methacrylate	41	10.643	10.643	(1.315)	338402	100.000	112	
	32	2,2-Dichloropropane	77	5.642	5.642	(0.771)	474471	100.000	109	
	33	Bromochloromethane	128	5.809	5.809	(0.794)	197484	100.000	106	
	34	Chloroform	83	6.014	6.014	(0.822)	708383	100.000	102	
	35	Carbon Tetrachloride	117	6.227	6.237	(0.769)	521803	100.000	108	
	36	Tetrahydrofuran	42	6.302	6.302	(0.861)	538083	500.000	542	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	201701	50.0000	50.0	
	38	1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	606347	100.000	106	
	39	1,1-Dichloropropene	75	6.618	6.627	(0.817)	542023	100.000	106	
	40	2-Butanone	43	6.655	6.655	(0.910)	869399	500.000	522	
	41	Benzene	78	7.055	7.055	(0.871)	1415775	100.000	103	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	342793	50.0000		
	43	Cyclohexane	56	5.790	5.791	(0.792)	605366	100.000	107	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	266889	100.000	116	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	245596	50.0000	48.2	
	46	Tertiary-amyl methyl ether	73	7.334	7.334	(1.003)	850475	100.000	111	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	549340	100.000	95.4	
	48	Trichloroethene	95	8.003	8.003	(0.989)	379705	100.000	101	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	558227	50.0000		
	50	Dibromomethane	93	8.589	8.589	(1.061)	261642	100.000	103	
	51	1,2-Dichloropropane	63	8.737	8.738	(1.079)	385453	100.000	104	
	52	Bromodichloromethane	83	8.849	8.859	(1.093)	542154	100.000	105	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	670290	100.000	112	
	54	1,4-Dioxane	88	9.137	9.137	(1.129)	78968	2000.00	2450	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	685776	50.0000	50.4	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	229486	100.000	107	
	57	Toluene	92	9.937	9.937	(1.227)	857503	100.000	102	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	1723383	500.000	507	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	286199	100.000	105	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	575363	100.000	110	
	61	1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	299918	100.000	101	
	62	Dibromochloromethane	129	10.773	10.774	(0.934)	417763	100.000	111	
	63	1,3-Dichloropropane	76	10.876	10.876	(0.943)	626348	100.000	102	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	374167	100.000	105	
	65	2-Hexanone	43	11.294	11.294	(0.979)	1245942	500.000	538	
*	66	Chlorobenzene-D5	117	11.536	11.536	(1.000)	501569	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.002)	934609	100.000	101	
	152	1-Chlorohexane	91	11.601	11.601	(1.006)	1618698	100.000	(a)	
	68	Ethylbenzene	91	11.601	11.601	(1.006)	1618698	100.000	102	
	69	1,1,1,2-Tetrachloroethane	131	11.629	11.629	(1.008)	351777	100.000	106	
M	70	Xylenes (total)	106				3755689	100.000	310	
	71	m+p-Xylenes	91	11.749	11.750	(1.019)	2456069	200.000	203	
	72	o-Xylene	91	12.168	12.168	(1.055)	1299620	100.000	107	
	73	Styrene	104	12.223	12.224	(1.060)	997760	100.000	108	
	74	Bromoform	173	12.233	12.233	(1.060)	252742	100.000	113	
	75	Isopropylbenzene	105	12.475	12.475	(0.899)	1456833	100.000	108	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	270382	50.0000	49.8	

Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1264.d
Report Date: 15-May-2018 13:58

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	77	cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	139960	100.000	110	
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	112857	100.000	109	
	79	Bromobenzene	156	12.828	12.828	(0.924)	385158	100.000	102	
	80	N-Propylbenzene	91	12.874	12.875	(0.928)	1830667	100.000	104	
	81	1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.933)	448497	100.000	102	
	82	1,3,5-Trimethylbenzene	105	13.069	13.061	(0.942)	1236190	100.000	106	
	83	2-Chlorotoluene	91	13.014	13.014	(0.938)	1098148	100.000	104	
	84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	377695	100.000	99.5	
	85	4-Chlorotoluene	91	13.172	13.172	(0.949)	1153483	100.000	103	
	86	tert-Butylbenzene	119	13.376	13.377	(0.964)	1171247	100.000	107	
	87	Pentachloroethane	117	13.395	13.395	(0.965)	281051	100.000	107	
	88	1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	1292165	100.000	107	
	89	P-Isopropyltoluene	119	13.730	13.730	(0.989)	1219817	100.000	108	
	90	1,3-Dichlorobenzene	146	13.795	13.795	(0.994)	685682	100.000	102	
*	91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	253287	50.0000		
	92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	699219	100.000	99.8	
	93	N-Butylbenzene	91	14.232	14.232	(1.025)	1127949	100.000	108	
	94	sec-Butylbenzene	105	13.562	13.563	(0.977)	1469372	100.000	106	
	95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	667333	100.000	104	
	96	1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	77966	100.000	111	
	97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	457320	100.000	106	
	98	Hexachlorobutadiene	225	16.416	16.416	(1.183)	152838	100.000	102	
	99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	408398	100.000	108	
	100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	1268533	100.000	104	
	101	Naphthalene	128	16.807	16.806	(1.211)	938571	100.000	116	
	102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	327226	100.000	106	
	103	Methyl Acetate	43	3.689	3.690	(0.504)	312471	100.000	102	
	104	Methylcyclohexane	83	7.966	7.966	(1.089)	566730	100.000	107	
M	153	Total Alkylbenzenes	100				9347407	100.000	746	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Data File: \\target_server\gg\chem\gcms-d.i\D051018.b\D1264.d
Date : 10-MAY-2018 11:34
Client ID:
Sample Info: WG227999-5
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
Y (x10^6)
Min
\\target_server\gg\chem\gcms-d.i\D051018.b\D1264.d
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.654)
-Vinyl Chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.128)
-Trichlorofluoromethane (2.268)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.779)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.439)
-Acetone (3.523)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.801)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.369)
-Chloroprene (4.480)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.438)
-2,2-Dichloropropane (5.633)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.228)+
-Dibromofluoromethane (6.377)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.055)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.325)+
-Isobutyl Alcohol (7.604)
-Trichloroethene (7.976)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.849)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.881)
-Toluene (9.937)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.555)+
-1-Chlorohexane (11.801)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-cis-1,4-Dichloro-2-Butene (12.828)+
-N-Propylbenzene (12.875)
-1,1,2,2-Tetrachloroethane (13.049)
-2-Chlorotoluene (13.014)
-1,3,5-Trimethylbenzene (13.070)+
-trans-1,4-Dichloro-2-Bute (13.160)
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.386)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.563)
-P-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.795)
-1,4-Dichlorobenzene-D4 (13.897)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropa (15.571)
-1,3,5-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)

Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Report Date: 18-May-2018 12:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Lab Smp Id: WG228096-9
Inj Date : 11-MAY-2018 09:03 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228096-9,SL3807
Misc Info : WG228096,WG227999-4,SL3807-5
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051118.b\D8A05(21)D.m
Meth Date : 18-May-2018 12:21 hgould Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 2 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	290279	70.3435	70.3(R)	
2	Chloromethane	50	1.663	1.663	(0.227)	250348	56.4450	56.4	
3	Vinyl chloride	62	1.728	1.728	(0.236)	194068	55.9936	56.0	
4	Bromomethane	94	2.025	2.025	(0.277)	89198	49.8427	49.8	
5	Chloroethane	64	2.146	2.137	(0.293)	88073	55.5252	55.5	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	276404	51.4016	51.4	
7	Diethyl Ether	59	2.583	2.583	(0.353)	88785	49.9397	49.9	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	55890	241.579	242	
9	1,1-Dichloroethene	96	2.778	2.788	(0.380)	113132	49.0857	49.1	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	354605	49.7513	49.8	
11	Freon-113	151	2.834	2.835	(0.387)	97922	48.5742	48.6	
12	Iodomethane	142	2.936	2.937	(0.401)	129926	54.1316	54.1	
13	Acrolein	56	3.159	3.160	(0.432)	138380	239.437	239	
14	Methylene Chloride	84	3.447	3.448	(0.471)	183931	47.8081	47.8	
15	Acetone	43	3.522	3.522	(0.482)	51154	47.8765	47.9	
16	Isobutyl Alcohol	43	7.603	7.604	(1.039)	127110	878.937	879	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	170975	48.5751	48.6	
18	Allyl Chloride	41	3.317	3.318	(0.454)	264916	51.4643	51.5	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	446871	49.0889	49.1	
20	Acetonitrile	39	4.135	4.136	(0.565)	45430	467.491	467	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	566089	52.0364	52.0	
22	Chloroprene	53	4.479	4.480	(0.612)	278000	51.0617	51.1	
23	Propionitrile	54	7.147	7.148	(0.977)	235956	474.940	475	
24	Methacrylonitrile	41	7.185	7.185	(0.982)	1074019	484.679	485	

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Report Date: 18-May-2018 12:22

							CONCENTRATIONS		
		QUANT SIG					ON-COLUMN	FINAL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	25 1,1-Dichloroethane	63	4.517	4.517	(0.617)	346983	52.7255	52.7	
	26 Acrylonitrile	52	4.610	4.610	(0.630)	274543	237.263	237	
	27 Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	490820	53.4841	53.5	
	28 Vinyl Acetate	43	4.981	4.982	(0.615)	434924	55.3223	55.3	
	29 cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	186385	49.7455	49.7	
M	30 1,2-Dichloroethylene (total)	96				357360	98.3206	98.3	
	31 Methyl Methacrylate	41	10.643	10.643	(1.315)	159288	47.6940	47.7	
	32 2,2-Dichloropropane	77	5.641	5.642	(0.771)	250856	57.8589	57.8	
	33 Bromochloromethane	128	5.809	5.809	(0.794)	94530	51.1729	51.2	
	34 Chloroform	83	6.013	6.014	(0.822)	340025	49.2890	49.3	
	35 Carbon Tetrachloride	117	6.227	6.237	(0.769)	246702	51.8642	51.9	
	36 Tetrahydrofuran	42	6.311	6.302	(0.863)	45316	45.9171	45.9	
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	200430	50.0024	50.0	
	38 1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	283832	50.0049	50.0	
	39 1,1-Dichloropropene	75	6.618	6.627	(0.817)	257110	50.9244	50.9	
	40 2-Butanone	43	6.655	6.655	(0.910)	79368	47.9154	47.9	
	41 Benzene	78	7.054	7.055	(0.871)	681802	50.0640	50.1	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	340936	50.0000		
	43 Cyclohexane	56	5.790	5.791	(0.792)	279289	49.8153	49.8	
	44 Ethyl Methacrylate	69	9.137	9.137	(1.129)	116806	44.8203	44.8	
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	248710	49.0726	49.1	
	46 Tertiary-amyl methyl ether	73	7.333	7.334	(1.003)	395310	51.9163	51.9	
	47 1,2-Dichloroethane	62	7.408	7.408	(0.915)	271927	47.7661	47.8	
	48 Trichloroethene	95	8.003	8.003	(0.989)	182778	49.2282	49.2	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	551947	50.0000		
	50 Dibromomethane	93	8.588	8.589	(1.061)	124139	49.4612	49.5	
	51 1,2-Dichloropropane	63	8.737	8.738	(1.079)	186977	50.7837	50.8	
	52 Bromodichloromethane	83	8.849	8.859	(1.093)	263238	51.5890	51.6	
	53 cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	305103	51.3946	51.4	
	54 1,4-Dioxane	88	9.137	9.137	(1.129)	31501	835.561	836	
$	55 Toluene-D8	98	9.881	9.881	(1.220)	680110	50.5269	50.5	
	56 2-Chloroethylvinylether	63	9.639	9.639	(1.191)	113920	49.6986	49.7	
	57 Toluene	92	9.936	9.937	(1.227)	413639	49.7106	49.7	
	58 4-methyl-2-pentanone	43	10.410	10.411	(1.286)	162853	48.4592	48.4	
	59 Tetrachloroethene	164	10.364	10.365	(0.898)	137048	50.0596	50.0	
	60 trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	282459	54.9007	54.9	
	61 1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	141584	48.3100	48.3	
	62 Dibromochloromethane	129	10.773	10.774	(0.934)	195572	51.8565	51.8	
	63 1,3-Dichloropropane	76	10.875	10.876	(0.943)	284044	46.2786	46.3	
	64 1,2-Dibromoethane	107	10.996	10.997	(1.358)	172635	48.8533	48.8	
	65 2-Hexanone	43	11.294	11.294	(0.979)	113379	48.9272	48.9	
*	66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	502089	50.0000		
	67 Chlorobenzene	112	11.554	11.555	(1.002)	448359	48.3108	48.3	
	152 1-Chlorohexane	91	11.600	11.601	(1.006)	779805			(aR)
	68 Ethylbenzene	91	11.600	11.601	(1.006)	779805	49.0338	49.0	
	69 1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	166601	50.3778	50.4	
M	70 Xylenes (total)	106				1805989	148.921	149	
	71 m+p-Xylenes	91	11.749	11.750	(1.019)	1195394	98.8696	98.9	
	72 o-Xylene	91	12.167	12.168	(1.055)	610595	50.0511	50.0	
	73 Styrene	104	12.223	12.224	(1.060)	472288	51.1719	51.2	
	74 Bromoform	173	12.233	12.233	(1.060)	116357	46.1186	46.1	
	75 Isopropylbenzene	105	12.474	12.475	(0.899)	720827	53.7298	53.7	
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	271852	50.5958	50.6	
	77 cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	67240	47.4576	47.4	

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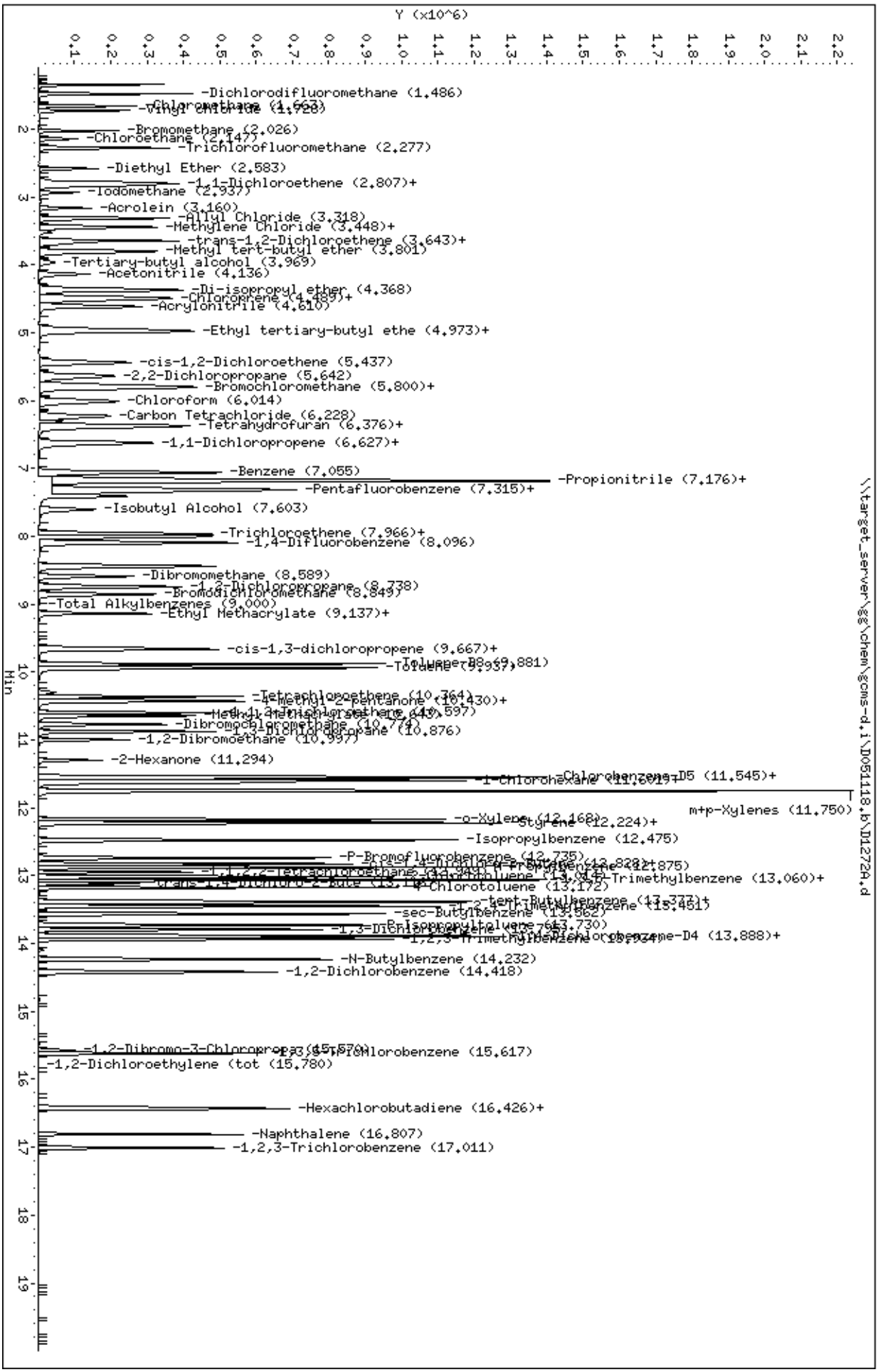
Report Date: 18-May-2018 12:22

			QUANT SIG					CONCENTRATIONS		
								ON-COLUMN	FINAL	
	Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	53183	46.1480	46.1	
	79	Bromobenzene	156	12.828	12.828	(0.924)	182376	48.2714	48.3	
	80	N-Propylbenzene	91	12.874	12.875	(0.928)	873990	49.8094	49.8	
	81	1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	207265	47.1583	47.2	
	82	1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	587855	50.5107	50.5	
	83	2-Chlorotoluene	91	13.013	13.014	(0.938)	522710	49.7349	49.7	
	84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	170845	45.1391	45.1	
	85	4-Chlorotoluene	91	13.172	13.172	(0.949)	558434	50.0065	50.0	
	86	tert-Butylbenzene	119	13.376	13.377	(0.964)	551640	50.3661	50.4	
	87	Pentachloroethane	117	13.395	13.395	(0.965)	133479	50.8300	50.8	
	88	1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	610413	50.6227	50.6	
	89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	580336	51.6927	51.7	
	90	1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	326603	48.4730	48.5	
*	91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	252669	50.0000		
	92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	328765	47.0205	47.0	
	93	N-Butylbenzene	91	14.231	14.232	(1.025)	545299	52.1262	52.1	
	94	sec-Butylbenzene	105	13.562	13.563	(0.977)	697075	50.4437	50.4	
	95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	310464	48.5718	48.6	
	96	1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	32894	47.1176	47.1	
	97	1,3,5-Trichlorobenzene	180	15.616	15.617	(1.125)	216110	50.1058	50.1	
	98	Hexachlorobutadiene	225	16.416	16.416	(1.183)	71083	47.3372	47.3	
	99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	187210	49.7982	49.8	
	100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	614250	50.6617	50.7	
	101	Naphthalene	128	16.806	16.806	(1.211)	395237	43.5753	43.6	
	102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	145941	47.5271	47.5	
	103	Methyl Acetate	43	3.689	3.690	(0.504)	132158	43.3998	43.4	
	104	Methylcyclohexane	83	7.966	7.966	(1.089)	271041	51.4435	51.4	
M	153	Total Alkylbenzenes	100				4446608	355.571	356	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.


Data File: \\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Date : 11-MAY-2018 09:03
Client ID:
Sample Info: WG228096-9,SL3807
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051118.b\D1272A.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.486)
-Chloromethane (1.663)
-Vinyl chloride (1.726)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.583)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)+
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.801)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.437)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.228)
-Tetrahydrofuran (6.376)+
-1,1-Dichloropropene (6.627)+
-Benzene (7.055)
-Propionitrile (7.176)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.603)
-Trichloroethene (7.966)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.849)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
-Toluene (9.937)
-Tetrachloroethene (10.764)
-4-Methyl-2-pentanone (10.430)+
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-1-Chlorohexane (11.601)+
Chlorobenzene-D5 (11.545)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
4-Chlorotoluene (13.172)
-sec-Butylbenzene (13.562)
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3902
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-D
Lab File IDs : D1354.d D1353.d D1352.d D1351.d D1356.d D1355.d
Column ID:
Calibration Date(s): 17-MAY-18 08:11, 17-MAY-18 11:09

	1.0000 Level 1	5.0000 Level 2	20.0000 Level 3	50.0000 Level 4	100.0000 Level 5	150.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Dichlorodifluoromethane	0.79300	0.96937	0.89845	0.84663	0.87321	0.84698	AVG		0.87127		6.82672	15.00000	O
Chloromethane	0.87951	0.93660	0.78647	0.67068	0.78352	0.73924	AVG		0.79934		11.9799(	15.00000	O
Vinyl chloride	0.59946	0.71193	0.60441	0.56433	0.67146	0.60581	AVG		0.62623		8.69713	15.00000	O
Bromomethane	0.34697	0.35727	0.29267	0.28194	0.30939	0.31305	AVG		0.31688		9.37706	15.00000	O
Chloroethane	0.28651	0.34838	0.28906	0.27081	0.26281	+++++	AVG		0.29152		11.52707	15.00000	O
Trichlorofluoromethane	0.91981	1.10400	0.98417	0.97784	0.96130	0.95399	AVG		0.98352		6.42620	15.00000	O
1,1-Dichloroethene	0.42112	0.38787	0.35145	0.33495	0.35738	0.34565	AVG		0.36640		8.78477	15.00000	O
Carbon Disulfide	1.19739	1.17482	1.14792	1.14066	1.23036	1.19632	AVG		1.18124		2.85825	15.00000	O
Freon-113	0.28290	0.28850	0.31279	0.30554	0.31667	0.29672	AVG		0.30052		4.47874	15.00000	O
Methylene Chloride	0.64204	0.56279	0.52137	0.51621	0.55275	0.53602	AVG		0.55520		8.30821	15.00000	O
Acetone	0.18214	0.16029	0.16150	0.15713	0.16145	0.15245	AVG		0.16249		6.29144	15.00000	O
trans-1,2-Dichloroethene	0.54755	0.52619	0.47789	0.48204	0.51207	0.49236	AVG		0.50635		5.38735	15.00000	O
Methyl tert-butyl ether	1.16697	1.18583	1.26471	1.32111	1.51659	1.44392	AVG		1.31652		10.6562	15.00000	O
1,1-Dichloroethane	1.09130	1.04721	0.97407	0.98752	1.00826	0.99941	AVG		1.01796		4.28776	15.00000	O
cis-1,2-Dichloroethene	0.53482	0.53653	0.50982	0.52108	0.56060	0.55343	AVG		0.53605		3.55774	15.00000	O
2,2-Dichloropropane	0.66562	0.69608	0.69487	0.73014	0.72998	0.75752	AVG		0.71237		4.62243	15.00000	O
Bromochloromethane	0.25286	0.26960	0.27284	0.28086	0.28381	0.24986	AVG		0.26831		5.26824	15.00000	O
Chloroform	1.12020	1.10289	1.01132	1.03934	1.06013	1.06097	AVG		1.06581		3.76668	15.00000	O
Carbon Tetrachloride	0.49064	0.48949	0.45439	0.46014	0.47686	0.47640	AVG		0.47465		3.13209	15.00000	O
1,1,1-Trichloroethane	0.98350	0.94493	0.87313	0.88751	0.90492	0.92163	AVG		0.91927		4.38740	15.00000	O
1,1-Dichloropropene	0.48565	0.47329	0.46296	0.45351	0.47731	0.47490	AVG		0.47127		2.41038	15.00000	O
2-Butanone	0.23016	0.22526	0.24155	0.24293	0.25944	0.24986	AVG		0.24154		5.19133	15.00000	O
Benzene	1.22980	1.24322	1.18890	1.19028	1.24833	1.22889	AVG		1.22157		2.11969	15.00000	O
1,2-Dichloroethane	0.70747	0.56001	0.54504	0.54335	0.53100	0.54687	AVG		0.57229		11.6841	15.00000	O
Trichloroethene	0.38821	0.36285	0.34254	0.33584	0.33714	0.33844	AVG		0.35084		5.94675	15.00000	O
Dibromomethane	0.24117	0.21822	0.22484	0.23265	0.23501	0.23806	AVG		0.23166		3.71633	15.00000	O
1,2-Dichloropropane	0.34122	0.33334	0.33064	0.33358	0.34385	0.34980	AVG		0.33874		2.19378	15.00000	O
Bromodichloromethane	0.47390	0.45184	0.46415	0.48054	0.49438	0.51487	AVG		0.47995		4.66274	15.00000	O
cis-1,3-dichloropropene	3462	19790	94112	254013	569134	818228	LNR	0.02753	0.61582		0.99953	0.99000	O
Toluene	0.80764	0.79276	0.72461	0.72060	0.74326	0.74749	AVG		0.75606		4.76571	15.00000	O
4-methyl-2-pentanone	0.28581	0.28808	0.31418	0.32311	0.32450	0.31184	AVG		0.30792		5.51649	15.00000	O
Tetrachloroethene	0.28430	0.28535	0.25823	0.25531	0.26524	0.26074	AVG		0.26820		4.95681	15.00000	O
trans-1,3-Dichloropropene	0.39878	0.42294	0.48694	0.52254	0.53464	0.54818	AVG		0.48567		12.7434(	15.00000	O
1,1,2-Trichloroethane	0.27368	0.25744	0.25222	0.26012	0.26672	0.26458	AVG		0.26246		2.87222	15.00000	O
Dibromochloromethane	0.32331	0.33019	0.36518	0.39210	0.41232	0.41604	AVG		0.37319		10.8033(	15.00000	O
1,3-Dichloropropane	0.61095	0.56780	0.57950	0.60235	0.62039	0.60928	AVG		0.59838		3.39929	15.00000	O
1,2-Dibromoethane	0.30858	0.30034	0.31266	0.32110	0.33020	0.33039	AVG		0.31721		3.82863	15.00000	O

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3902
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-D
Lab File IDs : D1354.d D1353.d D1352.d D1351.d D1356.d D1355.d
Column ID:
Calibration Date(s): 17-MAY-18 08:11 17-MAY-18 11:09

2-Hexanone	0.17289	0.19756	0.24019	0.24508	0.25502	0.24329	AVG		0.22567		14.4747	15.00000	O
Chlorobenzene	0.97633	0.94691	0.88767	0.88684	0.90220	0.90412	AVG		0.91734		3.95117	15.00000	O
Ethylbenzene	1.68401	1.68635	1.57756	1.59542	1.60838	1.60141	AVG		1.62552		2.91192	15.00000	O
1,1,1,2-Tetrachloroethane	0.32125	0.31902	0.32734	0.33974	0.34723	0.35269	AVG		0.33454		4.19921	15.00000	O
m+p-Xylenes	1.17012	1.27771	1.21928	1.23994	1.23071	1.23192	AVG		1.22828		2.83471	15.00000	O
o-Xylene	0.96684	1.13413	1.21107	1.26099	1.29652	1.29786	AVG		1.19457		10.6720	15.00000	O
Styrene	0.69459	0.84351	0.90970	0.94140	0.97173	0.96555	AVG		0.88775		11.8925	15.00000	O
Bromoform	0.17128	0.18815	0.21190	0.23508	0.24776	0.24673	AVG		0.21682		14.7388	15.00000	O
Isopropylbenzene	2.35854	2.64724	2.71037	2.72357	2.84112	2.81203	AVG		2.68214		6.47041	15.00000	O
Bromobenzene	0.77815	0.72615	0.72712	0.71078	0.73756	0.72533	AVG		0.73418		3.15644	15.00000	O
N-Propylbenzene	3.75081	3.75523	3.63655	3.49811	3.63678	3.56998	AVG		3.64124		2.76286	15.00000	O
1,1,2,2-Tetrachloroethane	0.90272	0.79783	0.83249	0.81785	0.85386	0.82404	AVG		0.83813		4.36243	15.00000	O
1,3,5-Trimethylbenzene	1.99843	2.33288	2.39228	2.38601	2.45763	2.41413	AVG		2.33023		7.18937	15.00000	O
2-Chlorotoluene	2.11454	2.13753	2.08486	2.09895	2.17156	2.15814	AVG		2.12760		1.59825	15.00000	O
1,2,3-Trichloropropane	0.77713	0.74487	0.74435	0.73642	0.75598	0.72448	AVG		0.74720		2.40786	15.00000	O
4-Chlorotoluene	2.26474	2.29449	2.24492	2.25838	2.31067	2.29470	AVG		2.27798		1.12314	15.00000	O
tert-Butylbenzene	1.80056	2.19069	2.26715	2.27609	2.36769	2.33943	AVG		2.20694		9.44420	15.00000	O
1,2,4-Trimethylbenzene	2.01253	2.41385	2.46926	2.47024	2.54274	2.52992	AVG		2.40642		8.24986	15.00000	O
P-Isopropyltoluene	1.96665	2.27913	2.37329	2.36184	2.48102	2.46890	AVG		2.32180		8.15369	15.00000	O
1,3-Dichlorobenzene	1.38765	1.34731	1.29022	1.28388	1.32804	1.31329	AVG		1.32506		2.91700	15.00000	O
1,4-Dichlorobenzene	1.55322	1.39429	1.32920	1.30632	1.35648	1.34006	AVG		1.37993		6.51149	15.00000	O
N-Butylbenzene	1.99254	2.20685	2.31578	2.32052	2.39223	2.41191	AVG		2.27330		6.83272	15.00000	O
sec-Butylbenzene	2.57051	2.93047	2.91619	2.88891	2.99468	2.95111	AVG		2.87531		5.33821	15.00000	O
1,2-Dichlorobenzene	1.17056	1.19885	1.21299	1.23236	1.29740	1.28670	AVG		1.23314		4.05421	15.00000	O
1,2-Dibromo-3-Chloropropane	0.15455	0.11956	0.13101	0.14051	0.15731	0.15647	AVG		0.14324		10.8991	15.00000	O
Hexachlorobutadiene	0.40420	0.36184	0.33754	0.32714	0.35822	0.35861	AVG		0.35792		7.41329	15.00000	O
1,2,4-Trichlorobenzene	0.62667	0.65777	0.70921	0.74267	0.81920	0.81607	AVG		0.72860		10.9522	15.00000	O
Naphthalene	3912	22533	121258	320798	796844	1088321	LNR	0.03616	1.76798		0.99742	0.99000	O
1,2,3-Trichlorobenzene	0.56208	0.56306	0.60879	0.59408	0.67003	0.65032	AVG		0.60806		7.34028	15.00000	O
Dibromofluoromethane	0.61493	0.62075	0.60854	0.61389	0.61115	0.60645	AVG		0.61262		0.83199	15.00000	
1,2-Dichloroethane-D4	0.87100	0.84545	0.82485	0.85246	0.79020	0.83104	AVG		0.83583		3.31204	15.00000	
Toluene-D8	1.21001	1.21776	1.21802	1.21797	1.21819	1.23018	AVG		1.21869		0.53093	15.00000	
P-Bromofluorobenzene	0.49809	0.49930	0.50437	0.50603	0.49257	0.51153	AVG		0.50198		1.33443	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1358A.d
Report Date: 21-May-2018 09:41

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa02236
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: WG228566-8
Level: LOW Operator: JSS
Data Type: MS DATA SampleType: LCS
SpikeList File: IND_CHECK.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D8A05(22)D.m
Misc Info: WG228566,WG228547-4

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	1	Dichlorodifluorome	50.0	47.6	95.12	80-120
	2	Chloromethane	50.0	45.9	91.72	80-120
	3	Vinyl chloride	50.0	46.8	93.64	80-120
	4	Bromomethane	50.0	45.3	90.70	80-120
	5	Chloroethane	50.0	46.4	92.86	80-120
	6	Trichlorofluoromet	50.0	42.4	84.91	80-120
	7	Diethyl Ether	50.0	51.3	102.63	80-120
	8	Tertiary-butyl alc	250	205	82.20	80-120
	9	1,1-Dichloroethene	50.0	47.0	94.08	80-120
	10	Carbon Disulfide	50.0	46.7	93.43	80-120
	11	Freon-113	50.0	47.2	94.33	80-120
	12	Iodomethane	50.0	43.7	87.33	80-120
	13	Acrolein	250	196	78.22*	80-120
	14	Methylene Chloride	50.0	48.2	96.37	80-120
	15	Acetone	50.0	43.4	86.80	80-120
	16	Isobutyl Alcohol	1000	825	82.47	80-120
	17	trans-1,2-Dichloro	50.0	49.2	98.47	80-120
	18	Allyl Chloride	50.0	49.8	99.69	80-120
	19	Methyl tert-butyl	50.0	49.8	99.65	80-120
	20	Acetonitrile	500	461	92.20	80-120
	21	Di-isopropyl ether	50.0	47.6	95.11	80-120
	22	Chloroprene	50.0	49.9	99.73	80-120
	23	Propionitrile	500	470	94.02	80-120
	24	Methacrylonitrile	500	474	94.91	80-120
	25	1,1-Dichloroethane	50.0	50.4	100.92	80-120
	26	Acrylonitrile	250	232	93.03	80-120
	27	Ethyl tertiary-but	50.0	46.9	93.77	80-120
	28	Vinyl Acetate	50.0	54.5	108.98	80-120
	29	cis-1,2-Dichloroet	50.0	49.9	99.81	80-120
M	30	1,2-Dichloroethyle	100	99.1	99.14	80-120
	31	Methyl Methacrylat	50.0	44.7	89.35	80-120
	32	2,2-Dichloropropan	50.0	47.9	95.87	80-120
	33	Bromochloromethane	50.0	50.5	101.01	80-120
	34	Chloroform	50.0	47.5	95.01	80-120
	35	Carbon Tetrachlori	50.0	47.3	94.52	80-120
	36	Tetrahydrofuran	50.0	44.8	89.70	80-120
	38	1,1,1-Trichloroeth	50.0	46.6	93.10	80-120
	39	1,1-Dichloropropen	50.0	48.8	97.54	80-120
	40	2-Butanone	50.0	44.6	89.29	80-120
	41	Benzene	50.0	49.9	99.79	80-120

Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1358A.d
Report Date: 21-May-2018 09:41

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	43	Cyclohexane	50.0	49.9	99.83	80-120
	44	Ethyl Methacrylate	50.0	43.6	87.17	80-120
	46	Tertiary-amyl meth	50.0	45.0	89.95	80-120
	47	1,2-Dichloroethane	50.0	44.8	89.55	80-120
	48	Trichloroethene	50.0	47.0	93.94	80-120
	50	Dibromomethane	50.0	48.0	96.10	80-120
	51	1,2-Dichloropropan	50.0	49.8	99.54	80-120
	52	Bromodichlorometha	50.0	50.4	100.70	80-120
	53	cis-1,3-dichloropr	50.0	45.6	91.16	80-120
	54	1,4-Dioxane	1000	961	96.07	80-120
	56	2-Chloroethylvinyl	50.0	50.4	100.80	80-120
	57	Toluene	50.0	48.2	96.33	80-120
	58	4-methyl-2-pentano	50.0	46.2	92.32	80-120
	59	Tetrachloroethene	50.0	49.7	99.33	80-120
	60	trans-1,3-Dichloro	50.0	51.5	102.95	80-120
	61	1,1,2-Trichloroeth	50.0	47.4	94.81	80-120
	62	Dibromochlorometha	50.0	52.2	104.43	80-120
	63	1,3-Dichloropropan	50.0	47.3	94.63	80-120
	64	1,2-Dibromoethane	50.0	47.2	94.39	80-120
	65	2-Hexanone	50.0	47.3	94.54	80-120
	67	Chlorobenzene	50.0	48.5	96.93	80-120
	152	1-Chlorohexane	50.0	0.00	0.00*	80-120
	68	Ethylbenzene	50.0	48.2	96.34	80-120
	69	1,1,1,2-Tetrachlor	50.0	50.4	100.83	80-120
M	70	Xylenes (total)	150	151	100.51	80-120
	71	m+p-Xylenes	100	99.4	99.38	80-120
	72	o-Xylene	50.0	51.4	102.78	80-120
	73	Styrene	50.0	52.7	105.47	80-120
	74	Bromoform	50.0	50.5	100.97	80-120
	75	Isopropylbenzene	50.0	53.5	107.06	80-120
	77	cis-1,4-Dichloro-2	50.0	40.8	81.67	80-120
	78	trans-1,4-Dichloro	50.0	41.1	82.16	80-120
	79	Bromobenzene	50.0	49.3	98.69	80-120
	80	N-Propylbenzene	50.0	48.3	96.56	80-120
	81	1,1,2,2-Tetrachlor	50.0	46.5	93.02	80-120
	82	1,3,5-Trimethylben	50.0	50.9	101.83	80-120
	83	2-Chlorotoluene	50.0	49.0	98.06	80-120
	84	1,2,3-Trichloropro	50.0	44.8	89.68	80-120
	85	4-Chlorotoluene	50.0	49.0	97.98	80-120
	86	tert-Butylbenzene	50.0	50.5	101.08	80-120
	87	Pentachloroethane	50.0	49.5	98.96	80-120
	88	1,2,4-Trimethylben	50.0	50.8	101.69	80-120
	89	P-Isopropyltoluene	50.0	51.4	102.89	80-120
	90	1,3-Dichlorobenzen	50.0	48.9	97.76	80-120
	92	1,4-Dichlorobenzen	50.0	47.2	94.47	80-120
	93	N-Butylbenzene	50.0	50.5	101.08	80-120
	94	sec-Butylbenzene	50.0	50.0	100.02	80-120
	95	1,2-Dichlorobenzen	50.0	49.6	99.26	80-120
	96	1,2-Dibromo-3-Chlo	50.0	40.9	81.77	80-120
	97	1,3,5-Trichloroben	50.0	49.2	98.40	80-120
	98	Hexachlorobutadien	50.0	44.7	89.47	80-120
	99	1,2,4-Trichloroben	50.0	49.3	98.53	80-120
	100	1,2,3-Trimethylben	50.0	50.7	101.33	80-120
	101	Naphthalene	50.0	42.1	84.20	80-120

Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1358A.d
Report Date: 21-May-2018 09:41

	SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	102 1,2,3-Trichloroben	50.0	45.4	90.92	80-120
	103 Methyl Acetate	50.0	43.7	87.34	80-120
	104 Methylcyclohexane	50.0	47.0	94.04	80-120
M	153 Total Alkylbenzene	350	352	100.74	80-120

	SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$	37 Dibromofluorometha	50.0	48.6	97.31	68-128
$	45 1,2-Dichloroethane	50.0	45.6	91.28	67-135
$	55 Toluene-D8	50.0	49.7	99.42	65-128
$	76 P-Bromofluorobenze	50.0	48.2	96.46	56-133

Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\D1351.d
Report Date: 21-May-2018 09:38

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051718.b\D1351.d
Lab Smp Id: WG228547-4
Inj Date : 17-MAY-2018 08:11
Operator : JSS   Inst ID: gcms-d.i
Smp Info : WG228547-4
Misc Info :
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-d.i\D051718.b\D8A05(22)D.m
Meth Date : 21-May-2018 09:36 gcms-d.i   Quant Type: ISTD
Cal Date : 17-MAY-2018 08:11   Cal File: D1351.d
Als bottle: 1   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.486	(0.203)	224863	50.0000	48.6	
2	Chloromethane	50	1.653	1.654	(0.226)	178131	50.0000	42.0	
3	Vinyl chloride	62	1.728	1.728	(0.236)	149884	50.0000	45.0	
4	Bromomethane	94	2.025	2.025	(0.277)	74882	50.0000	44.5	
5	Chloroethane	64	2.137	2.137	(0.292)	71927	50.0000	46.4	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	259713	50.0000	49.7	
7	Diethyl Ether	59	2.583	2.583	(0.353)	84663	50.0000	51.7	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	41222	250.000	219	
9	1,1-Dichloroethene	96	2.778	2.779	(0.380)	88961	50.0000	45.7	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	302956	50.0000	48.3	
11	Freon-113	151	2.834	2.834	(0.387)	81151	50.0000	50.8	
12	Iodomethane	142	2.936	2.937	(0.401)	94847	50.0000	47.3	
13	Acrolein	56	3.159	3.160	(0.432)	111565	250.000	307	
14	Methylene Chloride	84	3.447	3.448	(0.471)	137104	50.0000	46.5	
15	Acetone	43	3.522	3.522	(0.482)	208664	250.000	242	
16	Isobutyl Alcohol	43	7.612	7.613	(1.041)	99477	1000.00	927	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	128030	50.0000	47.6	
18	Allyl Chloride	41	3.317	3.318	(0.454)	221440	50.0000	54.1	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	350884	50.0000	50.2	
20	Acetonitrile	39	4.135	4.136	(0.565)	37888	500.000	519	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	451092	50.0000	48.4	
22	Chloroprene	53	4.479	4.480	(0.612)	234850	50.0000	54.4	
23	Propionitrile	54	7.147	7.148	(0.977)	194735	500.000	539	
24	Methacrylonitrile	41	7.185	7.185	(0.982)	964573	500.000	561	

Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\D1351.d
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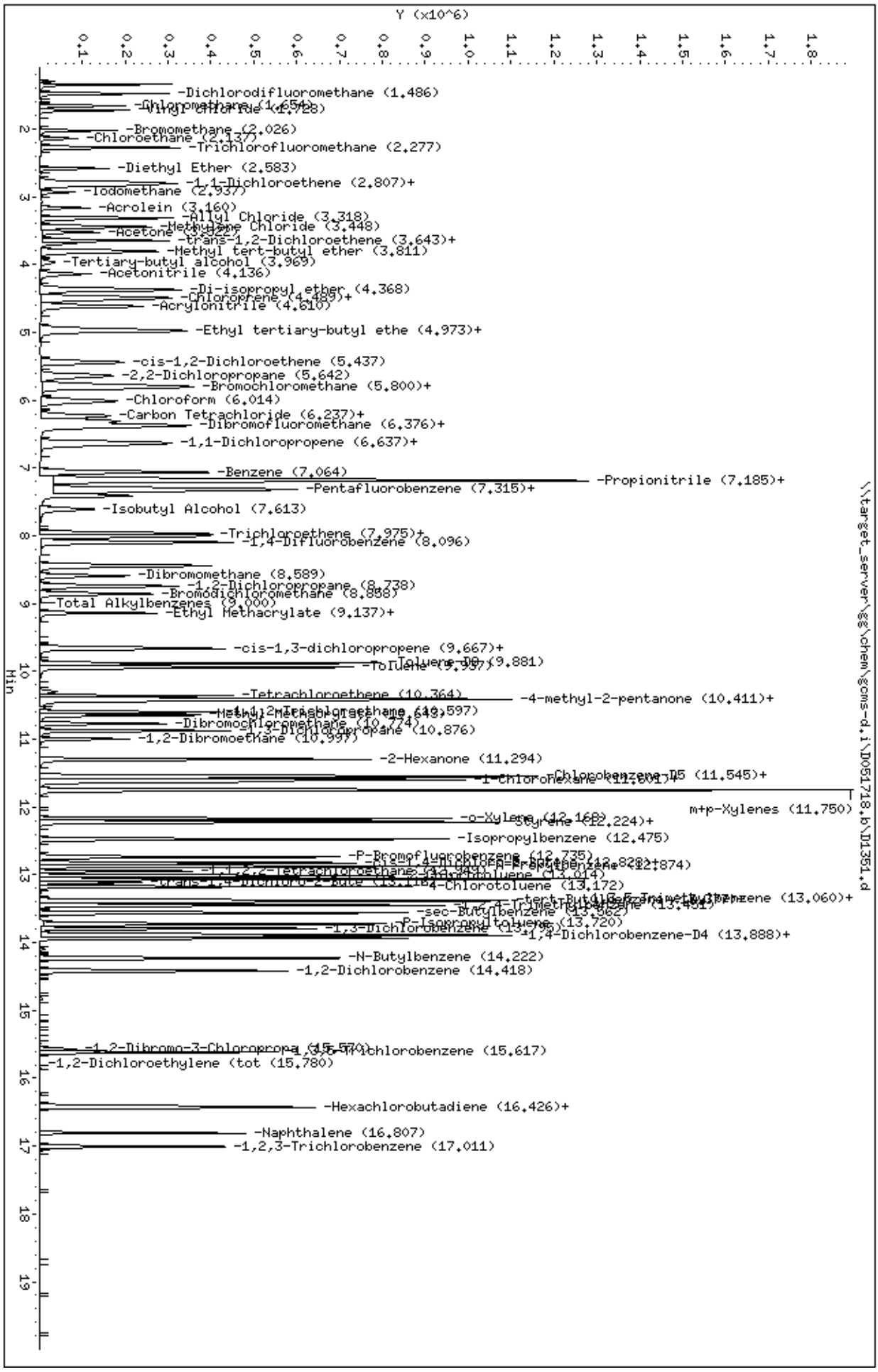
							AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	25 1,1-Dichloroethane	63	4.517	4.517	(0.617)	262284	50.0000	48.5	
	26 Acrylonitrile	52	4.610	4.610	(0.630)	232467	250.000	267	
	27 Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	386647	50.0000	48.0	
	28 Vinyl Acetate	43	4.981	4.982	(0.615)	335200	50.0000	53.3	
	29 cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	138398	50.0000	48.6	
M	30 1,2-Dichloroethylene (total)	96				266428	50.0000	(a)	
	31 Methyl Methacrylate	41	10.643	10.643	(1.315)	138281	50.0000	49.8	
	32 2,2-Dichloropropane	77	5.641	5.642	(0.771)	193925	50.0000	51.2	
	33 Bromochloromethane	128	5.809	5.809	(0.794)	74596	50.0000	52.3	
	34 Chloroform	83	6.013	6.014	(0.822)	276047	50.0000	48.8	
	35 Carbon Tetrachloride	117	6.236	6.237	(0.770)	200760	50.0000	48.5	
	36 Tetrahydrofuran	42	6.311	6.311	(0.863)	194895	250.000	263	
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	163048	50.0000	50.1	
	38 1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	235721	50.0000	48.3	
	39 1,1-Dichloropropene	75	6.627	6.627	(0.819)	197868	50.0000	48.1	
	40 2-Butanone	43	6.655	6.655	(0.910)	322614	250.000	251	
	41 Benzene	78	7.064	7.064	(0.873)	519322	50.0000	48.7	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	265598	50.0000		
	43 Cyclohexane	56	5.790	5.791	(0.792)	219876	50.0000	51.0	
	44 Ethyl Methacrylate	69	9.137	9.137	(1.129)	96497	50.0000	48.8	
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	226411	50.0000	51.0	
	46 Tertiary-amyl methyl ether	73	7.333	7.334	(1.003)	313419	50.0000	48.0	
	47 1,2-Dichloroethane	62	7.408	7.408	(0.915)	237064	50.0000	47.5	
	48 Trichloroethene	95	8.003	8.003	(0.989)	146526	50.0000	47.9	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	436302	50.0000		
	50 Dibromomethane	93	8.588	8.589	(1.061)	101507	50.0000	50.2	
	51 1,2-Dichloropropane	63	8.737	8.738	(1.079)	145541	50.0000	49.2	
	52 Bromodichloromethane	83	8.858	8.858	(1.094)	209660	50.0000	50.1	
	53 cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	254013	50.0000	48.6	
	54 1,4-Dioxane	88	9.137	9.137	(1.129)	23177	1000.00	920	
$	55 Toluene-D8	98	9.881	9.881	(1.220)	531402	50.0000	50.0	
	56 2-Chloroethylvinylether	63	9.639	9.639	(1.191)	88429	50.0000	51.6	
	57 Toluene	92	9.936	9.937	(1.227)	314399	50.0000	47.6	
	58 4-methyl-2-pentanone	43	10.410	10.411	(1.286)	704874	250.000	262	
	59 Tetrachloroethene	164	10.364	10.364	(0.898)	101926	50.0000	47.6	
	60 trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	227987	50.0000	53.8	
	61 1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	113492	50.0000	49.6	
	62 Dibromochloromethane	129	10.773	10.774	(0.934)	156540	50.0000	52.5	
	63 1,3-Dichloropropane	76	10.875	10.876	(0.943)	240479	50.0000	50.3	
	64 1,2-Dibromoethane	107	10.996	10.997	(1.358)	140095	50.0000	50.6	
	65 2-Hexanone	43	11.294	11.294	(0.979)	489217	250.000	271	
*	66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	399232	50.0000		
	67 Chlorobenzene	112	11.554	11.554	(1.002)	354053	50.0000	48.3	
	152 1-Chlorohexane	91	11.600	11.601	(1.006)	636944	50.0000	(a)	
	68 Ethylbenzene	91	11.600	11.601	(1.006)	636944	50.0000	49.1	
	69 1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	135635	50.0000	50.8	
M	70 Xylenes (total)	106				1493477	150.000	(a)	
	71 m+p-Xylenes	91	11.749	11.750	(1.019)	990049	100.000	101	
	72 o-Xylene	91	12.167	12.168	(1.055)	503428	50.0000	52.8	
	73 Styrene	104	12.223	12.224	(1.060)	375837	50.0000	53.0	
	74 Bromoform	173	12.233	12.233	(1.060)	93853	50.0000	54.2	
	75 Isopropylbenzene	105	12.474	12.475	(0.899)	564399	50.0000	50.8	
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	220781	50.0000	50.4	
	77 cis-1,4-Dichloro-2-Butene	53	12.809	12.809	(0.923)	60906	50.0000	50.9	

Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\D1351.d
Report Date: 21-May-2018 09:38

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	48907	50.0000	51.2	
	79	Bromobenzene	156	12.828	12.828	(0.924)	147293	50.0000	48.4	
	80	N-Propylbenzene	91	12.874	12.874	(0.928)	724907	50.0000	48.0	
	81	1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	169482	50.0000	48.8	
	82	1,3,5-Trimethylbenzene	105	13.060	13.060	(0.941)	494449	50.0000	51.2	
	83	2-Chlorotoluene	91	13.013	13.014	(0.938)	434962	50.0000	49.3	
	84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	152606	50.0000	49.3	
	85	4-Chlorotoluene	91	13.171	13.172	(0.949)	468000	50.0000	49.6	
	86	tert-Butylbenzene	119	13.376	13.377	(0.964)	471670	50.0000	51.6	
	87	Pentachloroethane	117	13.395	13.395	(0.965)	116595	50.0000	54.3	
	88	1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	511903	50.0000	51.3	
	89	P-Isopropyltoluene	119	13.720	13.720	(0.989)	489439	50.0000	50.9	
	90	1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	266055	50.0000	48.4	
*	91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	207228	50.0000		
	92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	270706	50.0000	47.3	
	93	N-Butylbenzene	91	14.222	14.222	(1.025)	480876	50.0000	51.0	
	94	sec-Butylbenzene	105	13.562	13.562	(0.977)	598664	50.0000	50.2	
	95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	255380	50.0000	50.0	
	96	1,2-Dibromo-3-Chloropropane	75	15.570	15.570	(1.122)	29118	50.0000	49.0	
	97	1,3,5-Trichlorobenzene	180	15.616	15.617	(1.125)	186679	50.0000	53.3	
	98	Hexachlorobutadiene	225	16.407	16.407	(1.182)	67793	50.0000	45.7	
	99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	153902	50.0000	51.0	
	100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	533113	50.0000	54.0	
	101	Naphthalene	128	16.806	16.806	(1.211)	320798	50.0000	45.6	
	102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	123109	50.0000	48.8	
	103	Methyl Acetate	43	3.689	3.690	(0.504)	118792	50.0000	53.0	
	104	Methylcyclohexane	83	7.966	7.966	(1.089)	213331	50.0000	48.5	
M	153	Total Alkylbenzenes	100				3771908	50.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).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Sample Info: WG228547-4
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
Y (x10^6)
Min
\\target_server\gg\chem\gcms-d.i\D051718.b\D1351.d
-Dichlorodifluoromethane (1.486)
-Chloromethane (1.656)
-Vinyl chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.137)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.583)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.622)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.437)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)+
-Dibromofluoromethane (6.376)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.064)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.975)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.888)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
-Toluene (9.937)
Toluene-D8 (9.881)
-Tetrachloroethene (10.364)
-4-methyl-2-pentanone (10.411)+
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
Chlorobenzene-D5 (11.545)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-Bromobenzene (12.874)
-4-Chlorotoluene (13.172)
-sec-Butylbenzene (13.562)
-P-Isopropyltoluene (13.720)
-1,3-Dichlorobenzene (13.776)
-1,4-Dichlorobenzene-D4 (13.888)+
-N-Butylbenzene (14.222)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropa
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)

Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\D1352.d
Report Date: 21-May-2018 09:38

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051718.b\D1352.d
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Inj Date : 17-MAY-2018 08:47
Operator : JSS   Inst ID: gcms-d.i
Smp Info : WG228547-3
Misc Info :
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-d.i\D051718.b\D8A05(22)D.m
Meth Date : 21-May-2018 09:36 gcms-d.i   Quant Type: ISTD
Cal Date : 17-MAY-2018 08:47   Cal File: D1352.d
Als bottle: 2   Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.486	(0.203)	98693	20.0000	20.6	
2	Chloromethane	50	1.663	1.654	(0.227)	86392	20.0000	19.7	
3	Vinyl chloride	62	1.728	1.728	(0.236)	66393	20.0000	19.3	
4	Bromomethane	94	2.025	2.025	(0.277)	32149	20.0000	18.5	
5	Chloroethane	64	2.146	2.137	(0.293)	31753	20.0000	19.8	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	108109	20.0000	20.0	
7	Diethyl Ether	59	2.583	2.583	(0.353)	34847	20.0000	20.6	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	18347	100.000	97.9	
9	1,1-Dichloroethene	96	2.788	2.779	(0.381)	38606	20.0000	19.2	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	126097	20.0000	19.4	
11	Freon-113	151	2.834	2.834	(0.387)	34359	20.0000	20.8	
12	Iodomethane	142	2.936	2.937	(0.401)	28632	20.0000	15.8	
13	Acrolein	56	3.159	3.160	(0.432)	42813	100.000	114	
14	Methylene Chloride	84	3.448	3.448	(0.471)	57271	20.0000	18.8	
15	Acetone	43	3.522	3.522	(0.482)	88703	100.000	99.4	
16	Isobutyl Alcohol	43	7.612	7.613	(1.041)	41715	400.000	391	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	52495	20.0000	18.9	
18	Allyl Chloride	41	3.317	3.318	(0.454)	85070	20.0000	20.1	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	138926	20.0000	19.2	
20	Acetonitrile	39	4.135	4.136	(0.565)	16001	200.000	212	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	175776	20.0000	18.9	
22	Chloroprene	53	4.479	4.480	(0.612)	91637	20.0000	20.5	
23	Propionitrile	54	7.138	7.148	(0.976)	80379	200.000	215	
24	Methacrylonitrile	41	7.175	7.185	(0.981)	385864	200.000	217	

Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\D1352.d
Report Date: 21-May-2018 09:38

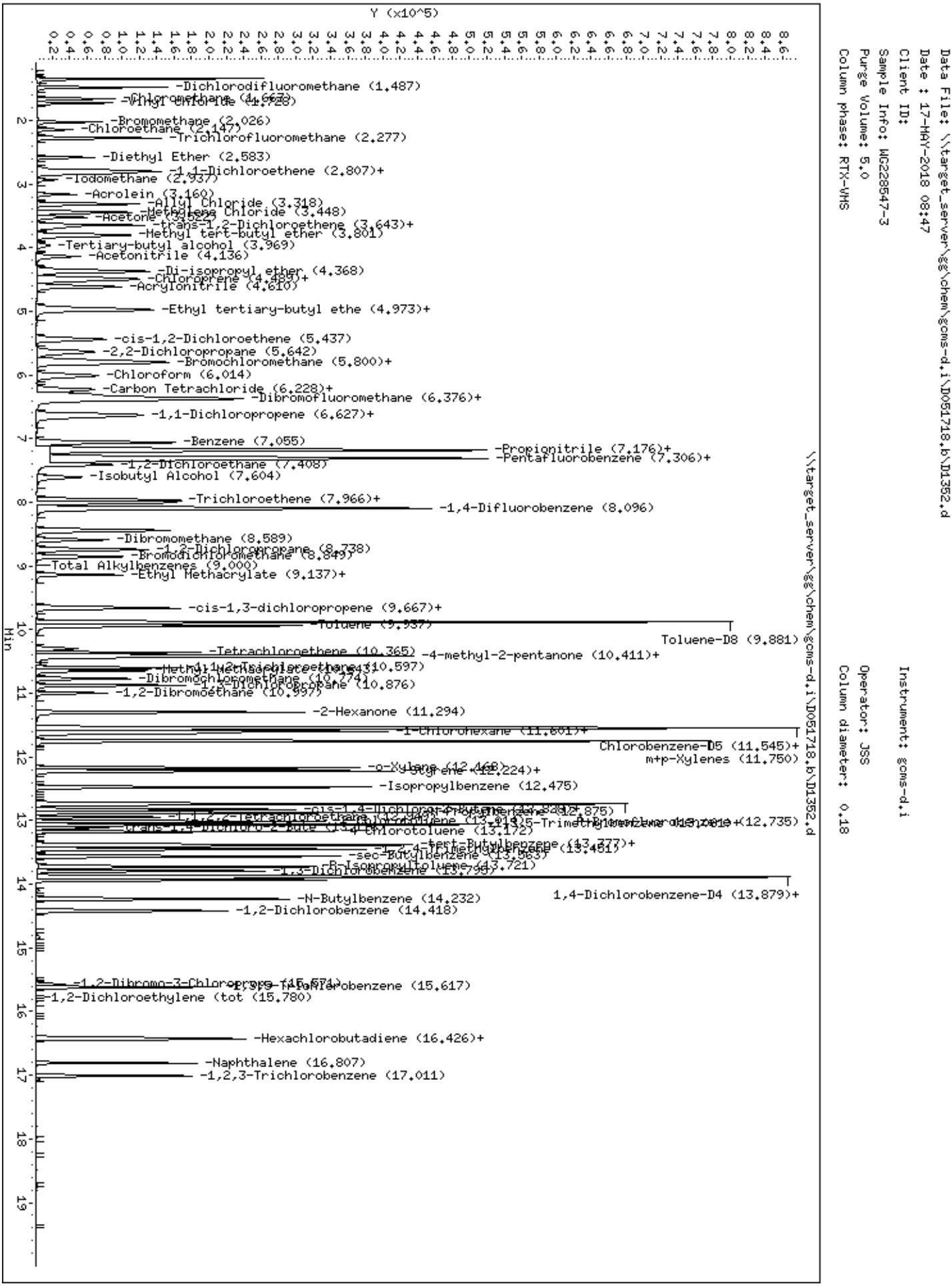
							AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	25 1,1-Dichloroethane	63	4.517	4.517	(0.617)	107000	20.0000	19.1	
	26 Acrylonitrile	52	4.610	4.610	(0.630)	92424	100.000	103	
	27 Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	145267	20.0000	18.4	
	28 Vinyl Acetate	43	4.981	4.982	(0.615)	128431	20.0000	20.2	
	29 cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	56003	20.0000	19.0	
M	30 1,2-Dichloroethylene (total)	96				108498	20.0000	(a)	
	31 Methyl Methacrylate	41	10.643	10.643	(1.315)	49089	20.0000	18.4	
	32 2,2-Dichloropropane	77	5.642	5.642	(0.771)	76330	20.0000	19.5	
	33 Bromochloromethane	128	5.809	5.809	(0.794)	29971	20.0000	20.3	
	34 Chloroform	83	6.013	6.014	(0.822)	111092	20.0000	19.0	
	35 Carbon Tetrachloride	117	6.227	6.237	(0.769)	80225	20.0000	19.1	
	36 Tetrahydrofuran	42	6.311	6.311	(0.863)	75803	100.000	99.0	
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	167118	50.0000	49.7	
	38 1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	95912	20.0000	19.0	
	39 1,1-Dichloropropene	75	6.618	6.627	(0.817)	81738	20.0000	19.6	
	40 2-Butanone	43	6.655	6.655	(0.910)	132667	100.000	100	
	41 Benzene	78	7.055	7.064	(0.871)	209909	20.0000	19.5	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	274620	50.0000		
	43 Cyclohexane	56	5.790	5.791	(0.792)	91632	20.0000	20.6	
	44 Ethyl Methacrylate	69	9.137	9.137	(1.129)	34851	20.0000	18.4	
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	226521	50.0000	49.3	
	46 Tertiary-amyl methyl ether	73	7.333	7.334	(1.003)	116846	20.0000	18.3	
	47 1,2-Dichloroethane	62	7.408	7.408	(0.915)	96231	20.0000	19.0	
	48 Trichloroethene	95	8.003	8.003	(0.989)	60478	20.0000	19.5	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	441392	50.0000		
	50 Dibromomethane	93	8.588	8.589	(1.061)	39697	20.0000	19.4	
	51 1,2-Dichloropropane	63	8.737	8.738	(1.079)	58376	20.0000	19.5	
	52 Bromodichloromethane	83	8.858	8.858	(1.094)	81949	20.0000	19.3	
	53 cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	94112	20.0000	18.7	
	54 1,4-Dioxane	88	9.137	9.137	(1.129)	11893	400.000	466	
$	55 Toluene-D8	98	9.881	9.881	(1.220)	537626	50.0000	50.0	
	56 2-Chloroethylvinylether	63	9.639	9.639	(1.191)	31433	20.0000	18.5	
	57 Toluene	92	9.936	9.937	(1.227)	127934	20.0000	19.2	
	58 4-methyl-2-pentanone	43	10.411	10.411	(1.286)	277351	100.000	102	
	59 Tetrachloroethene	164	10.364	10.364	(0.898)	41747	20.0000	19.2	
	60 trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	85972	20.0000	20.0	
	61 1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	44531	20.0000	19.2	
	62 Dibromochloromethane	129	10.773	10.774	(0.934)	59038	20.0000	19.6	
	63 1,3-Dichloropropane	76	10.875	10.876	(0.943)	93685	20.0000	19.4	
	64 1,2-Dibromoethane	107	10.996	10.997	(1.358)	55203	20.0000	19.7	
	65 2-Hexanone	43	11.294	11.294	(0.979)	194150	100.000	106	
*	66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	404166	50.0000		
	67 Chlorobenzene	112	11.554	11.554	(1.002)	143507	20.0000	19.4	
	152 1-Chlorohexane	91	11.600	11.601	(1.006)	255039	20.0000	(a)	
	68 Ethylbenzene	91	11.600	11.601	(1.006)	255039	20.0000	19.4	
	69 1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	52920	20.0000	19.6	
M	70 Xylenes (total)	106				590022	60.0000	(a)	
	71 m+p-Xylenes	91	11.749	11.750	(1.019)	394232	40.0000	39.7	
	72 o-Xylene	91	12.168	12.168	(1.055)	195790	20.0000	20.3	
	73 Styrene	104	12.223	12.224	(1.060)	147068	20.0000	20.5	
	74 Bromoform	173	12.233	12.233	(1.060)	34257	20.0000	19.5	
	75 Isopropylbenzene	105	12.474	12.475	(0.899)	224233	20.0000	20.2	
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	222626	50.0000	50.2	
	77 cis-1,4-Dichloro-2-Butene	53	12.809	12.809	(0.923)	20842	20.0000	18.1	

Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\D1352.d
Report Date: 21-May-2018 09:38

							AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	78 trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	18095	20.0000	19.3	
	79 Bromobenzene	156	12.828	12.828	(0.924)	60156	20.0000	19.8	
	80 N-Propylbenzene	91	12.874	12.874	(0.928)	300858	20.0000	20.0	
	81 1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	68873	20.0000	19.9	
	82 1,3,5-Trimethylbenzene	105	13.060	13.060	(0.941)	197917	20.0000	20.5	
	83 2-Chlorotoluene	91	13.014	13.014	(0.938)	172484	20.0000	19.6	
	84 1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	61581	20.0000	19.9	
	85 4-Chlorotoluene	91	13.172	13.172	(0.949)	185726	20.0000	19.7	
	86 tert-Butylbenzene	119	13.376	13.377	(0.964)	187565	20.0000	20.5	
	87 Pentachloroethane	117	13.395	13.395	(0.965)	44139	20.0000	20.6	
	88 1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	204286	20.0000	20.5	
	89 P-Isopropyltoluene	119	13.720	13.720	(0.989)	196346	20.0000	20.4	
	90 1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	106742	20.0000	19.5	
*	91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	206829	50.0000		
	92 1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	109967	20.0000	19.3	
	93 N-Butylbenzene	91	14.231	14.222	(1.025)	191588	20.0000	20.4	
	94 sec-Butylbenzene	105	13.562	13.562	(0.977)	241261	20.0000	20.3	
	95 1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	100353	20.0000	19.7	
	96 1,2-Dibromo-3-Chloropropane	75	15.570	15.570	(1.122)	10839	20.0000	18.3	
	97 1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	69985	20.0000	20.0	
	98 Hexachlorobutadiene	225	16.407	16.407	(1.182)	27925	20.0000	18.9	
	99 1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	58674	20.0000	19.5	
	100 1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	203965	20.0000	20.7	
	101 Naphthalene	128	16.806	16.806	(1.211)	121258	20.0000	18.4	
	102 1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	50366	20.0000	20.0	
	103 Methyl Acetate	43	3.689	3.690	(0.504)	47574	20.0000	20.5	
	104 Methylcyclohexane	83	7.966	7.966	(1.089)	87534	20.0000	19.6	
M	153 Total Alkylbenzenes	100				1519821	20.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\D1352.d
Date : 17-MAY-2018 08:47
Client ID:
Sample Info: WG228547-3
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051718.b\D1352.d
Y (x10^5)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)
-Vinyl Chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.583)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.522)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.801)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.437)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.228)+
-Dibromofluoromethane (6.376)+
-1,1-Dichloropropene (6.627)+
-Benzene (7.055)
-Propionitrile (7.176)+
-Pentafluorobenzene (7.306)+
-1,2-Dichloroethane (7.408)
-Isobutyl Alcohol (7.604)
-Trichloroethene (7.966)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.849)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
-Toluene (9.937)
Toluene-D8 (9.881)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-1,1,2-Trichloroethane (10.597)
-Methyl Methacrylate (10.643)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-1-Chlorohexane (11.601)+
Chlorobenzene-D5 (11.545)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-cis-1,4-Dichloro-2-Butene (12.828)+
-1,1,2,2-Tetrachloroethane (12.949)
-N-Propylbenzene (12.875)
-1,1,2,2-Tetrachloroethane (12.949)
-1,3,5-Trimethylbenzene (13.018)+
-trans-1,4-Dichloro-2-Bute (13.[illegible])
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.377)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.563)
-R-Isopropyltoluene (13.721)
-1,3-Dichlorobenzene (13.795)
1,4-Dichlorobenzene-D4 (13.879)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.571)
-1,3,5-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)

Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\D1353.d
Report Date: 21-May-2018 09:39

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051718.b\D1353.d
Lab Smp Id: WG228547-2
Inj Date : 17-MAY-2018 09:22
Operator : JSS   Inst ID: gcms-d.i
Smp Info : WG228547-2
Misc Info :
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-d.i\D051718.b\D8A05(22)D.m
Meth Date : 21-May-2018 09:36 gcms-d.i   Quant Type: ISTD
Cal Date : 17-MAY-2018 09:22   Cal File: D1353.d
Als bottle: 3   Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.486	(0.203)	26064	5.00000	5.6	
2	Chloromethane	50	1.663	1.654	(0.227)	25183	5.00000	5.8	
3	Vinyl chloride	62	1.728	1.728	(0.236)	19142	5.00000	5.7	
4	Bromomethane	94	2.025	2.025	(0.277)	9606	5.00000	5.6	
5	Chloroethane	64	2.146	2.137	(0.293)	9367	5.00000	6.0	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	29684	5.00000	5.6	
7	Diethyl Ether	59	2.583	2.583	(0.353)	7565	5.00000	4.6	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	3369	25.0000	25.1	
9	1,1-Dichloroethene	96	2.788	2.779	(0.381)	10429	5.00000	5.3	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	31588	5.00000	5.0	
11	Freon-113	151	2.834	2.834	(0.387)	7757	5.00000	4.8	
12	Iodomethane	142	2.936	2.937	(0.401)	6514	5.00000	5.8	
13	Acrolein	56	3.159	3.160	(0.432)	8541	25.0000	23.2	
14	Methylene Chloride	84	3.448	3.448	(0.471)	15132	5.00000	5.1	
15	Acetone	43	3.522	3.522	(0.482)	21549	25.0000	24.7	
16	Isobutyl Alcohol	43	7.612	7.613	(1.041)	7217	100.000	90.4	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	14148	5.00000	5.2	
18	Allyl Chloride	41	3.317	3.318	(0.454)	19827	5.00000	4.8	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	31884	5.00000	4.5	
20	Acetonitrile	39	4.145	4.136	(0.567)	3596	50.0000	48.7	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	36079	5.00000	4.8	
22	Chloroprene	53	4.479	4.480	(0.612)	20841	5.00000	4.8	
23	Propionitrile	54	7.148	7.148	(0.977)	16932	50.0000	46.3	
24	Methacrylonitrile	41	7.185	7.185	(0.982)	80594	50.0000	46.3	

Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\D1353.d
Report Date: 21-May-2018 09:39

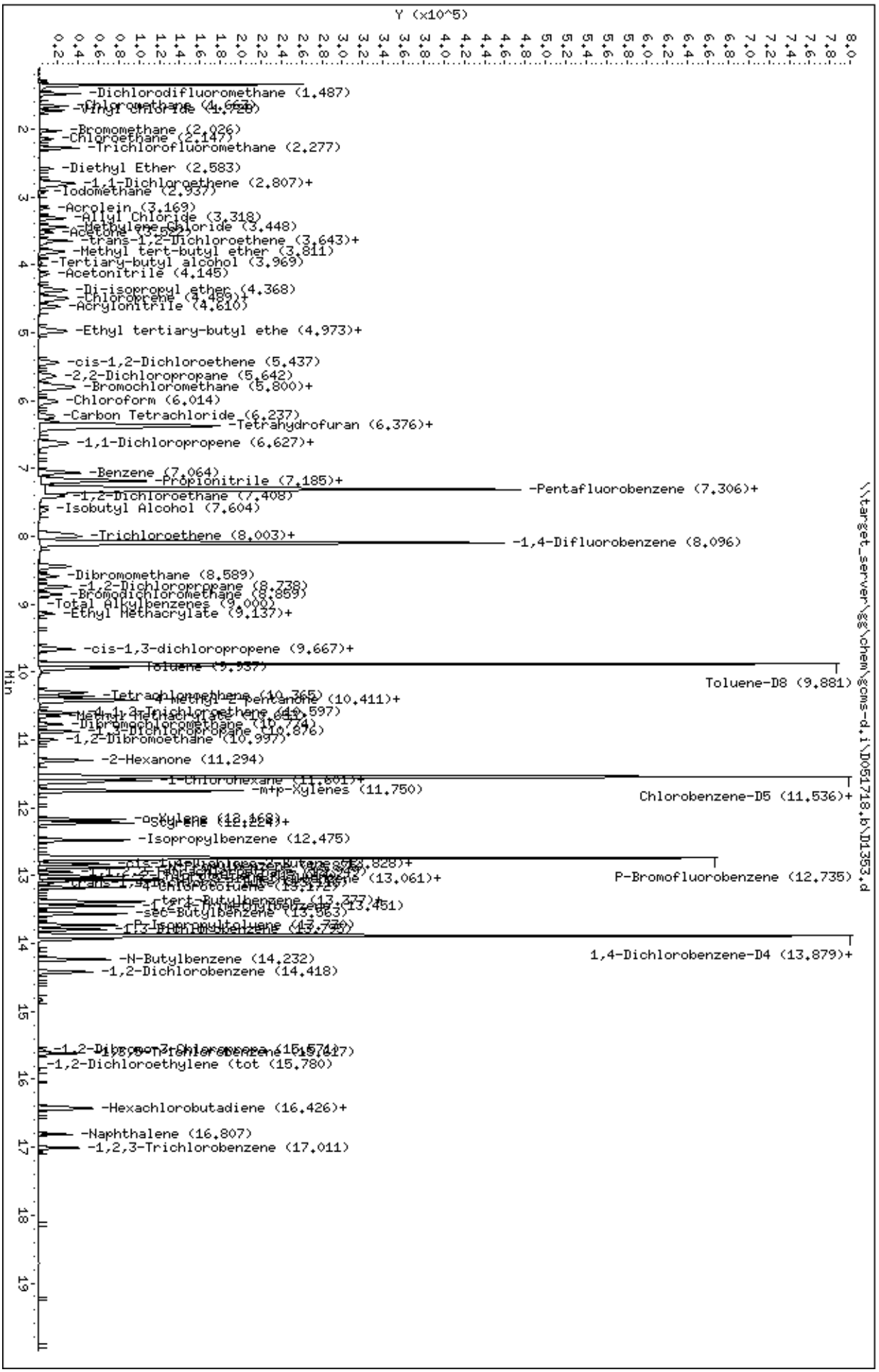
							AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	25 1,1-Dichloroethane	63	4.517	4.517	(0.617)	28157	5.00000	5.1	
	26 Acrylonitrile	52	4.610	4.610	(0.630)	20065	25.0000	22.8	
	27 Ethyl tertiary-butyl ether	59	4.972	4.963	(0.680)	29324	5.00000	4.9	
	28 Vinyl Acetate	43	4.991	4.982	(0.616)	28367	5.00000	4.5	
	29 cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	14426	5.00000	5.0	
M	30 1,2-Dichloroethylene (total)	96				28574	5.00000	(a)	
	31 Methyl Methacrylate	41	10.652	10.643	(1.316)	8523	5.00000	4.4	
	32 2,2-Dichloropropane	77	5.642	5.642	(0.771)	18716	5.00000	4.9	
	33 Bromochloromethane	128	5.818	5.809	(0.795)	7249	5.00000	5.0	
	34 Chloroform	83	6.013	6.014	(0.822)	29654	5.00000	5.2	
	35 Carbon Tetrachloride	117	6.236	6.237	(0.770)	21269	5.00000	5.2	
	36 Tetrahydrofuran	42	6.311	6.311	(0.863)	16313	25.0000	21.8	
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	166905	50.0000	50.7	
	38 1,1,1-Trichloroethane	97	6.385	6.376	(0.873)	25407	5.00000	5.1	
	39 1,1-Dichloropropene	75	6.627	6.627	(0.819)	20565	5.00000	5.0	
	40 2-Butanone	43	6.655	6.655	(0.910)	30284	25.0000	23.3	
	41 Benzene	78	7.064	7.064	(0.873)	54019	5.00000	5.1	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	268876	50.0000		
	43 Cyclohexane	56	5.790	5.791	(0.792)	20810	5.00000	4.8	
	44 Ethyl Methacrylate	69	9.137	9.137	(1.129)	6319	5.00000	4.6	
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	227322	50.0000	50.6	
	46 Tertiary-amyl methyl ether	73	7.333	7.334	(1.003)	23909	5.00000	5.1	
	47 1,2-Dichloroethane	62	7.408	7.408	(0.915)	24333	5.00000	4.9	
	48 Trichloroethene	95	8.003	8.003	(0.989)	15766	5.00000	5.2	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	434510	50.0000		
	50 Dibromomethane	93	8.588	8.589	(1.061)	9482	5.00000	4.7	
	51 1,2-Dichloropropane	63	8.737	8.738	(1.079)	14484	5.00000	4.9	
	52 Bromodichloromethane	83	8.858	8.858	(1.094)	19633	5.00000	4.7	
	53 cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	19790	5.00000	5.1	
	54 1,4-Dioxane	88	9.146	9.137	(1.130)	2548	100.000	102	
$	55 Toluene-D8	98	9.881	9.881	(1.220)	529130	50.0000	50.0	
	56 2-Chloroethylvinylether	63	9.630	9.639	(1.189)	6306	5.00000	4.3	
	57 Toluene	92	9.936	9.937	(1.227)	34446	5.00000	5.2	
	58 4-methyl-2-pentanone	43	10.411	10.411	(1.286)	62587	25.0000	23.4	
	59 Tetrachloroethene	164	10.364	10.364	(0.898)	11393	5.00000	5.3	
	60 trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	18377	5.00000	4.4	
	61 1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	11186	5.00000	4.9	
	62 Dibromochloromethane	129	10.773	10.774	(0.934)	13183	5.00000	4.4	
	63 1,3-Dichloropropane	76	10.875	10.876	(0.943)	22670	5.00000	4.7	
	64 1,2-Dibromoethane	107	10.996	10.997	(1.358)	13050	5.00000	4.7	
	65 2-Hexanone	43	11.294	11.294	(0.979)	39439	25.0000	21.9	
*	66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	399258	50.0000		
	67 Chlorobenzene	112	11.554	11.554	(1.002)	37806	5.00000	5.2	
	152 1-Chlorohexane	91	11.600	11.601	(1.006)	67329	5.00000	(a)	
	68 Ethylbenzene	91	11.600	11.601	(1.006)	67329	5.00000	5.2	
	69 1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	12737	5.00000	4.8	
M	70 Xylenes (total)	106				147308	15.0000	(a)	
	71 m+p-Xylenes	91	11.749	11.750	(1.019)	102027	10.0000	10.4	
	72 o-Xylene	91	12.168	12.168	(1.055)	45281	5.00000	4.7	
	73 Styrene	104	12.223	12.224	(1.060)	33678	5.00000	4.8	
	74 Bromoform	173	12.233	12.233	(1.060)	7512	5.00000	4.3	
	75 Isopropylbenzene	105	12.474	12.475	(0.899)	53583	5.00000	4.9	
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	216949	50.0000	49.7	
	77 cis-1,4-Dichloro-2-Butene	53	12.818	12.809	(0.924)	4364	5.00000	4.7	

Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\D1353.d
Report Date: 21-May-2018 09:39

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	78 trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	3402	5.00000	4.2	
	79 Bromobenzene	156	12.828	12.828	(0.924)	14698	5.00000	4.9	
	80 N-Propylbenzene	91	12.874	12.874	(0.928)	76010	5.00000	5.2	
	81 1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	16149	5.00000	4.8	
	82 1,3,5-Trimethylbenzene	105	13.060	13.060	(0.941)	47220	5.00000	5.0	
	83 2-Chlorotoluene	91	13.014	13.014	(0.938)	43266	5.00000	5.0	
	84 1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	15077	5.00000	5.0	
	85 4-Chlorotoluene	91	13.172	13.172	(0.949)	46443	5.00000	5.0	
	86 tert-Butylbenzene	119	13.376	13.377	(0.964)	44342	5.00000	5.0	
	87 Pentachloroethane	117	13.395	13.395	(0.965)	9632	5.00000	4.6	
	88 1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	48859	5.00000	5.0	
	89 P-Isopropyltoluene	119	13.729	13.720	(0.989)	46132	5.00000	4.9	
	90 1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	27271	5.00000	5.1	
*	91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	202411	50.0000		
	92 1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	28222	5.00000	5.0	
	93 N-Butylbenzene	91	14.231	14.222	(1.025)	44669	5.00000	4.8	
	94 sec-Butylbenzene	105	13.562	13.562	(0.977)	59316	5.00000	5.1	
	95 1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	24266	5.00000	4.9	
	96 1,2-Dibromo-3-Chloropropane	75	15.570	15.570	(1.122)	2420	5.00000	4.2	
	97 1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	15318	5.00000	4.5	
	98 Hexachlorobutadiene	225	16.407	16.407	(1.182)	7324	5.00000	5.0	
	99 1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	13314	5.00000	4.5	
	100 1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	44917	5.00000	4.7	
	101 Naphthalene	128	16.806	16.806	(1.211)	22533	5.00000	5.0	
	102 1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	11397	5.00000	4.6	
	103 Methyl Acetate	43	3.689	3.690	(0.504)	10645	5.00000	4.7	
	104 Methylcyclohexane	83	7.975	7.966	(1.090)	16866	5.00000	4.4	
M	153 Total Alkylbenzenes	100				366548	5.00000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).



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Column phase: RTX-VMS

Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18

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Report Date: 21-May-2018 09:39

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051718.b\D1354.d
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Inj Date : 17-MAY-2018 09:58 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228547-1
Misc Info :
Comment : SW846 5030
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Meth Date : 21-May-2018 09:36 gcms-d.i Quant Type: ISTD
Cal Date : 17-MAY-2018 09:58 Cal File: D1354.d
Als bottle: 4 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.486	(0.203)	4171	1.00000	0.91(a)	
2	Chloromethane	50	1.663	1.654	(0.227)	4626	1.00000	1.1	
3	Vinyl chloride	62	1.728	1.728	(0.236)	3153	1.00000	0.96(a)	
4	Bromomethane	94	2.025	2.025	(0.277)	1825	1.00000	1.1	
5	Chloroethane	64	2.146	2.137	(0.293)	1507	1.00000	0.98(a)	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	4838	1.00000	0.94(a)	
7	Diethyl Ether	59	2.583	2.583	(0.353)	1385	1.00000	0.85(a)	
8	Tertiary-butyl alcohol	59	3.959	3.969	(0.541)	474	5.00000	10.8	
9	1,1-Dichloroethene	96	2.788	2.779	(0.381)	2215	1.00000	1.1	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	6298	1.00000	1.0	
11	Freon-113	151	2.825	2.834	(0.386)	1488	1.00000	0.94(a)	
12	Iodomethane	142	2.936	2.937	(0.401)	1114	1.00000	3.3(T)	
13	Acrolein	56	3.159	3.160	(0.432)	1618	5.00000	4.5(a)	
14	Methylene Chloride	84	3.448	3.448	(0.471)	3377	1.00000	1.2(a)	
15	Acetone	43	3.522	3.522	(0.482)	4790	5.00000	5.6	
16	Isobutyl Alcohol	43	7.612	7.613	(1.041)	1246	20.0000	37.1	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	2880	1.00000	1.1	
18	Allyl Chloride	41	3.318	3.318	(0.454)	3219	1.00000	0.79(a)	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	6138	1.00000	0.89(a)	
20	Acetonitrile	39	4.145	4.136	(0.567)	586	10.0000	8.1(a)	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	5642	1.00000	1.6	
22	Chloroprene	53	4.480	4.480	(0.612)	3070	1.00000	0.72(a)	
23	Propionitrile	54	7.148	7.148	(0.977)	2800	10.0000	7.8(a)	
24	Methacrylonitrile	41	7.185	7.185	(0.982)	13444	10.0000	7.9(a)	

Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\D1354.d
Report Date: 21-May-2018 09:39

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	25 1,1-Dichloroethane	63	4.517	4.517	(0.617)	5740	1.00000	1.1	
	26 Acrylonitrile	52	4.619	4.610	(0.631)	3666	5.00000	4.2(a)	
	27 Ethyl tertiary-butyl ether	59	4.972	4.963	(0.680)	4364	1.00000	2.0	
	28 Vinyl Acetate	43	4.991	4.982	(0.616)	4871	1.00000	0.80(Ta)	
	29 cis-1,2-Dichloroethene	96	5.446	5.437	(0.745)	2813	1.00000	1.00	
M	30 1,2-Dichloroethylene (total)	96				5693	1.00000	(a)	
	31 Methyl Methacrylate	41	10.652	10.643	(1.316)	1256	1.00000	1.8	
	32 2,2-Dichloropropane	77	5.651	5.642	(0.773)	3501	1.00000	0.93(a)	
	33 Bromochloromethane	128	5.818	5.809	(0.795)	1330	1.00000	0.94(a)	
	34 Chloroform	83	6.013	6.014	(0.822)	5892	1.00000	1.0	
	35 Carbon Tetrachloride	117	6.246	6.237	(0.772)	4134	1.00000	1.0	
	36 Tetrahydrofuran	42	6.320	6.311	(0.864)	3078	5.00000	4.2(a)	
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	161718	50.0000	50.2	
	38 1,1,1-Trichloroethane	97	6.385	6.376	(0.873)	5173	1.00000	1.1	
	39 1,1-Dichloropropene	75	6.627	6.627	(0.819)	4092	1.00000	1.0	
	40 2-Butanone	43	6.664	6.655	(0.911)	6053	5.00000	4.8(a)	
	41 Benzene	78	7.055	7.064	(0.871)	10362	1.00000	1.0	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	262988	50.0000		
	43 Cyclohexane	56	5.781	5.791	(0.790)	3488	1.00000	0.82(a)	
	44 Ethyl Methacrylate	69	9.137	9.137	(1.129)	953	1.00000	1.9	
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	229063	50.0000	52.1	
	46 Tertiary-amyl methyl ether	73	7.334	7.334	(1.003)	4283	1.00000	2.2	
	47 1,2-Dichloroethane	62	7.408	7.408	(0.915)	5961	1.00000	1.2	
	48 Trichloroethene	95	8.003	8.003	(0.989)	3271	1.00000	1.1	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	421288	50.0000		
	50 Dibromomethane	93	8.598	8.589	(1.062)	2032	1.00000	1.0	
	51 1,2-Dichloropropane	63	8.737	8.738	(1.079)	2875	1.00000	1.0(T)	
	52 Bromodichloromethane	83	8.849	8.858	(1.093)	3993	1.00000	0.99(a)	
	53 cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	3462	1.00000	2.0	
$	55 Toluene-D8	98	9.881	9.881	(1.220)	509763	50.0000	49.6	
	56 2-Chloroethylvinylether	63	9.639	9.639	(1.191)	1075	1.00000	1.3	
	57 Toluene	92	9.937	9.937	(1.227)	6805	1.00000	1.1	
	58 4-methyl-2-pentanone	43	10.411	10.411	(1.286)	12041	5.00000	4.6(a)	
	59 Tetrachloroethene	164	10.364	10.364	(0.898)	2216	1.00000	1.1	
	60 trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	3360	1.00000	0.82(a)	
	61 1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	2306	1.00000	1.0	
	62 Dibromochloromethane	129	10.773	10.774	(0.934)	2520	1.00000	0.87(a)	
	63 1,3-Dichloropropane	76	10.875	10.876	(0.943)	4762	1.00000	1.0	
	64 1,2-Dibromoethane	107	10.996	10.997	(1.358)	2600	1.00000	0.97(Ta)	
	65 2-Hexanone	43	11.294	11.294	(0.979)	6738	5.00000	3.8(a)	
*	66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	389724	50.0000		
	67 Chlorobenzene	112	11.554	11.554	(1.002)	7610	1.00000	1.1	
	152 1-Chlorohexane	91	11.601	11.601	(1.006)	13126	1.00000	(a)	
	68 Ethylbenzene	91	11.601	11.601	(1.006)	13126	1.00000	1.0	
	69 1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	2504	1.00000	0.96(a)	
M	70 Xylenes (total)	106				25777	5.00000	(a)	
	71 m+p-Xylenes	91	11.749	11.750	(1.019)	18241	2.00000	1.9(a)	
	72 o-Xylene	91	12.168	12.168	(1.055)	7536	1.00000	0.81(a)	
	73 Styrene	104	12.223	12.224	(1.060)	5414	1.00000	0.78(a)	
	74 Bromoform	173	12.233	12.233	(1.060)	1335	1.00000	0.79(Ta)	
	75 Isopropylbenzene	105	12.474	12.475	(0.899)	9202	1.00000	0.88(a)	
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	209838	50.0000	49.6	
	77 cis-1,4-Dichloro-2-Butene	53	12.809	12.809	(0.923)	790	1.00000	1.8	
	78 trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	518	1.00000	1.1	

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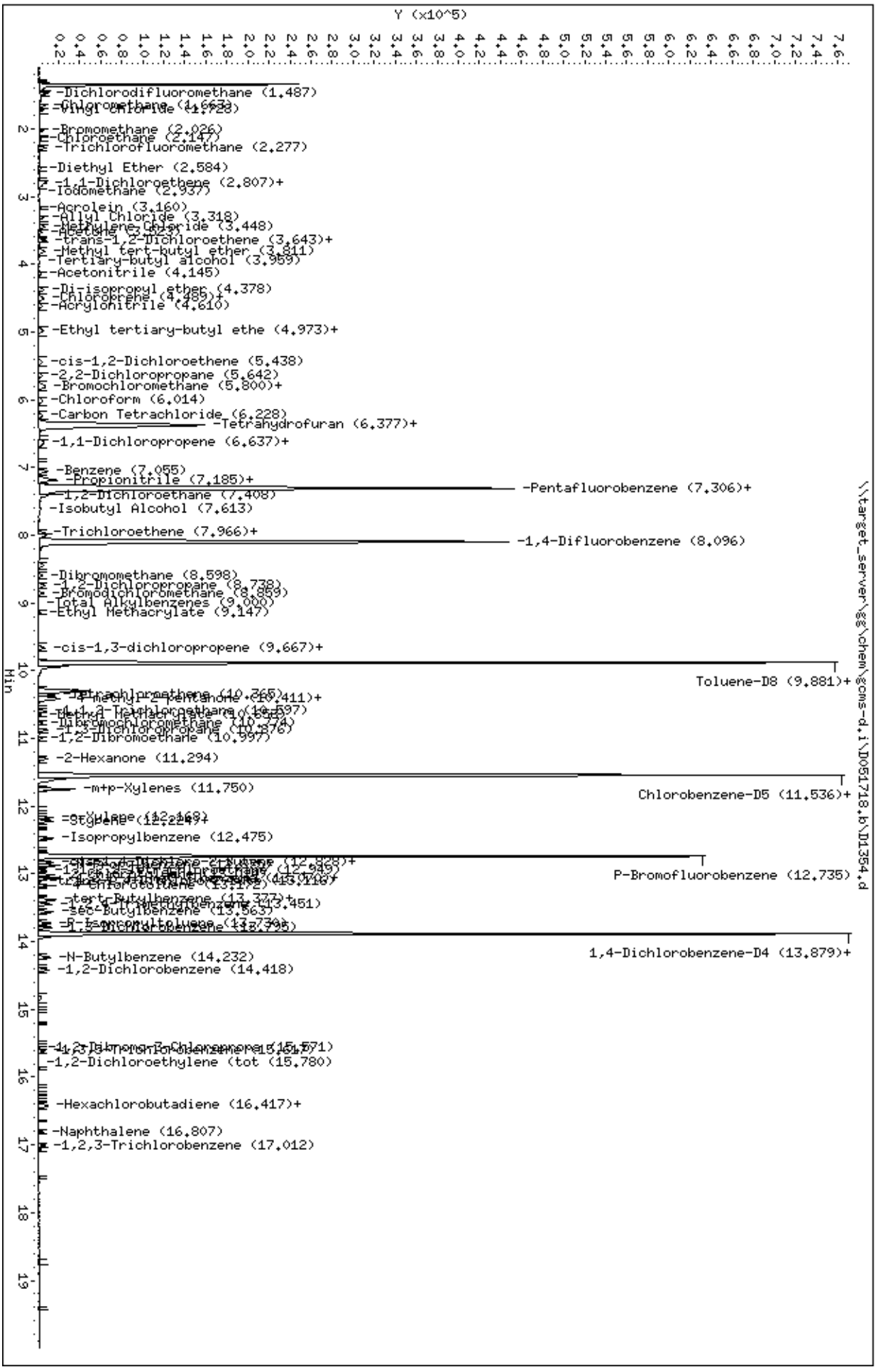
Report Date: 21-May-2018 09:39

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	79 Bromobenzene	156	12.828	12.828	(0.924)	3036	1.00000	1.0	
	80 N-Propylbenzene	91	12.874	12.874	(0.928)	14634	1.00000	1.0	
	81 1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.933)	3522	1.00000	1.1	
	82 1,3,5-Trimethylbenzene	105	13.060	13.060	(0.941)	7797	1.00000	0.86(a)	
	83 2-Chlorotoluene	91	13.014	13.014	(0.938)	8250	1.00000	0.99(a)	
	84 1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	3032	1.00000	1.0	
	85 4-Chlorotoluene	91	13.172	13.172	(0.949)	8836	1.00000	0.99(a)	
	86 tert-Butylbenzene	119	13.376	13.377	(0.964)	7025	1.00000	0.82(a)	
	87 Pentachloroethane	117	13.395	13.395	(0.965)	1558	1.00000	0.77(a)	
	88 1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	7852	1.00000	0.84(a)	
	89 P-Isopropyltoluene	119	13.729	13.720	(0.989)	7673	1.00000	0.85(a)	
	90 1,3-Dichlorobenzene	146	13.795	13.795	(0.994)	5414	1.00000	1.0	
*	91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	195078	50.0000		
	92 1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	6060	1.00000	1.1	
	93 N-Butylbenzene	91	14.231	14.222	(1.025)	7774	1.00000	0.88(a)	
	94 sec-Butylbenzene	105	13.562	13.562	(0.977)	10029	1.00000	0.89(a)	
	95 1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	4567	1.00000	0.95(a)	
	96 1,2-Dibromo-3-Chloropropane	75	15.570	15.570	(1.122)	603	1.00000	1.1	
	97 1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	2752	1.00000	0.83(a)	
	98 Hexachlorobutadiene	225	16.416	16.407	(1.183)	1577	1.00000	1.1	
	99 1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	2445	1.00000	0.86(a)	
	100 1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	7414	1.00000	0.80(a)	
	101 Naphthalene	128	16.807	16.806	(1.211)	3912	1.00000	2.4	
	102 1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	2193	1.00000	0.92(a)	
	103 Methyl Acetate	43	3.689	3.690	(0.504)	1779	1.00000	0.80(a)	
	104 Methylcyclohexane	83	7.975	7.966	(1.090)	2421	1.00000	1.2	
M	153 Total Alkylbenzenes	100				62784	1.00000	(a)	

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).



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Operator: JSS
Column diameter: 0.18

Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\D1355.d
Report Date: 21-May-2018 09:39

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051718.b\D1355.d
Lab Smp Id: WG228547-6
Inj Date : 17-MAY-2018 10:34 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228547-6
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051718.b\D8A05(22)D.m
Meth Date : 21-May-2018 09:36 gcms-d.i Quant Type: ISTD
Cal Date : 17-MAY-2018 10:34 Cal File: D1355.d
Als bottle: 5 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.486	(0.203)	684308	150.000	146	
2	Chloromethane	50	1.654	1.654	(0.226)	597262	150.000	139	
3	Vinyl chloride	62	1.728	1.728	(0.236)	489460	150.000	145	
4	Bromomethane	94	2.025	2.025	(0.277)	252925	150.000	148	
5	Chloroethane	64	2.128	2.137	(0.291)	163765	150.000	104	
6	Trichlorofluoromethane	101	2.267	2.277	(0.310)	770764	150.000	145	
7	Diethyl Ether	59	2.583	2.583	(0.353)	263682	150.000	159(A)	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.543)	138212	750.000	734	
9	1,1-Dichloroethene	96	2.778	2.779	(0.380)	279268	150.000	142	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	966552	150.000	152(A)	
11	Freon-113	151	2.834	2.834	(0.387)	239730	150.000	148	
12	Iodomethane	142	2.936	2.937	(0.401)	320627	150.000	151(A)	
13	Acrolein	56	3.160	3.160	(0.432)	242445	750.000	659	
14	Methylene Chloride	84	3.448	3.448	(0.471)	433072	150.000	145	
15	Acetone	43	3.522	3.522	(0.482)	615837	750.000	704	
16	Isobutyl Alcohol	43	7.613	7.613	(1.041)	329007	3000.00	2970	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	397797	150.000	146	
18	Allyl Chloride	41	3.318	3.318	(0.454)	672352	150.000	162(A)	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	1166600	150.000	164(A)	
20	Acetonitrile	39	4.145	4.136	(0.567)	113812	1500.00	1540(A)	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	1431826	150.000	149	
22	Chloroprene	53	4.480	4.480	(0.612)	725548	150.000	166(A)	
23	Propionitrile	54	7.157	7.148	(0.978)	571731	1500.00	1560(A)	
24	Methacrylonitrile	41	7.185	7.185	(0.982)	2665452	1500.00	1530(A)	

Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\D1355.d
Report Date: 21-May-2018 09:39

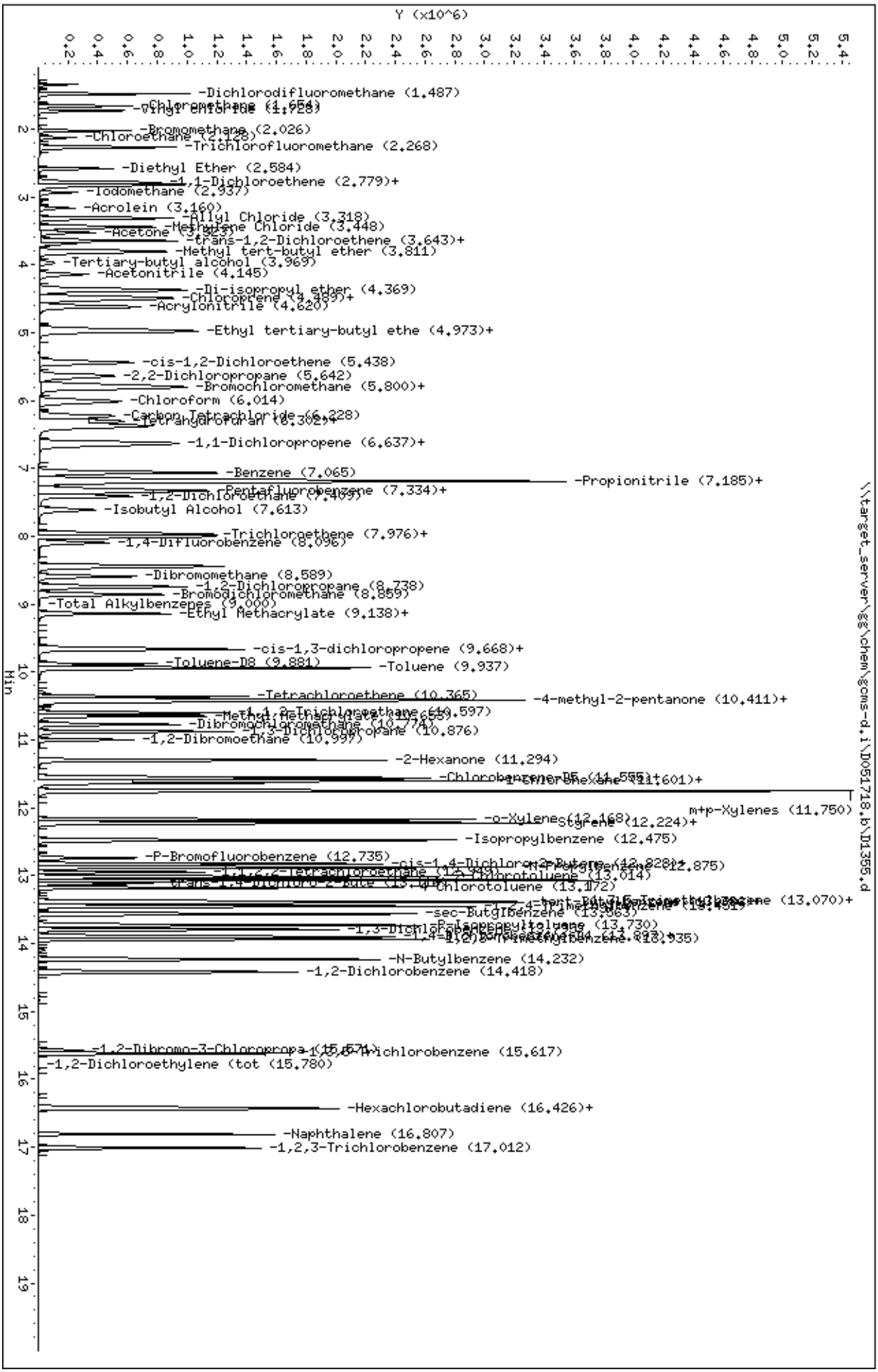
							AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	25 1,1-Dichloroethane	63	4.517	4.517	(0.617)	807464	150.000	147	
	26 Acrylonitrile	52	4.619	4.610	(0.631)	690721	750.000	783(A)	
	27 Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	1249885	150.000	150(A)	
	28 Vinyl Acetate	43	4.982	4.982	(0.615)	1057805	150.000	166(A)	
	29 cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	447137	150.000	155(A)	
M	30 1,2-Dichloroethylene (total)	96				844934	150.000	(a)	
	31 Methyl Methacrylate	41	10.643	10.643	(1.315)	431506	150.000	150(A)	
	32 2,2-Dichloropropane	77	5.642	5.642	(0.771)	612027	150.000	160(A)	
	33 Bromochloromethane	128	5.818	5.809	(0.795)	201872	150.000	140	
	34 Chloroform	83	6.014	6.014	(0.822)	857199	150.000	149	
	35 Carbon Tetrachloride	117	6.237	6.237	(0.770)	633238	150.000	150(A)	
	36 Tetrahydrofuran	42	6.302	6.311	(0.861)	618618	750.000	824(A)	
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	163325	50.0000	49.5	
	38 1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	744617	150.000	150(A)	
	39 1,1-Dichloropropene	75	6.618	6.627	(0.817)	631247	150.000	151(A)	
	40 2-Butanone	43	6.655	6.655	(0.910)	1009373	750.000	776(A)	
	41 Benzene	78	7.064	7.064	(0.873)	1633457	150.000	151(A)	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	269313	50.0000		
	43 Cyclohexane	56	5.790	5.791	(0.792)	695718	150.000	159(A)	
	44 Ethyl Methacrylate	69	9.137	9.137	(1.129)	307511	150.000	150	
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	223811	50.0000	49.7	
	46 Tertiary-amyl methyl ether	73	7.334	7.334	(1.003)	1021444	150.000	151(A)	
	47 1,2-Dichloroethane	62	7.408	7.408	(0.915)	726902	150.000	143	
	48 Trichloroethene	95	8.003	8.003	(0.989)	449854	150.000	145	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	443070	50.0000		
	50 Dibromomethane	93	8.589	8.589	(1.061)	316429	150.000	154(A)	
	51 1,2-Dichloropropane	63	8.737	8.738	(1.079)	464962	150.000	155(A)	
	52 Bromodichloromethane	83	8.858	8.858	(1.094)	684366	150.000	161(A)	
	53 cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	818228	150.000	151(A)	
	54 1,4-Dioxane	88	9.137	9.137	(1.129)	66928	3000.00	2620	
$	55 Toluene-D8	98	9.881	9.881	(1.220)	545054	50.0000	50.5	
	56 2-Chloroethylvinylether	63	9.639	9.639	(1.191)	262427	150.000	150	
	57 Toluene	92	9.937	9.937	(1.227)	993568	150.000	148	
	58 4-methyl-2-pentanone	43	10.411	10.411	(1.286)	2072528	750.000	760(A)	
	59 Tetrachloroethene	164	10.364	10.364	(0.898)	318522	150.000	146	
	60 trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	728648	150.000	169(A)	
	61 1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	351683	150.000	151(A)	
	62 Dibromochloromethane	129	10.773	10.774	(0.933)	508237	150.000	167(A)	
	63 1,3-Dichloropropane	76	10.876	10.876	(0.942)	744297	150.000	153(A)	
	64 1,2-Dibromoethane	107	10.996	10.997	(1.358)	439159	150.000	156(A)	
	65 2-Hexanone	43	11.294	11.294	(0.978)	1486037	750.000	808(A)	
*	66 Chlorobenzene-D5	117	11.545	11.536	(1.000)	407199	50.0000		
	67 Chlorobenzene	112	11.554	11.554	(1.001)	1104473	150.000	148	
	152 1-Chlorohexane	91	11.601	11.601	(1.005)	1956281	150.000	(a)	
	68 Ethylbenzene	91	11.601	11.601	(1.005)	1956281	150.000	148	
	69 1,1,1,2-Tetrachloroethane	131	11.629	11.629	(1.007)	430843	150.000	158(A)	
M	70 Xylenes (total)	106				4595278	150.000	(a)	
	71 m+p-Xylenes	91	11.749	11.750	(1.018)	3009812	300.000	301(A)	
	72 o-Xylene	91	12.168	12.168	(1.054)	1585466	150.000	163(A)	
	73 Styrene	104	12.224	12.224	(1.059)	1179515	150.000	163(A)	
	74 Bromoform	173	12.233	12.233	(1.060)	301399	150.000	171(A)	
	75 Isopropylbenzene	105	12.475	12.475	(0.899)	1773426	150.000	157(A)	
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	226645	50.0000	51.0	
	77 cis-1,4-Dichloro-2-Butene	53	12.809	12.809	(0.923)	185829	150.000	151(A)	

Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\D1355.d
Report Date: 21-May-2018 09:39

			QUANT SIG					AMOUNTS		
								CAL-AMT	ON-COL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	146231	150.000	150	
	79	Bromobenzene	156	12.828	12.828	(0.924)	457434	150.000	148	
	80	N-Propylbenzene	91	12.874	12.874	(0.928)	2251431	150.000	147	
	81	1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.933)	519684	150.000	147	
	82	1,3,5-Trimethylbenzene	105	13.069	13.060	(0.942)	1522485	150.000	155(A)	
	83	2-Chlorotoluene	91	13.014	13.014	(0.938)	1361044	150.000	152(A)	
	84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	456900	150.000	145	
	85	4-Chlorotoluene	91	13.172	13.172	(0.949)	1447166	150.000	151(A)	
	86	tert-Butylbenzene	119	13.376	13.377	(0.964)	1475381	150.000	159(A)	
	87	Pentachloroethane	117	13.395	13.395	(0.965)	359817	150.000	165(A)	
	88	1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	1595511	150.000	158(A)	
	89	P-Isopropyltoluene	119	13.730	13.720	(0.989)	1557032	150.000	160(A)	
	90	1,3-Dichlorobenzene	146	13.795	13.795	(0.994)	828234	150.000	149	
*	91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	210219	50.0000		
	92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	845120	150.000	146	
	93	N-Butylbenzene	91	14.232	14.222	(1.025)	1521089	150.000	159(A)	
	94	sec-Butylbenzene	105	13.562	13.562	(0.977)	1861140	150.000	154(A)	
	95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	811466	150.000	156(A)	
	96	1,2-Dibromo-3-Chloropropane	75	15.570	15.570	(1.122)	98679	150.000	164(A)	
	97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	593372	150.000	167(A)	
	98	Hexachlorobutadiene	225	16.416	16.407	(1.183)	226158	150.000	150(A)	
	99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	514658	150.000	168(A)	
	100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	1613134	150.000	161(A)	
	101	Naphthalene	128	16.807	16.806	(1.211)	1088321	150.000	148	
	102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	410130	150.000	160(A)	
	103	Methyl Acetate	43	3.689	3.690	(0.504)	362928	150.000	160(A)	
	104	Methylcyclohexane	83	7.966	7.966	(1.089)	666428	150.000	148	
M	153	Total Alkylbenzenes	100				11784069	150.000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.


Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\D1355.d
Date : 17-MAY-2018 10:34
Client ID:
Sample Info: WG228547-6
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051718.b\D1355.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.654)
-Vinyl chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.128)
-Trichlorofluoromethane (2.268)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.779)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.555)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.145)
-Di-isopropyl ether (4.369)
-Chloroprene (4.489)+
-Acrylonitrile (4.620)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.438)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.228)
-Tetrahydrofuran (6.302)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.065)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.334)+
-1,2-Dichloroethane (7.409)
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.976)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.859)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.668)+
-Toluene-D8 (9.881)
-Toluene (9.937)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-1,1,2-Trichloroethane (10.597)
-Methyl Methacrylate (10.765)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.555)+
-Ethylbenzene (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-cis-1,4-Dichloro-2-Butene (12.828)+
-1,1,2,2-Tetrachloroethane (13.014)
-4-Chlorotoluene (13.072)
-1,2,4-Trimethylbenzene (13.070)+
-sec-Butylbenzene (13.963)
-P-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (14.084)
-1,4-Dichlorobenzene (14.193)
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.671)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)

Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\D1356.d
Report Date: 21-May-2018 09:39

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051718.b\D1356.d
Lab Smp Id: WG228547-5
Inj Date : 17-MAY-2018 11:09 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228547-5
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051718.b\D8A05(22)D.m
Meth Date : 21-May-2018 09:36 gcms-d.i Quant Type: ISTD
Cal Date : 17-MAY-2018 11:09 Cal File: D1356.d
Als bottle: 6 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.486	(0.203)	504484	100.000	100	
2	Chloromethane	50	1.663	1.654	(0.227)	452665	100.000	98.0	
3	Vinyl chloride	62	1.728	1.728	(0.236)	387928	100.000	107	
4	Bromomethane	94	2.025	2.025	(0.277)	178744	100.000	97.6	
5	Chloroethane	64	2.128	2.137	(0.291)	151836	100.000	90.2	
6	Trichlorofluoromethane	101	2.267	2.277	(0.310)	555380	100.000	97.7	
7	Diethyl Ether	59	2.583	2.583	(0.353)	197907	100.000	111	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.543)	109422	500.000	535	
9	1,1-Dichloroethene	96	2.778	2.779	(0.380)	206470	100.000	97.5	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	710825	100.000	104	
11	Freon-113	151	2.834	2.834	(0.387)	182950	100.000	105	
12	Iodomethane	142	2.936	2.937	(0.401)	224817	100.000	99.8	
13	Acrolein	56	3.160	3.160	(0.432)	181489	500.000	460	
14	Methylene Chloride	84	3.448	3.448	(0.471)	319344	100.000	99.6	
15	Acetone	43	3.522	3.522	(0.482)	466376	500.000	497	
16	Isobutyl Alcohol	43	7.612	7.613	(1.041)	246677	2000.00	2080	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	295842	100.000	101	
18	Allyl Chloride	41	3.318	3.318	(0.454)	481019	100.000	108	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	876188	100.000	115	
20	Acetonitrile	39	4.136	4.136	(0.565)	86454	1000.00	1090	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	1044244	100.000	102	
22	Chloroprene	53	4.480	4.480	(0.612)	518208	100.000	110	
23	Propionitrile	54	7.148	7.148	(0.977)	432697	1000.00	1100	
24	Methacrylonitrile	41	7.185	7.185	(0.982)	1976719	1000.00	1060	

Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\D1356.d
Report Date: 21-May-2018 09:39

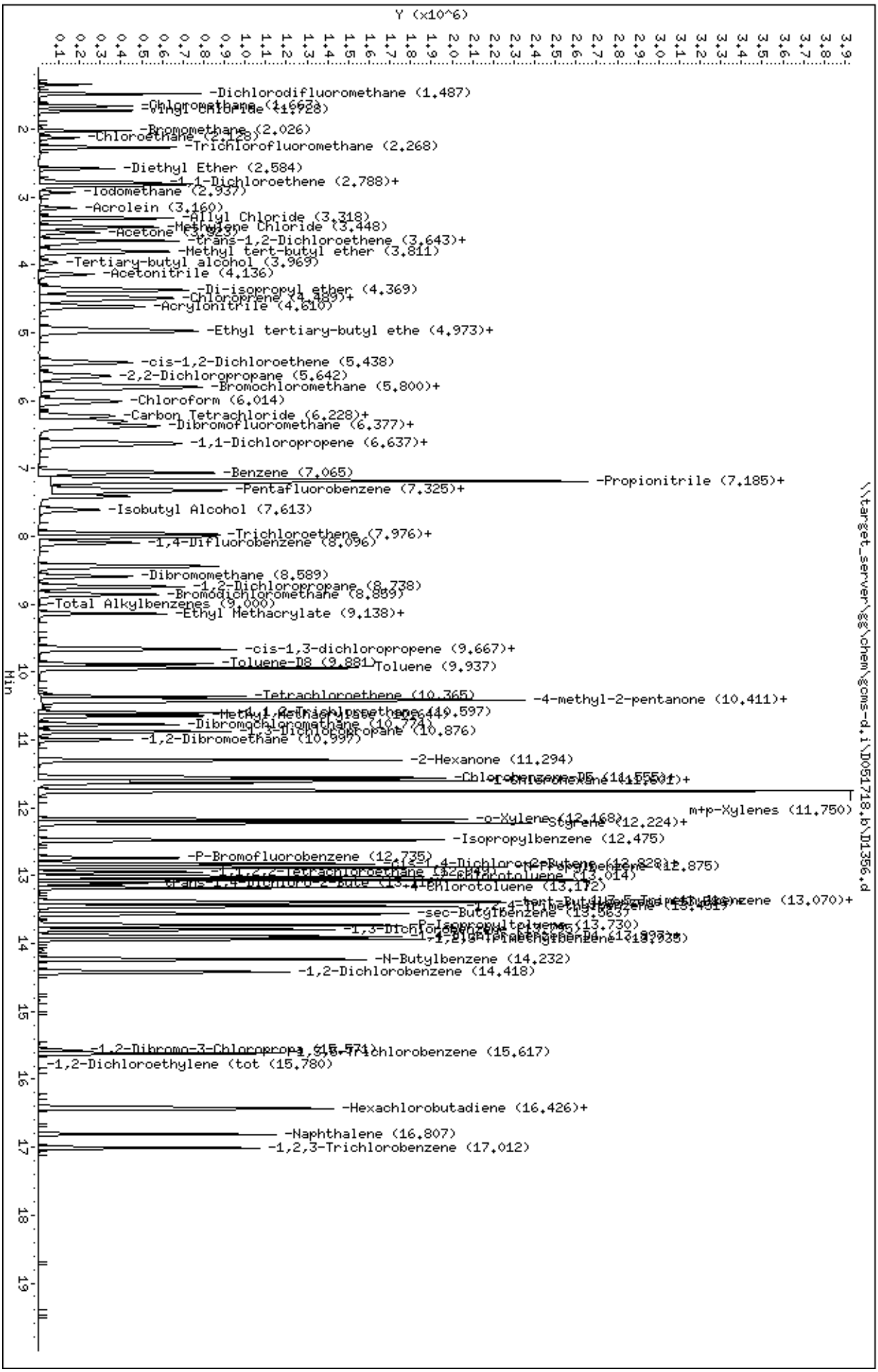
							AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	25 1,1-Dichloroethane	63	4.517	4.517	(0.617)	582508	100.000	99.0	
	26 Acrylonitrile	52	4.619	4.610	(0.631)	519776	500.000	549	
	27 Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	900041	100.000	101	
	28 Vinyl Acetate	43	4.982	4.982	(0.615)	762279	100.000	111	
	29 cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	323880	100.000	104	
M	30 1,2-Dichloroethylene (total)	96				619722	100.000	(a)	
	31 Methyl Methacrylate	41	10.643	10.643	(1.315)	305944	100.000	100	
	32 2,2-Dichloropropane	77	5.642	5.642	(0.771)	421738	100.000	102	
	33 Bromochloromethane	128	5.809	5.809	(0.794)	163968	100.000	106	
	34 Chloroform	83	6.014	6.014	(0.822)	612473	100.000	99.5	
	35 Carbon Tetrachloride	117	6.227	6.237	(0.769)	452116	100.000	100	
	36 Tetrahydrofuran	42	6.302	6.311	(0.861)	461795	500.000	574	
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	176541	50.0000	49.9	
	38 1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	522806	100.000	98.4	
	39 1,1-Dichloropropene	75	6.618	6.627	(0.817)	452546	100.000	101	
	40 2-Butanone	43	6.655	6.655	(0.910)	749449	500.000	537	
	41 Benzene	78	7.064	7.064	(0.873)	1183561	100.000	102	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	288868	50.0000		
	43 Cyclohexane	56	5.790	5.791	(0.792)	525095	100.000	112	
	44 Ethyl Methacrylate	69	9.137	9.137	(1.129)	220508	100.000	101	
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	228263	50.0000	47.3	
	46 Tertiary-amyl methyl ether	73	7.334	7.334	(1.003)	720677	100.000	99.8	
	47 1,2-Dichloroethane	62	7.408	7.408	(0.915)	503451	100.000	92.8	
	48 Trichloroethene	95	8.003	8.003	(0.989)	319649	100.000	96.1	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	474056	50.0000		
	50 Dibromomethane	93	8.589	8.589	(1.061)	222820	100.000	101	
	51 1,2-Dichloropropane	63	8.737	8.738	(1.079)	326009	100.000	102	
	52 Bromodichloromethane	83	8.858	8.858	(1.094)	468730	100.000	103	
	53 cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	569134	100.000	98.8	
	54 1,4-Dioxane	88	9.137	9.137	(1.129)	56203	2000.00	2050	
$	55 Toluene-D8	98	9.881	9.881	(1.220)	577489	50.0000	50.0	
	56 2-Chloroethylvinylether	63	9.639	9.639	(1.191)	187633	100.000	100	
	57 Toluene	92	9.937	9.937	(1.227)	704696	100.000	98.3	
	58 4-methyl-2-pentanone	43	10.411	10.411	(1.286)	1538335	500.000	527	
	59 Tetrachloroethene	164	10.364	10.364	(0.898)	228867	100.000	98.9	
	60 trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	506894	100.000	110	
	61 1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	252876	100.000	102	
	62 Dibromochloromethane	129	10.773	10.774	(0.933)	355776	100.000	110	
	63 1,3-Dichloropropane	76	10.876	10.876	(0.942)	535311	100.000	104	
	64 1,2-Dibromoethane	107	10.996	10.997	(1.358)	313069	100.000	104	
	65 2-Hexanone	43	11.294	11.294	(0.978)	1100234	500.000	565	
*	66 Chlorobenzene-D5	117	11.545	11.536	(1.000)	431428	50.0000		
	67 Chlorobenzene	112	11.554	11.554	(1.001)	778468	100.000	98.3	
	152 1-Chlorohexane	91	11.601	11.601	(1.005)	1387803	100.000	(a)	
	68 Ethylbenzene	91	11.601	11.601	(1.005)	1387803	100.000	98.9	
	69 1,1,1,2-Tetrachloroethane	131	11.629	11.629	(1.007)	299609	100.000	104	
M	70 Xylenes (total)	106				3242556	100.000	(a)	
	71 m+p-Xylenes	91	11.749	11.750	(1.018)	2123847	200.000	200	
	72 o-Xylene	91	12.168	12.168	(1.054)	1118709	100.000	108	
	73 Styrene	104	12.223	12.224	(1.059)	838460	100.000	109	
	74 Bromoform	173	12.233	12.233	(1.060)	213784	100.000	114	
	75 Isopropylbenzene	105	12.474	12.475	(0.899)	1244955	100.000	106	
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	233504	50.0000	49.1	
	77 cis-1,4-Dichloro-2-Butene	53	12.809	12.809	(0.923)	126021	100.000	98.5	

Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\D1356.d
Report Date: 21-May-2018 09:39

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	101547	100.000	100	
79	Bromobenzene	156	12.828	12.828	(0.924)	323193	100.000	100	
80	N-Propylbenzene	91	12.874	12.874	(0.928)	1593608	100.000	99.9	
81	1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.933)	374153	100.000	102	
82	1,3,5-Trimethylbenzene	105	13.069	13.060	(0.942)	1076915	100.000	105	
83	2-Chlorotoluene	91	13.014	13.014	(0.938)	951561	100.000	102	
84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	331263	100.000	101	
85	4-Chlorotoluene	91	13.172	13.172	(0.949)	1012517	100.000	101	
86	tert-Butylbenzene	119	13.376	13.377	(0.964)	1037503	100.000	107	
87	Pentachloroethane	117	13.395	13.395	(0.965)	248638	100.000	109	
88	1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	1114210	100.000	106	
89	P-Isopropyltoluene	119	13.730	13.720	(0.989)	1087161	100.000	107	
90	1,3-Dichlorobenzene	146	13.795	13.795	(0.994)	581937	100.000	100	
* 91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	219096	50.0000		
92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	594397	100.000	98.3	
93	N-Butylbenzene	91	14.232	14.222	(1.025)	1048254	100.000	105	
94	sec-Butylbenzene	105	13.562	13.562	(0.977)	1312243	100.000	104	
95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	568511	100.000	105	
96	1,2-Dibromo-3-Chloropropane	75	15.570	15.570	(1.122)	68930	100.000	110	
97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	402652	100.000	109	
98	Hexachlorobutadiene	225	16.416	16.407	(1.183)	156968	100.000	100	
99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	358966	100.000	112	
100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	1124862	100.000	108	
101	Naphthalene	128	16.807	16.806	(1.211)	796844	100.000	105	
102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	293600	100.000	110	
103	Methyl Acetate	43	3.689	3.690	(0.504)	268835	100.000	110	
104	Methylcyclohexane	83	7.966	7.966	(1.089)	497743	100.000	103	
M 153	Total Alkylbenzenes	100				8269894	100.000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\D1356.d
Date : 17-MAY-2018 11:09
Client ID:
Sample Info: WG228547-5
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051718.b\D1356.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)
-Vinyl Chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.168)
-Trichlorofluoromethane (2.268)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.788)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.523)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.369)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.438)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.228)+
-Dibromofluoromethane (6.377)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.065)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.325)+
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.976)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.899)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.881)
Toluene (9.937)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-Methyl Methacrylate (10.597)
-Dibromochloromethane (10.724)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.555)+
1-Chlorohexane (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
cis-1,4-Dichloro-2-Butene (12.828)+
-1,1,2,2-Tetrachloroethane (12.875)
-n-Propylbenzene (13.014)
trans-1,4-Dichloro-2-Butene (13.172)
4-Chlorotoluene (13.172)
-1,3,5-Trimethylbenzene (13.070)+
-sec-Butylbenzene (13.563)
-P-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.795)
-1,4-Dichlorobenzene-D4 (13.893)+
-1,2,3-Trimethylbenzene (13.935)
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.571)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)

Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1358A.d
Report Date: 21-May-2018 09:41

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051718B.b\D1358A.d
Lab Smp Id: WG228566-8
Inj Date : 17-MAY-2018 12:58 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228566-8
Misc Info : WG228566,WG228547-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051718B.b\D8A05(22)D.m
Meth Date : 18-May-2018 07:15 TCOTE Quant Type: ISTD
Cal Date : 17-MAY-2018 11:09 Cal File: D1356.d
Als bottle: 2 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.486	(0.203)	259858	47.5599	47.6	
2	Chloromethane	50	1.663	1.654	(0.227)	229891	45.8619	45.9	
3	Vinyl chloride	62	1.737	1.728	(0.238)	183870	46.8203	46.8	
4	Bromomethane	94	2.025	2.025	(0.277)	90118	45.3498	45.3	
5	Chloroethane	64	2.146	2.137	(0.293)	84882	46.4315	46.4	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	261859	42.4564	42.4	
7	Diethyl Ether	59	2.583	2.583	(0.353)	99201	51.3158	51.3	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.543)	45680	205.495	205	
9	1,1-Dichloroethene	96	2.788	2.779	(0.381)	108091	47.0423	47.0	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	346067	46.7175	46.7	
11	Freon-113	151	2.834	2.834	(0.387)	88886	47.1651	47.2	
12	Iodomethane	142	2.936	2.937	(0.401)	102826	43.6657	43.7	
13	Acrolein	56	3.160	3.160	(0.432)	83766	195.544	196(R)	
14	Methylene Chloride	84	3.448	3.448	(0.471)	167759	48.1835	48.2	
15	Acetone	43	3.522	3.522	(0.482)	44223	43.3986	43.4	
16	Isobutyl Alcohol	43	7.613	7.613	(1.041)	104067	824.703	825	
17	trans-1,2-Dichloroethene	96	3.652	3.643	(0.499)	156343	49.2363	49.2	
18	Allyl Chloride	41	3.318	3.318	(0.454)	240818	49.8466	49.8	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	411336	49.8228	49.8	
20	Acetonitrile	39	4.136	4.136	(0.565)	39701	460.994	461	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	522859	47.5561	47.6	
22	Chloroprene	53	4.480	4.480	(0.612)	253925	49.8641	49.9	
23	Propionitrile	54	7.148	7.148	(0.977)	200649	470.116	470	
24	Methacrylonitrile	41	7.185	7.185	(0.982)	963145	474.556	474	

Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1358A.d
Report Date: 21-May-2018 09:41

			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	322107	50.4576	50.4	
	26	Acrylonitrile	52	4.619	4.610	(0.631)	238936	232.586	232	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	445057	46.8853	46.9	
	28	Vinyl Acetate	43	4.991	4.982	(0.616)	399110	54.4910	54.5	
	29	cis-1,2-Dichloroethene	96	5.446	5.437	(0.745)	167752	49.9027	49.9	
M	30	1,2-Dichloroethylene (total)	96				324095	99.1390	99.1	
	31	Methyl Methacrylate	41	10.652	10.643	(1.316)	143885	44.6745	44.7	
	32	2,2-Dichloropropane	77	5.651	5.642	(0.773)	214149	47.9369	47.9	
	33	Bromochloromethane	128	5.818	5.809	(0.795)	84976	50.5038	50.5	
	34	Chloroform	83	6.014	6.014	(0.822)	317508	47.5045	47.5	
	35	Carbon Tetrachloride	117	6.237	6.237	(0.770)	227863	47.2619	47.3	
	36	Tetrahydrofuran	42	6.311	6.311	(0.863)	39195	44.8492	44.8	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	186916	48.6537	48.6	
	38	1,1,1-Trichloroethane	97	6.385	6.376	(0.873)	268353	46.5502	46.6	
	39	1,1-Dichloropropene	75	6.627	6.627	(0.819)	233454	48.7690	48.8	
	40	2-Butanone	43	6.655	6.655	(0.910)	67624	44.6456	44.6	
	41	Benzene	78	7.064	7.064	(0.873)	619105	49.8953	49.9	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	313553	50.0000		
	43	Cyclohexane	56	5.790	5.791	(0.792)	254024	49.9154	49.9	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	100004	43.5831	43.6	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	239236	45.6421	45.6	
	46	Tertiary-amyl methyl ether	73	7.334	7.334	(1.003)	345550	44.9739	45.0	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	260274	44.7742	44.8	
	48	Trichloroethene	95	8.012	8.003	(0.990)	167383	46.9700	47.0	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	507874	50.0000		
	50	Dibromomethane	93	8.589	8.589	(1.061)	113066	48.0504	48.0	
	51	1,2-Dichloropropane	63	8.747	8.738	(1.080)	171239	49.7684	49.8	
	52	Bromodichloromethane	83	8.858	8.858	(1.094)	245470	50.3522	50.4	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	276494	45.5790	45.6	
	54	1,4-Dioxane	88	9.146	9.137	(1.130)	28178	960.720	961	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	615356	49.7105	49.7	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	100529	50.3980	50.4	
	57	Toluene	92	9.946	9.937	(1.228)	369878	48.1634	48.2	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	144374	46.1596	46.2	
	59	Tetrachloroethene	164	10.364	10.364	(0.898)	121312	49.6639	49.7	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	253937	51.4754	51.5	
	61	1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	126383	47.4066	47.4	
	62	Dibromochloromethane	129	10.773	10.774	(0.933)	177476	52.2154	52.2	
	63	1,3-Dichloropropane	76	10.876	10.876	(0.942)	257867	47.3162	47.3	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	152068	47.1957	47.2	
	65	2-Hexanone	43	11.294	11.294	(0.978)	97157	47.2701	47.3	
*	66	Chlorobenzene-D5	117	11.545	11.536	(1.000)	455386	50.0000		
	67	Chlorobenzene	112	11.554	11.554	(1.001)	404901	48.4626	48.5	
	152	1-Chlorohexane	91	11.601	11.601	(1.005)	713114			(aR)
	68	Ethylbenzene	91	11.601	11.601	(1.005)	713114	48.1677	48.2	
	69	1,1,1,2-Tetrachloroethane	131	11.629	11.629	(1.007)	153609	50.4142	50.4	
M	70	Xylenes (total)	106				1670846	150.769	151	
	71	m+p-Xylenes	91	11.749	11.750	(1.018)	1111730	99.3786	99.4	
	72	o-Xylene	91	12.168	12.168	(1.054)	559116	51.3903	51.4	
	73	Styrene	104	12.224	12.224	(1.059)	426364	52.7328	52.7	
	74	Bromoform	173	12.233	12.233	(1.060)	99689	50.4831	50.5	
	75	Isopropylbenzene	105	12.475	12.475	(0.899)	658956	53.5305	53.5	
$	76	P-Bromofluorobenzene	95	12.744	12.735	(1.574)	245917	48.2298	48.2	
	77	cis-1,4-Dichloro-2-Butene	53	12.818	12.809	(0.924)	53847	40.8363	40.8	

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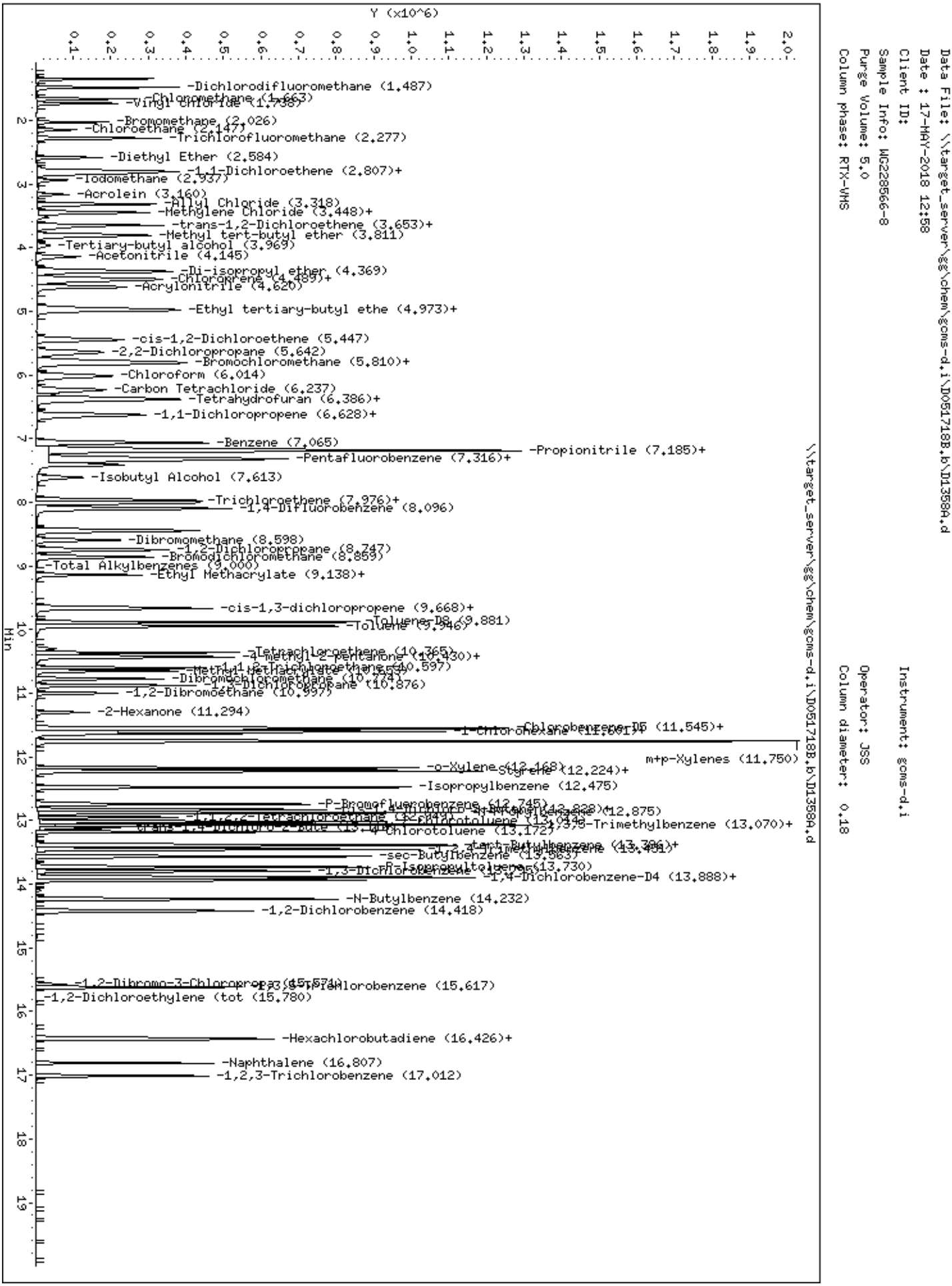
Report Date: 21-May-2018 09:41

		QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL	
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	78 trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	43368	41.0822	41.1	
	79 Bromobenzene	156	12.837	12.828	(0.925)	166277	49.3465	49.3	
	80 N-Propylbenzene	91	12.874	12.874	(0.928)	806851	48.2804	48.3	
	81 1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.933)	178913	46.5112	46.5	
	82 1,3,5-Trimethylbenzene	105	13.069	13.060	(0.942)	544531	50.9157	50.9	
	83 2-Chlorotoluene	91	13.014	13.014	(0.938)	478778	49.0311	49.0	
	84 1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	153778	44.8418	44.8	
	85 4-Chlorotoluene	91	13.181	13.172	(0.950)	512206	48.9916	49.0	
	86 tert-Butylbenzene	119	13.376	13.377	(0.964)	511922	50.5407	50.5	
	87 Pentachloroethane	117	13.395	13.395	(0.965)	117686	49.4810	49.5	
	88 1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	561552	50.8446	50.8	
	89 P-Isopropyltoluene	119	13.730	13.720	(0.989)	548221	51.4467	51.4	
	90 1,3-Dichlorobenzene	146	13.795	13.795	(0.994)	297270	48.8811	48.9	
*	91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	229479	50.0000		
	92 1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	299142	47.2332	47.2	
	93 N-Butylbenzene	91	14.232	14.222	(1.025)	527302	50.5393	50.5	
	94 sec-Butylbenzene	105	13.562	13.562	(0.977)	659938	50.0086	50.0	
	95 1,2-Dichlorobenzene	146	14.427	14.418	(1.040)	280898	49.6320	49.6	
	96 1,2-Dibromo-3-Chloropropane	75	15.570	15.570	(1.122)	26879	40.8874	40.9	
	97 1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	190763	49.2015	49.2	
	98 Hexachlorobutadiene	225	16.416	16.407	(1.183)	73485	44.7338	44.7	
	99 1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	164745	49.2665	49.3	
	100 1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	553531	50.6668	50.7	
	101 Naphthalene	128	16.807	16.806	(1.211)	326952	42.1013	42.1	
	102 1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	126862	45.4582	45.4	
	103 Methyl Acetate	43	3.689	3.690	(0.504)	115426	43.6679	43.7	
	104 Methylcyclohexane	83	7.975	7.966	(1.090)	243874	47.0221	47.0	
M	153 Total Alkylbenzenes	100				4160317	352.576	352	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.


Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1358A.d
Date : 17-MAY-2018 12:58
Client ID:
Sample Info: WG228566-8
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051718B.b\D1358A.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)
-Vinyl Chloride (1.738)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)+
-trans-1,2-Dichloroethene (3.653)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.145)
-Di-isopropyl ether (4.369)
-Chloroprene (4.489)+
-Acrylonitrile (4.620)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.447)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.810)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)
-Tetrahydrofuran (6.386)+
-1,1-Dichloropropene (6.628)+
-Benzene (7.065)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.316)+
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.976)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.598)
-1,2-Dichloropropane (8.747)
-Bromodichloromethane (8.859)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.668)+
-Toluene-D8 (9.881)
-Toluene (9.946)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.430)+
-1,1,2-Trichloroethane (10.597)
-Methyl Methacrylate (10.657)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-1-Chlorohexane (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.745)
-Cis-1,4-Dichloro-2-Butene (12.828)+
-N-Propylbenzene (12.875)
-1,1,2,2-Tetrachloroethane (12.949)
-1,3,5-Trimethylbenzene (13.070)+
-trans-1,4-Dichloro-2-Butene (13.148)
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.396)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.563)
-P-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.795)
-1,4-Dichlorobenzene-D4 (13.888)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.571)
-1,3,5-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3902
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-D
Lab File IDs : D1473.d D1472.d D1471.d D1470.d D1475.d D1474.d
Column ID:
Calibration Date(s): 22-MAY-18 08:30 22-MAY-18 11:28

	1.0000 Level 1	5.0000 Level 2	20.0000 Level 3	50.0000 Level 4	100.0000 Level 5	150.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Dichlorodifluoromethane	0.51580	0.72356	0.62043	0.56627	0.58824	0.60582	AVG		0.60335		11.4866	15.00000	O
Chloromethane	0.67451	0.76115	0.67184	0.55432	0.63418	0.60399	AVG		0.65000		10.8687	15.00000	O
Vinyl chloride	0.43568	0.59482	0.53318	0.45805	0.56871	0.52657	AVG		0.51950		11.9078	15.00000	O
Bromomethane	0.25828	0.30443	0.27747	0.25045	0.28578	0.28550	AVG		0.27699		7.14330	15.00000	O
Chloroethane	0.24054	0.33950	0.27518	0.24245	0.26030	0.24906	AVG		0.26784		13.9583	15.00000	O
Trichlorofluoromethane	0.80422	1.04271	0.89491	0.79005	0.87308	0.90987	AVG		0.88581		10.2561	15.00000	O
1,1-Dichloroethene	0.38399	0.43083	0.38009	0.34445	0.38990	0.37377	AVG		0.38384		7.28731	15.00000	O
Carbon Disulfide	0.97781	1.19015	1.09823	1.04107	1.18345	1.16932	AVG		1.11001		7.82284	15.00000	O
Freon-113	0.29949	0.29709	0.27783	0.26173	0.27974	0.27712	AVG		0.28217		4.98754	15.00000	O
Methylene Chloride	0.55109	0.50044	0.55140	0.52510	0.54843	0.53657	AVG		0.53551		3.73663	15.00000	O
Acetone	0.14734	0.19344	0.19466	0.17750	0.17554	0.15297	AVG		0.17357		11.4406	15.00000	O
trans-1,2-Dichloroethene	0.49005	0.56928	0.50202	0.47047	0.50955	0.49453	AVG		0.50598		6.66153	15.00000	O
Methyl tert-butyl ether	1.00471	1.33693	1.33343	1.35109	1.37890	1.40629	AVG		1.30189		11.3821	15.00000	O
1,1-Dichloroethane	0.90323	1.11102	1.01995	0.96159	1.01623	1.00525	AVG		1.00288		6.88019	15.00000	O
cis-1,2-Dichloroethene	0.45514	0.55643	0.52505	0.50671	0.54765	0.54641	AVG		0.52290		7.23056	15.00000	O
2,2-Dichloropropane	0.62148	0.79083	0.77077	0.73702	0.77017	0.78672	AVG		0.74617		8.57110	15.00000	O
Bromochloromethane	0.23062	0.28546	0.26670	0.26189	0.26911	0.25568	AVG		0.26158		6.93728	15.00000	O
Chloroform	0.98392	1.14173	1.07284	1.01758	1.06624	1.07491	AVG		1.05953		5.11614	15.00000	O
Carbon Tetrachloride	0.40149	0.51427	0.48345	0.45824	0.49186	0.49106	AVG		0.47340		8.35655	15.00000	O
1,1,1-Trichloroethane	0.81700	1.01185	0.92969	0.86437	0.94007	0.94425	AVG		0.91787		7.42066	15.00000	O
1,1-Dichloropropene	0.39206	0.50489	0.47684	0.44497	0.48597	0.47826	AVG		0.46383		8.65571	15.00000	O
2-Butanone	4217	34303	137251	334229	636292	943254	LNR	-0.09441	0.23515		0.99916	0.99000	O
Benzene	1.07773	1.33260	1.24236	1.15822	1.25114	1.22051	AVG		1.21376		7.17992	15.00000	O
1,2-Dichloroethane	0.64174	0.65358	0.58360	0.56465	0.54984	0.57575	AVG		0.59486		7.16287	15.00000	O
Trichloroethene	0.30983	0.38342	0.34636	0.32698	0.34134	0.33820	AVG		0.34102		7.18744	15.00000	O
Dibromomethane	0.19561	0.25124	0.23728	0.23478	0.22900	0.23854	AVG		0.23108		8.15711	15.00000	O
1,2-Dichloropropane	0.28167	0.35125	0.34231	0.32864	0.34946	0.34749	AVG		0.33347		7.99419	15.00000	O
Bromodichloromethane	0.39195	0.50429	0.48854	0.48587	0.50635	0.52902	AVG		0.48433		9.87391	15.00000	O
cis-1,3-dichloropropene	3088	22276	95333	243272	534714	804505	LNR	0.02367	0.62182		0.99948	0.99000	O
Toluene	0.68053	0.79490	0.74624	0.70217	0.74440	0.73918	AVG		0.73457		5.39853	15.00000	O
4-methyl-2-pentanone	8659	70664	281457	689700	1284853	1969251	LNR	-0.08250	0.30132		0.99842	0.99000	O
Tetrachloroethene	0.22834	0.30442	0.26636	0.25009	0.33819	0.26004	AVG		0.27457		14.5263	15.00000	O
trans-1,3-Dichloropropene	0.35972	0.48304	0.50632	0.52989	0.53526	0.55936	AVG		0.49560		14.4239	15.00000	O
1,1,2-Trichloroethane	0.23679	0.27477	0.26500	0.25688	0.25528	0.25864	AVG		0.25789		4.87111	15.00000	O
Dibromochloromethane	0.27862	0.36499	0.39344	0.40016	0.40775	0.41730	AVG		0.37704		13.6274	15.00000	O
1,3-Dichloropropane	0.51004	0.64041	0.63144	0.61886	0.60813	0.61717	AVG		0.60434		7.87269	15.00000	O
1,2-Dibromoethane	0.24682	0.31829	0.31837	0.31974	0.31204	0.32498	AVG		0.30671		9.66032	15.00000	O

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3902
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-D
Lab File IDs : D1473.d D1472.d D1471.d D1470.d D1475.d D1474.d
Column ID:
Calibration Date(s): 22-MAY-18 08:30 22-MAY-18 11:28

2-Hexanone	4621	46098	198827	488726	916459	1399368	LNR	-0.09400	0.23648		0.99861	0.99000	O
Chlorobenzene	0.90597	1.00781	0.92671	0.87673	0.90569	0.90079	AVG		0.92062		4.95295	15.00000	O
Ethylbenzene	1.46991	1.84896	1.67118	1.57039	1.64262	1.61722	AVG		1.63671		7.67374	15.00000	O
1,1,1,2-Tetrachloroethane	0.27902	0.36947	0.35046	0.34154	0.35522	0.35602	AVG		0.34196		9.39865	15.00000	O
m+p-Xylenes	1.03020	1.40347	1.30420	1.23117	1.25770	1.25574	AVG		1.24708		9.83389	15.00000	O
o-Xylene	0.91013	1.27864	1.29583	1.25164	1.32246	1.31722	AVG		1.22932		12.8946	15.00000	O
Styrene	4481	34748	142674	350105	768736	1149571	LNR	0.01136	0.97863		0.99980	0.99000	O
Bromoform	0.15996	0.20298	0.22688	0.24195	0.23457	0.24770	AVG		0.21901		15.0030	15.00000	W
Isopropylbenzene	2.01406	2.94282	2.84418	2.70173	2.84489	2.83912	AVG		2.69780		12.7393	15.00000	O
Bromobenzene	0.66010	0.80309	0.74087	0.71403	0.73043	0.73629	AVG		0.73080		6.31112	15.00000	O
N-Propylbenzene	3.22358	4.06050	3.70357	3.50392	3.63795	3.62239	AVG		3.62532		7.52188	15.00000	O
1,1,2,2-Tetrachloroethane	0.73246	0.93561	0.86212	0.84454	0.76801	0.80901	AVG		0.82529		8.74802	15.00000	O
1,3,5-Trimethylbenzene	1.86584	2.55789	2.48822	2.39176	2.44482	2.48047	AVG		2.37150		10.6961	15.00000	O
2-Chlorotoluene	1.87394	2.32425	2.21085	2.12035	2.17988	2.20405	AVG		2.15222		7.04470	15.00000	O
1,2,3-Trichloropropane	0.61178	0.86884	0.79886	0.77099	0.69444	0.72511	AVG		0.74500		11.9475	15.00000	O
4-Chlorotoluene	2.08075	2.50509	2.39038	2.29405	2.32338	2.33530	AVG		2.32149		6.01092	15.00000	O
tert-Butylbenzene	1.80375	2.30388	2.31256	2.23248	2.20927	2.34615	AVG		2.20135		9.15255	15.00000	O
1,2,4-Trimethylbenzene	1.68954	2.65570	2.57176	2.46048	2.55485	2.57442	AVG		2.41779		14.9788	15.00000	O
P-Isopropyltoluene	1.59100	2.45256	2.46485	2.33857	2.45784	2.47067	AVG		2.29592		15.1953	15.00000	W
1,3-Dichlorobenzene	1.25730	1.42859	1.33945	1.28245	1.31656	1.32238	AVG		1.32445		4.45510	15.00000	O
1,4-Dichlorobenzene	1.42469	1.48773	1.40531	1.31289	1.34752	1.34968	AVG		1.38797		4.59522	15.00000	O
N-Butylbenzene	1.67307	2.35854	2.39274	2.25019	2.38233	2.42127	AVG		2.24636		12.7750	15.00000	O
sec-Butylbenzene	2.09128	3.17230	3.01147	2.83114	2.97160	2.94640	AVG		2.83736		13.4582	15.00000	O
1,2-Dichlorobenzene	1.05212	1.31329	1.28026	1.23613	1.26241	1.29420	AVG		1.23973		7.71552	15.00000	O
1,2-Dibromo-3-Chloropropane	218	1954	9459	23976	48304	78813	LNR	0.02324	0.12863		0.99758	0.99000	O
Hexachlorobutadiene	0.34153	0.37859	0.35286	0.32740	0.34668	0.36033	AVG		0.35123		4.95855	15.00000	O
1,2,4-Trichlorobenzene	0.55157	0.71104	0.75025	0.75339	0.75827	0.78827	AVG		0.71880		11.9019	15.00000	O
Naphthalene	2799	24794	122493	311565	609067	964438	LNR	0.00753	1.58210		0.99865	0.99000	O
1,2,3-Trichlorobenzene	1440	11926	50056	115414	229664	364131	LNR	-0.00283	0.59416		0.99855	0.99000	O
Dibromofluoromethane	0.61326	0.60420	0.61658	0.61185	0.61651	0.62145	AVG		0.61398		0.94898	15.00000	
1,2-Dichloroethane-D4	0.91428	0.90607	0.88633	0.88564	0.86372	0.89576	AVG		0.89197		1.99340	15.00000	
Toluene-D8	1.23171	1.23641	1.21763	1.22845	1.25315	1.26063	AVG		1.23800		1.29742	15.00000	
P-Bromofluorobenzene	0.49074	0.49150	0.50439	0.50015	0.50333	0.51411	AVG		0.50070		1.75157	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1477A.d
Report Date: 23-May-2018 11:49

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa02236
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: WG228859-6
Level: LOW Operator: JSS
Data Type: MS DATA SampleType: LCS
SpikeList File: IND_CHECK.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D8A05(23)D.m
Misc Info: WG228859,WG228847-4

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	1	Dichlorodifluorome	50.0	63.6	127.30*	80-120
	2	Chloromethane	50.0	54.5	109.06	80-120
	3	Vinyl chloride	50.0	55.5	110.98	80-120
	4	Bromomethane	50.0	52.2	104.31	80-120
	5	Chloroethane	50.0	52.6	105.27	80-120
	6	Trichlorofluoromet	50.0	46.4	92.87	80-120
	7	Diethyl Ether	50.0	48.4	96.92	80-120
	8	Tertiary-butyl alc	250	240	95.97	80-120
	9	1,1-Dichloroethene	50.0	44.3	88.63	80-120
	10	Carbon Disulfide	50.0	49.5	98.94	80-120
	11	Freon-113	50.0	44.9	89.74	80-120
	12	Iodomethane	50.0	57.8	115.56	80-120
	13	Acrolein	250	209	83.51	80-120
	14	Methylene Chloride	50.0	48.8	97.58	80-120
	15	Acetone	50.0	42.8	85.65	80-120
	16	Isobutyl Alcohol	1000	943	94.33	80-120
	17	trans-1,2-Dichloro	50.0	47.1	94.24	80-120
	18	Allyl Chloride	50.0	51.3	102.67	80-120
	19	Methyl tert-butyl	50.0	51.2	102.31	80-120
	20	Acetonitrile	500	462	92.44	80-120
	21	Di-isopropyl ether	50.0	52.9	105.86	80-120
	22	Chloroprene	50.0	49.2	98.43	80-120
	23	Propionitrile	500	467	93.47	80-120
	24	Methacrylonitrile	500	476	95.20	80-120
	25	1,1-Dichloroethane	50.0	50.5	101.06	80-120
	26	Acrylonitrile	250	238	95.02	80-120
	27	Ethyl tertiary-but	50.0	53.0	105.95	80-120
	28	Vinyl Acetate	50.0	58.2	116.37	80-120
	29	cis-1,2-Dichloroet	50.0	49.4	98.78	80-120
M	30	1,2-Dichloroethyle	100	96.5	96.51	80-120
	31	Methyl Methacrylat	50.0	46.8	93.64	80-120
	32	2,2-Dichloropropan	50.0	44.5	89.09	80-120
	33	Bromochloromethane	50.0	49.9	99.86	80-120
	34	Chloroform	50.0	48.1	96.18	80-120
	35	Carbon Tetrachlori	50.0	47.6	95.21	80-120
	36	Tetrahydrofuran	50.0	44.2	88.41	80-120
	38	1,1,1-Trichloroeth	50.0	46.7	93.39	80-120
	39	1,1-Dichloropropen	50.0	49.3	98.53	80-120
	40	2-Butanone	50.0	40.4	80.79	80-120
	41	Benzene	50.0	49.8	99.55	80-120

Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1477A.d
Report Date: 23-May-2018 11:49

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	43	Cyclohexane	50.0	50.9	101.81	80-120
	44	Ethyl Methacrylate	50.0	46.7	93.38	80-120
	46	Tertiary-amyl meth	50.0	50.1	100.15	80-120
	47	1,2-Dichloroethane	50.0	45.0	89.92	80-120
	48	Trichloroethene	50.0	48.1	96.22	80-120
	50	Dibromomethane	50.0	48.8	97.54	80-120
	51	1,2-Dichloropropan	50.0	50.3	100.57	80-120
	52	Bromodichlorometha	50.0	51.6	103.17	80-120
	53	cis-1,3-dichloropr	50.0	45.0	89.92	80-120
	54	1,4-Dioxane	1000	1100	110.59	80-120
	56	2-Chloroethylvinyl	50.0	55.8	111.58	80-120
	57	Toluene	50.0	49.3	98.67	80-120
	58	4-methyl-2-pentano	50.0	42.7	85.44	80-120
	59	Tetrachloroethene	50.0	47.6	95.30	80-120
	60	trans-1,3-Dichloro	50.0	52.1	104.15	80-120
	61	1,1,2-Trichloroeth	50.0	48.5	97.03	80-120
	62	Dibromochlorometha	50.0	52.9	105.77	80-120
	63	1,3-Dichloropropan	50.0	48.1	96.12	80-120
	64	1,2-Dibromoethane	50.0	49.0	97.98	80-120
	65	2-Hexanone	50.0	40.9	81.88	80-120
	67	Chlorobenzene	50.0	48.5	97.01	80-120
	152	1-Chlorohexane	50.0	0.00	*	80-120
	68	Ethylbenzene	50.0	48.6	97.24	80-120
	69	1,1,1,2-Tetrachlor	50.0	50.8	101.57	80-120
M	70	Xylenes (total)	150	150	100.01	80-120
	71	m+p-Xylenes	100	98.7	98.73	80-120
	72	o-Xylene	50.0	51.3	102.55	80-120
	73	Styrene	50.0	49.3	98.62	80-120
	74	Bromoform	50.0	51.0	101.99	80-120
	75	Isopropylbenzene	50.0	53.4	106.91	80-120
	77	cis-1,4-Dichloro-2	50.0	43.1	86.15	80-120
	78	trans-1,4-Dichloro	50.0	46.7	93.42	80-120
	79	Bromobenzene	50.0	49.4	98.90	80-120
	80	N-Propylbenzene	50.0	48.8	97.51	80-120
	81	1,1,2,2-Tetrachlor	50.0	47.2	94.39	80-120
	82	1,3,5-Trimethylben	50.0	50.9	101.80	80-120
	83	2-Chlorotoluene	50.0	49.7	99.41	80-120
	84	1,2,3-Trichloropro	50.0	45.2	90.46	80-120
	85	4-Chlorotoluene	50.0	49.0	98.11	80-120
	86	tert-Butylbenzene	50.0	51.3	102.57	80-120
	87	Pentachloroethane	50.0	52.5	104.94	80-120
	88	1,2,4-Trimethylben	50.0	51.4	102.88	80-120
	89	P-Isopropyltoluene	50.0	52.0	104.02	80-120
	90	1,3-Dichlorobenzen	50.0	49.3	98.68	80-120
	92	1,4-Dichlorobenzen	50.0	47.4	94.81	80-120
	93	N-Butylbenzene	50.0	51.4	102.80	80-120
	94	sec-Butylbenzene	50.0	50.8	101.54	80-120
	95	1,2-Dichlorobenzen	50.0	49.9	99.84	80-120
	96	1,2-Dibromo-3-Chlo	50.0	41.2	82.32	80-120
	97	1,3,5-Trichloroben	50.0	49.8	99.70	80-120
	98	Hexachlorobutadien	50.0	45.2	90.44	80-120
	99	1,2,4-Trichloroben	50.0	49.7	99.41	80-120
	100	1,2,3-Trimethylben	50.0	49.9	99.88	80-120
	101	Naphthalene	50.0	44.3	88.66	80-120

Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1477A.d
Report Date: 23-May-2018 11:49

SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
102 1,2,3-Trichloroben	50.0	45.0	89.92	80-120
103 Methyl Acetate	50.0	43.3	86.64	80-120
104 Methylcyclohexane	50.0	50.6	101.28	80-120
M 153 Total Alkylbenzene	350	356	101.87	80-120

SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$ 37 Dibromofluorometha	50.0	49.2	98.51	68-128
$ 45 1,2-Dichloroethane	50.0	46.1	92.24	67-135
$ 55 Toluene-D8	50.0	50.5	101.10	65-128
$ 76 P-Bromofluorobenze	50.0	48.9	97.75	56-133

Data File: \\target_server\gg\chem\gcms-d.i\D052218.b\D1470.d
Report Date: 23-May-2018 11:31

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D052218.b\D1470.d
Lab Smp Id: WG228847-4
Inj Date : 22-MAY-2018 08:30
Operator : JSS   Inst ID: gcms-d.i
Smp Info : WG228847-4
Misc Info :
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-d.i\D052218.b\D8A05(23)D.m
Meth Date : 22-May-2018 12:19 jsampson   Quant Type: ISTD
Cal Date : 22-MAY-2018 08:30   Cal File: D1470.d
Als bottle: 1   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	148848	50.0000	46.9	
2	Chloromethane	50	1.653	1.654	(0.226)	145707	50.0000	42.6	
3	Vinyl chloride	62	1.728	1.728	(0.236)	120402	50.0000	44.1	
4	Bromomethane	94	2.025	2.025	(0.277)	65832	50.0000	45.2	
5	Chloroethane	64	2.146	2.146	(0.293)	63729	50.0000	45.2	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	207671	50.0000	44.6	
7	Diethyl Ether	59	2.583	2.584	(0.353)	82707	50.0000	47.3	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	44159	250.000	260	
9	1,1-Dichloroethene	96	2.778	2.779	(0.380)	90541	50.0000	44.9	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	273655	50.0000	46.9	
11	Freon-113	151	2.834	2.835	(0.387)	68799	50.0000	46.4	
12	Iodomethane	142	2.936	2.937	(0.401)	75557	50.0000	48.3	
13	Acrolein	56	3.159	3.160	(0.432)	97797	250.000	302	
14	Methylene Chloride	84	3.448	3.448	(0.471)	138027	50.0000	49.0	
15	Acetone	43	3.522	3.522	(0.482)	233283	250.000	256	
16	Isobutyl Alcohol	43	7.603	7.604	(1.039)	93541	1000.00	1030	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	123668	50.0000	46.5	
18	Allyl Chloride	41	3.317	3.318	(0.454)	189587	50.0000	50.8	
19	Methyl tert-butyl ether	73	3.801	3.801	(0.520)	355145	50.0000	51.9	
20	Acetonitrile	39	4.136	4.136	(0.565)	36658	500.000	520	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	414928	50.0000	50.3	
22	Chloroprene	53	4.479	4.480	(0.612)	205631	50.0000	48.4	
23	Propionitrile	54	7.148	7.148	(0.977)	181732	500.000	519	

Data File: \\target_server\gg\chem\gcms-d.i\D052218.b\D1470.d
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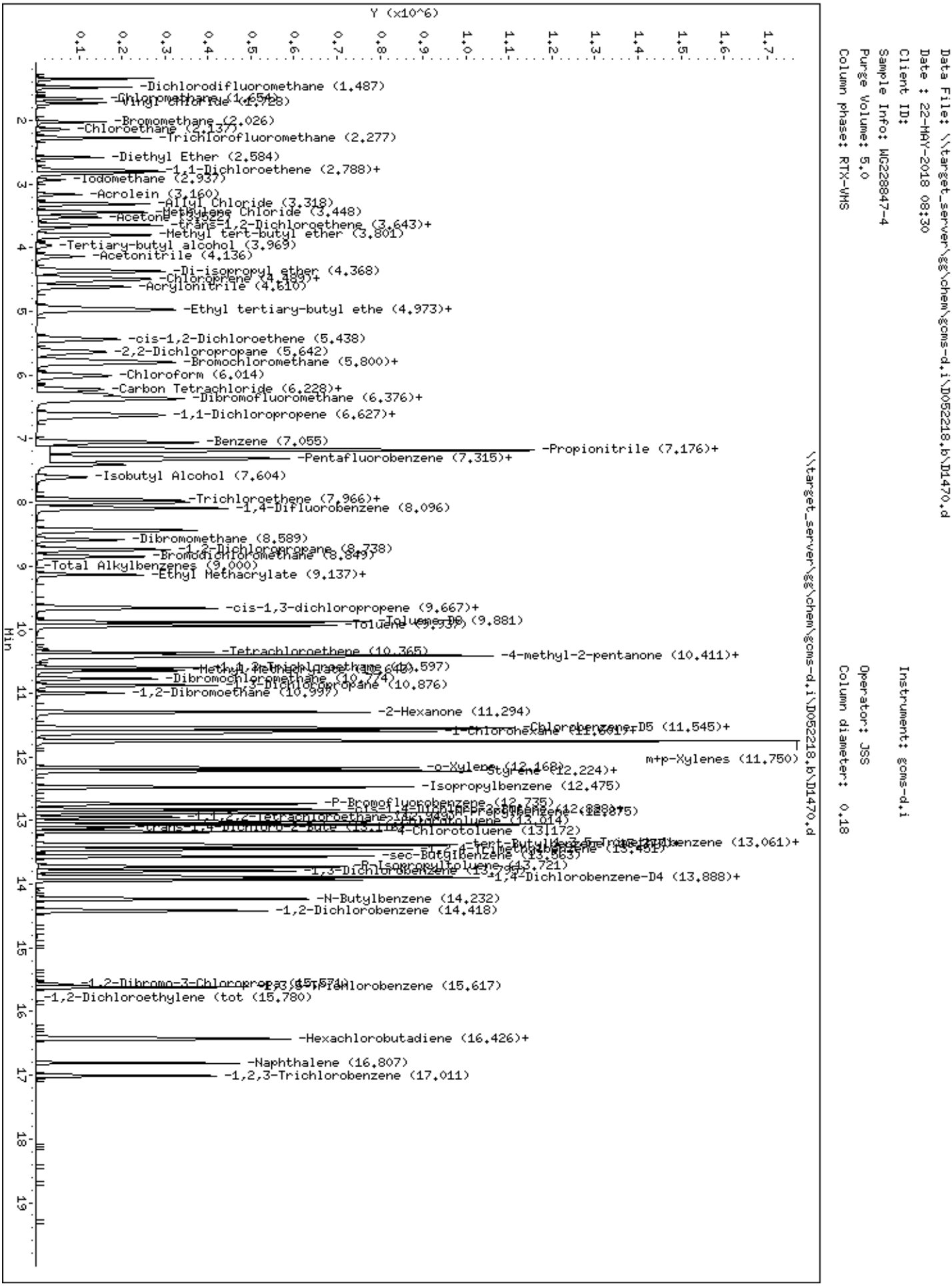
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.175	7.176	(0.981)	879193	500.000	522	
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	252762	50.0000	47.9	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	206302	250.000	258	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	372812	50.0000	52.0	
	28	Vinyl Acetate	43	4.981	4.982	(0.615)	317661	50.0000	54.1	
	29	cis-1,2-Dichloroethene	96	5.437	5.438	(0.743)	133192	50.0000	48.4	
M	30	1,2-Dichloroethylene (total)	96				256860	50.0000	94.9	
	31	Methyl Methacrylate	41	10.643	10.643	(1.315)	127526	50.0000	49.7	
	32	2,2-Dichloropropane	77	5.642	5.642	(0.771)	193733	50.0000	49.4	
	33	Bromochloromethane	128	5.809	5.809	(0.794)	68840	50.0000	50.0	
	34	Chloroform	83	6.013	6.014	(0.822)	267481	50.0000	48.0	
	35	Carbon Tetrachloride	117	6.227	6.228	(0.769)	192603	50.0000	48.4	
	36	Tetrahydrofuran	42	6.302	6.302	(0.861)	183778	250.000	254	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	160830	50.0000	49.8	
	38	1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	227208	50.0000	47.1	
	39	1,1-Dichloropropene	75	6.618	6.618	(0.817)	187027	50.0000	48.0	
	40	2-Butanone	43	6.655	6.655	(0.910)	334229	250.000	266	
	41	Benzene	78	7.055	7.055	(0.871)	486812	50.0000	47.7	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	262859	50.0000		
	43	Cyclohexane	56	5.781	5.781	(0.790)	192945	50.0000	49.5	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	88166	50.0000	50.2	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	232798	50.0000	49.6	
	46	Tertiary-amyl methyl ether	73	7.333	7.334	(1.003)	306330	50.0000	50.6	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	237328	50.0000	47.5	
	48	Trichloroethene	95	8.003	8.003	(0.989)	137434	50.0000	47.9	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	420311	50.0000		
	50	Dibromomethane	93	8.588	8.589	(1.061)	98681	50.0000	50.8	
	51	1,2-Dichloropropane	63	8.737	8.738	(1.079)	138132	50.0000	49.3	
	52	Bromodichloromethane	83	8.849	8.849	(1.093)	204215	50.0000	50.2	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	243272	50.0000	47.7	
	54	1,4-Dioxane	88	9.137	9.137	(1.129)	20802	1000.00	1020	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	516330	50.0000	49.6	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	78255	50.0000	53.1	
	57	Toluene	92	9.936	9.937	(1.227)	295131	50.0000	47.8	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	689700	250.000	268	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	93971	50.0000	45.5	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	222718	50.0000	53.4	
	61	1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	107970	50.0000	49.8	
	62	Dibromochloromethane	129	10.773	10.774	(0.934)	150360	50.0000	53.1	
	63	1,3-Dichloropropane	76	10.875	10.876	(0.943)	232535	50.0000	51.2	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	134390	50.0000	52.1	
	65	2-Hexanone	43	11.294	11.294	(0.979)	488726	250.000	270	
*	66	Chlorobenzene-D5	117	11.535	11.536	(1.000)	375750	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.002)	329432	50.0000	47.6	
	152	1-Chlorohexane	91	11.601	11.601	(1.006)	590073	50.0000	(a)	
	68	Ethylbenzene	91	11.601	11.601	(1.006)	590073	50.0000	48.0	
	69	1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	128332	50.0000	49.9	
M	70	Xylenes (total)	106				1395524	150.000	150	
	71	m+p-Xylenes	91	11.749	11.750	(1.019)	925222	100.000	98.7	
	72	o-Xylene	91	12.168	12.168	(1.055)	470302	50.0000	50.9	
	73	Styrene	104	12.223	12.224	(1.060)	350105	50.0000	48.2	
	74	Bromoform	173	12.233	12.233	(1.060)	90913	50.0000	55.2	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	515491	50.0000	50.1	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	210217	50.0000	49.9	

Data File: \\target_server\gg\chem\gcms-d.i\D052218.b\D1470.d
Report Date: 23-May-2018 11:31

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
77	cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	54505	50.0000	51.1	
78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	43846	50.0000	55.2	
79	Bromobenzene	156	12.828	12.828	(0.924)	136237	50.0000	48.8	
80	N-Propylbenzene	91	12.874	12.875	(0.928)	668548	50.0000	48.3	
81	1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	161138	50.0000	51.2	
82	1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	456348	50.0000	50.4	
83	2-Chlorotoluene	91	13.014	13.014	(0.938)	404563	50.0000	49.2	
84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	147105	50.0000	51.7	
85	4-Chlorotoluene	91	13.172	13.172	(0.949)	437704	50.0000	49.4	
86	tert-Butylbenzene	119	13.376	13.377	(0.964)	425957	50.0000	50.7	
87	Pentachloroethane	117	13.395	13.395	(0.965)	102835	50.0000	53.6	
88	1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	469459	50.0000	50.9	
89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	446200	50.0000	50.9	
90	1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	244692	50.0000	48.4	
* 91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	190800	50.0000		
92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	250500	50.0000	47.3	
93	N-Butylbenzene	91	14.231	14.232	(1.025)	429336	50.0000	50.1	
94	sec-Butylbenzene	105	13.562	13.563	(0.977)	540181	50.0000	49.9	
95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	235853	50.0000	49.8	
96	1,2-Dibromo-3-Chloropropane	157	15.570	15.571	(1.122)	23976	50.0000	43.3	
97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	163090	50.0000	50.2	
98	Hexachlorobutadiene	225	16.407	16.407	(1.182)	62468	50.0000	46.6	
99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	143747	50.0000	52.4	
100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	461498	50.0000	49.0	
101	Naphthalene	128	16.806	16.806	(1.211)	311565	50.0000	52.0	
102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	115414	50.0000	50.8	
103	Methyl Acetate	43	3.689	3.690	(0.504)	112776	50.0000	51.3	
104	Methylcyclohexane	83	7.966	7.966	(1.089)	178702	50.0000	49.6	
M 153	Total Alkylbenzenes	100				3436029	50.0000	351	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).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Date : 22-MAY-2018 08:30
Client ID:
Sample Info: WG228847-4
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
Y (x10^6)
Min
\\target_server\gg\chem\gcms-d.i\D052218.b\D1470.d
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.654)
-Vinyl Chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.137)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.788)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.522)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.801)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.438)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.228)+
-Dibromofluoromethane (6.376)+
-1,1-Dichloropropene (6.627)+
-Benzene (7.055)
-Propionitrile (7.176)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.604)
-Trichloroethene (7.966)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.849)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.881)
-Toluene (9.937)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-1,1,2-Trichloroethane (10.597)
-Methyl Methacrylate (10.640)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-1-Chlorohexane (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-cis-1,4-Dichloro-2-butene (12.889)+
-1,1,2,2-Tetrachloroethane (12.949)+
-2-Chlorotoluene (13.014)
-trans-1,4-Dichloro-2-Bute (13.116)
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.451)
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.563)
-P-Isopropyltoluene (13.721)
-1,3-Dichlorobenzene (13.799)
-1,4-Dichlorobenzene-D4 (13.888)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.571)
-1,3,5-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)

Data File: \\target_server\gg\chem\gcms-d.i\D052218.b\D1471.d
Report Date: 23-May-2018 11:31

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D052218.b\D1471.d
Lab Smp Id: WG228847-3
Inj Date : 22-MAY-2018 09:06
Operator : JSS   Inst ID: gcms-d.i
Smp Info : WG228847-3
Misc Info :
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-d.i\D052218.b\D8A05(23)D.m
Meth Date : 22-May-2018 12:19 jsampson   Quant Type: ISTD
Cal Date : 22-MAY-2018 09:06   Cal File: D1471.d
Als bottle: 2   Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	65083	20.0000	20.6	
2	Chloromethane	50	1.663	1.654	(0.227)	70476	20.0000	20.7	
3	Vinyl chloride	62	1.737	1.728	(0.238)	55930	20.0000	20.5	
4	Bromomethane	94	2.025	2.025	(0.277)	29107	20.0000	20.0	
5	Chloroethane	64	2.146	2.146	(0.293)	28866	20.0000	20.5	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	93876	20.0000	20.2	
7	Diethyl Ether	59	2.592	2.584	(0.354)	34127	20.0000	19.6	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	18223	100.000	107	
9	1,1-Dichloroethene	96	2.787	2.779	(0.381)	39871	20.0000	19.8	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	115204	20.0000	19.8	
11	Freon-113	151	2.834	2.835	(0.387)	29144	20.0000	19.7	
12	Iodomethane	142	2.936	2.937	(0.401)	24331	20.0000	17.3	
13	Acrolein	56	3.169	3.160	(0.433)	29938	100.000	92.8	
14	Methylene Chloride	84	3.447	3.448	(0.471)	57842	20.0000	20.6	
15	Acetone	43	3.522	3.522	(0.482)	102100	100.000	112	
16	Isobutyl Alcohol	43	7.612	7.604	(1.041)	38443	400.000	425	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	52662	20.0000	19.8	
18	Allyl Chloride	41	3.317	3.318	(0.454)	77041	20.0000	20.7	
19	Methyl tert-butyl ether	73	3.810	3.801	(0.521)	139876	20.0000	20.5	
20	Acetonitrile	39	4.145	4.136	(0.567)	15426	200.000	219	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	165206	20.0000	20.1	
22	Chloroprene	53	4.479	4.480	(0.612)	85715	20.0000	20.2	
23	Propionitrile	54	7.147	7.148	(0.977)	74554	200.000	213	

Data File: \\target_server\gg\chem\gcms-d.i\D052218.b\D1471.d
Report Date: 23-May-2018 11:31

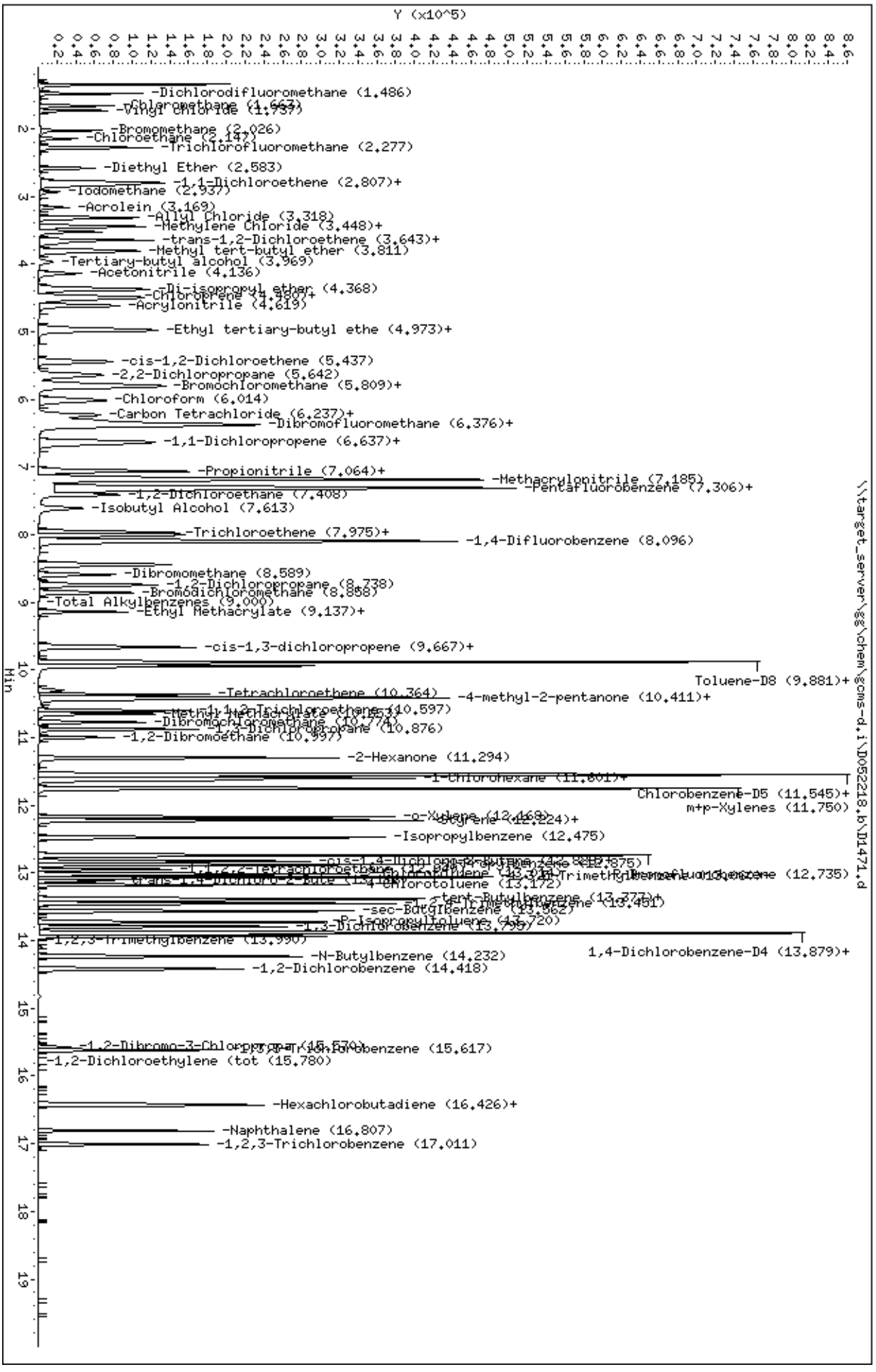
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.185	7.176	(0.982)	358822	200.000	214	
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	106992	20.0000	20.3	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	82880	100.000	104	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	142809	20.0000	20.0	
	28	Vinyl Acetate	43	4.981	4.982	(0.615)	123978	20.0000	21.1	
	29	cis-1,2-Dichloroethene	96	5.437	5.438	(0.743)	55078	20.0000	20.1	
M	30	1,2-Dichloroethylene (total)	96				107740	20.0000	39.9	
	31	Methyl Methacrylate	41	10.652	10.643	(1.316)	48143	20.0000	19.5	
	32	2,2-Dichloropropane	77	5.641	5.642	(0.771)	80853	20.0000	20.6	
	33	Bromochloromethane	128	5.809	5.809	(0.794)	27977	20.0000	20.4	
	34	Chloroform	83	6.013	6.014	(0.822)	112540	20.0000	20.2	
	35	Carbon Tetrachloride	117	6.236	6.228	(0.770)	81374	20.0000	20.4	
	36	Tetrahydrofuran	42	6.311	6.302	(0.863)	73741	100.000	103	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	161698	50.0000	50.2	
	38	1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	97524	20.0000	20.2	
	39	1,1-Dichloropropene	75	6.627	6.618	(0.819)	80261	20.0000	20.6	
	40	2-Butanone	43	6.655	6.655	(0.910)	137251	100.000	106	
	41	Benzene	78	7.064	7.055	(0.873)	209112	20.0000	20.5	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	262249	50.0000		
	43	Cyclohexane	56	5.790	5.781	(0.792)	81341	20.0000	20.9	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	32323	20.0000	19.1	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	232439	50.0000	49.7	
	46	Tertiary-amyl methyl ether	73	7.343	7.334	(1.004)	116754	20.0000	19.3	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	98230	20.0000	19.6	
	48	Trichloroethene	95	8.003	8.003	(0.989)	58299	20.0000	20.3	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	420795	50.0000		
	50	Dibromomethane	93	8.588	8.589	(1.061)	39938	20.0000	20.5	
	51	1,2-Dichloropropane	63	8.737	8.738	(1.079)	57617	20.0000	20.5	
	52	Bromodichloromethane	83	8.858	8.849	(1.094)	82230	20.0000	20.2	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	95333	20.0000	19.4	
	54	1,4-Dioxane	88	9.137	9.137	(1.129)	9640	400.000	471	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	512373	50.0000	49.2	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	29563	20.0000	20.2	
	57	Toluene	92	9.936	9.937	(1.227)	125605	20.0000	20.3	
	58	4-methyl-2-pentanone	43	10.410	10.411	(1.286)	281457	100.000	107	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	39921	20.0000	19.4	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	85222	20.0000	20.4	
	61	1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	44605	20.0000	20.6	
	62	Dibromochloromethane	129	10.773	10.774	(0.934)	58966	20.0000	20.9	
	63	1,3-Dichloropropane	76	10.875	10.876	(0.943)	94636	20.0000	20.9	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	53588	20.0000	20.8	
	65	2-Hexanone	43	11.294	11.294	(0.979)	198827	100.000	107	
*	66	Chlorobenzene-D5	117	11.535	11.536	(1.000)	374684	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.002)	138890	20.0000	20.1	
	152	1-Chlorohexane	91	11.600	11.601	(1.006)	250466	20.0000	(a)	
	68	Ethylbenzene	91	11.600	11.601	(1.006)	250466	20.0000	20.4	
	69	1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	52524	20.0000	20.5	
M	70	Xylenes (total)	106				585141	60.0000	62.9	
	71	m+p-Xylenes	91	11.749	11.750	(1.019)	390930	40.0000	41.8	
	72	o-Xylene	91	12.167	12.168	(1.055)	194211	20.0000	21.1	
	73	Styrene	104	12.223	12.224	(1.060)	142674	20.0000	20.0	
	74	Bromoform	173	12.233	12.233	(1.060)	34004	20.0000	20.7	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	218001	20.0000	21.1	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	212244	50.0000	50.4	

Data File: \\target_server\gg\chem\gcms-d.i\D052218.b\D1471.d
Report Date: 23-May-2018 11:31

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	77	cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	20585	20.0000	19.9	
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	16884	20.0000	21.2	
	79	Bromobenzene	156	12.828	12.828	(0.924)	56786	20.0000	20.3	
	80	N-Propylbenzene	91	12.874	12.875	(0.928)	283871	20.0000	20.4	
	81	1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	66080	20.0000	20.9	
	82	1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	190717	20.0000	21.0	
	83	2-Chlorotoluene	91	13.013	13.014	(0.938)	169457	20.0000	20.5	
	84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	61231	20.0000	21.4	
	85	4-Chlorotoluene	91	13.172	13.172	(0.949)	183218	20.0000	20.6	
	86	tert-Butylbenzene	119	13.376	13.377	(0.964)	177253	20.0000	21.0	
	87	Pentachloroethane	117	13.395	13.395	(0.965)	40938	20.0000	21.2	
	88	1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	197120	20.0000	21.3	
	89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	188926	20.0000	21.5	
	90	1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	102666	20.0000	20.2	
*	91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	191620	50.0000		
	92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	107714	20.0000	20.2	
	93	N-Butylbenzene	91	14.231	14.232	(1.025)	183399	20.0000	21.3	
	94	sec-Butylbenzene	105	13.562	13.563	(0.977)	230823	20.0000	21.2	
	95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	98129	20.0000	20.6	
	96	1,2-Dibromo-3-Chloropropane	157	15.570	15.571	(1.122)	9459	20.0000	17.5	
	97	1,3,5-Trichlorobenzene	180	15.616	15.617	(1.125)	65235	20.0000	20.0	
	98	Hexachlorobutadiene	225	16.416	16.407	(1.183)	27046	20.0000	20.1	
	99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	57505	20.0000	20.9	
	100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	189112	20.0000	20.0	
	101	Naphthalene	128	16.806	16.806	(1.211)	122493	20.0000	20.6	
	102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	50056	20.0000	21.8	
	103	Methyl Acetate	43	3.689	3.690	(0.504)	45719	20.0000	20.8	
	104	Methylcyclohexane	83	7.966	7.966	(1.089)	74460	20.0000	20.7	
M	153	Total Alkylbenzenes	100				1452109	20.0000	148	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Y (x10^5)
Min
-Dichlorodifluoromethane (1.486)
-Chloromethane (1.663)
-Vinyl Chloride (1.757)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.583)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.169)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)+
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.460)+
-Acrylonitrile (4.619)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.437)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.809)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)+
-Dibromofluoromethane (6.376)+
-1,1-Dichloropropene (6.637)+
-Propionitrile (7.064)+
-Methacrylonitrile (7.185)
-Pentafluorobenzene (7.306)+
-1,2-Dichloroethane (7.408)
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.975)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.858)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
Toluene-D8 (9.881)+
-Tetrachloroethene (10.364)
-4-methyl-2-pentanone (10.411)+
-1,1,2-Trichloroethane (10.597)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-1-Chlorohexane (11.601)+
Chlorobenzene-D5 (11.545)+
m+p-Xylenes (11.750)
-o-Xylene (12.169)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-1,1,2,2-Tetrachloroethane (12.840)
-Bromoform (12.875)
-Bromofluorobenzene (12.735)
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.277)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.562)
-p-Isopropyltoluene (13.720)
-1,3-Dichlorobenzene (13.799)
-1,2,3-Trimethylbenzene (13.990)
1,4-Dichlorobenzene-D4 (13.879)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.570)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)
Data File: \\target_server\gg\chem\gcms-d.i\D052218.b\D1471.d
Date : 22-MAY-2018 09:06
Client ID:
Sample Info: WG228847-3
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D052218.b\D1471.d

Data File: \\target_server\gg\chem\gcms-d.i\D052218.b\D1472.d
Report Date: 23-May-2018 11:31

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D052218.b\D1472.d
Lab Smp Id: WG228847-2
Inj Date : 22-MAY-2018 09:42
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228847-2
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D052218.b\D8A05(23)D.m
Meth Date : 22-May-2018 12:19 jsampson Quant Type: ISTD
Cal Date : 22-MAY-2018 09:42 Cal File: D1472.d
Als bottle: 3 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	18919	5.00000	6.0	
2	Chloromethane	50	1.663	1.654	(0.227)	19902	5.00000	5.8	
3	Vinyl chloride	62	1.728	1.728	(0.236)	15553	5.00000	5.7	
4	Bromomethane	94	2.025	2.025	(0.277)	7960	5.00000	5.5	
5	Chloroethane	64	2.146	2.146	(0.293)	8877	5.00000	6.3	
6	Trichlorofluoromethane	101	2.286	2.277	(0.312)	27264	5.00000	5.9	
7	Diethyl Ether	59	2.592	2.584	(0.354)	8467	5.00000	4.9	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	4264	25.0000	23.6	
9	1,1-Dichloroethene	96	2.788	2.779	(0.381)	11265	5.00000	5.6	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	31119	5.00000	5.4	
11	Freon-113	151	2.834	2.835	(0.387)	7768	5.00000	5.3	
12	Iodomethane	142	2.936	2.937	(0.401)	5573	5.00000	5.2	
13	Acrolein	56	3.159	3.160	(0.432)	7736	25.0000	24.1	
14	Methylene Chloride	84	3.448	3.448	(0.471)	13085	5.00000	4.7(a)	
15	Acetone	43	3.522	3.522	(0.482)	25290	25.0000	27.9	
16	Isobutyl Alcohol	43	7.612	7.604	(1.041)	8424	100.000	96.2	
17	trans-1,2-Dichloroethene	96	3.652	3.643	(0.499)	14885	5.00000	5.6	
18	Allyl Chloride	41	3.317	3.318	(0.454)	14775	5.00000	4.0	
19	Methyl tert-butyl ether	73	3.810	3.801	(0.521)	34957	5.00000	5.1	
20	Acetonitrile	39	4.145	4.136	(0.567)	3739	50.0000	53.3	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	37964	5.00000	4.6	
22	Chloroprene	53	4.479	4.480	(0.612)	20789	5.00000	4.9	
23	Propionitrile	54	7.148	7.148	(0.977)	18569	50.0000	53.3	

Data File: \\target_server\gg\chem\gcms-d.i\D052218.b\D1472.d
Report Date: 23-May-2018 11:31

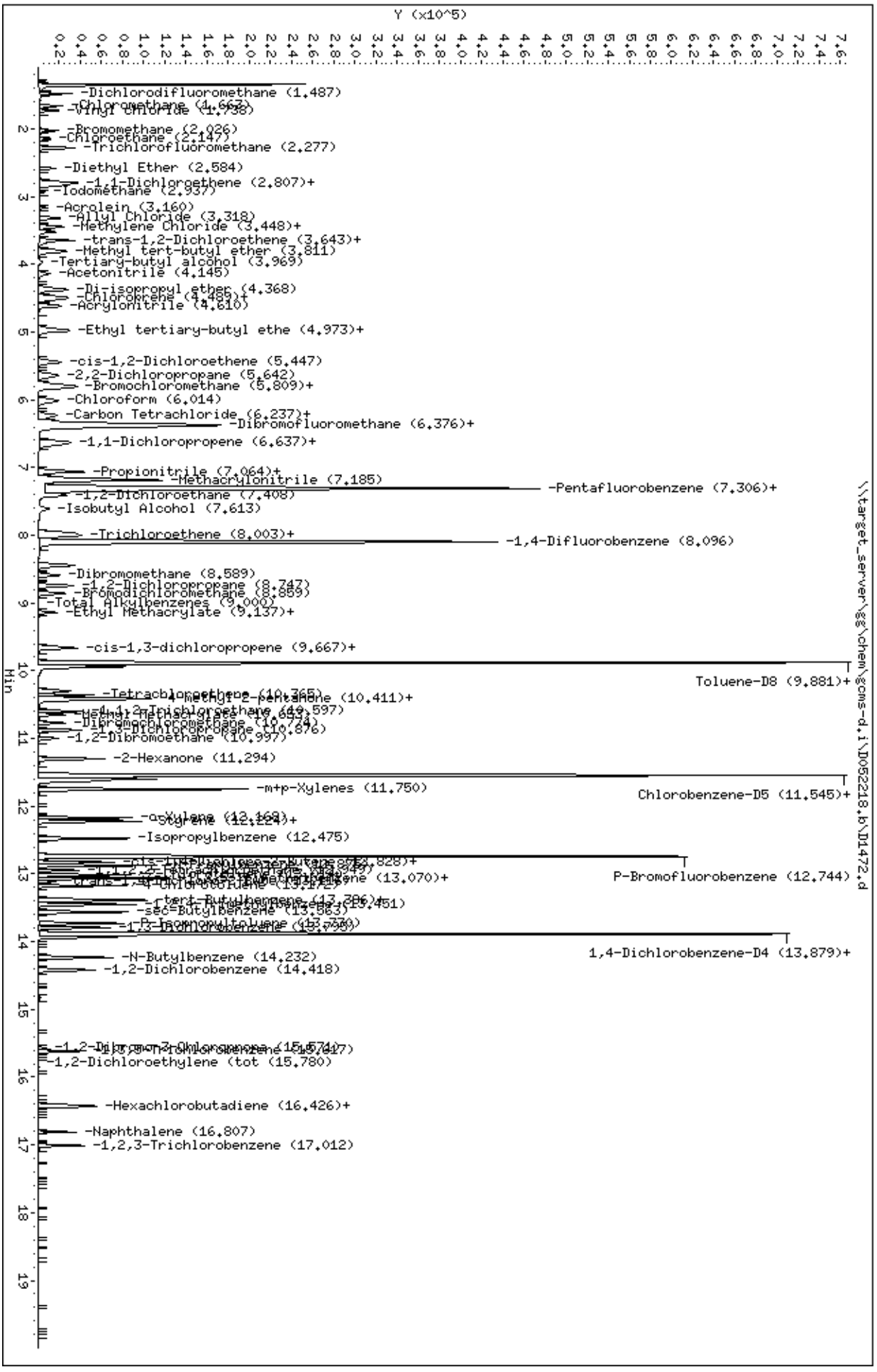
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.185	7.176	(0.982)	87821	50.0000	52.4	
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	29050	5.00000	5.5	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	20713	25.0000	26.1	
	27	Ethyl tertiary-butyl ether	59	4.972	4.963	(0.680)	31725	5.00000	4.4	
	28	Vinyl Acetate	43	4.991	4.982	(0.616)	29707	5.00000	5.1	
	29	cis-1,2-Dichloroethene	96	5.446	5.438	(0.745)	14549	5.00000	5.3	
M	30	1,2-Dichloroethylene (total)	96				29434	5.00000	10.9	
	31	Methyl Methacrylate	41	10.652	10.643	(1.316)	9892	5.00000	5.0	
	32	2,2-Dichloropropane	77	5.642	5.642	(0.771)	20678	5.00000	5.3	
	33	Bromochloromethane	128	5.809	5.809	(0.794)	7464	5.00000	5.4	
	34	Chloroform	83	6.013	6.014	(0.822)	29853	5.00000	5.4	
	35	Carbon Tetrachloride	117	6.237	6.228	(0.770)	21423	5.00000	5.4	
	36	Tetrahydrofuran	42	6.320	6.302	(0.864)	17662	25.0000	25.5	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	157981	50.0000	49.2	
	38	1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	26457	5.00000	5.5	
	39	1,1-Dichloropropene	75	6.627	6.618	(0.819)	21032	5.00000	5.4	
	40	2-Butanone	43	6.655	6.655	(0.910)	34303	25.0000	23.2	
	41	Benzene	78	7.064	7.055	(0.873)	55512	5.00000	5.5	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	261472	50.0000		
	43	Cyclohexane	56	5.790	5.781	(0.792)	20990	5.00000	5.4	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	6699	5.00000	4.9	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	236912	50.0000	50.8	
	46	Tertiary-amyl methyl ether	73	7.343	7.334	(1.004)	27454	5.00000	4.6	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	27226	5.00000	5.5	
	48	Trichloroethene	95	8.012	8.003	(0.990)	15972	5.00000	5.6	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	416569	50.0000		
	50	Dibromomethane	93	8.588	8.589	(1.061)	10466	5.00000	5.4	
	51	1,2-Dichloropropane	63	8.747	8.738	(1.080)	14632	5.00000	5.3	
	52	Bromodichloromethane	83	8.858	8.849	(1.094)	21007	5.00000	5.2	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	22276	5.00000	5.5	
	54	1,4-Dioxane	88	9.146	9.137	(1.130)	1986	100.000	98.0	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	515049	50.0000	49.9	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	6312	5.00000	4.5	
	57	Toluene	92	9.936	9.937	(1.227)	33113	5.00000	5.4	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	70664	25.0000	24.0	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	11283	5.00000	5.5	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	20122	5.00000	4.9	
	61	1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	11446	5.00000	5.3	
	62	Dibromochloromethane	129	10.773	10.774	(0.933)	13528	5.00000	4.8	
	63	1,3-Dichloropropane	76	10.875	10.876	(0.942)	23736	5.00000	5.3	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	13259	5.00000	5.2	
	65	2-Hexanone	43	11.294	11.294	(0.978)	46098	25.0000	21.6	
*	66	Chlorobenzene-D5	117	11.545	11.536	(1.000)	370636	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.001)	37353	5.00000	5.5	
	152	1-Chlorohexane	91	11.601	11.601	(1.005)	68529	5.00000		(a)
	68	Ethylbenzene	91	11.601	11.601	(1.005)	68529	5.00000	5.6	
	69	1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.007)	13694	5.00000	5.4	
M	70	Xylenes (total)	106				151426	15.0000	16.4	
	71	m+p-Xylenes	91	11.749	11.750	(1.018)	104035	10.0000	11.2	
	72	o-Xylene	91	12.168	12.168	(1.054)	47391	5.00000	5.2	
	73	Styrene	104	12.223	12.224	(1.059)	34748	5.00000	5.4	
	74	Bromoform	173	12.233	12.233	(1.060)	7523	5.00000	4.6	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	55182	5.00000	5.4	
$	76	P-Bromofluorobenzene	95	12.744	12.735	(1.574)	204744	50.0000	49.1	

Data File: \\target_server\gg\chem\gcms-d.i\D052218.b\D1472.d
Report Date: 23-May-2018 11:31

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
77	cis-1,4-Dichloro-2-Butene	53	12.818	12.810	(0.924)	4369	5.00000	5.2	
78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	3676	5.00000	4.7	
79	Bromobenzene	156	12.828	12.828	(0.924)	15059	5.00000	5.5	
80	N-Propylbenzene	91	12.874	12.875	(0.928)	76140	5.00000	5.6	
81	1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	17544	5.00000	5.7	
82	1,3,5-Trimethylbenzene	105	13.069	13.061	(0.942)	47964	5.00000	5.4	
83	2-Chlorotoluene	91	13.014	13.014	(0.938)	43583	5.00000	5.4	
84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	16292	5.00000	5.8	
85	4-Chlorotoluene	91	13.172	13.172	(0.949)	46974	5.00000	5.4	
86	tert-Butylbenzene	119	13.376	13.377	(0.964)	43201	5.00000	5.2	
87	Pentachloroethane	117	13.395	13.395	(0.965)	9779	5.00000	5.2	
88	1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	49798	5.00000	5.5	
89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	45989	5.00000	5.3	
90	1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	26788	5.00000	5.4	
* 91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	187514	50.0000		
92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	27897	5.00000	5.4	
93	N-Butylbenzene	91	14.231	14.232	(1.025)	44226	5.00000	5.2	
94	sec-Butylbenzene	105	13.562	13.563	(0.977)	59485	5.00000	5.6	
95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	24626	5.00000	5.3	
96	1,2-Dibromo-3-Chloropropane	157	15.570	15.571	(1.122)	1954	5.00000	3.8	
97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	14700	5.00000	4.6	
98	Hexachlorobutadiene	225	16.416	16.407	(1.183)	7099	5.00000	5.4	
99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	13333	5.00000	4.9	
100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	45579	5.00000	4.9	
101	Naphthalene	128	16.806	16.806	(1.211)	24794	5.00000	4.6	
102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	11926	5.00000	5.2	
103	Methyl Acetate	43	3.689	3.690	(0.504)	11273	5.00000	5.2	
104	Methylcyclohexane	83	7.975	7.966	(1.090)	17614	5.00000	4.9	
M 153	Total Alkylbenzenes	100				366803	5.00000	37.9	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).



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Client ID:
Sample Info: WG228847-2
Purge Volume: 5.0
Column phase: RTX-VMS

\\target_server\gg\chem\gcms-d.i\D052218.b\D1472.d

Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18

Data File: \\target_server\gg\chem\gcms-d.i\D052218.b\D1473.d
Report Date: 23-May-2018 11:31

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D052218.b\D1473.d
Lab Smp Id: WG228847-1
Inj Date : 22-MAY-2018 10:17
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Smp Info : WG228847-1
Misc Info :
Comment : SW846 5030
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Meth Date : 22-May-2018 12:19 jsampson Quant Type: ISTD
Cal Date : 22-MAY-2018 10:17 Cal File: D1473.d
Als bottle: 4 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	2704	1.00000	0.85(a)	
2	Chloromethane	50	1.663	1.654	(0.227)	3536	1.00000	1.0	
3	Vinyl chloride	62	1.737	1.728	(0.237)	2284	1.00000	0.84(a)	
4	Bromomethane	94	2.035	2.025	(0.278)	1354	1.00000	0.93(a)	
5	Chloroethane	64	2.155	2.146	(0.294)	1261	1.00000	0.90(a)	
6	Trichlorofluoromethane	101	2.286	2.277	(0.312)	4216	1.00000	0.91(a)	
7	Diethyl Ether	59	2.592	2.584	(0.354)	1875	1.00000	1.1	
8	Tertiary-butyl alcohol	59	3.978	3.969	(0.543)	432	5.00000	0.74(a)	
9	1,1-Dichloroethene	96	2.797	2.779	(0.382)	2013	1.00000	1.0	
10	Carbon Disulfide	76	2.815	2.807	(0.384)	5126	1.00000	0.88(a)	
11	Freon-113	151	2.843	2.835	(0.388)	1570	1.00000	1.1	
12	Iodomethane	142	2.946	2.937	(0.402)	938	1.00000	2.2(T)	
13	Acrolein	56	3.169	3.160	(0.433)	1842	5.00000	5.7	
14	Methylene Chloride	84	3.457	3.448	(0.472)	2889	1.00000	1.0(a)	
15	Acetone	43	3.531	3.522	(0.482)	3862	5.00000	4.2(a)	
16	Isobutyl Alcohol	43	7.622	7.604	(1.041)	1191	20.0000	16.6(a)	
17	trans-1,2-Dichloroethene	96	3.652	3.643	(0.499)	2569	1.00000	0.97(a)	
18	Allyl Chloride	41	3.327	3.318	(0.454)	3973	1.00000	1.1	
19	Methyl tert-butyl ether	73	3.819	3.801	(0.522)	5267	1.00000	0.77(a)	
20	Acetonitrile	39	4.154	4.136	(0.567)	617	10.0000	8.8(a)	
21	Di-isopropyl ether	45	4.368	4.368	(0.596)	7240	1.00000	0.88(a)	
22	Chloroprene	53	4.489	4.480	(0.613)	3838	1.00000	0.91(a)	
23	Propionitrile	54	7.157	7.148	(0.977)	3148	10.0000	9.0(a)	

Data File: \\target_server\gg\chem\gcms-d.i\D052218.b\D1473.d
Report Date: 23-May-2018 11:31

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.194	7.176	(0.982)	15034	10.0000	9.0(a)	
	25	1,1-Dichloroethane	63	4.526	4.517	(0.618)	4735	1.00000	0.90(a)	
	26	Acrylonitrile	52	4.628	4.610	(0.632)	3619	5.00000	4.5(a)	
	27	Ethyl tertiary-butyl ether	59	4.982	4.963	(0.680)	5969	1.00000	0.84(a)	
	28	Vinyl Acetate	43	4.991	4.982	(0.616)	4355	1.00000	0.74(a)	
	29	cis-1,2-Dichloroethene	96	5.456	5.438	(0.745)	2386	1.00000	0.87(a)	
M	30	1,2-Dichloroethylene (total)	96				4955	1.00000	1.8(a)	
	31	Methyl Methacrylate	41	10.652	10.643	(1.314)	1581	1.00000	1.8	
	32	2,2-Dichloropropane	77	5.651	5.642	(0.772)	3258	1.00000	0.83(a)	
	33	Bromochloromethane	128	5.818	5.809	(0.794)	1209	1.00000	0.88(a)	
	34	Chloroform	83	6.032	6.014	(0.824)	5158	1.00000	0.93(a)	
	35	Carbon Tetrachloride	117	6.237	6.228	(0.769)	3364	1.00000	0.85(a)	
	36	Tetrahydrofuran	42	6.330	6.302	(0.864)	2015	5.00000	3.8(a)	
$	37	Dibromofluoromethane	113	6.385	6.376	(0.872)	160746	50.0000	49.9	
	38	1,1,1-Trichloroethane	97	6.385	6.376	(0.872)	4283	1.00000	0.89(a)	
	39	1,1-Dichloropropene	75	6.636	6.618	(0.819)	3285	1.00000	0.84(a)	
	40	2-Butanone	43	6.673	6.655	(0.911)	4217	5.00000	(a)	
	41	Benzene	78	7.064	7.055	(0.872)	9030	1.00000	0.89(a)	
*	42	Pentafluorobenzene	168	7.324	7.315	(1.000)	262116	50.0000		
	43	Cyclohexane	56	5.809	5.781	(0.793)	2842	1.00000	0.73(a)	
	44	Ethyl Methacrylate	69	9.146	9.137	(1.128)	1170	1.00000	1.8	
$	45	1,2-Dichloroethane-D4	65	7.306	7.297	(0.997)	239648	50.0000	51.2	
	46	Tertiary-amyl methyl ether	73	7.352	7.334	(1.004)	5863	1.00000	0.97(a)	
	47	1,2-Dichloroethane	62	7.417	7.408	(0.915)	5377	1.00000	1.1	
	48	Trichloroethene	95	8.012	8.003	(0.989)	2596	1.00000	0.91(a)	
*	49	1,4-Difluorobenzene	114	8.105	8.096	(1.000)	418936	50.0000		
	50	Dibromomethane	93	8.589	8.589	(1.060)	1639	1.00000	0.85(a)	
	51	1,2-Dichloropropane	63	8.747	8.738	(1.079)	2360	1.00000	0.84(Ta)	
	52	Bromodichloromethane	83	8.858	8.849	(1.093)	3284	1.00000	0.81(a)	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.193)	3088	1.00000	1.8	
$	55	Toluene-D8	98	9.890	9.881	(1.220)	516007	50.0000	49.7	
	56	2-Chloroethylvinylether	63	9.648	9.639	(1.190)	802	1.00000	0.79(a)	
	57	Toluene	92	9.946	9.937	(1.227)	5702	1.00000	0.93(a)	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.284)	8659	5.00000	(Ta)	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	1703	1.00000	0.83(a)	
	60	trans-1,3-Dichloropropene	75	10.438	10.430	(1.288)	3014	1.00000	0.72(a)	
	61	1,1,2-Trichloroethane	83	10.597	10.597	(1.307)	1984	1.00000	0.92(a)	
	62	Dibromochloromethane	129	10.773	10.774	(0.933)	2078	1.00000	0.74(a)	
	63	1,3-Dichloropropane	76	10.885	10.876	(0.943)	3804	1.00000	0.84(a)	
	64	1,2-Dibromoethane	107	11.006	10.997	(1.358)	2068	1.00000	0.80(Ta)	
	65	2-Hexanone	43	11.303	11.294	(0.979)	4621	5.00000	(a)	
*	66	Chlorobenzene-D5	117	11.545	11.536	(1.000)	372914	50.0000		
	67	Chlorobenzene	112	11.563	11.555	(1.002)	6757	1.00000	0.98(a)	
	152	1-Chlorohexane	91	11.601	11.601	(1.005)	10963	1.00000	(a)	
	68	Ethylbenzene	91	11.601	11.601	(1.005)	10963	1.00000	0.90(a)	
	69	1,1,1,2-Tetrachloroethane	131	11.638	11.629	(1.008)	2081	1.00000	0.82(a)	
M	70	Xylenes (total)	106				22155	5.00000	2.4(a)	
	71	m+p-Xylenes	91	11.749	11.750	(1.018)	15367	2.00000	1.6(a)	
	72	o-Xylene	91	12.168	12.168	(1.054)	6788	1.00000	0.74(a)	
	73	Styrene	104	12.223	12.224	(1.059)	4481	1.00000	1.2	
	74	Bromoform	173	12.233	12.233	(1.060)	1193	1.00000	0.73(Ta)	
	75	Isopropylbenzene	105	12.484	12.475	(0.899)	7460	1.00000	0.75(a)	
$	76	P-Bromofluorobenzene	95	12.744	12.735	(1.572)	205587	50.0000	49.0	
	77	cis-1,4-Dichloro-2-Butene	53	12.818	12.810	(0.923)	645	1.00000	1.7	

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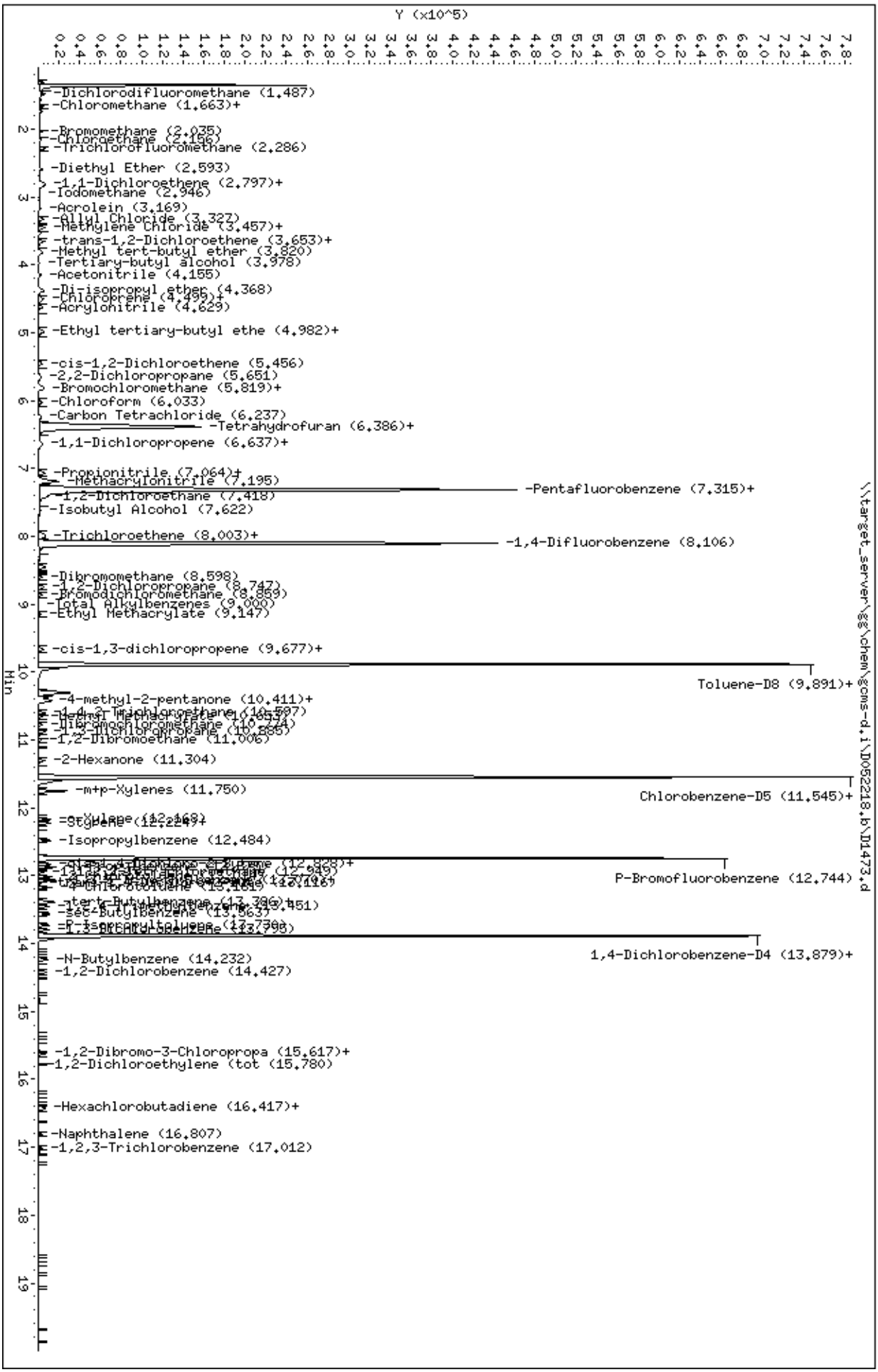
			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.944)	585	1.00000	0.76(a)	
	79	Bromobenzene	156	12.837	12.828	(0.924)	2445	1.00000	0.90(a)	
	80	N-Propylbenzene	91	12.874	12.875	(0.927)	11940	1.00000	0.89(a)	
	81	1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.932)	2713	1.00000	0.89(a)	
	82	1,3,5-Trimethylbenzene	105	13.069	13.061	(0.941)	6911	1.00000	0.79(a)	
	83	2-Chlorotoluene	91	13.014	13.014	(0.937)	6941	1.00000	0.87(a)	
	84	1,2,3-Trichloropropane	75	13.069	13.070	(0.941)	2266	1.00000	0.82(a)	
	85	4-Chlorotoluene	91	13.181	13.172	(0.949)	7707	1.00000	0.90(a)	
	86	tert-Butylbenzene	119	13.376	13.377	(0.963)	6681	1.00000	0.82(a)	
	87	Pentachloroethane	117	13.395	13.395	(0.965)	1740	1.00000	0.93(a)	
	88	1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	6258	1.00000	0.70(a)	
	89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	5893	1.00000	0.69(a)	
	90	1,3-Dichlorobenzene	146	13.794	13.795	(0.993)	4657	1.00000	0.95(a)	
*	91	1,4-Dichlorobenzene-D4	152	13.887	13.879	(1.000)	185198	50.0000		
	92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	5277	1.00000	1.0	
	93	N-Butylbenzene	91	14.231	14.232	(1.025)	6197	1.00000	0.74(a)	
	94	sec-Butylbenzene	105	13.562	13.563	(0.977)	7746	1.00000	0.74(a)	
	95	1,2-Dichlorobenzene	146	14.427	14.418	(1.039)	3897	1.00000	0.85(a)	
	96	1,2-Dibromo-3-Chloropropane	157	15.579	15.571	(1.122)	218	1.00000	0.48(Ta)	
	97	1,3,5-Trichlorobenzene	180	15.626	15.617	(1.125)	3076	1.00000	0.98(a)	
	98	Hexachlorobutadiene	225	16.416	16.407	(1.182)	1265	1.00000	0.97(a)	
	99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.183)	2043	1.00000	0.77(a)	
	100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.003)	9123	1.00000	1.00	
	101	Naphthalene	128	16.807	16.806	(1.210)	2799	1.00000	0.85(a)	
	102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.225)	1440	1.00000	0.51(a)	
	103	Methyl Acetate	43	3.689	3.690	(0.504)	2098	1.00000	0.96(a)	
	104	Methylcyclohexane	83	7.966	7.966	(1.088)	2838	1.00000	0.79(a)	
M	153	Total Alkylbenzenes	100				51626	1.00000	5.4(a)	

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).


Y (x10^5)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)+
-Bromomethane (2.035)
-Chloroethane (2.156)
-Trichlorofluoromethane (2.286)
-Diethyl Ether (2.593)
-1,1-Dichloroethene (2.797)+
-Iodomethane (2.946)
-Acrolein (3.169)
-Allyl Chloride (3.327)
-Methylene Chloride (3.457)+
-trans-1,2-Dichloroethene (3.653)+
-Methyl tert-butyl ether (3.820)
-Tertiary-butyl alcohol (3.978)
-Acetonitrile (4.155)
-Di-isopropyl ether (4.368)
-Chloroprene (4.496)+
-Acrylonitrile (4.629)
-Ethyl tertiary-butyl ethe (4.982)+
-cis-1,2-Dichloroethene (5.456)
-2,2-Dichloropropane (5.651)
-Bromochloromethane (5.819)+
-Chloroform (6.033)
-Carbon Tetrachloride (6.237)
-Tetrahydrofuran (6.386)+
-1,1-Dichloropropene (6.637)+
-Propionitrile (7.064)+
-Methacrylonitrile (7.195)
-1,2-Dichloroethane (7.418)
-Isobutyl Alcohol (7.622)
-Trichloroethene (8.003)+
-Dibromomethane (8.598)
-1,2-Dichloropropane (8.747)
-Bromodichloromethane (8.869)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.147)
-cis-1,3-dichloropropene (9.677)+
-4-methyl-2-pentanone (10.411)+
-1,2-Dibromoethane (11.006)
-2-Hexanone (11.304)
-m+p-Xylenes (11.750)
-Isopropylbenzene (12.484)
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.427)
-1,2-Dibromo-3-Chloropropa (15.617)+
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.417)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)
-Pentafluorobenzene (7.315)+
-1,4-Difluorobenzene (8.106)
Toluene-D8 (9.891)+
Chlorobenzene-D5 (11.545)+
P-Bromofluorobenzene (12.744)
1,4-Dichlorobenzene-D4 (13.879)+
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Column phase: RTX-VMS
Instrument: gcms-d,i
Operator: JSS
Column diameter: 0.18

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Report Date: 23-May-2018 11:31

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D052218.b\D1474.d
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Inj Date : 22-MAY-2018 10:53 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228847-6
Misc Info :
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Meth Date : 22-May-2018 12:19 jsampson Quant Type: ISTD
Cal Date : 22-MAY-2018 10:53 Cal File: D1474.d
Als bottle: 5 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	483586	150.000	151(A)	
2	Chloromethane	50	1.663	1.654	(0.227)	482128	150.000	139	
3	Vinyl chloride	62	1.737	1.728	(0.237)	420325	150.000	152(A)	
4	Bromomethane	94	2.034	2.025	(0.278)	227896	150.000	155(A)	
5	Chloroethane	64	2.137	2.146	(0.292)	198812	150.000	139	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	726289	150.000	154(A)	
7	Diethyl Ether	59	2.592	2.584	(0.354)	270829	150.000	153(A)	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	128941	750.000	755(A)	
9	1,1-Dichloroethene	96	2.787	2.779	(0.381)	298359	150.000	146	
10	Carbon Disulfide	76	2.815	2.807	(0.384)	933394	150.000	158(A)	
11	Freon-113	151	2.834	2.835	(0.387)	221208	150.000	147	
12	Iodomethane	142	2.945	2.937	(0.402)	294815	150.000	149	
13	Acrolein	56	3.169	3.160	(0.433)	220239	750.000	673	
14	Methylene Chloride	84	3.457	3.448	(0.472)	428312	150.000	150(A)	
15	Acetone	43	3.531	3.522	(0.482)	610512	750.000	661	
16	Isobutyl Alcohol	43	7.612	7.604	(1.039)	281577	3000.00	3050(A)	
17	trans-1,2-Dichloroethene	96	3.652	3.643	(0.499)	394750	150.000	147	
18	Allyl Chloride	41	3.327	3.318	(0.454)	564433	150.000	149	
19	Methyl tert-butyl ether	73	3.810	3.801	(0.520)	1122552	150.000	162(A)	
20	Acetonitrile	39	4.145	4.136	(0.566)	104494	1500.00	1460	
21	Di-isopropyl ether	45	4.377	4.368	(0.598)	1352084	150.000	162(A)	
22	Chloroprene	53	4.489	4.480	(0.613)	689491	150.000	160(A)	
23	Propionitrile	54	7.157	7.148	(0.977)	518856	1500.00	1460	

Data File: \\target_server\gg\chem\gcms-d.i\D052218.b\D1474.d
Report Date: 23-May-2018 11:31

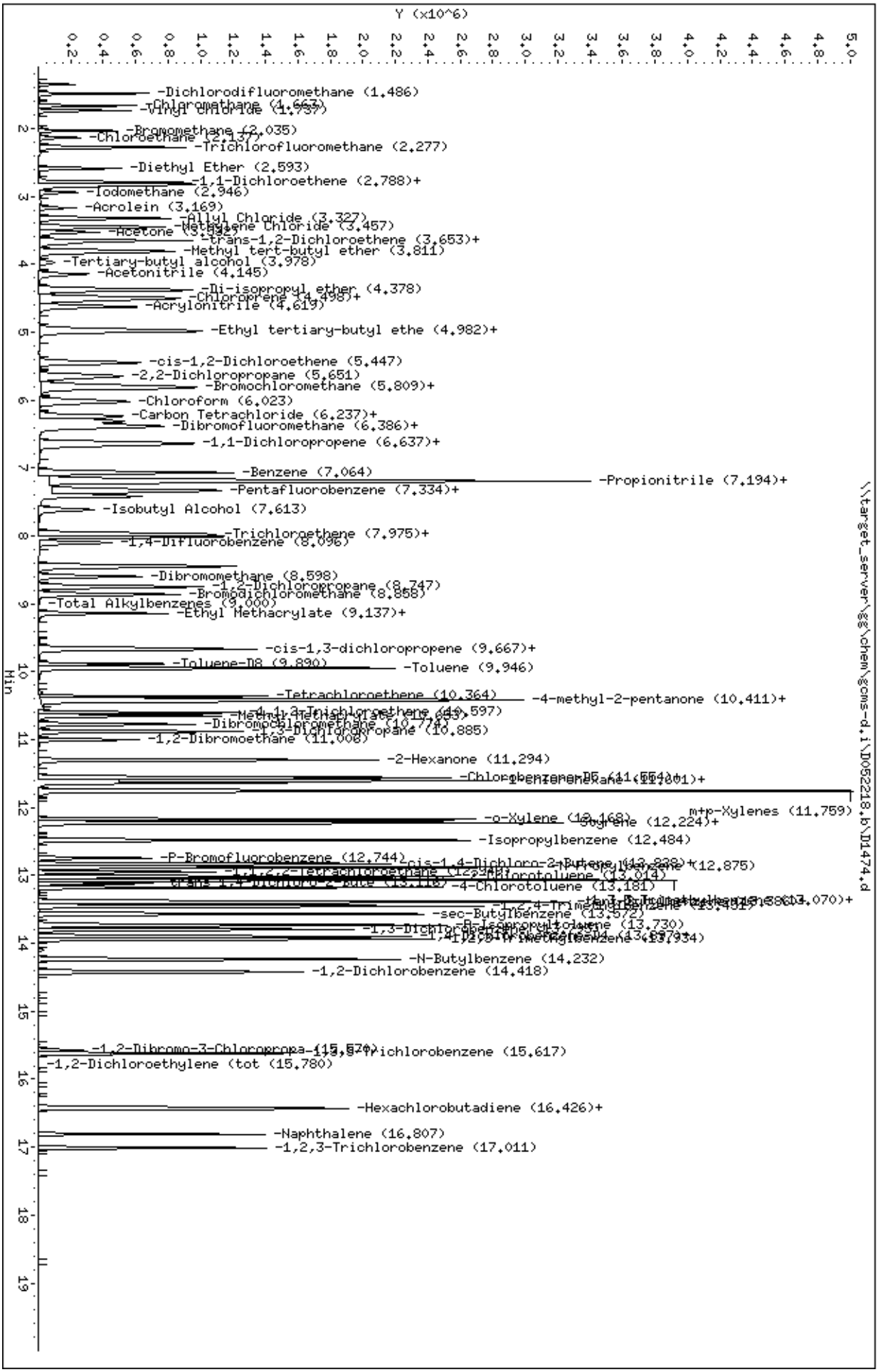
								AMOUNTS		
			QUANT SIG					CAL-AMT	ON-COL	
	Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	24	Methacrylonitrile	41	7.194	7.176	(0.982)	2516397	1500.00	1480	
	25	1,1-Dichloroethane	63	4.526	4.517	(0.618)	802423	150.000	150(A)	
	26	Acrylonitrile	52	4.619	4.610	(0.631)	603693	750.000	747	
	27	Ethyl tertiary-butyl ether	59	4.972	4.963	(0.679)	1221441	150.000	168(A)	
	28	Vinyl Acetate	43	4.991	4.982	(0.616)	986365	150.000	164(A)	
	29	cis-1,2-Dichloroethene	96	5.446	5.438	(0.744)	436165	150.000	157(A)	
M	30	1,2-Dichloroethylene (total)	96				830915	150.000	303	
	31	Methyl Methacrylate	41	10.652	10.643	(1.314)	408201	150.000	153(A)	
	32	2,2-Dichloropropane	77	5.651	5.642	(0.772)	627985	150.000	158(A)	
	33	Bromochloromethane	128	5.827	5.809	(0.796)	204090	150.000	147	
	34	Chloroform	83	6.023	6.014	(0.822)	858028	150.000	152(A)	
	35	Carbon Tetrachloride	117	6.236	6.228	(0.769)	634512	150.000	156(A)	
	36	Tetrahydrofuran	42	6.311	6.302	(0.862)	555835	750.000	758(A)	
$	37	Dibromofluoromethane	113	6.385	6.376	(0.872)	165355	50.0000	50.6	
	38	1,1,1-Trichloroethane	97	6.385	6.376	(0.872)	753736	150.000	154(A)	
	39	1,1-Dichloropropene	75	6.627	6.618	(0.818)	617978	150.000	155(A)	
	40	2-Butanone	43	6.655	6.655	(0.909)	943254	750.000	749	
	41	Benzene	78	7.064	7.055	(0.872)	1577053	150.000	151(A)	
*	42	Pentafluorobenzene	168	7.324	7.315	(1.000)	266078	50.0000		
	43	Cyclohexane	56	5.799	5.781	(0.792)	619174	150.000	157(A)	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.127)	277795	150.000	152(A)	
$	45	1,2-Dichloroethane-D4	65	7.305	7.297	(0.997)	238343	50.0000	50.2	
	46	Tertiary-amyl methyl ether	73	7.343	7.334	(1.003)	1002255	150.000	164(A)	
	47	1,2-Dichloroethane	62	7.417	7.408	(0.915)	743942	150.000	145	
	48	Trichloroethene	95	8.012	8.003	(0.989)	437000	150.000	149	
*	49	1,4-Difluorobenzene	114	8.105	8.096	(1.000)	430709	50.0000		
	50	Dibromomethane	93	8.598	8.589	(1.061)	308225	150.000	155(A)	
	51	1,2-Dichloropropane	63	8.746	8.738	(1.079)	448997	150.000	156(A)	
	52	Bromodichloromethane	83	8.858	8.849	(1.093)	683555	150.000	164(A)	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.193)	804505	150.000	151(A)	
	54	1,4-Dioxane	88	9.146	9.137	(1.128)	54545	3000.00	2600	
$	55	Toluene-D8	98	9.890	9.881	(1.220)	542964	50.0000	50.9	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.189)	229955	150.000	152(A)	
	57	Toluene	92	9.946	9.937	(1.227)	955117	150.000	151(A)	
	58	4-methyl-2-pentanone	43	10.410	10.411	(1.284)	1969251	750.000	754(A)	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	305998	150.000	142	
	60	trans-1,3-Dichloropropene	75	10.438	10.430	(1.288)	722769	150.000	169(A)	
	61	1,1,2-Trichloroethane	83	10.596	10.597	(1.307)	334196	150.000	150(A)	
	62	Dibromochloromethane	129	10.773	10.774	(0.933)	491056	150.000	166(A)	
	63	1,3-Dichloropropane	76	10.885	10.876	(0.943)	726242	150.000	153(A)	
	64	1,2-Dibromoethane	107	11.005	10.997	(1.358)	419911	150.000	159(A)	
	65	2-Hexanone	43	11.294	11.294	(0.978)	1399368	750.000	750	
*	66	Chlorobenzene-D5	117	11.545	11.536	(1.000)	392244	50.0000		
	67	Chlorobenzene	112	11.563	11.555	(1.002)	1059984	150.000	147	
	152	1-Chlorohexane	91	11.600	11.601	(1.005)	1903029	150.000	(a)	
	68	Ethylbenzene	91	11.600	11.601	(1.005)	1903029	150.000	148	
	69	1,1,1,2-Tetrachloroethane	131	11.638	11.629	(1.008)	418946	150.000	156(A)	
M	70	Xylenes (total)	106				4505349	150.000	463	
	71	m+p-Xylenes	91	11.758	11.750	(1.019)	2955334	300.000	302(A)	
	72	o-Xylene	91	12.167	12.168	(1.054)	1550015	150.000	161(A)	
	73	Styrene	104	12.223	12.224	(1.059)	1149571	150.000	150(A)	
	74	Bromoform	173	12.233	12.233	(1.060)	291482	150.000	170(A)	
	75	Isopropylbenzene	105	12.484	12.475	(0.899)	1712383	150.000	158(A)	
$	76	P-Bromofluorobenzene	95	12.744	12.735	(1.572)	221432	50.0000	51.3	

Data File: \\target_server\gg\chem\gcms-d.i\D052218.b\D1474.d
Report Date: 23-May-2018 11:31

							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	77 cis-1,4-Dichloro-2-Butene	53	12.818	12.810	(0.923)	175036	150.000	154(A)	
	78 trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.944)	139136	150.000	166(A)	
	79 Bromobenzene	156	12.837	12.828	(0.924)	444085	150.000	151(A)	
	80 N-Propylbenzene	91	12.874	12.875	(0.927)	2184801	150.000	150	
	81 1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.932)	487943	150.000	147	
	82 1,3,5-Trimethylbenzene	105	13.069	13.061	(0.941)	1496067	150.000	157(A)	
	83 2-Chlorotoluene	91	13.013	13.014	(0.937)	1329348	150.000	154(A)	
	84 1,2,3-Trichloropropane	75	13.069	13.070	(0.941)	437340	150.000	146	
	85 4-Chlorotoluene	91	13.181	13.172	(0.949)	1408508	150.000	151(A)	
	86 tert-Butylbenzene	119	13.385	13.377	(0.964)	1415055	150.000	160(A)	
	87 Pentachloroethane	117	13.395	13.395	(0.965)	336374	150.000	166(A)	
	88 1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	1552733	150.000	160(A)	
	89 P-Isopropyltoluene	119	13.729	13.730	(0.989)	1490155	150.000	161(A)	
	90 1,3-Dichlorobenzene	146	13.794	13.795	(0.993)	797579	150.000	150	
*	91 1,4-Dichlorobenzene-D4	152	13.887	13.879	(1.000)	201046	50.0000		
	92 1,4-Dichlorobenzene	146	13.906	13.897	(1.001)	814045	150.000	146	
	93 N-Butylbenzene	91	14.231	14.232	(1.025)	1460358	150.000	162(A)	
	94 sec-Butylbenzene	105	13.571	13.563	(0.977)	1777084	150.000	156(A)	
	95 1,2-Dichlorobenzene	146	14.427	14.418	(1.039)	780583	150.000	156(A)	
	96 1,2-Dibromo-3-Chloropropane	157	15.570	15.571	(1.121)	78813	150.000	169(A)	
	97 1,3,5-Trichlorobenzene	180	15.616	15.617	(1.125)	547163	150.000	160(A)	
	98 Hexachlorobutadiene	225	16.416	16.407	(1.182)	217331	150.000	154(A)	
	99 1,2,4-Trichlorobenzene	180	16.435	16.434	(1.183)	475433	150.000	164(A)	
	100 1,2,3-Trimethylbenzene	105	13.934	13.934	(1.003)	1524229	150.000	154(A)	
	101 Naphthalene	128	16.806	16.806	(1.210)	964438	150.000	152(A)	
	102 1,2,3-Trichlorobenzene	180	17.011	17.011	(1.225)	364131	150.000	152(A)	
	103 Methyl Acetate	43	3.689	3.690	(0.504)	328422	150.000	148	
	104 Methylcyclohexane	83	7.975	7.966	(1.089)	599331	150.000	164(A)	
M	153 Total Alkylbenzenes	100				11376253	150.000	1100	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.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Operator: JSS
Column diameter: 0.18
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Y (x10^6)
Min
-Dichlorodifluoromethane (1.486)
-Chloromethane (1.663)
-Vinyl chloride (1.737)
-Bromomethane (2.035)
-Chloroethane (2.137)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.593)
-1,1-Dichloroethene (2.788)+
-Iodomethane (2.946)
-Acrolein (3.169)
-Allyl Chloride (3.327)
-Methylene Chloride (3.457)
-Acetone (3.532)
-trans-1,2-Dichloroethene (3.653)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.978)
-Acetonitrile (4.145)
-Di-isopropyl ether (4.378)
-Chloroprene (4.498)+
-Acrylonitrile (4.619)
-Ethyl tertiary-butyl ethe (4.982)+
-cis-1,2-Dichloroethene (5.447)
-2,2-Dichloropropane (5.651)
-Bromochloromethane (5.809)+
-Chloroform (6.023)
-Carbon Tetrachloride (6.237)+
-Dibromofluoromethane (6.386)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.064)
-Propionitrile (7.194)+
-Pentafluorobenzene (7.334)+
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.975)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.598)
-1,2-Dichloropropane (8.747)
-Bromodichloromethane (8.858)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.890)
-Toluene (9.946)
-Tetrachloroethene (10.364)
-4-methyl-2-pentanone (10.411)+
-Methyl Methacrylate (10.597)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.885)
-1,2-Dibromoethane (11.008)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.554)
-Pentachloroethane (11.701)+
m+p-Xylenes (11.759)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.484)
-P-Bromofluorobenzene (12.744)
-cis-1,4-Dichloro-2-Butene (12.838)+
-1,1,2,2-Tetrachloroethane (12.875)
-4-Chlorotoluene (13.014)
-trans-1,4-Dichloro-2-Butene (13.118)
-4-Chlorotoluene (13.181)
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.572)
-P-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.834)
-1,4-Dichlorobenzene-D4 (13.887)+
-1,2,3-Trimethylbenzene (13.934)
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropa (15.570)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)

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Report Date: 23-May-2018 11:31

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D052218.b\D1475.d
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Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D052218.b\D8A05(23)D.m
Meth Date : 22-May-2018 12:19 jsampson Quant Type: ISTD
Cal Date : 22-MAY-2018 11:28 Cal File: D1475.d
Als bottle: 6 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	320712	100.000	97.5	
2	Chloromethane	50	1.663	1.654	(0.227)	345759	100.000	97.6	
3	Vinyl chloride	62	1.737	1.728	(0.237)	310066	100.000	109	
4	Bromomethane	94	2.035	2.025	(0.278)	155808	100.000	103	
5	Chloroethane	64	2.137	2.146	(0.292)	141918	100.000	97.2	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	476011	100.000	98.6	
7	Diethyl Ether	59	2.592	2.584	(0.354)	182838	100.000	101	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	85076	500.000	485	
9	1,1-Dichloroethene	96	2.788	2.779	(0.381)	212575	100.000	102	
10	Carbon Disulfide	76	2.815	2.807	(0.384)	645222	100.000	107	
11	Freon-113	151	2.843	2.835	(0.388)	152515	100.000	99.1	
12	Iodomethane	142	2.946	2.937	(0.402)	184635	100.000	102	
13	Acrolein	56	3.169	3.160	(0.433)	143784	500.000	429	
14	Methylene Chloride	84	3.457	3.448	(0.472)	299006	100.000	102	
15	Acetone	43	3.531	3.522	(0.482)	478528	500.000	506	
16	Isobutyl Alcohol	43	7.612	7.604	(1.039)	179997	2000.00	1900	
17	trans-1,2-Dichloroethene	96	3.652	3.643	(0.499)	277810	100.000	101	
18	Allyl Chloride	41	3.327	3.318	(0.454)	422870	100.000	109	
19	Methyl tert-butyl ether	73	3.810	3.801	(0.520)	751786	100.000	106	
20	Acetonitrile	39	4.145	4.136	(0.566)	69188	1000.00	946	
21	Di-isopropyl ether	45	4.377	4.368	(0.598)	946466	100.000	111	
22	Chloroprene	53	4.489	4.480	(0.613)	466640	100.000	106	
23	Propionitrile	54	7.157	7.148	(0.977)	346132	1000.00	953	

Data File: \\target_server\gg\chem\gcms-d.i\D052218.b\D1475.d
Report Date: 23-May-2018 11:31

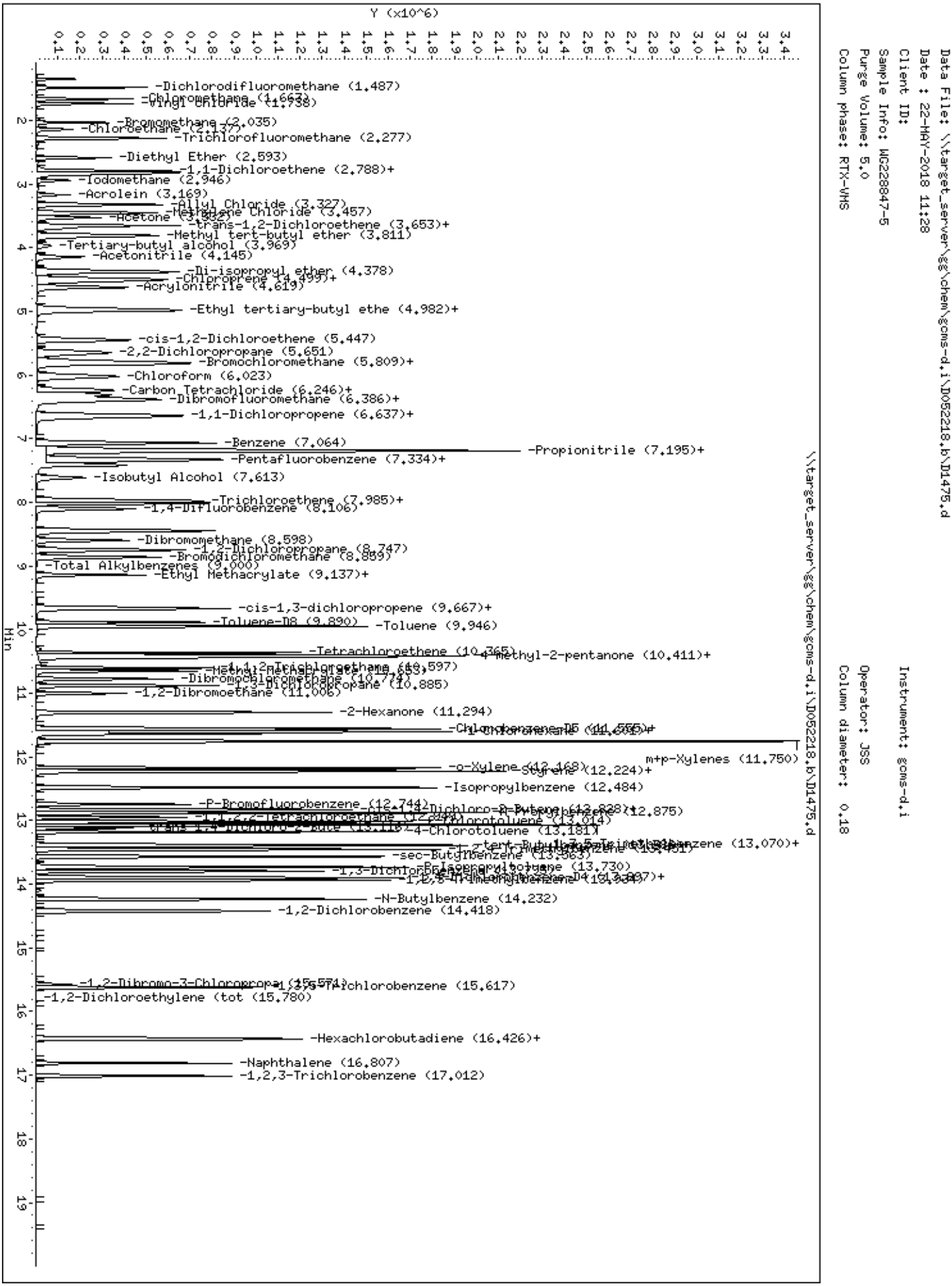
							AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	24 Methacrylonitrile	41	7.194	7.176	(0.982)	1670104	1000.00	957	
	25 1,1-Dichloroethane	63	4.526	4.517	(0.618)	554056	100.000	101	
	26 Acrylonitrile	52	4.619	4.610	(0.631)	404366	500.000	488	
	27 Ethyl tertiary-butyl ether	59	4.972	4.963	(0.679)	826018	100.000	111	
	28 Vinyl Acetate	43	4.991	4.982	(0.616)	614121	100.000	100	
	29 cis-1,2-Dichloroethene	96	5.446	5.438	(0.744)	298581	100.000	105	
M	30 1,2-Dichloroethylene (total)	96				576391	100.000	205	
	31 Methyl Methacrylate	41	10.652	10.643	(1.314)	260532	100.000	96.0	
	32 2,2-Dichloropropane	77	5.651	5.642	(0.772)	419903	100.000	103	
	33 Bromochloromethane	128	5.827	5.809	(0.796)	146718	100.000	103	
	34 Chloroform	83	6.023	6.014	(0.822)	581319	100.000	101	
	35 Carbon Tetrachloride	117	6.246	6.228	(0.771)	432154	100.000	104	
	36 Tetrahydrofuran	42	6.311	6.302	(0.862)	363060	500.000	484	
$	37 Dibromofluoromethane	113	6.385	6.376	(0.872)	168062	50.0000	50.2	
	38 1,1,1-Trichloroethane	97	6.385	6.376	(0.872)	512531	100.000	102	
	39 1,1-Dichloropropene	75	6.636	6.618	(0.819)	426977	100.000	105	
	40 2-Butanone	43	6.655	6.655	(0.909)	636292	500.000	492	
	41 Benzene	78	7.064	7.055	(0.872)	1099261	100.000	103	
*	42 Pentafluorobenzene	168	7.324	7.315	(1.000)	272603	50.0000		
	43 Cyclohexane	56	5.800	5.781	(0.792)	446453	100.000	110	
	44 Ethyl Methacrylate	69	9.137	9.137	(1.127)	180389	100.000	97.1	
$	45 1,2-Dichloroethane-D4	65	7.306	7.297	(0.997)	235454	50.0000	48.4	
	46 Tertiary-amyl methyl ether	73	7.343	7.334	(1.003)	655154	100.000	104	
	47 1,2-Dichloroethane	62	7.417	7.408	(0.915)	483091	100.000	92.4	
	48 Trichloroethene	95	8.012	8.003	(0.989)	299902	100.000	100	
*	49 1,4-Difluorobenzene	114	8.105	8.096	(1.000)	439303	50.0000		
	50 Dibromomethane	93	8.598	8.589	(1.061)	201198	100.000	99.1	
	51 1,2-Dichloropropane	63	8.747	8.738	(1.079)	307034	100.000	105	
	52 Bromodichloromethane	83	8.858	8.849	(1.093)	444885	100.000	104	
	53 cis-1,3-dichloropropene	75	9.667	9.667	(1.193)	534714	100.000	99.0	
	54 1,4-Dioxane	88	9.146	9.137	(1.128)	40951	2000.00	1920	
$	55 Toluene-D8	98	9.890	9.881	(1.220)	550514	50.0000	50.6	
	56 2-Chloroethylvinylether	63	9.639	9.639	(1.189)	146763	100.000	95.2	
	57 Toluene	92	9.946	9.937	(1.227)	654033	100.000	101	
	58 4-methyl-2-pentanone	43	10.411	10.411	(1.284)	1284853	500.000	481	
	59 Tetrachloroethene	164	10.364	10.365	(0.898)	266137	100.000	123	
	60 trans-1,3-Dichloropropene	75	10.438	10.430	(1.288)	470286	100.000	108	
	61 1,1,2-Trichloroethane	83	10.597	10.597	(1.307)	224294	100.000	99.0	
	62 Dibromochloromethane	129	10.773	10.774	(0.933)	320876	100.000	108	
	63 1,3-Dichloropropane	76	10.885	10.876	(0.943)	478562	100.000	101	
	64 1,2-Dibromoethane	107	11.006	10.997	(1.358)	274162	100.000	102	
	65 2-Hexanone	43	11.294	11.294	(0.978)	916459	500.000	488	
*	66 Chlorobenzene-D5	117	11.545	11.536	(1.000)	393469	50.0000		
	67 Chlorobenzene	112	11.563	11.555	(1.002)	712725	100.000	98.4	
	152 1-Chlorohexane	91	11.601	11.601	(1.005)	1292638	100.000	(a)	
	68 Ethylbenzene	91	11.601	11.601	(1.005)	1292638	100.000	100	
	69 1,1,1,2-Tetrachloroethane	131	11.638	11.629	(1.008)	279538	100.000	104	
M	70 Xylenes (total)	106				3020162	100.000	309	
	71 m+p-Xylenes	91	11.749	11.750	(1.018)	1979469	200.000	202	
	72 o-Xylene	91	12.168	12.168	(1.054)	1040693	100.000	108	
	73 Styrene	104	12.223	12.224	(1.059)	768736	100.000	100	
	74 Bromoform	173	12.233	12.233	(1.060)	184589	100.000	107	
	75 Isopropylbenzene	105	12.484	12.475	(0.899)	1149308	100.000	105	
$	76 P-Bromofluorobenzene	95	12.744	12.735	(1.572)	221115	50.0000	50.3	

Data File: \\target_server\gg\chem\gcms-d.i\D052218.b\D1475.d
Report Date: 23-May-2018 11:31

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	77	cis-1,4-Dichloro-2-Butene	53	12.818	12.810	(0.923)	106406	100.000	93.4	
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.944)	86070	100.000	102	
	79	Bromobenzene	156	12.837	12.828	(0.924)	295088	100.000	99.9	
	80	N-Propylbenzene	91	12.874	12.875	(0.927)	1469695	100.000	100	
	81	1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.932)	310267	100.000	93.0	
	82	1,3,5-Trimethylbenzene	105	13.069	13.061	(0.941)	987683	100.000	103	
	83	2-Chlorotoluene	91	13.014	13.014	(0.937)	880649	100.000	101	
	84	1,2,3-Trichloropropane	75	13.069	13.070	(0.941)	280547	100.000	93.2	
	85	4-Chlorotoluene	91	13.181	13.172	(0.949)	938622	100.000	100	
	86	tert-Butylbenzene	119	13.376	13.377	(0.963)	892524	100.000	100	
	87	Pentachloroethane	117	13.395	13.395	(0.965)	159939	100.000	78.7	
	88	1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	1032133	100.000	106	
	89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	992944	100.000	107	
	90	1,3-Dichlorobenzene	146	13.794	13.795	(0.993)	531876	100.000	99.4	
*	91	1,4-Dichlorobenzene-D4	152	13.887	13.879	(1.000)	201995	50.0000		
	92	1,4-Dichlorobenzene	146	13.906	13.897	(1.001)	544384	100.000	97.1	
	93	N-Butylbenzene	91	14.231	14.232	(1.025)	962438	100.000	106	
	94	sec-Butylbenzene	105	13.571	13.563	(0.977)	1200496	100.000	105	
	95	1,2-Dichlorobenzene	146	14.427	14.418	(1.039)	510001	100.000	102	
	96	1,2-Dibromo-3-Chloropropane	157	15.579	15.571	(1.122)	48304	100.000	108	
	97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	355058	100.000	103	
	98	Hexachlorobutadiene	225	16.416	16.407	(1.182)	140054	100.000	98.7	
	99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.183)	306335	100.000	105	
	100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.003)	1007295	100.000	101	
	101	Naphthalene	128	16.806	16.806	(1.210)	609067	100.000	95.7	
	102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.225)	229664	100.000	95.5	
	103	Methyl Acetate	43	3.689	3.690	(0.504)	218278	100.000	95.8	
	104	Methylcyclohexane	83	7.975	7.966	(1.089)	412454	100.000	110	
M	153	Total Alkylbenzenes	100				7537913	100.000	727	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Data File: \\target_server\gg\chem\gcms-d.i\D052218.b\D1475.d
Date : 22-MAY-2018 11:28
Client ID:
Sample Info: WG228847-5
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D052218.b\D1475.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)
-Vinyl Chloride (1.738)
-Bromomethane (2.035)
-Chloroethane (2.137)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.593)
-1,1-Dichloroethene (2.788)+
-Iodomethane (2.946)
-Acrolein (3.169)
-Allyl Chloride (3.327)
-Methylene Chloride (3.457)
-Acetone (3.532)
-trans-1,2-Dichloroethene (3.653)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.145)
-Di-isopropyl ether (4.378)
-Chloroprene (4.499)+
-Acrylonitrile (4.619)
-Ethyl tertiary-butyl ethe (4.982)+
-cis-1,2-Dichloroethene (5.447)
-2,2-Dichloropropane (5.651)
-Bromochloromethane (5.809)+
-Chloroform (6.023)
-Carbon Tetrachloride (6.246)+
-Dibromofluoromethane (6.386)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.064)
-Propionitrile (7.195)+
-Pentafluorobenzene (7.334)+
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.985)+
-1,4-Difluorobenzene (8.106)
-Dibromomethane (8.598)
-1,2-Dichloropropane (8.747)
-Bromodichloromethane (8.859)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.890)
-Toluene (9.946)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-1,1,2-Trichloroethane (10.597)
-Methyl Methacrylate (10.653)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.885)
-1,2-Dibromoethane (11.006)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.555)+
-1-Chloronexane (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.484)
-P-Bromofluorobenzene (12.744)
-cis-1,4-Dichloro-2-Butene (12.828)+
-N-Propylbenzene (12.875)
-1,1,2,2-Tetrachloroethane (12.949)
-2-Chlorotoluene (13.014)
-trans-1,4-Dichloro-2-Bute (13.116)
-4-Chlorotoluene (13.181)
-tert-Butylbenzene (13.070)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.563)
-P-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.733)
-1,2,3-Trimethylbenzene (13.934)
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropa (15.571)
-1,3,5-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)

Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1477A.d
Report Date: 23-May-2018 11:49

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D052218B.b\D1477A.d
Lab Smp Id: WG228859-6
Inj Date : 22-MAY-2018 13:18 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228859-6
Misc Info : WG228859,WG228847-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D052218B.b\D8A05(23)D.m
Meth Date : 23-May-2018 11:33 gcms-d.i Quant Type: ISTD
Cal Date : 22-MAY-2018 11:28 Cal File: D1475.d
Als bottle: 2 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	224904	63.6487	63.6(R)	
2	Chloromethane	50	1.663	1.654	(0.227)	207576	54.5290	54.5	
3	Vinyl chloride	62	1.737	1.728	(0.238)	168827	55.4903	55.5	
4	Bromomethane	94	2.025	2.025	(0.277)	84605	52.1558	52.2	
5	Chloroethane	64	2.146	2.146	(0.293)	82566	52.6370	52.6	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	240887	46.4341	46.4	
7	Diethyl Ether	59	2.583	2.584	(0.353)	94414	48.4583	48.4	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	45338	239.925	240	
9	1,1-Dichloroethene	96	2.788	2.779	(0.381)	99620	44.3162	44.3	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	321591	49.4700	49.5	
11	Freon-113	151	2.834	2.835	(0.387)	74144	44.8678	44.9	
12	Iodomethane	142	2.936	2.937	(0.401)	102725	57.7805	57.8	
13	Acrolein	56	3.169	3.160	(0.433)	75164	208.766	209	
14	Methylene Chloride	84	3.448	3.448	(0.471)	153012	48.7893	48.8	
15	Acetone	43	3.522	3.522	(0.482)	43535	42.8268	42.8	
16	Isobutyl Alcohol	43	7.612	7.604	(1.041)	95650	943.255	943	
17	trans-1,2-Dichloroethene	96	3.652	3.643	(0.499)	139637	47.1224	47.1	
18	Allyl Chloride	41	3.317	3.318	(0.454)	213518	51.3338	51.3	
19	Methyl tert-butyl ether	73	3.810	3.801	(0.521)	390023	51.1539	51.2	
20	Acetonitrile	39	4.145	4.136	(0.567)	36317	462.189	462	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	486500	52.9322	52.9	
22	Chloroprene	53	4.489	4.480	(0.614)	232798	49.2138	49.2	
23	Propionitrile	54	7.148	7.148	(0.977)	182359	467.348	467	
24	Methacrylonitrile	41	7.185	7.176	(0.982)	892432	476.011	476	

Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1477A.d
Report Date: 23-May-2018 11:49

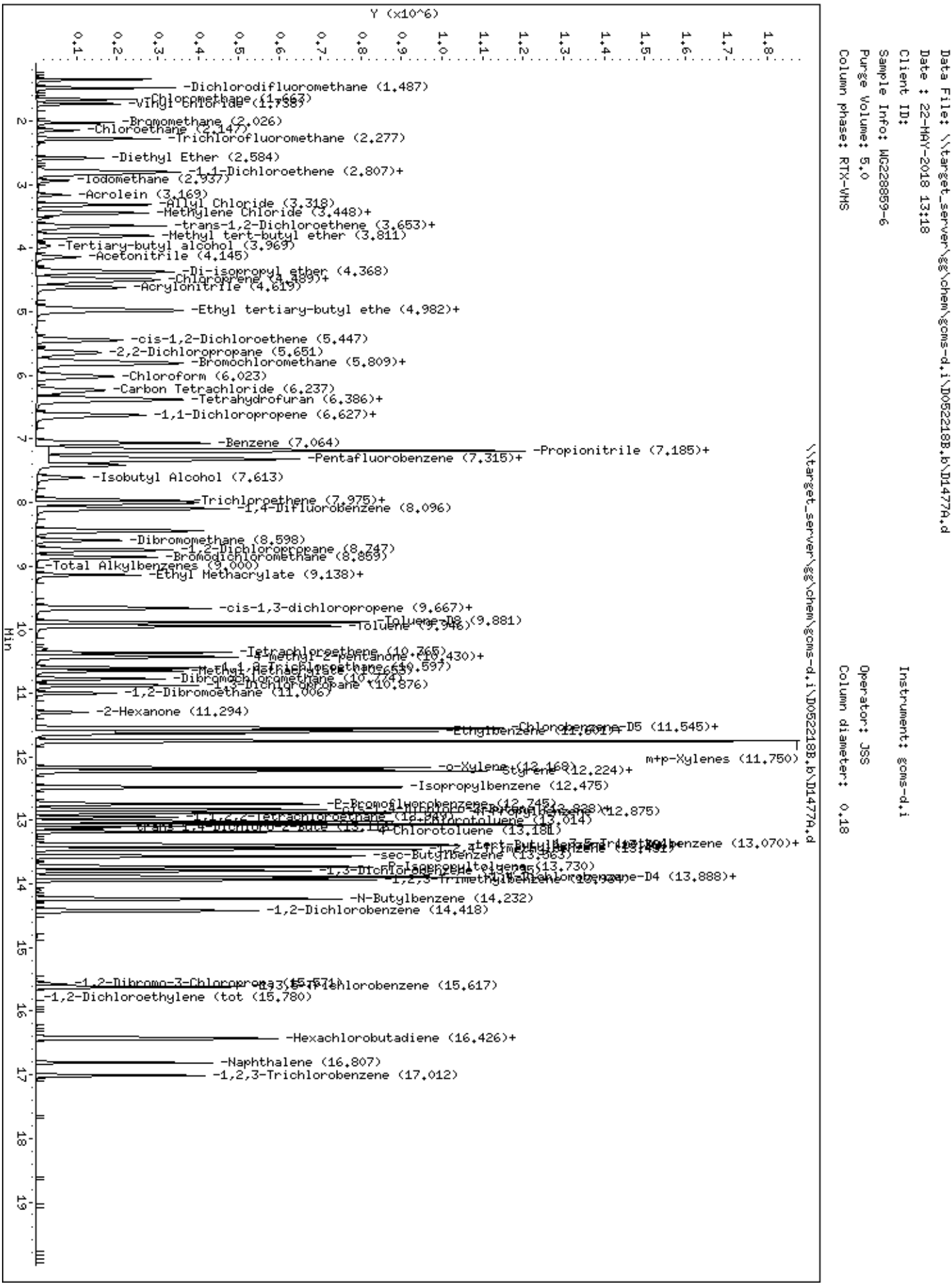
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	296772	50.5288	50.5	
	26	Acrylonitrile	52	4.619	4.610	(0.631)	211248	237.548	238	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	422806	52.9748	53.0	
	28	Vinyl Acetate	43	4.991	4.982	(0.616)	378555	58.1829	58.2	
	29	cis-1,2-Dichloroethene	96	5.446	5.438	(0.745)	151251	49.3906	49.4	
M	30	1,2-Dichloroethylene (total)	96				290888	96.5130	96.5	
	31	Methyl Methacrylate	41	10.652	10.643	(1.316)	132979	46.8206	46.8	
	32	2,2-Dichloropropane	77	5.651	5.642	(0.773)	194656	44.5447	44.5	
	33	Bromochloromethane	128	5.818	5.809	(0.795)	76486	49.9283	49.9	
	34	Chloroform	83	6.023	6.014	(0.823)	298406	48.0901	48.1	
	35	Carbon Tetrachloride	117	6.237	6.228	(0.770)	210093	47.6063	47.6	
	36	Tetrahydrofuran	42	6.320	6.302	(0.864)	34884	44.2030	44.2	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	177112	49.2561	49.2	
	38	1,1,1-Trichloroethane	97	6.385	6.376	(0.873)	251002	46.6937	46.7	
	39	1,1-Dichloropropene	75	6.627	6.618	(0.819)	213025	49.2660	49.3	
	40	2-Butanone	43	6.655	6.655	(0.910)	62130	40.3941	40.4	
	41	Benzene	78	7.064	7.055	(0.873)	563230	49.7773	49.8	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	292824	50.0000		
	43	Cyclohexane	56	5.800	5.781	(0.793)	221055	50.9054	50.9	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	90868	46.6913	46.7	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	240919	46.1195	46.1	
	46	Tertiary-amyl methyl ether	73	7.343	7.334	(1.004)	337446	50.0746	50.1	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	249322	44.9599	45.0	
	48	Trichloroethene	95	8.012	8.003	(0.990)	152954	48.1124	48.1	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	466113	50.0000		
	50	Dibromomethane	93	8.598	8.589	(1.062)	105056	48.7692	48.8	
	51	1,2-Dichloropropane	63	8.747	8.738	(1.080)	156327	50.2872	50.3	
	52	Bromodichloromethane	83	8.858	8.849	(1.094)	232901	51.5828	51.6	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	253752	44.9582	45.0	
	54	1,4-Dioxane	88	9.146	9.137	(1.130)	25080	1105.94	1100	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	583367	50.5477	50.5	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	91137	55.7922	55.8	
	57	Toluene	92	9.946	9.937	(1.228)	337831	49.3338	49.3	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	131581	42.7181	42.7	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	108040	47.6519	47.6	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	240590	52.0746	52.1	
	61	1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	116637	48.5146	48.5	
	62	Dibromochloromethane	129	10.773	10.774	(0.933)	164647	52.8831	52.9	
	63	1,3-Dichloropropane	76	10.875	10.876	(0.942)	239844	48.0621	48.1	
	64	1,2-Dibromoethane	107	11.006	10.997	(1.359)	140073	48.9903	49.0	
	65	2-Hexanone	43	11.294	11.294	(0.978)	89121	40.9396	40.9	
*	66	Chlorobenzene-D5	117	11.545	11.536	(1.000)	412871	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.001)	368749	48.5073	48.5	
	68	Ethylbenzene	91	11.601	11.601	(1.005)	657080	48.6185	48.6	
	69	1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.007)	143400	50.7850	50.8	
M	70	Xylenes (total)	106				1537240	150.011	150	
	71	m+p-Xylenes	91	11.749	11.750	(1.018)	1016735	98.7347	98.7	
	72	o-Xylene	91	12.168	12.168	(1.054)	520505	51.2762	51.3	
	73	Styrene	104	12.223	12.224	(1.059)	393884	49.3106	49.3	
	74	Bromoform	173	12.233	12.233	(1.060)	92224	50.9968	51.0	
	75	Isopropylbenzene	105	12.484	12.475	(0.899)	601289	53.4551	53.4	
$	76	P-Bromofluorobenzene	95	12.744	12.735	(1.574)	228128	48.8740	48.9	
	77	cis-1,4-Dichloro-2-Butene	53	12.818	12.810	(0.923)	49965	43.0772	43.1	
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.944)	40505	46.7125	46.7	

Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1477A.d
Report Date: 23-May-2018 11:49

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	79 Bromobenzene	156	12.837	12.828	(0.924)	150680	49.4506	49.4	
	80 N-Propylbenzene	91	12.874	12.875	(0.927)	736939	48.7530	48.8	
	81 1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.932)	162397	47.1940	47.2	
	82 1,3,5-Trimethylbenzene	105	13.069	13.061	(0.941)	503321	50.9024	50.9	
	83 2-Chlorotoluene	91	13.014	13.014	(0.937)	446017	49.7028	49.7	
	84 1,2,3-Trichloropropane	75	13.069	13.070	(0.941)	140494	45.2289	45.2	
	85 4-Chlorotoluene	91	13.181	13.172	(0.949)	474828	49.0552	49.0	
	86 tert-Butylbenzene	119	13.376	13.377	(0.963)	470708	51.2836	51.3	
	87 Pentachloroethane	117	13.395	13.395	(0.965)	110042	52.4703	52.5	
	88 1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	518545	51.4380	51.4	
	89 P-Isopropyltoluene	119	13.729	13.730	(0.989)	497900	52.0118	52.0	
	90 1,3-Dichlorobenzene	146	13.794	13.795	(0.993)	272470	49.3398	49.3	
*	91 1,4-Dichlorobenzene-D4	152	13.887	13.879	(1.000)	208475	50.0000		
	92 1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	274343	47.4056	47.4	
	93 N-Butylbenzene	91	14.231	14.232	(1.025)	481441	51.4020	51.4	
	94 sec-Butylbenzene	105	13.562	13.563	(0.977)	600618	50.7691	50.8	
	95 1,2-Dichlorobenzene	146	14.417	14.418	(1.038)	258038	49.9196	49.9	
	96 1,2-Dibromo-3-Chloropropane	157	15.570	15.571	(1.121)	21452	41.1589	41.2	
	97 1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	176889	49.8492	49.8	
	98 Hexachlorobutadiene	225	16.416	16.407	(1.182)	66225	45.2216	45.2	
	99 1,2,4-Trichlorobenzene	180	16.435	16.434	(1.183)	148960	49.7025	49.7	
	100 1,2,3-Trimethylbenzene	105	13.934	13.934	(1.003)	513630	49.9398	49.9	
	101 Naphthalene	128	16.807	16.806	(1.210)	289958	44.3325	44.3	
	102 1,2,3-Trichlorobenzene	180	17.011	17.011	(1.225)	111727	44.9583	45.0	
	103 Methyl Acetate	43	3.689	3.690	(0.504)	106047	43.3196	43.3	
	104 Methylcyclohexane	83	7.975	7.966	(1.090)	203250	50.6398	50.6	
M	153 Total Alkylbenzenes	100				3809472	356.560	356	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.


Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1477A.d
Date : 22-MAY-2018 13:18
Client ID:
Sample Info: WG228859-6
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D052218B.b\D1477A.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.667)
-Vinyl Chloride (1.758)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.169)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)+
-trans-1,2-Dichloroethene (3.653)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.145)
-Di-isopropyl ether (4.368)
-Chloroprene (4.489)+
-Acrylonitrile (4.619)
-Ethyl tertiary-butyl ethe (4.982)+
-cis-1,2-Dichloroethene (5.447)
-2,2-Dichloropropane (5.651)
-Bromochloromethane (5.809)+
-Chloroform (6.023)
-Carbon Tetrachloride (6.237)
-Tetrahydrofuran (6.386)+
-1,1-Dichloropropene (6.627)+
-Benzene (7.064)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.975)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.598)
-1,2-Dichloropropane (8.747)
-Bromodichloromethane (8.859)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.881)
-Toluene (9.946)
-Tetrachloroethene (10.365)
-4-Methyl-2-pentanone (10.430)+
-Methyl Methacrylate (10.597)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (11.006)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-Ethylbenzene (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-Bromofluorobenzene (12.745)
-Bromoform (12.828)+
-1,1,2,2-Tetrachloroethane (12.875)
-n-Propylbenzene (13.014)
-2-Chlorotoluene (13.181)
-4-Chlorotoluene (13.181)
-1,3,5-Trimethylbenzene (13.070)+
-sec-Butylbenzene (13.363)
-p-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.786)
-1,4-Dichlorobenzene-D4 (13.888)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.571)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228421-4
Analytical Date: 05/16/18 12:40
Lab File ID : D1328.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.60519	0.53303	0.53303	0.010	-11.92245	20.00000	Averaged
2	Chloromethane	0.65045	0.54891	0.54891	0.100	-15.61161	20.00000	Averaged
3	Vinyl chloride	0.50829	0.43637	0.43637	0.010	-14.14954	20.00000	Averaged
4	Bromomethane	0.26245	0.23425	0.23425	0.010	-10.74617	20.00000	Averaged
5	Chloroethane	0.23262	0.22738	0.22738	0.010	-2.25246	20.00000	Averaged
6	Trichlorofluoromethane	0.78861	0.78561	0.78561	0.010	-0.38159	20.00000	Averaged
9	1,1-Dichloroethene	0.33801	0.31379	0.31379	0.100	-7.16449	20.00000	Averaged
10	Carbon Disulfide	1.04529	1.02317	1.02317	0.010	-2.11594	20.00000	Averaged
11	Freon-113	0.29565	0.26661	0.26661	0.010	-9.82240	20.00000	Averaged
14	Methylene Chloride	0.56422	0.52059	0.52059	0.010	-7.73264	20.00000	Averaged
15	Acetone	0.15669	0.15702	0.15702	0.010	0.20446	20.00000	Averaged
17	trans-1,2-Dichloroethene	0.51620	0.44846	0.44846	0.010	-13.12190	20.00000	Averaged
19	Methyl tert-butyl ether	1.33505	1.26299	1.26299	0.010	-5.39692	20.00000	Averaged
25	1,1-Dichloroethane	0.96513	0.93797	0.93797	0.100	-2.81362	20.00000	Averaged
29	cis-1,2-Dichloroethene	0.54948	0.50149	0.50149	0.010	-8.73424	20.00000	Averaged
32	2,2-Dichloropropane	0.63584	0.64708	0.64708	0.010	1.76649	20.00000	Averaged
33	Bromochloromethane	0.27091	0.27305	0.27305	0.010	0.79009	20.00000	Averaged
34	Chloroform	1.01172	0.98547	0.98547	0.010	-2.59430	20.00000	Averaged
35	Carbon Tetrachloride	0.43090	0.42931	0.42931	0.010	-0.36991	20.00000	Averaged
38	1,1,1-Trichloroethane	0.83243	0.80782	0.80782	0.010	-2.95648	20.00000	Averaged
39	1,1-Dichloropropene	0.45737	0.42830	0.42830	0.010	-6.35534	20.00000	Averaged
40	2-Butanone	0.24292	0.24519	0.24519	0.010	0.93303	20.00000	Averaged
41	Benzene	1.23369	1.16635	1.16635	0.010	-5.45818	20.00000	Averaged
47	1,2-Dichloroethane	0.51571	0.53512	0.53512	0.010	3.76352	20.00000	Averaged
48	Trichloroethene	0.33634	0.32526	0.32526	0.010	-3.29443	20.00000	Averaged
50	Dibromomethane	0.22736	0.23347	0.23347	0.010	2.68479	20.00000	Averaged
51	1,2-Dichloropropane	0.33353	0.33342	0.33342	0.010	-0.03393	20.00000	Averaged
52	Bromodichloromethane	0.46224	0.48351	0.48351	0.010	4.60208	20.00000	Averaged
53	cis-1,3-dichloropropene	0.53778	0.57369	0.57369	0.010	6.67874	20.00000	Averaged
57	Toluene	0.75378	0.71044	0.71044	0.010	-5.75013	20.00000	Averaged
58	4-methyl-2-pentanone	0.30443	0.33067	0.33067	0.010	8.61868	20.00000	Averaged
59	Tetrachloroethene	0.27263	0.24162	0.24162	0.010	-11.37635	20.00000	Averaged
60	trans-1,3-Dichloropropene	0.46607	0.51111	0.51111	0.010	9.66344	20.00000	Averaged
61	1,1,2-Trichloroethane	0.26549	0.26781	0.26781	0.010	0.87185	20.00000	Averaged
62	Dibromochloromethane	0.37557	0.39008	0.39008	0.010	3.86230	20.00000	Averaged
63	1,3-Dichloropropane	0.61122	0.60305	0.60305	0.010	-1.33676	20.00000	Averaged
64	1,2-Dibromoethane	0.32012	0.32822	0.32822	0.010	2.53157	20.00000	Averaged
65	2-Hexanone	0.23077	0.24687	0.24687	0.010	6.97963	20.00000	Averaged
67	Chlorobenzene	0.92421	0.87029	0.87029	0.300	-5.83455	20.00000	Averaged
68	Ethylbenzene	1.58372	1.52744	1.52744	0.010	-3.55369	20.00000	Averaged
69	1,1,1,2-Tetrachloroethane	0.32933	0.32987	0.32987	0.010	0.16426	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228421-4
Analytical Date: 05/16/18 12:40
Lab File ID : D1328.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

	Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71	m+p-Xylenes	1.20403	1.19491	1.19491	0.010	-0.75766	20.00000	Averaged
72	o-Xylene	1.21487	1.22054	1.22054	0.010	0.46687	20.00000	Averaged
73	Styrene	0.91910	0.92417	0.92417	0.010	0.55170	20.00000	Averaged
74	Bromoform	50.00000	47.40218	0.23836	0.100	-5.19565	20.00000	Linear
75	Isopropylbenzene	2.65481	2.62134	2.62134	0.010	-1.26092	20.00000	Averaged
79	Bromobenzene	0.74765	0.71006	0.71006	0.010	-5.02755	20.00000	Averaged
80	N-Propylbenzene	3.47227	3.40901	3.40901	0.010	-1.82172	20.00000	Averaged
81	1,1,2,2-Tetrachloroethane	0.86973	0.84133	0.84133	0.300	-3.26616	20.00000	Averaged
82	1,3,5-Trimethylbenzene	2.30306	2.29349	2.29349	0.010	-0.41538	20.00000	Averaged
83	2-Chlorotoluene	2.07978	2.04979	2.04979	0.010	-1.44191	20.00000	Averaged
84	1,2,3-Trichloropropane	0.74898	0.76212	0.76212	0.010	1.75472	20.00000	Averaged
85	4-Chlorotoluene	2.20985	2.20690	2.20690	0.010	-0.13351	20.00000	Averaged
86	tert-Butylbenzene	2.16738	2.18181	2.18181	0.010	0.66563	20.00000	Averaged
88	1,2,4-Trimethylbenzene	2.38615	2.40040	2.40040	0.010	0.59731	20.00000	Averaged
89	P-Isopropyltoluene	2.22161	2.28489	2.28489	0.010	2.84839	20.00000	Averaged
90	1,3-Dichlorobenzene	1.33333	1.27266	1.27266	0.010	-4.55018	20.00000	Averaged
92	1,4-Dichlorobenzene	1.38362	1.31708	1.31708	0.010	-4.80934	20.00000	Averaged
93	N-Butylbenzene	2.07013	2.20955	2.20955	0.010	6.73505	20.00000	Averaged
94	sec-Butylbenzene	2.73458	2.75778	2.75778	0.010	0.84833	20.00000	Averaged
95	1,2-Dichlorobenzene	1.26487	1.23143	1.23143	0.010	-2.64331	20.00000	Averaged
96	1,2-Dibromo-3-Chloropropane	0.13815	0.14609	0.14609	0.010	5.74574	20.00000	Averaged
98	Hexachlorobutadiene	0.29715	0.31414	0.31414	0.010	5.71704	20.00000	Averaged
99	1,2,4-Trichlorobenzene	0.74393	0.74647	0.74647	0.010	0.34120	20.00000	Averaged
101	Naphthalene	50.00000	44.41119	1.59504	0.010	-11.17762	20.00000	Linear
102	1,2,3-Trichlorobenzene	0.60765	0.59154	0.59154	0.010	-2.65219	20.00000	Averaged
37	Dibromofluoromethane	0.58785	0.60162	0.60162	0.010	2.34136	20.00000	Averaged
45	1,2-Dichloroethane-D4	0.74328	0.83134	0.83134	0.010	11.84838	20.00000	Averaged
55	Toluene-D8	1.21935	1.22307	1.22307	0.010	0.30519	20.00000	Averaged
76	P-Bromofluorobenzene	0.48673	0.51370	0.51370	0.010	5.54087	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG228421-4
Lab File ID : D1328.d
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34

SDG: SL3902
Analytical Date: 05/16/18 12:40
Instrument ID: GCMS-D
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1328.d
Report Date: 21-May-2018 14:26

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051618B.b\D1328.d
Lab Smp Id: WG228421-4
Inj Date : 16-MAY-2018 12:40 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228421-4,SL3902
Misc Info : WG228421,WG227999-4,SL3902-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051618B.b\D8A05(21)D.m
Meth Date : 21-May-2018 14:24 gcms-d.i Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	147714	50.0000	44.0	
2	Chloromethane	50	1.663	1.663	(0.227)	152113	50.0000	42.2	
3	Vinyl chloride	62	1.728	1.728	(0.236)	120927	50.0000	42.9	
4	Bromomethane	94	2.025	2.025	(0.277)	64915	50.0000	44.6	
5	Chloroethane	64	2.137	2.137	(0.292)	63012	50.0000	48.9	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	217707	50.0000	49.8	
7	Diethyl Ether	59	2.583	2.583	(0.353)	73340	50.0000	50.8	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.543)	41451	250.000	220	
9	1,1-Dichloroethene	96	2.778	2.788	(0.380)	86958	50.0000	46.4	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	283542	50.0000	48.9	
11	Freon-113	151	2.834	2.835	(0.387)	73882	50.0000	45.1	
12	Iodomethane	142	2.936	2.937	(0.401)	92497	50.0000	47.6	
13	Acrolein	56	3.159	3.160	(0.432)	109887	250.000	234	
14	Methylene Chloride	84	3.448	3.448	(0.471)	144267	50.0000	46.1	
15	Acetone	43	3.522	3.522	(0.482)	217560	250.000	250	
16	Isobutyl Alcohol	43	7.603	7.604	(1.039)	103576	1000.00	881	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	124278	50.0000	43.4	
18	Allyl Chloride	41	3.318	3.318	(0.454)	211093	50.0000	50.4	
19	Methyl tert-butyl ether	73	3.801	3.811	(0.520)	350001	50.0000	47.3	
20	Acetonitrile	39	4.136	4.136	(0.565)	39250	500.000	497	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	441691	50.0000	50.0	
22	Chloroprene	53	4.480	4.480	(0.612)	218802	50.0000	49.4	
23	Propionitrile	54	7.138	7.148	(0.976)	201114	500.000	498	
24	Methacrylonitrile	41	7.176	7.185	(0.981)	970329	500.000	539	

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Report Date: 21-May-2018 14:26

							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	25 1,1-Dichloroethane	63	4.517	4.517	(0.617)	259931	50.0000	48.6	
	26 Acrylonitrile	52	4.610	4.610	(0.630)	235459	250.000	250	
	27 Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	371671	50.0000	49.8	
	28 Vinyl Acetate	43	4.982	4.982	(0.615)	342556	50.0000	54.0	
	29 cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	138973	50.0000	45.6	
M	30 1,2-Dichloroethylene (total)	96				263251	50.0000	(a)	
	31 Methyl Methacrylate	41	10.643	10.643	(1.315)	137719	50.0000	51.1	
	32 2,2-Dichloropropane	77	5.642	5.642	(0.771)	179318	50.0000	50.9	
	33 Bromochloromethane	128	5.809	5.809	(0.794)	75668	50.0000	50.4	
	34 Chloroform	83	6.013	6.014	(0.822)	273093	50.0000	48.7	
	35 Carbon Tetrachloride	117	6.227	6.237	(0.769)	191038	50.0000	49.8	
	36 Tetrahydrofuran	42	6.302	6.302	(0.861)	200943	250.000	250	
$	37 Dibromofluoromethane	113	6.367	6.376	(0.870)	166720	50.0000	51.2	
	38 1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	223862	50.0000	48.5	
	39 1,1-Dichloropropene	75	6.618	6.627	(0.817)	190590	50.0000	46.8	
	40 2-Butanone	43	6.655	6.655	(0.910)	339734	250.000	252	
	41 Benzene	78	7.055	7.055	(0.871)	519016	50.0000	47.3	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	277120	50.0000		
	43 Cyclohexane	56	5.790	5.791	(0.792)	209396	50.0000	45.9	
	44 Ethyl Methacrylate	69	9.137	9.137	(1.129)	96088	50.0000	45.7	
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	230382	50.0000	55.9	
	46 Tertiary-amyl methyl ether	73	7.334	7.334	(1.003)	296523	50.0000	47.9	
	47 1,2-Dichloroethane	62	7.408	7.408	(0.915)	238123	50.0000	51.9	
	48 Trichloroethene	95	8.003	8.003	(0.989)	144739	50.0000	48.4	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	444991	50.0000		
	50 Dibromomethane	93	8.589	8.589	(1.061)	103890	50.0000	51.3	
	51 1,2-Dichloropropane	63	8.737	8.738	(1.079)	148368	50.0000	50.0	
	52 Bromodichloromethane	83	8.849	8.859	(1.093)	215157	50.0000	52.3	
	53 cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	255288	50.0000	53.3	
	54 1,4-Dioxane	88	9.137	9.137	(1.129)	23487	1000.00	772	
$	55 Toluene-D8	98	9.881	9.881	(1.220)	544257	50.0000	50.2	
	56 2-Chloroethylvinylether	63	9.639	9.639	(1.191)	84004	50.0000	45.5	
	57 Toluene	92	9.937	9.937	(1.227)	316138	50.0000	47.1	
	58 4-methyl-2-pentanone	43	10.411	10.411	(1.286)	735729	250.000	272	
	59 Tetrachloroethene	164	10.364	10.365	(0.898)	100207	50.0000	44.3	
	60 trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	227438	50.0000	54.8	
	61 1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	119171	50.0000	50.4	
	62 Dibromochloromethane	129	10.773	10.774	(0.934)	161780	50.0000	51.9	
	63 1,3-Dichloropropane	76	10.875	10.876	(0.943)	250106	50.0000	49.3	
	64 1,2-Dibromoethane	107	10.996	10.997	(1.358)	146055	50.0000	51.3	
	65 2-Hexanone	43	11.294	11.294	(0.979)	511937	250.000	267	
*	66 Chlorobenzene-D5	117	11.536	11.536	(1.000)	414738	50.0000		
	67 Chlorobenzene	112	11.554	11.555	(1.002)	360941	50.0000	47.1	
	68 Ethylbenzene	91	11.601	11.601	(1.006)	633489	50.0000	48.2	
	69 1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	136809	50.0000	50.1	
M	70 Xylenes (total)	106				1497352	150.000	(a)	
	71 m+p-Xylenes	91	11.749	11.750	(1.019)	991148	100.000	99.2	
	72 o-Xylene	91	12.168	12.168	(1.055)	506204	50.0000	50.2	
	73 Styrene	104	12.223	12.224	(1.060)	383290	50.0000	50.3	
	74 Bromoform	173	12.233	12.233	(1.060)	98859	50.0000	47.4	
	75 Isopropylbenzene	105	12.474	12.475	(0.899)	560880	50.0000	49.4	
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	228593	50.0000	52.8	
	77 cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	61503	50.0000	51.2	
	78 trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	49165	50.0000	50.3	

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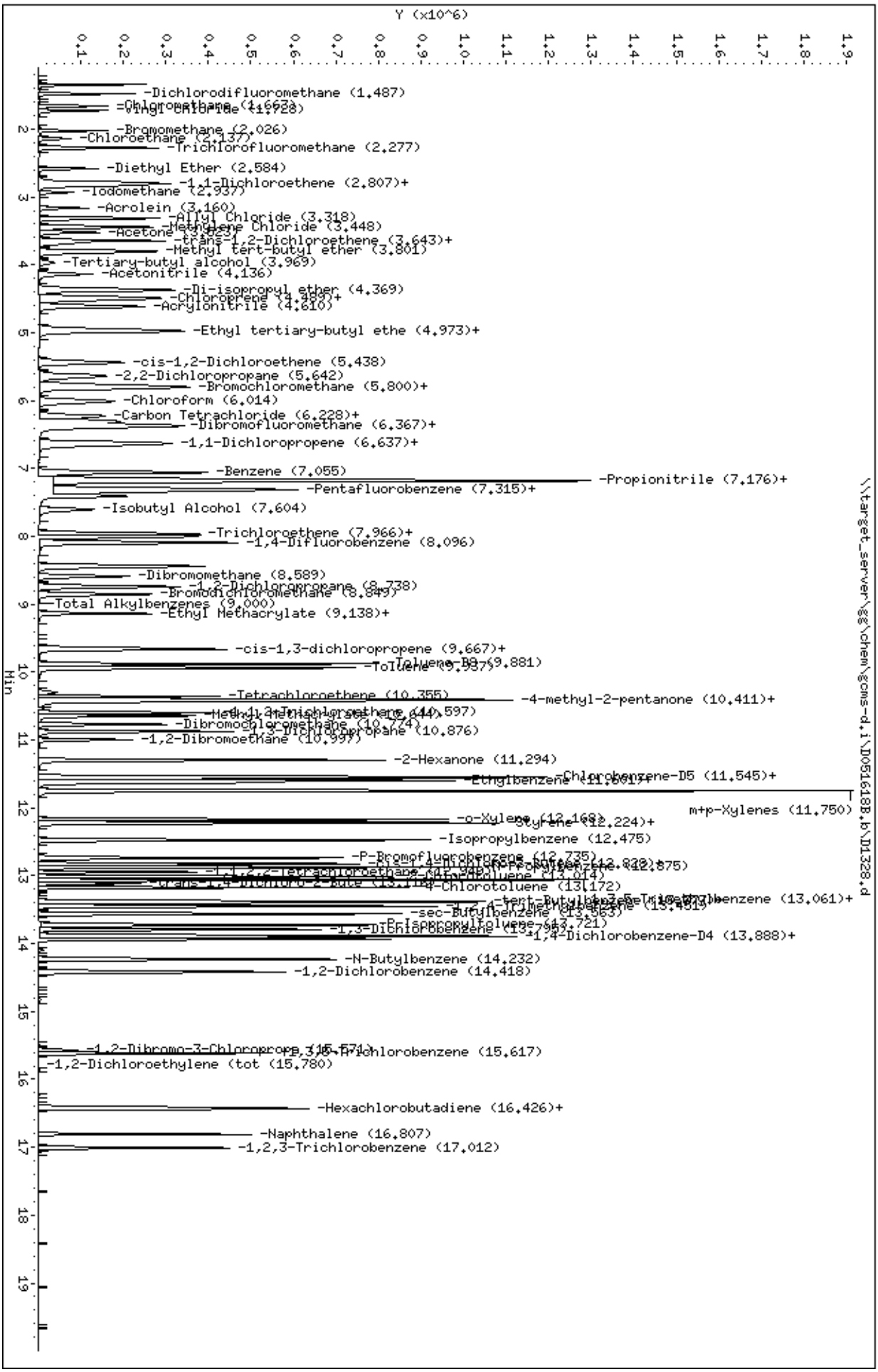
Report Date: 21-May-2018 14:26

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
79	Bromobenzene	156	12.828	12.828	(0.924)	151929	50.0000	47.5	
80	N-Propylbenzene	91	12.874	12.875	(0.928)	729416	50.0000	49.1	
81	1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.933)	180016	50.0000	48.4	
82	1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	490732	50.0000	49.8	
83	2-Chlorotoluene	91	13.014	13.014	(0.938)	438588	50.0000	49.3	
84	1,2,3-Trichloropropane	75	13.060	13.070	(0.941)	163068	50.0000	50.9	
85	4-Chlorotoluene	91	13.172	13.172	(0.949)	472204	50.0000	49.9	
86	tert-Butylbenzene	119	13.376	13.377	(0.964)	466835	50.0000	50.3	
87	Pentachloroethane	117	13.395	13.395	(0.965)	113440	50.0000	51.0	
88	1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	513606	50.0000	50.3	
89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	488892	50.0000	51.4	
90	1,3-Dichlorobenzene	146	13.795	13.795	(0.994)	272308	50.0000	47.7	
* 91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	213967	50.0000		
92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	281811	50.0000	47.6	
93	N-Butylbenzene	91	14.231	14.232	(1.025)	472771	50.0000	53.4	
94	sec-Butylbenzene	105	13.562	13.563	(0.977)	590074	50.0000	50.4	
95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	263486	50.0000	48.7	
96	1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	31258	50.0000	52.9	
97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	185038	50.0000	50.7	
98	Hexachlorobutadiene	225	16.407	16.416	(1.182)	67216	50.0000	52.8	
99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	159720	50.0000	50.2	
100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	517284	50.0000	50.4	
101	Naphthalene	128	16.807	16.806	(1.211)	341286	50.0000	44.4	
102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	126569	50.0000	48.7	
103	Methyl Acetate	43	3.689	3.690	(0.504)	119532	50.0000	48.3	
104	Methylcyclohexane	83	7.966	7.966	(1.089)	199578	50.0000	46.6	
M 153	Total Alkylbenzenes	100				3752326	50.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1328.d
Date : 16-MAY-2018 12:40
Client ID:
Sample Info: WG228421-4,SL3902
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051618B.b\D1328.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.662)
-Vinyl Chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.137)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.563)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.801)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.369)
-Chloroprene (4.469)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.438)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.228)+
-Dibromofluoromethane (6.367)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.055)
-Propionitrile (7.176)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.604)
-Trichloroethene (7.966)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.849)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.881)
-Toluene (9.937)
-Tetrachloroethene (10.355)
-4-methyl-2-pentanone (10.411)+
-Methyl Methacrylate (10.597)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-Ethylbenzene (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-cis-1,4-Dichloro-2-butene (12.828)+
-1,1,2,2-Tetrachloroethane (12.875)
-Bromobenzene (13.014)
-trans-1,4-Dichloro-2-butene (13.119)+
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.061)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.563)
-PrIsopropyltoluene (13.721)
-1,3-Dichlorobenzene (13.792)
-1,4-Dichlorobenzene-D4 (13.888)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.571)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228421-5
Analytical Date: 05/16/18 23:06
Lab File ID : D1345.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.60519	0.59577	0.59577	0.010	-1.55610	20.00000	Averaged
2	Chloromethane	0.65045	0.56160	0.56160	0.100	-13.65956	20.00000	Averaged
3	Vinyl chloride	0.50829	0.48318	0.48318	0.010	-4.94131	20.00000	Averaged
4	Bromomethane	0.26245	0.21930	0.21930	0.010	-16.44063	20.00000	Averaged
5	Chloroethane	0.23262	0.24872	0.24872	0.010	6.92243	20.00000	Averaged
6	Trichlorofluoromethane	0.78861	0.91590	0.91590	0.010	16.14029	20.00000	Averaged
9	1,1-Dichloroethene	0.33801	0.35829	0.35829	0.100	6.00040	20.00000	Averaged
10	Carbon Disulfide	1.04529	1.15862	1.15862	0.010	10.84181	20.00000	Averaged
11	Freon-113	0.29565	0.29457	0.29457	0.010	-0.36322	20.00000	Averaged
14	Methylene Chloride	0.56422	0.53622	0.53622	0.010	-4.96242	20.00000	Averaged
15	Acetone	0.15669	0.16654	0.16654	0.010	6.28067	20.00000	Averaged
17	trans-1,2-Dichloroethene	0.51620	0.48525	0.48525	0.010	-5.99598	20.00000	Averaged
19	Methyl tert-butyl ether	1.33505	1.31029	1.31029	0.010	-1.85436	20.00000	Averaged
25	1,1-Dichloroethane	0.96513	1.01851	1.01851	0.100	5.53110	20.00000	Averaged
29	cis-1,2-Dichloroethene	0.54948	0.53058	0.53058	0.010	-3.44103	20.00000	Averaged
32	2,2-Dichloropropane	0.63584	0.55140	0.55140	0.010	-13.28030	20.00000	Averaged
33	Bromochloromethane	0.27091	0.28487	0.28487	0.010	5.15141	20.00000	Averaged
34	Chloroform	1.01172	1.06508	1.06508	0.010	5.27501	20.00000	Averaged
35	Carbon Tetrachloride	0.43090	0.47040	0.47040	0.010	9.16657	20.00000	Averaged
38	1,1,1-Trichloroethane	0.83243	0.90851	0.90851	0.010	9.14008	20.00000	Averaged
39	1,1-Dichloropropene	0.45737	0.46691	0.46691	0.010	2.08521	20.00000	Averaged
40	2-Butanone	0.24292	0.26046	0.26046	0.010	7.21776	20.00000	Averaged
41	Benzene	1.23369	1.22592	1.22592	0.010	-0.62938	20.00000	Averaged
47	1,2-Dichloroethane	0.51571	0.57183	0.57183	0.010	10.88148	20.00000	Averaged
48	Trichloroethene	0.33634	0.34633	0.34633	0.010	2.96928	20.00000	Averaged
50	Dibromomethane	0.22736	0.23990	0.23990	0.010	5.51493	20.00000	Averaged
51	1,2-Dichloropropane	0.33353	0.35175	0.35175	0.010	5.46243	20.00000	Averaged
52	Bromodichloromethane	0.46224	0.50853	0.50853	0.010	10.01494	20.00000	Averaged
53	cis-1,3-dichloropropene	0.53778	0.57683	0.57683	0.010	7.26184	20.00000	Averaged
57	Toluene	0.75378	0.74858	0.74858	0.010	-0.68944	20.00000	Averaged
58	4-methyl-2-pentanone	0.30443	0.34200	0.34200	0.010	12.33871	20.00000	Averaged
59	Tetrachloroethene	0.27263	0.26081	0.26081	0.010	-4.33492	20.00000	Averaged
60	trans-1,3-Dichloropropene	0.46607	0.52359	0.52359	0.010	12.34193	20.00000	Averaged
61	1,1,2-Trichloroethane	0.26549	0.26828	0.26828	0.010	1.05133	20.00000	Averaged
62	Dibromochloromethane	0.37557	0.40579	0.40579	0.010	8.04663	20.00000	Averaged
63	1,3-Dichloropropane	0.61122	0.63023	0.63023	0.010	3.11146	20.00000	Averaged
64	1,2-Dibromoethane	0.32012	0.33557	0.33557	0.010	4.82806	20.00000	Averaged
65	2-Hexanone	0.23077	0.26312	0.26312	0.010	14.02154	20.00000	Averaged
67	Chlorobenzene	0.92421	0.91981	0.91981	0.300	-0.47587	20.00000	Averaged
68	Ethylbenzene	1.58372	1.64374	1.64374	0.010	3.78959	20.00000	Averaged
69	1,1,1,2-Tetrachloroethane	0.32933	0.35771	0.35771	0.010	8.61906	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228421-5
Analytical Date: 05/16/18 23:06
Lab File ID : D1345.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34
Column ID:

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71 m+p-Xylenes	1.20403	1.27359	1.27359	0.010	5.77717	20.00000	Averaged
72 o-Xylene	1.21487	1.31072	1.31072	0.010	7.89028	20.00000	Averaged
73 Styrene	0.91910	0.97457	0.97457	0.010	6.03437	20.00000	Averaged
74 Bromoform	50.00000	48.18603	0.24241	0.100	-3.62794	20.00000	Linear
75 Isopropylbenzene	2.65481	2.79038	2.79038	0.010	5.10645	20.00000	Averaged
79 Bromobenzene	0.74765	0.73090	0.73090	0.010	-2.23999	20.00000	Averaged
80 N-Propylbenzene	3.47227	3.63675	3.63675	0.010	4.73692	20.00000	Averaged
81 1,1,2,2-Tetrachloroethane	0.86973	0.85604	0.85604	0.300	-1.57414	20.00000	Averaged
82 1,3,5-Trimethylbenzene	2.30306	2.44729	2.44729	0.010	6.26252	20.00000	Averaged
83 2-Chlorotoluene	2.07978	2.15852	2.15852	0.010	3.78594	20.00000	Averaged
84 1,2,3-Trichloropropane	0.74898	0.77812	0.77812	0.010	3.89109	20.00000	Averaged
85 4-Chlorotoluene	2.20985	2.32031	2.32031	0.010	4.99836	20.00000	Averaged
86 tert-Butylbenzene	2.16738	2.31640	2.31640	0.010	6.87543	20.00000	Averaged
88 1,2,4-Trimethylbenzene	2.38615	2.52388	2.52388	0.010	5.77244	20.00000	Averaged
89 P-Isopropyltoluene	2.22161	2.38625	2.38625	0.010	7.41080	20.00000	Averaged
90 1,3-Dichlorobenzene	1.33333	1.32598	1.32598	0.010	-0.55162	20.00000	Averaged
92 1,4-Dichlorobenzene	1.38362	1.36379	1.36379	0.010	-1.43324	20.00000	Averaged
93 N-Butylbenzene	2.07013	2.33338	2.33338	0.010	12.71695	20.00000	Averaged
94 sec-Butylbenzene	2.73458	2.94270	2.94270	0.010	7.61064	20.00000	Averaged
95 1,2-Dichlorobenzene	1.26487	1.27796	1.27796	0.010	1.03542	20.00000	Averaged
96 1,2-Dibromo-3-Chloropropane	0.13815	0.14648	0.14648	0.010	6.03239	20.00000	Averaged
98 Hexachlorobutadiene	0.29715	0.32489	0.32489	0.010	9.33365	20.00000	Averaged
99 1,2,4-Trichlorobenzene	0.74393	0.75299	0.75299	0.010	1.21769	20.00000	Averaged
101 Naphthalene	50.00000	45.03403	1.61798	0.010	-9.93194	20.00000	Linear
102 1,2,3-Trichlorobenzene	0.60765	0.61231	0.61231	0.010	0.76657	20.00000	Averaged
37 Dibromofluoromethane	0.58785	0.62104	0.62104	0.010	5.64590	20.00000	Averaged
45 1,2-Dichloroethane-D4	0.74328	0.85996	0.85996	0.010	15.69889	20.00000	Averaged
55 Toluene-D8	1.21935	1.21661	1.21661	0.010	-0.22455	20.00000	Averaged
76 P-Bromofluorobenzene	0.48673	0.50961	0.50961	0.010	4.69906	20.00000	Averaged

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG228421-5
Lab File ID : D1345.d
Initial Calibration Date(s): 05/10/18 08:36 05/10/18 11:34

SDG: SL3902
Analytical Date: 05/16/18 23:06
Instrument ID: GCMS-D
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1345.d
Report Date: 21-May-2018 14:26

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051618B.b\D1345.d
Lab Smp Id: WG228421-5
Inj Date : 16-MAY-2018 23:06 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228421-5,SL3902
Misc Info : WG228421,WG227999-4,SL3902-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051618B.b\D8A05(21)D.m
Meth Date : 21-May-2018 14:24 gcms-d.i Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 18 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

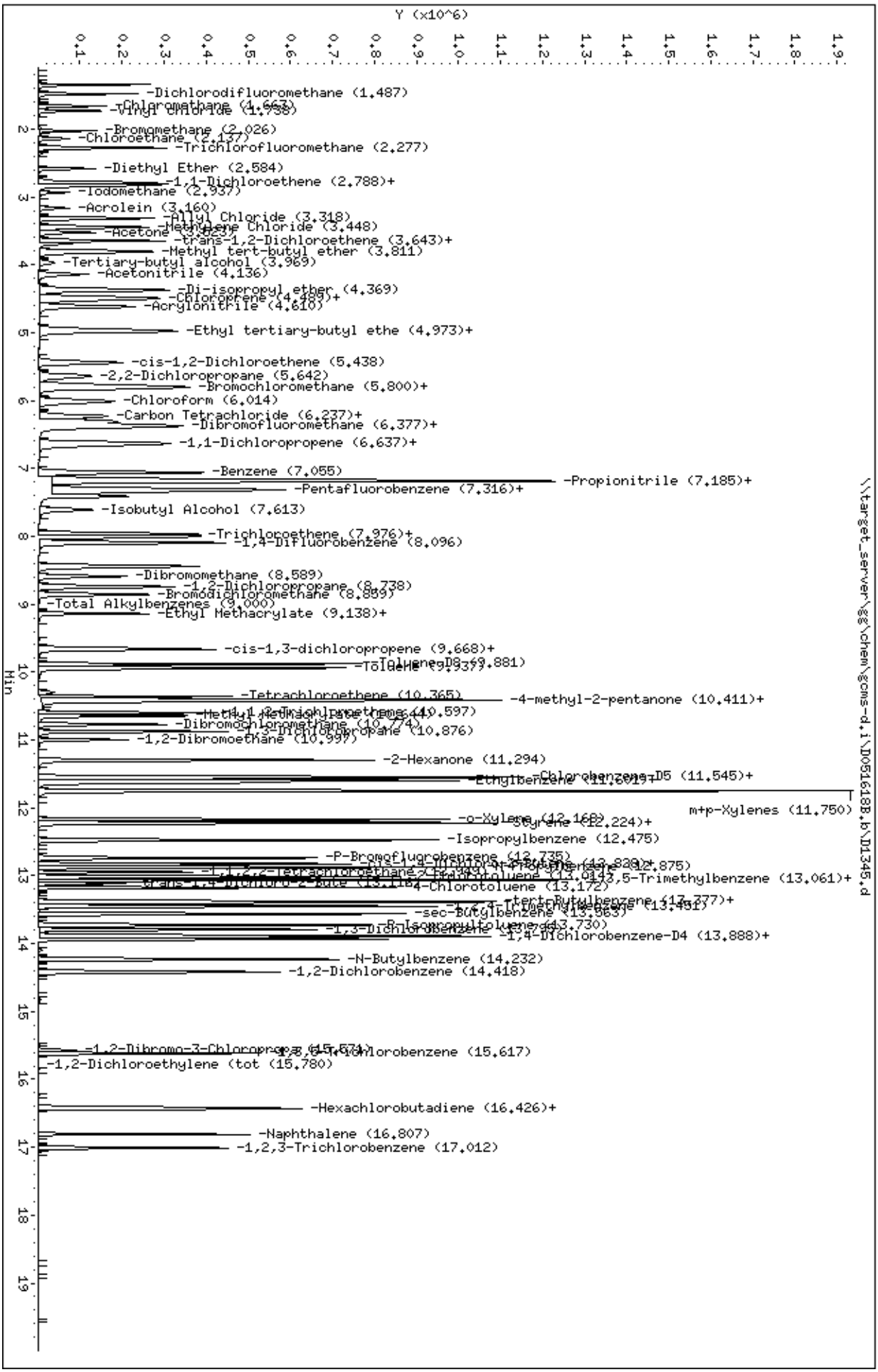
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	152724	50.0000	49.2	
2	Chloromethane	50	1.663	1.663	(0.227)	143966	50.0000	43.2	
3	Vinyl chloride	62	1.737	1.728	(0.238)	123861	50.0000	47.5	
4	Bromomethane	94	2.025	2.025	(0.277)	56218	50.0000	41.8	
5	Chloroethane	64	2.137	2.137	(0.292)	63760	50.0000	53.5	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	234789	50.0000	58.1	
7	Diethyl Ether	59	2.583	2.583	(0.353)	71181	50.0000	53.2	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.543)	42200	250.000	242	
9	1,1-Dichloroethene	96	2.788	2.788	(0.381)	91847	50.0000	53.0	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	297010	50.0000	55.4	
11	Freon-113	151	2.834	2.835	(0.387)	75513	50.0000	49.8	
12	Iodomethane	142	2.936	2.937	(0.401)	82649	50.0000	46.1	
13	Acrolein	56	3.169	3.160	(0.433)	74319	250.000	171	
14	Methylene Chloride	84	3.448	3.448	(0.471)	137460	50.0000	47.5	
15	Acetone	43	3.522	3.522	(0.482)	213456	250.000	266	
16	Isobutyl Alcohol	43	7.613	7.604	(1.041)	104904	1000.00	962	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	124392	50.0000	47.0	
18	Allyl Chloride	41	3.318	3.318	(0.454)	194650	50.0000	50.3	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	335890	50.0000	49.1	
20	Acetonitrile	39	4.136	4.136	(0.565)	39993	500.000	547	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	418453	50.0000	51.2	
22	Chloroprene	53	4.480	4.480	(0.612)	220952	50.0000	54.0	
23	Propionitrile	54	7.148	7.148	(0.977)	196503	500.000	526	
24	Methacrylonitrile	41	7.185	7.185	(0.982)	941286	500.000	565	

Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1345.d
Report Date: 21-May-2018 14:26

							AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	25 1,1-Dichloroethane	63	4.517	4.517	(0.617)	261093	50.0000	52.8	
	26 Acrylonitrile	52	4.610	4.610	(0.630)	223922	250.000	257	
	27 Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	353407	50.0000	51.2	
	28 Vinyl Acetate	43	4.982	4.982	(0.615)	323519	50.0000	54.0	
	29 cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	136012	50.0000	48.3	
M	30 1,2-Dichloroethylene (total)	96				260404	50.0000	95.3	
	31 Methyl Methacrylate	41	10.643	10.643	(1.315)	134083	50.0000	52.6	
	32 2,2-Dichloropropane	77	5.642	5.642	(0.771)	141351	50.0000	43.4	
	33 Bromochloromethane	128	5.809	5.809	(0.794)	73025	50.0000	52.6	
	34 Chloroform	83	6.014	6.014	(0.822)	273032	50.0000	52.6	
	35 Carbon Tetrachloride	117	6.237	6.237	(0.770)	197976	50.0000	54.6	
	36 Tetrahydrofuran	42	6.302	6.302	(0.861)	200832	250.000	271	
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	159203	50.0000	52.8	
	38 1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	232895	50.0000	54.6	
	39 1,1-Dichloropropene	75	6.627	6.627	(0.819)	196505	50.0000	51.0	
	40 2-Butanone	43	6.655	6.655	(0.910)	333837	250.000	268	
	41 Benzene	78	7.055	7.055	(0.871)	515951	50.0000	49.7	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	256348	50.0000		
	43 Cyclohexane	56	5.790	5.791	(0.792)	218042	50.0000	51.7	
	44 Ethyl Methacrylate	69	9.137	9.137	(1.129)	90359	50.0000	45.4	
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	220450	50.0000	57.8	
	46 Tertiary-amyl methyl ether	73	7.334	7.334	(1.003)	288374	50.0000	50.4	
	47 1,2-Dichloroethane	62	7.408	7.408	(0.915)	240663	50.0000	55.4	
	48 Trichloroethene	95	8.003	8.003	(0.989)	145759	50.0000	51.5	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	420867	50.0000		
	50 Dibromomethane	93	8.589	8.589	(1.061)	100966	50.0000	52.8	
	51 1,2-Dichloropropane	63	8.737	8.738	(1.079)	148040	50.0000	52.7	
	52 Bromodichloromethane	83	8.858	8.859	(1.094)	214023	50.0000	55.0	
	53 cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	242768	50.0000	53.6	
	54 1,4-Dioxane	88	9.137	9.137	(1.129)	25515	1000.00	889	
$	55 Toluene-D8	98	9.881	9.881	(1.220)	512033	50.0000	49.9	
	56 2-Chloroethylvinylether	63	9.639	9.639	(1.191)	73745	50.0000	42.2	
	57 Toluene	92	9.937	9.937	(1.227)	315054	50.0000	49.6	
	58 4-methyl-2-pentanone	43	10.411	10.411	(1.286)	719675	250.000	281	
	59 Tetrachloroethene	164	10.364	10.365	(0.898)	101547	50.0000	47.8	
	60 trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	220362	50.0000	56.2	
	61 1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	112911	50.0000	50.5	
	62 Dibromochloromethane	129	10.773	10.774	(0.934)	157995	50.0000	54.0	
	63 1,3-Dichloropropane	76	10.876	10.876	(0.943)	245381	50.0000	51.6	
	64 1,2-Dibromoethane	107	10.996	10.997	(1.358)	141231	50.0000	52.4	
	65 2-Hexanone	43	11.294	11.294	(0.979)	512233	250.000	285	
*	66 Chlorobenzene-D5	117	11.536	11.536	(1.000)	389349	50.0000		
	67 Chlorobenzene	112	11.554	11.555	(1.002)	358128	50.0000	49.8	
	68 Ethylbenzene	91	11.601	11.601	(1.006)	639989	50.0000	51.9	
	69 1,1,1,2-Tetrachloroethane	131	11.629	11.629	(1.008)	139275	50.0000	54.3	
M	70 Xylenes (total)	106				1502071	150.000	160	
	71 m+p-Xylenes	91	11.749	11.750	(1.019)	991742	100.000	106	
	72 o-Xylene	91	12.168	12.168	(1.055)	510329	50.0000	53.9	
	73 Styrene	104	12.224	12.224	(1.060)	379446	50.0000	53.0	
	74 Bromoform	173	12.233	12.233	(1.060)	94381	50.0000	48.2	
	75 Isopropylbenzene	105	12.475	12.475	(0.899)	568900	50.0000	52.6	
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	214476	50.0000	52.3	
	77 cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	52463	50.0000	45.9	
	78 trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	43297	50.0000	46.6	

Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1345.d
Report Date: 21-May-2018 14:26

		QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	79 Bromobenzene	156	12.828	12.828	(0.924)	149015	50.0000	48.9	
	80 N-Propylbenzene	91	12.874	12.875	(0.928)	741456	50.0000	52.4	
	81 1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.933)	174529	50.0000	49.2	
	82 1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	498951	50.0000	53.1	
	83 2-Chlorotoluene	91	13.014	13.014	(0.938)	440077	50.0000	51.9	
	84 1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	158642	50.0000	51.9	
	85 4-Chlorotoluene	91	13.172	13.172	(0.949)	473062	50.0000	52.5	
	86 tert-Butylbenzene	119	13.376	13.377	(0.964)	472265	50.0000	53.4	
	87 Pentachloroethane	117	13.395	13.395	(0.965)	112194	50.0000	52.9	
	88 1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	514567	50.0000	52.9	
	89 P-Isopropyltoluene	119	13.730	13.730	(0.989)	486507	50.0000	53.7	
	90 1,3-Dichlorobenzene	146	13.795	13.795	(0.994)	270339	50.0000	49.7	
*	91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	203879	50.0000		
	92 1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	278048	50.0000	49.3	
	93 N-Butylbenzene	91	14.232	14.232	(1.025)	475728	50.0000	56.4	
	94 sec-Butylbenzene	105	13.562	13.563	(0.977)	599955	50.0000	53.8	
	95 1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	260550	50.0000	50.5	
	96 1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	29865	50.0000	53.0	
	97 1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	175473	50.0000	50.4	
	98 Hexachlorobutadiene	225	16.416	16.416	(1.183)	66238	50.0000	54.7	
	99 1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	153519	50.0000	50.6	
	100 1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	513201	50.0000	52.4	
	101 Naphthalene	128	16.807	16.806	(1.211)	329873	50.0000	45.0	
	102 1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	124837	50.0000	50.4	
	103 Methyl Acetate	43	3.689	3.690	(0.504)	112655	50.0000	49.2	
	104 Methylcyclohexane	83	7.966	7.966	(1.089)	200288	50.0000	50.6	
M	153 Total Alkylbenzenes	100				3789429	50.0000	376	


Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1345.d
Date : 16-MAY-2018 23:06
Client ID:
Sample Info: WG228421-5,SL3902
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051618B.b\D1345.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)
-Vinyl Chloride (1.738)
-Bromomethane (2.026)
-Chloroethane (2.137)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.788)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.623)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.369)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.438)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)+
-Dibromofluoromethane (6.377)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.055)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.316)+
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.976)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.869)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.668)+
-Toluene (9.939)
-Toluene-D8 (9.881)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-Methyl Methacrylate (10.597)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-Ethylbenzene (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-1,1,2,2-Tetrachloroethane (12.839)+
-cis-1,4-Dichloro-2-butene (12.875)
-n-Propylbenzene (12.949)
-4-Ethyltoluene (13.043)
-1,3,5-Trimethylbenzene (13.061)+
-trans-1,4-Dichloro-2-butene (13.116)
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.277)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.563)
-P-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.797)
-1,4-Dichlorobenzene-D4 (13.888)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.574)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228566-4
Analytical Date: 05/17/18 12:12
Lab File ID : D1357.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/17/18 08:11 05/17/18 11:09
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.87127	0.78322	0.78322	0.010	-10.10668	20.00000	Averaged
2	Chloromethane	0.79934	0.72974	0.72974	0.100	-8.70625	20.00000	Averaged
3	Vinyl chloride	0.62623	0.60459	0.60459	0.010	-3.45519	20.00000	Averaged
4	Bromomethane	0.31688	0.31868	0.31868	0.010	0.56893	20.00000	Averaged
5	Chloroethane	0.29152	0.26669	0.26669	0.010	-8.51616	20.00000	Averaged
6	Trichlorofluoromethane	0.98352	0.84397	0.84397	0.010	-14.18918	20.00000	Averaged
9	1,1-Dichloroethene	0.36640	0.33223	0.33223	0.100	-9.32626	20.00000	Averaged
10	Carbon Disulfide	1.18124	1.13647	1.13647	0.010	-3.79025	20.00000	Averaged
11	Freon-113	0.30052	0.27766	0.27766	0.010	-7.60664	20.00000	Averaged
14	Methylene Chloride	0.55520	0.53818	0.53818	0.010	-3.06419	20.00000	Averaged
15	Acetone	0.16249	0.13811	0.13811	0.010	-15.00231	20.00000	Averaged
17	trans-1,2-Dichloroethene	0.50635	0.48779	0.48779	0.010	-3.66647	20.00000	Averaged
19	Methyl tert-butyl ether	1.31652	1.35366	1.35366	0.010	2.82101	20.00000	Averaged
25	1,1-Dichloroethane	1.01796	0.96712	0.96712	0.100	-4.99507	20.00000	Averaged
29	cis-1,2-Dichloroethene	0.53605	0.53085	0.53085	0.010	-0.96885	20.00000	Averaged
32	2,2-Dichloropropane	0.71237	0.68624	0.68624	0.010	-3.66741	20.00000	Averaged
33	Bromochloromethane	0.26831	0.28404	0.28404	0.010	5.86417	20.00000	Averaged
34	Chloroform	1.06581	1.00309	1.00309	0.010	-5.88459	20.00000	Averaged
35	Carbon Tetrachloride	0.47465	0.44139	0.44139	0.010	-7.00761	20.00000	Averaged
38	1,1,1-Trichloroethane	0.91927	0.84654	0.84654	0.010	-7.91156	20.00000	Averaged
39	1,1-Dichloropropene	0.47127	0.45343	0.45343	0.010	-3.78612	20.00000	Averaged
40	2-Butanone	0.24154	0.21888	0.21888	0.010	-9.37887	20.00000	Averaged
41	Benzene	1.22157	1.21655	1.21655	0.010	-0.41114	20.00000	Averaged
47	1,2-Dichloroethane	0.57229	0.51217	0.51217	0.010	-10.50467	20.00000	Averaged
48	Trichloroethene	0.35084	0.32482	0.32482	0.010	-7.41611	20.00000	Averaged
50	Dibromomethane	0.23166	0.22439	0.22439	0.010	-3.13693	20.00000	Averaged
51	1,2-Dichloropropane	0.33874	0.33652	0.33652	0.010	-0.65475	20.00000	Averaged
52	Bromodichloromethane	0.47995	0.46952	0.46952	0.010	-2.17225	20.00000	Averaged
53	cis-1,3-dichloropropene	50.00000	47.52119	0.56834	0.010	-4.95761	20.00000	Linear
57	Toluene	0.75606	0.73042	0.73042	0.010	-3.39119	20.00000	Averaged
58	4-methyl-2-pentanone	0.30792	0.29314	0.29314	0.010	-4.80219	20.00000	Averaged
59	Tetrachloroethene	0.26820	0.25681	0.25681	0.010	-4.24449	20.00000	Averaged
60	trans-1,3-Dichloropropene	0.48567	0.50544	0.50544	0.010	4.07070	20.00000	Averaged
61	1,1,2-Trichloroethane	0.26246	0.25452	0.25452	0.010	-3.02566	20.00000	Averaged
62	Dibromochloromethane	0.37319	0.38382	0.38382	0.010	2.84811	20.00000	Averaged
63	1,3-Dichloropropane	0.59838	0.58768	0.58768	0.010	-1.78866	20.00000	Averaged
64	1,2-Dibromoethane	0.31721	0.31183	0.31183	0.010	-1.69750	20.00000	Averaged
65	2-Hexanone	0.22567	0.22031	0.22031	0.010	-2.37537	20.00000	Averaged
67	Chlorobenzene	0.91734	0.89079	0.89079	0.300	-2.89460	20.00000	Averaged
68	Ethylbenzene	1.62552	1.57051	1.57051	0.010	-3.38448	20.00000	Averaged
69	1,1,1,2-Tetrachloroethane	0.33454	0.33284	0.33284	0.010	-0.50971	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228566-4
Analytical Date: 05/17/18 12:12
Lab File ID : D1357.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/17/18 08:11 05/17/18 11:09
Column ID:

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71 m+p-Xylenes	1.22828	1.20955	1.20955	0.010	-1.52462	20.00000	Averaged
72 o-Xylene	1.19457	1.24193	1.24193	0.010	3.96436	20.00000	Averaged
73 Styrene	0.88775	0.93794	0.93794	0.010	5.65357	20.00000	Averaged
74 Bromoform	0.21682	0.22343	0.22343	0.100	3.04932	20.00000	Averaged
75 Isopropylbenzene	2.68214	2.74498	2.74498	0.010	2.34261	20.00000	Averaged
79 Bromobenzene	0.73418	0.72151	0.72151	0.010	-1.72633	20.00000	Averaged
80 N-Propylbenzene	3.64124	3.51115	3.51115	0.010	-3.57279	20.00000	Averaged
81 1,1,2,2-Tetrachloroethane	0.83813	0.78379	0.78379	0.300	-6.48300	20.00000	Averaged
82 1,3,5-Trimethylbenzene	2.33023	2.36511	2.36511	0.010	1.49685	20.00000	Averaged
83 2-Chlorotoluene	2.12760	2.10429	2.10429	0.010	-1.09559	20.00000	Averaged
84 1,2,3-Trichloropropane	0.74720	0.69056	0.69056	0.010	-7.58077	20.00000	Averaged
85 4-Chlorotoluene	2.27798	2.24403	2.24403	0.010	-1.49026	20.00000	Averaged
86 tert-Butylbenzene	2.20694	2.25753	2.25753	0.010	2.29251	20.00000	Averaged
88 1,2,4-Trimethylbenzene	2.40642	2.46159	2.46159	0.010	2.29231	20.00000	Averaged
89 P-Isopropyltoluene	2.32180	2.37729	2.37729	0.010	2.39000	20.00000	Averaged
90 1,3-Dichlorobenzene	1.32506	1.30039	1.30039	0.010	-1.86222	20.00000	Averaged
92 1,4-Dichlorobenzene	1.37993	1.31535	1.31535	0.010	-4.67967	20.00000	Averaged
93 N-Butylbenzene	2.27330	2.27909	2.27909	0.010	0.25471	20.00000	Averaged
94 sec-Butylbenzene	2.87531	2.87397	2.87397	0.010	-0.04672	20.00000	Averaged
95 1,2-Dichlorobenzene	1.23314	1.23551	1.23551	0.010	0.19218	20.00000	Averaged
96 1,2-Dibromo-3-Chloropropane	0.14324	0.12405	0.12405	0.010	-13.39637	20.00000	Averaged
98 Hexachlorobutadiene	0.35792	0.32935	0.32935	0.010	-7.98362	20.00000	Averaged
99 1,2,4-Trichlorobenzene	0.72860	0.74098	0.74098	0.010	1.69934	20.00000	Averaged
101 Naphthalene	50.00000	44.89617	1.52358	0.010	-10.20767	20.00000	Linear
102 1,2,3-Trichlorobenzene	0.60806	0.56666	0.56666	0.010	-6.80780	20.00000	Averaged
37 Dibromofluoromethane	0.61262	0.60380	0.60380	0.010	-1.44011	20.00000	Averaged
45 1,2-Dichloroethane-D4	0.83583	0.77873	0.77873	0.010	-6.83226	20.00000	Averaged
55 Toluene-D8	1.21869	1.22939	1.22939	0.010	0.87829	20.00000	Averaged
76 P-Bromofluorobenzene	0.50198	0.49361	0.49361	0.010	-1.66749	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG228566-4
Lab File ID : D1357.d
Initial Calibration Date(s): 05/17/18 08:11 05/17/18 11:09

SDG: SL3902
Analytical Date: 05/17/18 12:12
Instrument ID: GCMS-D
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1357.d
Report Date: 21-May-2018 14:31

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051718B.b\D1357.d
Lab Smp Id: WG228566-4
Inj Date : 17-MAY-2018 12:12 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228566-4,SL3902
Misc Info : WG228566,WG228547-4,SL3902-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051718B.b\D8A05(22)D.m
Meth Date : 21-May-2018 14:29 gcms-d.i Quant Type: ISTD
Cal Date : 17-MAY-2018 11:09 Cal File: D1356.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.486	(0.203)	249893	50.0000	44.9	
2	Chloromethane	50	1.663	1.654	(0.227)	232832	50.0000	45.6	
3	Vinyl chloride	62	1.737	1.728	(0.238)	192902	50.0000	48.3	
4	Bromomethane	94	2.025	2.025	(0.277)	101679	50.0000	50.3	
5	Chloroethane	64	2.146	2.137	(0.293)	85090	50.0000	45.7	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	269276	50.0000	42.9	
7	Diethyl Ether	59	2.592	2.583	(0.354)	100302	50.0000	51.0	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.543)	45391	250.000	201	
9	1,1-Dichloroethene	96	2.788	2.779	(0.381)	106002	50.0000	45.3	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	362603	50.0000	48.1	
11	Freon-113	151	2.843	2.834	(0.389)	88590	50.0000	46.2	
12	Iodomethane	142	2.946	2.937	(0.403)	102191	50.0000	42.7	
13	Acrolein	56	3.169	3.160	(0.433)	128375	250.000	294	
14	Methylene Chloride	84	3.448	3.448	(0.471)	171713	50.0000	48.5	
15	Acetone	43	3.522	3.522	(0.482)	220334	250.000	212	
16	Isobutyl Alcohol	43	7.612	7.613	(1.041)	106778	1000.00	831	
17	trans-1,2-Dichloroethene	96	3.652	3.643	(0.499)	155633	50.0000	48.2	
18	Allyl Chloride	41	3.327	3.318	(0.455)	255724	50.0000	52.0	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	431899	50.0000	51.4	
20	Acetonitrile	39	4.145	4.136	(0.567)	41194	500.000	470	
21	Di-isopropyl ether	45	4.377	4.368	(0.598)	547387	50.0000	48.9	
22	Chloroprene	53	4.489	4.480	(0.614)	265088	50.0000	51.2	
23	Propionitrile	54	7.148	7.148	(0.977)	210279	500.000	484	
24	Methacrylonitrile	41	7.185	7.185	(0.982)	1031192	500.000	499	

Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1357.d
Report Date: 21-May-2018 14:31

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	25	1,1-Dichloroethane	63	4.526	4.517	(0.619)	308568	50.0000	47.5	
	26	Acrylonitrile	52	4.619	4.610	(0.631)	258017	250.000	247	
	27	Ethyl tertiary-butyl ether	59	4.972	4.963	(0.680)	464625	50.0000	48.1	
	28	Vinyl Acetate	43	4.991	4.982	(0.616)	388730	50.0000	52.6	
	29	cis-1,2-Dichloroethene	96	5.446	5.437	(0.745)	169374	50.0000	49.5	
M	30	1,2-Dichloroethylene (total)	96				325007	50.0000	97.7	
	31	Methyl Methacrylate	41	10.652	10.643	(1.316)	151196	50.0000	46.4	
	32	2,2-Dichloropropane	77	5.651	5.642	(0.773)	218953	50.0000	48.2	
	33	Bromochloromethane	128	5.818	5.809	(0.795)	90626	50.0000	52.9	
	34	Chloroform	83	6.023	6.014	(0.823)	320046	50.0000	47.0	
	35	Carbon Tetrachloride	117	6.237	6.237	(0.770)	226357	50.0000	46.5	
	36	Tetrahydrofuran	42	6.311	6.311	(0.863)	212813	250.000	239	
$	37	Dibromofluoromethane	113	6.385	6.376	(0.873)	192647	50.0000	49.3	
	38	1,1,1-Trichloroethane	97	6.385	6.376	(0.873)	270098	50.0000	46.0	
	39	1,1-Dichloropropene	75	6.627	6.627	(0.819)	232530	50.0000	48.1	
	40	2-Butanone	43	6.655	6.655	(0.910)	349183	250.000	226	
	41	Benzene	78	7.064	7.064	(0.873)	623878	50.0000	49.8	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	319060	50.0000		
	43	Cyclohexane	56	5.800	5.791	(0.793)	261342	50.0000	50.5	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	108391	50.0000	46.7	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	248461	50.0000	46.6	
	46	Tertiary-amyl methyl ether	73	7.343	7.334	(1.004)	364527	50.0000	46.6	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	262656	50.0000	44.7	
	48	Trichloroethene	95	8.012	8.003	(0.990)	166575	50.0000	46.3	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	512826	50.0000		
	50	Dibromomethane	93	8.598	8.589	(1.062)	115074	50.0000	48.4	
	51	1,2-Dichloropropane	63	8.747	8.738	(1.080)	172576	50.0000	49.7	
	52	Bromodichloromethane	83	8.858	8.858	(1.094)	240783	50.0000	48.9	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	291457	50.0000	47.5	
	54	1,4-Dioxane	88	9.146	9.137	(1.130)	27934	1000.00	943	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	630464	50.0000	50.4	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	100462	50.0000	49.9	
	57	Toluene	92	9.946	9.937	(1.228)	374578	50.0000	48.3	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	751637	250.000	238	
	59	Tetrachloroethene	164	10.364	10.364	(0.898)	119947	50.0000	47.9	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	259202	50.0000	52.0	
	61	1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	130524	50.0000	48.5	
	62	Dibromochloromethane	129	10.773	10.774	(0.933)	179267	50.0000	51.4	
	63	1,3-Dichloropropane	76	10.876	10.876	(0.942)	274480	50.0000	49.1	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	159913	50.0000	49.2	
	65	2-Hexanone	43	11.294	11.294	(0.978)	514494	250.000	244	
*	66	Chlorobenzene-D5	117	11.545	11.536	(1.000)	467060	50.0000		
	67	Chlorobenzene	112	11.554	11.554	(1.001)	416053	50.0000	48.6	
	68	Ethylbenzene	91	11.601	11.601	(1.005)	733522	50.0000	48.3	
	69	1,1,1,2-Tetrachloroethane	131	11.629	11.629	(1.007)	155456	50.0000	49.7	
M	70	Xylenes (total)	106				1709921	150.000	150	
	71	m+p-Xylenes	91	11.749	11.750	(1.018)	1129867	100.000	98.5	
	72	o-Xylene	91	12.168	12.168	(1.054)	580054	50.0000	52.0	
	73	Styrene	104	12.223	12.224	(1.059)	438073	50.0000	52.8	
	74	Bromoform	173	12.233	12.233	(1.060)	104354	50.0000	51.5	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	650422	50.0000	51.2	
$	76	P-Bromofluorobenzene	95	12.744	12.735	(1.574)	253136	50.0000	49.2	
	77	cis-1,4-Dichloro-2-Butene	53	12.818	12.809	(0.924)	60018	50.0000	44.0	
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	48234	50.0000	44.2	

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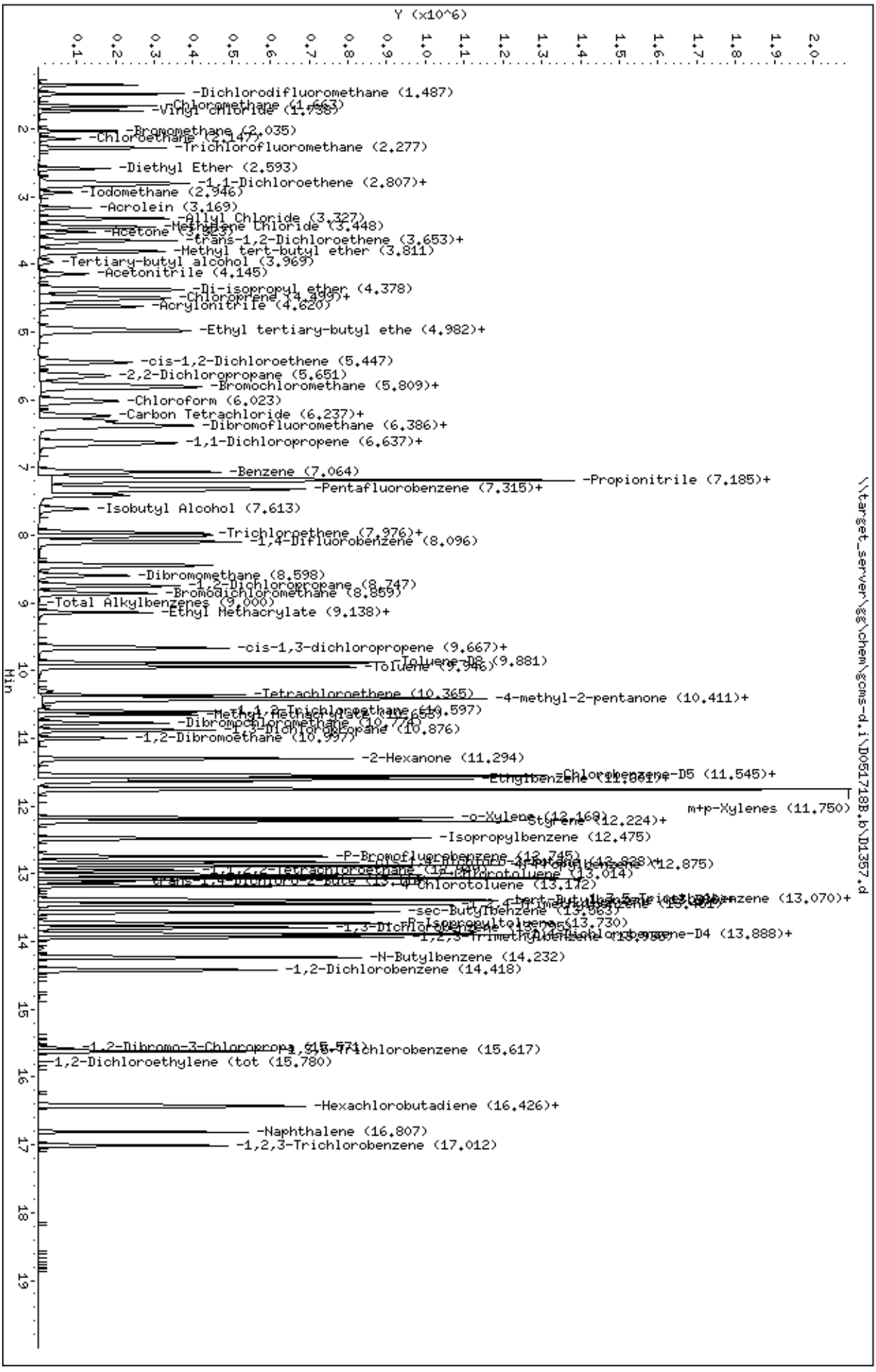
Report Date: 21-May-2018 14:31

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	79	Bromobenzene	156	12.828	12.828	(0.924)	170961	50.0000	49.1	
	80	N-Propylbenzene	91	12.874	12.874	(0.928)	831967	50.0000	48.2	
	81	1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.933)	185720	50.0000	46.8	
	82	1,3,5-Trimethylbenzene	105	13.069	13.060	(0.942)	560412	50.0000	50.7	
	83	2-Chlorotoluene	91	13.014	13.014	(0.938)	498611	50.0000	49.4	
	84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	163628	50.0000	46.2	
	85	4-Chlorotoluene	91	13.172	13.172	(0.949)	531724	50.0000	49.2	
	86	tert-Butylbenzene	119	13.376	13.377	(0.964)	534922	50.0000	51.1	
	87	Pentachloroethane	117	13.395	13.395	(0.965)	128368	50.0000	52.3	
	88	1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	583273	50.0000	51.1	
	89	P-Isopropyltoluene	119	13.729	13.720	(0.989)	563300	50.0000	51.2	
	90	1,3-Dichlorobenzene	146	13.795	13.795	(0.994)	308127	50.0000	49.1	
*	91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	236950	50.0000		
	92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	311673	50.0000	47.7	
	93	N-Butylbenzene	91	14.231	14.222	(1.025)	540031	50.0000	50.1	
	94	sec-Butylbenzene	105	13.562	13.562	(0.977)	680987	50.0000	50.0	
	95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	292755	50.0000	50.1	
	96	1,2-Dibromo-3-Chloropropane	75	15.570	15.570	(1.122)	29393	50.0000	43.3	
	97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	209256	50.0000	52.3	
	98	Hexachlorobutadiene	225	16.416	16.407	(1.183)	78039	50.0000	46.0	
	99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	175575	50.0000	50.8	
	100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	588973	50.0000	52.2	
	101	Naphthalene	128	16.807	16.806	(1.211)	361013	50.0000	44.9	
	102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	134271	50.0000	46.6	
	103	Methyl Acetate	43	3.689	3.690	(0.504)	131475	50.0000	48.9	
	104	Methylcyclohexane	83	7.975	7.966	(1.090)	244704	50.0000	46.4	
M	153	Total Alkylbenzenes	100				4294892	50.0000	352	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Date : 17-MAY-2018 12:12
Client ID:
Sample Info: WG228566-4,SL3902
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051718B.b\D1357.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)
-Vinyl chloride (1.738)
-Bromomethane (2.035)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.593)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.946)
-Acrolein (3.169)
-Allyl Chloride (3.327)
-Methylene Chloride (3.448)
-Acetone (3.565)
-trans-1,2-Dichloroethene (3.653)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.145)
-Di-isopropyl ether (4.378)
-Chloroprene (4.499)+
-Acrylonitrile (4.620)
-Ethyl tertiary-butyl ethe (4.982)+
-cis-1,2-Dichloroethene (5.447)
-2,2-Dichloropropane (5.651)
-Bromochloromethane (5.809)+
-Chloroform (6.023)
-Carbon Tetrachloride (6.237)+
-Dibromofluoromethane (6.386)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.064)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.976)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.598)
-1,2-Dichloropropane (8.747)
-Bromodichloromethane (8.859)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.881)
-Toluene (9.946)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-1,1,2-Trichloroethane (10.597)
-Methyl Methacrylate (10.655)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-Ethylbenzene (11.661)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.745)
-1,1,2,2-Tetrachloroethane (12.840)
-Bromobenzene (12.875)
-n-Propylbenzene (13.014)
-4-Chlorotoluene (13.172)
-1,3,5-Trimethylbenzene (13.401)
-sec-Butylbenzene (13.663)
-p-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.796)
-1,4-Dichlorobenzene-D4 (13.888)+
-1,2,3-Trimethylbenzene (13.938)
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.571)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228566-5
Analytical Date: 05/17/18 22:34
Lab File ID : D1374.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/17/18 08:11 05/17/18 11:09
Column ID:

	Compound	$\overline{\text{RRF}}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.87127	0.85577	0.85577	0.010	-1.77889	20.00000	Averaged	
2	Chloromethane	0.79934	0.85212	0.85212	0.100	6.60348	20.00000	Averaged	
3	Vinyl chloride	0.62623	0.66040	0.66040	0.010	5.45542	20.00000	Averaged	
4	Bromomethane	0.31688	0.32989	0.32989	0.010	4.10452	20.00000	Averaged	
5	Chloroethane	0.29152	0.31922	0.31922	0.010	9.50474	20.00000	Averaged	
6	Trichlorofluoromethane	0.98352	1.02486	1.02486	0.010	4.20287	20.00000	Averaged	
9	1,1-Dichloroethene	0.36640	0.38697	0.38697	0.100	5.61290	20.00000	Averaged	
10	Carbon Disulfide	1.18124	1.33995	1.33995	0.010	13.43512	20.00000	Averaged	
11	Freon-113	0.30052	0.32605	0.32605	0.010	8.49553	20.00000	Averaged	
14	Methylene Chloride	0.55520	0.56930	0.56930	0.010	2.53947	20.00000	Averaged	
15	Acetone	0.16249	0.18227	0.18227	0.010	12.17422	20.00000	Averaged	
17	trans-1,2-Dichloroethene	0.50635	0.53417	0.53417	0.010	5.49377	20.00000	Averaged	
19	Methyl tert-butyl ether	1.31652	1.50297	1.50297	0.010	14.16186	20.00000	Averaged	
25	1,1-Dichloroethane	1.01796	1.11039	1.11039	0.100	9.07966	20.00000	Averaged	
29	cis-1,2-Dichloroethene	0.53605	0.57493	0.57493	0.010	7.25383	20.00000	Averaged	
32	2,2-Dichloropropane	0.71237	0.69443	0.69443	0.010	-2.51793	20.00000	Averaged	
33	Bromochloromethane	0.26831	0.30221	0.30221	0.010	12.63709	20.00000	Averaged	
34	Chloroform	1.06581	1.15231	1.15231	0.010	8.11591	20.00000	Averaged	
35	Carbon Tetrachloride	0.47465	0.52043	0.52043	0.010	9.64487	20.00000	Averaged	
38	1,1,1-Trichloroethane	0.91927	1.01003	1.01003	0.010	9.87315	20.00000	Averaged	
39	1,1-Dichloropropene	0.47127	0.50738	0.50738	0.010	7.66141	20.00000	Averaged	
40	2-Butanone	0.24154	0.28612	0.28612	0.010	18.45802	20.00000	Averaged	
41	Benzene	1.22157	1.31906	1.31906	0.010	7.98052	20.00000	Averaged	
47	1,2-Dichloroethane	0.57229	0.59682	0.59682	0.010	4.28662	20.00000	Averaged	
48	Trichloroethene	0.35084	0.37587	0.37587	0.010	7.13475	20.00000	Averaged	
50	Dibromomethane	0.23166	0.25139	0.25139	0.010	8.51708	20.00000	Averaged	
51	1,2-Dichloropropane	0.33874	0.36591	0.36591	0.010	8.02251	20.00000	Averaged	
52	Bromodichloromethane	0.47995	0.54055	0.54055	0.010	12.62718	20.00000	Averaged	
53	cis-1,3-dichloropropene	50.00000	51.56617	0.61815	0.010	3.13233	20.00000	Linear	
57	Toluene	0.75606	0.80662	0.80662	0.010	6.68749	20.00000	Averaged	
58	4-methyl-2-pentanone	0.30792	0.37461	0.37461	0.010	21.65796	20.00000	Averaged	*
59	Tetrachloroethene	0.26820	0.28165	0.28165	0.010	5.01674	20.00000	Averaged	
60	trans-1,3-Dichloropropene	0.48567	0.55898	0.55898	0.010	15.09436	20.00000	Averaged	
61	1,1,2-Trichloroethane	0.26246	0.28297	0.28297	0.010	7.81267	20.00000	Averaged	
62	Dibromochloromethane	0.37319	0.41993	0.41993	0.010	12.52408	20.00000	Averaged	
63	1,3-Dichloropropane	0.59838	0.64692	0.64692	0.010	8.11248	20.00000	Averaged	
64	1,2-Dibromoethane	0.31721	0.34754	0.34754	0.010	9.55995	20.00000	Averaged	
65	2-Hexanone	0.22567	0.28489	0.28489	0.010	26.24062	20.00000	Averaged	*
67	Chlorobenzene	0.91734	0.94367	0.94367	0.300	2.87008	20.00000	Averaged	
68	Ethylbenzene	1.62552	1.73170	1.73170	0.010	6.53154	20.00000	Averaged	
69	1,1,1,2-Tetrachloroethane	0.33454	0.36624	0.36624	0.010	9.47544	20.00000	Averaged	

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228566-5
Analytical Date: 05/17/18 22:34
Lab File ID : D1374.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/17/18 08:11 05/17/18 11:09
Column ID:

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71 m+p-Xylenes	1.22828	1.35919	1.35919	0.010	10.65828	20.00000	Averaged
72 o-Xylene	1.19457	1.37620	1.37620	0.010	15.20490	20.00000	Averaged
73 Styrene	0.88775	1.01451	1.01451	0.010	14.27865	20.00000	Averaged
74 Bromoform	0.21682	0.25646	0.25646	0.100	18.28398	20.00000	Averaged
75 Isopropylbenzene	2.68214	3.02601	3.02601	0.010	12.82062	20.00000	Averaged
79 Bromobenzene	0.73418	0.75758	0.75758	0.010	3.18761	20.00000	Averaged
80 N-Propylbenzene	3.64124	3.88929	3.88929	0.010	6.81220	20.00000	Averaged
81 1,1,2,2-Tetrachloroethane	0.83813	0.90855	0.90855	0.300	8.40214	20.00000	Averaged
82 1,3,5-Trimethylbenzene	2.33023	2.61489	2.61489	0.010	12.21597	20.00000	Averaged
83 2-Chlorotoluene	2.12760	2.29557	2.29557	0.010	7.89496	20.00000	Averaged
84 1,2,3-Trichloropropane	0.74720	0.82896	0.82896	0.010	10.94136	20.00000	Averaged
85 4-Chlorotoluene	2.27798	2.44673	2.44673	0.010	7.40775	20.00000	Averaged
86 tert-Butylbenzene	2.20694	2.47710	2.47710	0.010	12.24175	20.00000	Averaged
88 1,2,4-Trimethylbenzene	2.40642	2.70669	2.70669	0.010	12.47748	20.00000	Averaged
89 P-Isopropyltoluene	2.32180	2.61191	2.61191	0.010	12.49473	20.00000	Averaged
90 1,3-Dichlorobenzene	1.32506	1.38303	1.38303	0.010	4.37423	20.00000	Averaged
92 1,4-Dichlorobenzene	1.37993	1.41472	1.41472	0.010	2.52117	20.00000	Averaged
93 N-Butylbenzene	2.27330	2.51229	2.51229	0.010	10.51285	20.00000	Averaged
94 sec-Butylbenzene	2.87531	3.15685	3.15685	0.010	9.79147	20.00000	Averaged
95 1,2-Dichlorobenzene	1.23314	1.32304	1.32304	0.010	7.28994	20.00000	Averaged
96 1,2-Dibromo-3-Chloropropane	0.14324	0.16448	0.16448	0.010	14.82990	20.00000	Averaged
98 Hexachlorobutadiene	0.35792	0.35732	0.35732	0.010	-0.16857	20.00000	Averaged
99 1,2,4-Trichlorobenzene	0.72860	0.80620	0.80620	0.010	10.65051	20.00000	Averaged
101 Naphthalene	50.00000	51.90702	1.77148	0.010	3.81403	20.00000	Linear
102 1,2,3-Trichlorobenzene	0.60806	0.66423	0.66423	0.010	9.23747	20.00000	Averaged
37 Dibromofluoromethane	0.61262	0.62620	0.62620	0.010	2.21700	20.00000	Averaged
45 1,2-Dichloroethane-D4	0.83583	0.87181	0.87181	0.010	4.30435	20.00000	Averaged
55 Toluene-D8	1.21869	1.22154	1.22154	0.010	0.23437	20.00000	Averaged
76 P-Bromofluorobenzene	0.50198	0.51487	0.51487	0.010	2.56782	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG228566-5
Lab File ID : D1374.d
Initial Calibration Date(s): 05/17/18 08:11 05/17/18 11:09

SDG: SL3902
Analytical Date: 05/17/18 22:34
Instrument ID: GCMS-D
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1374.d
Report Date: 21-May-2018 14:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051718B.b\D1374.d
Lab Smp Id: WG228566-5
Inj Date : 17-MAY-2018 22:34 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228566-5,SL3902
Misc Info : WG228566,WG228547-4,SL3902-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051718B.b\D8A05(22)D.m
Meth Date : 21-May-2018 14:29 gcms-d.i Quant Type: ISTD
Cal Date : 17-MAY-2018 11:09 Cal File: D1356.d
Als bottle: 18 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.486	(0.203)	219898	50.0000	49.1	
2	Chloromethane	50	1.663	1.654	(0.227)	218959	50.0000	53.3	
3	Vinyl chloride	62	1.737	1.728	(0.238)	169694	50.0000	52.7	
4	Bromomethane	94	2.025	2.025	(0.277)	84767	50.0000	52.0	
5	Chloroethane	64	2.137	2.137	(0.292)	82027	50.0000	54.8	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	263345	50.0000	52.1	
7	Diethyl Ether	59	2.583	2.583	(0.353)	91542	50.0000	57.8	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	50659	250.000	277	
9	1,1-Dichloroethene	96	2.787	2.779	(0.381)	99435	50.0000	52.8	
10	Carbon Disulfide	76	2.815	2.807	(0.385)	344310	50.0000	56.7	
11	Freon-113	151	2.834	2.834	(0.387)	83781	50.0000	54.2	
12	Iodomethane	142	2.936	2.937	(0.401)	101831	50.0000	52.2	
13	Acrolein	56	3.169	3.160	(0.433)	106694	250.000	304	
14	Methylene Chloride	84	3.447	3.448	(0.471)	146285	50.0000	51.3	
15	Acetone	43	3.522	3.522	(0.482)	234184	250.000	280	
16	Isobutyl Alcohol	43	7.612	7.613	(1.041)	116809	1000.00	1120	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	137259	50.0000	52.7	
18	Allyl Chloride	41	3.317	3.318	(0.454)	228068	50.0000	57.6	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	386199	50.0000	57.1	
20	Acetonitrile	39	4.135	4.136	(0.565)	41683	500.000	591	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	468756	50.0000	51.9	
22	Chloroprene	53	4.479	4.480	(0.612)	251647	50.0000	60.3	
23	Propionitrile	54	7.147	7.148	(0.977)	213600	500.000	611	
24	Methacrylonitrile	41	7.185	7.185	(0.982)	1003295	500.000	603	

Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1374.d
Report Date: 21-May-2018 14:32

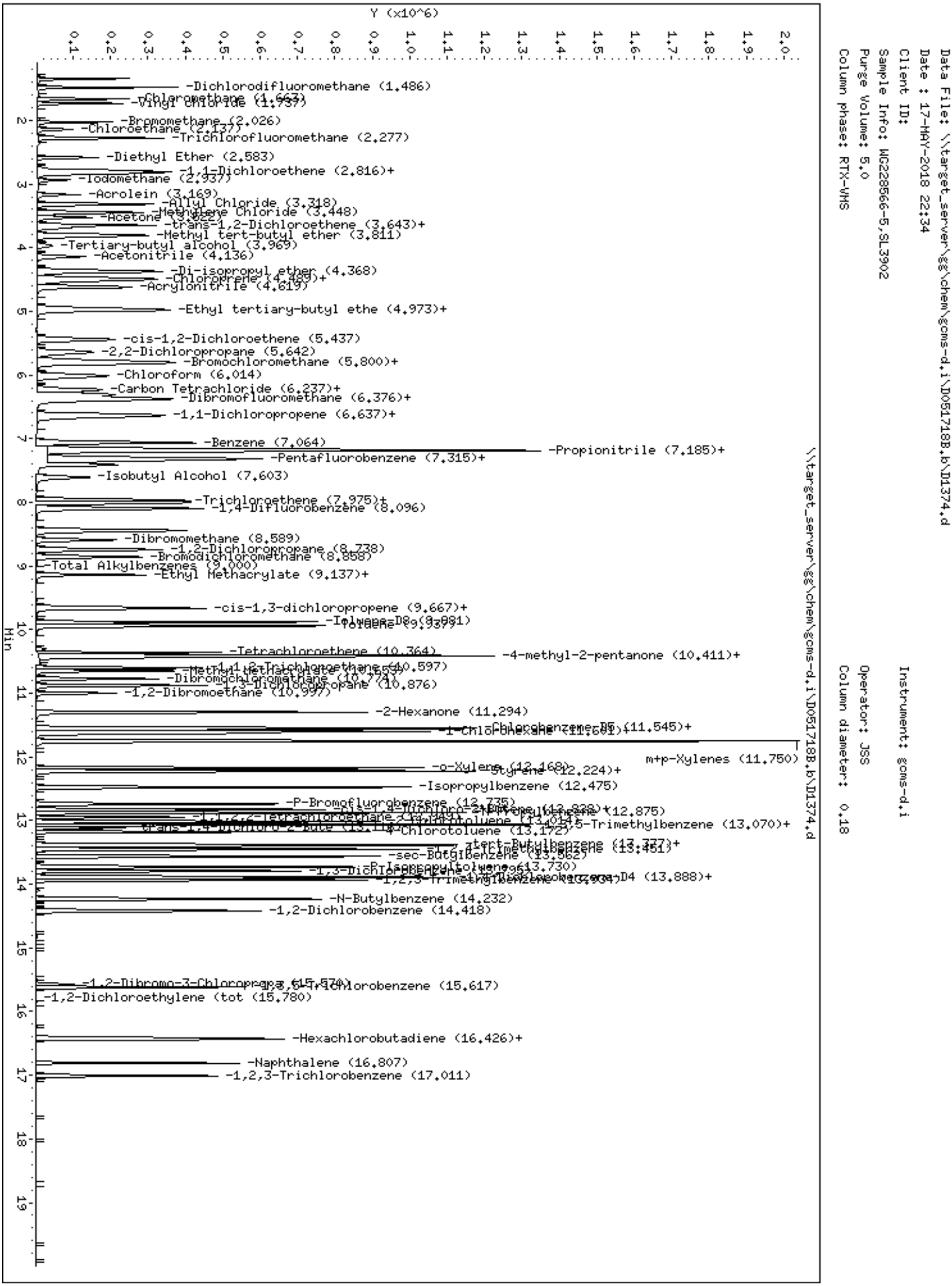
							AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	25 1,1-Dichloroethane	63	4.517	4.517	(0.617)	285324	50.0000	54.5	
	26 Acrylonitrile	52	4.619	4.610	(0.631)	246391	250.000	293	
	27 Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	398299	50.0000	51.1	
	28 Vinyl Acetate	43	4.981	4.982	(0.615)	362889	50.0000	59.7	
	29 cis-1,2-Dichloroethene	96	5.446	5.437	(0.745)	147733	50.0000	53.6	
M	30 1,2-Dichloroethylene (total)	96				284992	50.0000	(a)	
	31 Methyl Methacrylate	41	10.643	10.643	(1.315)	142873	50.0000	53.2	
	32 2,2-Dichloropropane	77	5.641	5.642	(0.771)	178440	50.0000	48.7	
	33 Bromochloromethane	128	5.818	5.809	(0.795)	77656	50.0000	56.3	
	34 Chloroform	83	6.013	6.014	(0.822)	296095	50.0000	54.0	
	35 Carbon Tetrachloride	117	6.236	6.237	(0.770)	219210	50.0000	54.8	
	36 Tetrahydrofuran	42	6.311	6.311	(0.863)	221541	250.000	309	
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	160907	50.0000	51.1	
	38 1,1,1-Trichloroethane	97	6.385	6.376	(0.873)	259536	50.0000	54.9	
	39 1,1-Dichloropropene	75	6.627	6.627	(0.819)	213711	50.0000	53.8	
	40 2-Butanone	43	6.655	6.655	(0.910)	367602	250.000	296	
	41 Benzene	78	7.064	7.064	(0.873)	555597	50.0000	54.0	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	256958	50.0000		
	43 Cyclohexane	56	5.790	5.791	(0.792)	229969	50.0000	55.1	
	44 Ethyl Methacrylate	69	9.137	9.137	(1.129)	100884	50.0000	52.7	
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	224019	50.0000	52.2	
	46 Tertiary-amyl methyl ether	73	7.333	7.334	(1.003)	319660	50.0000	50.6	
	47 1,2-Dichloroethane	62	7.408	7.408	(0.915)	251386	50.0000	52.1	
	48 Trichloroethene	95	8.003	8.003	(0.989)	158318	50.0000	53.6	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	421207	50.0000		
	50 Dibromomethane	93	8.588	8.589	(1.061)	105887	50.0000	54.2	
	51 1,2-Dichloropropane	63	8.737	8.738	(1.079)	154125	50.0000	54.0	
	52 Bromodichloromethane	83	8.858	8.858	(1.094)	227684	50.0000	56.3	
	53 cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	260371	50.0000	51.6	
	54 1,4-Dioxane	88	9.137	9.137	(1.129)	28649	1000.00	1180	
$	55 Toluene-D8	98	9.881	9.881	(1.220)	514523	50.0000	50.1	
	56 2-Chloroethylvinylether	63	9.639	9.639	(1.191)	84507	50.0000	51.1	
	57 Toluene	92	9.936	9.937	(1.227)	339754	50.0000	53.3	
	58 4-methyl-2-pentanone	43	10.410	10.411	(1.286)	788946	250.000	304	
	59 Tetrachloroethene	164	10.364	10.364	(0.898)	110592	50.0000	52.5	
	60 trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	235445	50.0000	57.5	
	61 1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	119187	50.0000	53.9	
	62 Dibromochloromethane	129	10.773	10.774	(0.934)	164888	50.0000	56.3	
	63 1,3-Dichloropropane	76	10.875	10.876	(0.943)	254018	50.0000	54.0	
	64 1,2-Dibromoethane	107	10.996	10.997	(1.358)	146385	50.0000	54.8	
	65 2-Hexanone	43	11.294	11.294	(0.979)	559319	250.000	316	
*	66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	392656	50.0000		
	67 Chlorobenzene	112	11.554	11.554	(1.002)	370539	50.0000	51.4	
	152 1-Chlorohexane	91	11.600	11.601	(1.006)	679961	50.0000	(a)	
	68 Ethylbenzene	91	11.600	11.601	(1.006)	679961	50.0000	53.3	
	69 1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	143808	50.0000	54.7	
M	70 Xylenes (total)	106				1607764	150.000	(a)	
	71 m+p-Xylenes	91	11.749	11.750	(1.019)	1067390	100.000	111	
	72 o-Xylene	91	12.167	12.168	(1.055)	540374	50.0000	57.6	
	73 Styrene	104	12.223	12.224	(1.060)	398352	50.0000	57.1	
	74 Bromoform	173	12.233	12.233	(1.060)	100700	50.0000	59.1	
	75 Isopropylbenzene	105	12.474	12.475	(0.899)	614374	50.0000	56.4	
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	216867	50.0000	51.3	
	77 cis-1,4-Dichloro-2-Butene	53	12.809	12.809	(0.923)	56936	50.0000	48.6	

Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1374.d
Report Date: 21-May-2018 14:32

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	78 trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	46882	50.0000	50.1	
	79 Bromobenzene	156	12.828	12.828	(0.924)	153813	50.0000	51.6	
	80 N-Propylbenzene	91	12.874	12.874	(0.928)	789647	50.0000	53.4	
	81 1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	184464	50.0000	54.2	
	82 1,3,5-Trimethylbenzene	105	13.060	13.060	(0.941)	530903	50.0000	56.1	
	83 2-Chlorotoluene	91	13.013	13.014	(0.938)	466072	50.0000	53.9	
	84 1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	168304	50.0000	55.5	
	85 4-Chlorotoluene	91	13.171	13.172	(0.949)	496762	50.0000	53.7	
	86 tert-Butylbenzene	119	13.376	13.377	(0.964)	502929	50.0000	56.1	
	87 Pentachloroethane	117	13.395	13.395	(0.965)	117854	50.0000	56.0	
	88 1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	549541	50.0000	56.2	
	89 P-Isopropyltoluene	119	13.729	13.720	(0.989)	530298	50.0000	56.2	
	90 1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	280797	50.0000	52.2	
*	91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	203031	50.0000		
	92 1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	287232	50.0000	51.3	
	93 N-Butylbenzene	91	14.231	14.222	(1.025)	510073	50.0000	55.2	
	94 sec-Butylbenzene	105	13.562	13.562	(0.977)	640938	50.0000	54.9	
	95 1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	268618	50.0000	53.6	
	96 1,2-Dibromo-3-Chloropropane	75	15.570	15.570	(1.122)	33394	50.0000	57.4	
	97 1,3,5-Trichlorobenzene	180	15.616	15.617	(1.125)	186621	50.0000	54.4	
	98 Hexachlorobutadiene	225	16.416	16.407	(1.183)	72547	50.0000	49.9	
	99 1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	163683	50.0000	55.3	
	100 1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	540908	50.0000	56.0	
	101 Naphthalene	128	16.806	16.806	(1.211)	359666	50.0000	51.9	
	102 1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	134859	50.0000	54.6	
	103 Methyl Acetate	43	3.689	3.690	(0.504)	127901	50.0000	59.0	
	104 Methylcyclohexane	83	7.966	7.966	(1.089)	214392	50.0000	50.4	
M	153 Total Alkylbenzenes	100				4054329	50.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1374.d
Date : 17-MAY-2018 22:34
Client ID:
Sample Info: WG228566-5,SL3902
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051718B.b\D1374.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.486)
-Chloromethane (1.663)
-Vinyl Chloride (1.737)
-Bromomethane (2.026)
-Chloroethane (2.137)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.583)
-1,1-Dichloroethene (2.816)+
-Iodomethane (2.937)
-Acrolein (3.169)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.622)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.489)+
-Acrylonitrile (4.619)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.437)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)+
-Dibromofluoromethane (6.376)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.064)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.603)
-Trichloroethene (7.975)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.858)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.881)
-Toluene (9.937)
-Tetrachloroethene (10.364)
-4-methyl-2-pentanone (10.411)+
-1,1,2-Trichloroethane (10.597)
-Methyl Methacrylate (10.653)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-1-Chlorohexane (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-cis-1,4-Dichloro-2-Butene (12.828)+
-1,1,2,2-Tetrachloroethane (12.949)+
-2-Chlorotoluene (13.014)
-1,3,5-Trimethylbenzene (13.070)+
-trans-1,4-Dichloro-2-Bute (13.116)
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.377)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.562)
-P-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.795)
-1,2,3-Trimethylbenzene (13.934)
-1,4-Dichlorobenzene-D4 (13.888)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.570)
-1,3,5-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228859-4
Analytical Date: 05/22/18 12:26
Lab File ID : D1476.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/22/18 08:30 05/22/18 11:28
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.60335	0.56639	0.56639	0.010	-6.12593	20.00000	Averaged
2	Chloromethane	0.65000	0.61583	0.61583	0.100	-5.25712	20.00000	Averaged
3	Vinyl chloride	0.51950	0.53276	0.53276	0.010	2.55268	20.00000	Averaged
4	Bromomethane	0.27699	0.29542	0.29542	0.010	6.65713	20.00000	Averaged
5	Chloroethane	0.26784	0.26628	0.26628	0.010	-0.58048	20.00000	Averaged
6	Trichlorofluoromethane	0.88581	0.80725	0.80725	0.010	-8.86822	20.00000	Averaged
9	1,1-Dichloroethene	0.38384	0.36762	0.36762	0.100	-4.22461	20.00000	Averaged
10	Carbon Disulfide	1.11001	1.10777	1.10777	0.010	-0.20168	20.00000	Averaged
11	Freon-113	0.28217	0.26505	0.26505	0.010	-6.06726	20.00000	Averaged
14	Methylene Chloride	0.53551	0.55418	0.55418	0.010	3.48770	20.00000	Averaged
15	Acetone	0.17357	0.15359	0.15359	0.010	-11.51570	20.00000	Averaged
17	trans-1,2-Dichloroethene	0.50598	0.50003	0.50003	0.010	-1.17707	20.00000	Averaged
19	Methyl tert-butyl ether	1.30189	1.38052	1.38052	0.010	6.03962	20.00000	Averaged
25	1,1-Dichloroethane	1.00288	0.99647	0.99647	0.100	-0.63834	20.00000	Averaged
29	cis-1,2-Dichloroethene	0.52290	0.54002	0.54002	0.010	3.27397	20.00000	Averaged
32	2,2-Dichloropropane	0.74617	0.75204	0.75204	0.010	0.78722	20.00000	Averaged
33	Bromochloromethane	0.26158	0.26896	0.26896	0.010	2.82257	20.00000	Averaged
34	Chloroform	1.05953	1.04368	1.04368	0.010	-1.49676	20.00000	Averaged
35	Carbon Tetrachloride	0.47340	0.46638	0.46638	0.010	-1.48300	20.00000	Averaged
38	1,1,1-Trichloroethane	0.91787	0.90063	0.90063	0.010	-1.87846	20.00000	Averaged
39	1,1-Dichloropropene	0.46383	0.47069	0.47069	0.010	1.47843	20.00000	Averaged
40	2-Butanone	250	244	0.23380	0.010	-2.46207	20.00000	Linear
41	Benzene	1.21376	1.23170	1.23170	0.010	1.47835	20.00000	Averaged
47	1,2-Dichloroethane	0.59486	0.55670	0.55670	0.010	-6.41545	20.00000	Averaged
48	Trichloroethene	0.34102	0.33567	0.33567	0.010	-1.57029	20.00000	Averaged
50	Dibromomethane	0.23108	0.23280	0.23280	0.010	0.74760	20.00000	Averaged
51	1,2-Dichloropropane	0.33347	0.34445	0.34445	0.010	3.29219	20.00000	Averaged
52	Bromodichloromethane	0.48433	0.49694	0.49694	0.010	2.60221	20.00000	Averaged
53	cis-1,3-dichloropropene	50.00000	49.00451	0.59472	0.010	-1.99099	20.00000	Linear
57	Toluene	0.73457	0.73564	0.73564	0.010	0.14531	20.00000	Averaged
58	4-methyl-2-pentanone	250	257	0.31468	0.010	2.78491	20.00000	Linear
59	Tetrachloroethene	0.27457	0.25814	0.25814	0.010	-5.98425	20.00000	Averaged
60	trans-1,3-Dichloropropene	0.49560	0.53581	0.53581	0.010	8.11277	20.00000	Averaged
61	1,1,2-Trichloroethane	0.25789	0.26248	0.26248	0.010	1.77708	20.00000	Averaged
62	Dibromochloromethane	0.37704	0.40460	0.40460	0.010	7.30941	20.00000	Averaged
63	1,3-Dichloropropane	0.60434	0.62474	0.62474	0.010	3.37584	20.00000	Averaged
64	1,2-Dibromoethane	0.30671	0.32048	0.32048	0.010	4.49186	20.00000	Averaged
65	2-Hexanone	250	248	0.23902	0.010	-0.80393	20.00000	Linear
67	Chlorobenzene	0.92062	0.90351	0.90351	0.300	-1.85779	20.00000	Averaged
68	Ethylbenzene	1.63671	1.62304	1.62304	0.010	-0.83530	20.00000	Averaged
69	1,1,1,2-Tetrachloroethane	0.34196	0.34618	0.34618	0.010	1.23410	20.00000	Averaged

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228859-4
Analytical Date: 05/22/18 12:26
Lab File ID : D1476.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/22/18 08:30 05/22/18 11:28
Column ID:

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71 m+p-Xylenes	1.24708	1.25730	1.25730	0.010	0.81959	20.00000	Averaged
72 o-Xylene	1.22932	1.30251	1.30251	0.010	5.95344	20.00000	Averaged
73 Styrene	50.00000	50.00536	0.96761	0.010	0.01071	20.00000	Linear
74 Bromoform	0.21901	0.23561	0.23561	0.100	7.58087	20.00000	Averaged
75 Isopropylbenzene	2.69780	2.85327	2.85327	0.010	5.76286	20.00000	Averaged
79 Bromobenzene	0.73080	0.74955	0.74955	0.010	2.56582	20.00000	Averaged
80 N-Propylbenzene	3.62532	3.67155	3.67155	0.010	1.27542	20.00000	Averaged
81 1,1,2,2-Tetrachloroethane	0.82529	0.84353	0.84353	0.300	2.20996	20.00000	Averaged
82 1,3,5-Trimethylbenzene	2.37150	2.46349	2.46349	0.010	3.87898	20.00000	Averaged
83 2-Chlorotoluene	2.15222	2.20659	2.20659	0.010	2.52622	20.00000	Averaged
84 1,2,3-Trichloropropane	0.74500	0.74590	0.74590	0.010	0.12066	20.00000	Averaged
85 4-Chlorotoluene	2.32149	2.37820	2.37820	0.010	2.44294	20.00000	Averaged
86 tert-Butylbenzene	2.20135	2.35287	2.35287	0.010	6.88303	20.00000	Averaged
88 1,2,4-Trimethylbenzene	2.41779	2.57894	2.57894	0.010	6.66518	20.00000	Averaged
89 P-Isopropyltoluene	2.29592	2.45439	2.45439	0.010	6.90242	20.00000	Averaged
90 1,3-Dichlorobenzene	1.32445	1.33937	1.33937	0.010	1.12614	20.00000	Averaged
92 1,4-Dichlorobenzene	1.38797	1.37739	1.37739	0.010	-0.76241	20.00000	Averaged
93 N-Butylbenzene	2.24636	2.37696	2.37696	0.010	5.81410	20.00000	Averaged
94 sec-Butylbenzene	2.83736	2.95676	2.95676	0.010	4.20801	20.00000	Averaged
95 1,2-Dichlorobenzene	1.23973	1.28799	1.28799	0.010	3.89259	20.00000	Averaged
96 1,2-Dibromo-3-Chloropropane	50.00000	48.01260	0.12053	0.010	-3.97479	20.00000	Linear
98 Hexachlorobutadiene	0.35123	0.34422	0.34422	0.010	-1.99660	20.00000	Averaged
99 1,2,4-Trichlorobenzene	0.71880	0.78015	0.78015	0.010	8.53549	20.00000	Averaged
101 Naphthalene	50.00000	51.59517	1.62066	0.010	3.19035	20.00000	Linear
102 1,2,3-Trichlorobenzene	50.00000	50.97647	0.60744	0.010	1.95294	20.00000	Linear
37 Dibromofluoromethane	0.61398	0.61354	0.61354	0.010	-0.07141	20.00000	Averaged
45 1,2-Dichloroethane-D4	0.89197	0.84816	0.84816	0.010	-4.91191	20.00000	Averaged
55 Toluene-D8	1.23800	1.23946	1.23946	0.010	0.11856	20.00000	Averaged
76 P-Bromofluorobenzene	0.50070	0.49373	0.49373	0.010	-1.39315	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG228859-4
Lab File ID : D1476.d
Initial Calibration Date(s): 05/22/18 08:30 05/22/18 11:28

SDG: SL3902
Analytical Date: 05/22/18 12:26
Instrument ID: GCMS-D
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1476.d
Report Date: 23-May-2018 11:35

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D052218B.b\D1476.d
Lab Smp Id: WG228859-4
Inj Date : 22-MAY-2018 12:26 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228859-4,SL3902
Misc Info : WG228859,WG228847-4,SL3902-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D052218B.b\D8A05(23)D.m
Meth Date : 23-May-2018 11:33 gcms-d.i Quant Type: ISTD
Cal Date : 22-MAY-2018 11:28 Cal File: D1475.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

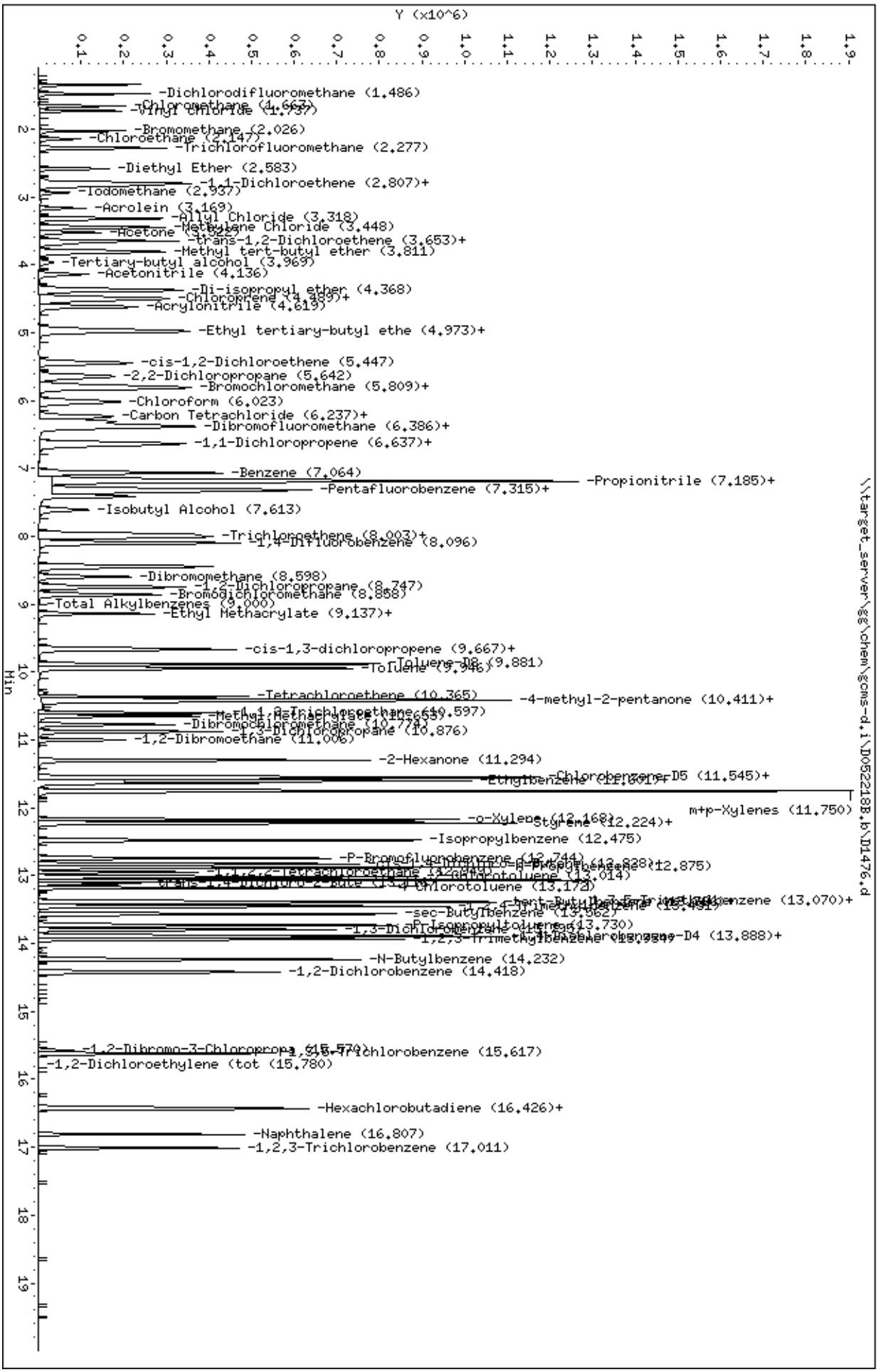
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	161945	50.0000	46.9	
2	Chloromethane	50	1.663	1.654	(0.227)	176080	50.0000	47.4	
3	Vinyl chloride	62	1.737	1.728	(0.238)	152330	50.0000	51.3	
4	Bromomethane	94	2.025	2.025	(0.277)	84469	50.0000	53.3	
5	Chloroethane	64	2.146	2.146	(0.293)	76137	50.0000	49.7	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	230813	50.0000	45.6	
7	Diethyl Ether	59	2.583	2.584	(0.353)	95738	50.0000	50.3	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	44826	250.000	243	
9	1,1-Dichloroethene	96	2.787	2.779	(0.381)	105112	50.0000	47.9	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	316737	50.0000	49.9	
11	Freon-113	151	2.834	2.835	(0.387)	75783	50.0000	47.0	
12	Iodomethane	142	2.936	2.937	(0.401)	85864	50.0000	50.2	
13	Acrolein	56	3.169	3.160	(0.433)	103063	250.000	293	
14	Methylene Chloride	84	3.448	3.448	(0.471)	158454	50.0000	51.7	
15	Acetone	43	3.522	3.522	(0.482)	219570	250.000	221	
16	Isobutyl Alcohol	43	7.612	7.604	(1.041)	95629	1000.00	966	
17	trans-1,2-Dichloroethene	96	3.652	3.643	(0.499)	142970	50.0000	49.4	
18	Allyl Chloride	41	3.317	3.318	(0.454)	220845	50.0000	54.4	
19	Methyl tert-butyl ether	73	3.810	3.801	(0.521)	394724	50.0000	53.0	
20	Acetonitrile	39	4.135	4.136	(0.565)	36759	500.000	479	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	482378	50.0000	53.8	
22	Chloroprene	53	4.489	4.480	(0.614)	239530	50.0000	51.8	
23	Propionitrile	54	7.147	7.148	(0.977)	189434	500.000	497	
24	Methacrylonitrile	41	7.185	7.176	(0.982)	943815	500.000	516	

Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1476.d
Report Date: 23-May-2018 11:35

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	25 1,1-Dichloroethane	63	4.517	4.517	(0.617)	284916	50.0000	49.7	
	26 Acrylonitrile	52	4.619	4.610	(0.631)	225432	250.000	260	
	27 Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	427508	50.0000	54.8	
	28 Vinyl Acetate	43	4.991	4.982	(0.616)	351760	50.0000	55.2	
	29 cis-1,2-Dichloroethene	96	5.446	5.438	(0.745)	154404	50.0000	51.6	
M	30 1,2-Dichloroethylene (total)	96				297374	50.0000	101	
	31 Methyl Methacrylate	41	10.652	10.643	(1.316)	141197	50.0000	50.6	
	32 2,2-Dichloropropane	77	5.651	5.642	(0.773)	215026	50.0000	50.4	
	33 Bromochloromethane	128	5.818	5.809	(0.795)	76902	50.0000	51.4	
	34 Chloroform	83	6.023	6.014	(0.823)	298412	50.0000	49.2	
	35 Carbon Tetrachloride	117	6.236	6.228	(0.770)	213066	50.0000	49.2	
	36 Tetrahydrofuran	42	6.311	6.302	(0.863)	191013	250.000	243	
$	37 Dibromofluoromethane	113	6.385	6.376	(0.873)	175425	50.0000	50.0	
	38 1,1,1-Trichloroethane	97	6.385	6.376	(0.873)	257512	50.0000	49.1	
	39 1,1-Dichloropropene	75	6.627	6.618	(0.819)	215037	50.0000	50.7	
	40 2-Butanone	43	6.655	6.655	(0.910)	334247	250.000	244	
	41 Benzene	78	7.064	7.055	(0.873)	562709	50.0000	50.7	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	285924	50.0000		
	43 Cyclohexane	56	5.790	5.781	(0.792)	217699	50.0000	51.3	
	44 Ethyl Methacrylate	69	9.137	9.137	(1.129)	96600	50.0000	50.5	
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	242508	50.0000	47.5	
	46 Tertiary-amyl methyl ether	73	7.343	7.334	(1.004)	338932	50.0000	51.5	
	47 1,2-Dichloroethane	62	7.408	7.408	(0.915)	254329	50.0000	46.8	
	48 Trichloroethene	95	8.012	8.003	(0.990)	153351	50.0000	49.2	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	456854	50.0000		
	50 Dibromomethane	93	8.598	8.589	(1.062)	106357	50.0000	50.4	
	51 1,2-Dichloropropane	63	8.746	8.738	(1.080)	157362	50.0000	51.6	
	52 Bromodichloromethane	83	8.858	8.849	(1.094)	227028	50.0000	51.3	
	53 cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	271701	50.0000	49.0	
	54 1,4-Dioxane	88	9.146	9.137	(1.130)	22993	1000.00	1030	
$	55 Toluene-D8	98	9.881	9.881	(1.220)	566254	50.0000	50.0	
	56 2-Chloroethylvinylether	63	9.639	9.639	(1.191)	84224	50.0000	52.6	
	57 Toluene	92	9.946	9.937	(1.228)	336079	50.0000	50.1	
	58 4-methyl-2-pentanone	43	10.410	10.411	(1.286)	718816	250.000	257	
	59 Tetrachloroethene	164	10.364	10.365	(0.898)	105689	50.0000	47.0	
	60 trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	244785	50.0000	54.0	
	61 1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	119914	50.0000	50.9	
	62 Dibromochloromethane	129	10.773	10.774	(0.933)	165653	50.0000	53.6	
	63 1,3-Dichloropropane	76	10.885	10.876	(0.943)	255782	50.0000	51.7	
	64 1,2-Dibromoethane	107	11.005	10.997	(1.359)	146414	50.0000	52.2	
	65 2-Hexanone	43	11.294	11.294	(0.978)	489308	250.000	248	
*	66 Chlorobenzene-D5	117	11.545	11.536	(1.000)	409420	50.0000		
	67 Chlorobenzene	112	11.554	11.555	(1.001)	369917	50.0000	49.1	
	68 Ethylbenzene	91	11.600	11.601	(1.005)	664505	50.0000	49.6	
	69 1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.007)	141731	50.0000	50.6	
M	70 Xylenes (total)	106				1562799	150.000	154	
	71 m+p-Xylenes	91	11.749	11.750	(1.018)	1029527	100.000	101	
	72 o-Xylene	91	12.167	12.168	(1.054)	533272	50.0000	53.0	
	73 Styrene	104	12.223	12.224	(1.059)	396159	50.0000	50.0	
	74 Bromoform	173	12.233	12.233	(1.060)	96463	50.0000	53.8	
	75 Isopropylbenzene	105	12.474	12.475	(0.898)	584493	50.0000	52.9	
$	76 P-Bromofluorobenzene	95	12.744	12.735	(1.574)	225561	50.0000	49.3	
	77 cis-1,4-Dichloro-2-Butene	53	12.818	12.810	(0.923)	57591	50.0000	50.3	
	78 trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.944)	46295	50.0000	54.3	

Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1476.d
Report Date: 23-May-2018 11:35

		QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	79 Bromobenzene	156	12.837	12.828	(0.924)	153546	50.0000	51.3	
	80 N-Propylbenzene	91	12.874	12.875	(0.927)	752118	50.0000	50.6	
	81 1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.932)	172797	50.0000	51.1	
	82 1,3,5-Trimethylbenzene	105	13.069	13.061	(0.941)	504646	50.0000	51.9	
	83 2-Chlorotoluene	91	13.013	13.014	(0.937)	452020	50.0000	51.3	
	84 1,2,3-Trichloropropane	75	13.069	13.070	(0.941)	152798	50.0000	50.1	
	85 4-Chlorotoluene	91	13.181	13.172	(0.949)	487175	50.0000	51.2	
	86 tert-Butylbenzene	119	13.376	13.377	(0.963)	481985	50.0000	53.4	
	87 Pentachloroethane	117	13.395	13.395	(0.965)	115016	50.0000	55.8	
	88 1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	528296	50.0000	53.3	
	89 P-Isopropyltoluene	119	13.729	13.730	(0.989)	502782	50.0000	53.4	
	90 1,3-Dichlorobenzene	146	13.794	13.795	(0.993)	274370	50.0000	50.6	
*	91 1,4-Dichlorobenzene-D4	152	13.887	13.879	(1.000)	204850	50.0000		
	92 1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	282158	50.0000	49.6	
	93 N-Butylbenzene	91	14.231	14.232	(1.025)	486921	50.0000	52.9	
	94 sec-Butylbenzene	105	13.562	13.563	(0.977)	605692	50.0000	52.1	
	95 1,2-Dichlorobenzene	146	14.417	14.418	(1.038)	263845	50.0000	51.9	
	96 1,2-Dibromo-3-Chloropropane	157	15.570	15.571	(1.121)	24691	50.0000	48.0	
	97 1,3,5-Trichlorobenzene	180	15.616	15.617	(1.125)	183728	50.0000	52.7	
	98 Hexachlorobutadiene	225	16.416	16.407	(1.182)	70513	50.0000	49.0	
	99 1,2,4-Trichlorobenzene	180	16.435	16.434	(1.183)	159814	50.0000	54.3	
	100 1,2,3-Trimethylbenzene	105	13.934	13.934	(1.003)	522724	50.0000	51.7	
	101 Naphthalene	128	16.806	16.806	(1.210)	331992	50.0000	51.6	
	102 1,2,3-Trichlorobenzene	180	17.011	17.011	(1.225)	124434	50.0000	51.0	
	103 Methyl Acetate	43	3.689	3.690	(0.504)	118421	50.0000	49.5	
	104 Methylcyclohexane	83	7.975	7.966	(1.090)	205566	50.0000	52.4	
M	153 Total Alkylbenzenes	100				3862440	50.0000	368	


Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1476.d
Date : 22-MAY-2018 12:26
Client ID:
Sample Info: WG228859-4,SL3902
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D052218B.b\D1476.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.486)
-Chloromethane (1.663)
-Vinyl chloride (1.737)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.583)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.169)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.562)
-trans-1,2-Dichloroethene (3.653)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.489)+
-Acrylonitrile (4.619)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.447)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.809)+
-Chloroform (6.023)
-Carbon Tetrachloride (6.237)+
-Dibromofluoromethane (6.386)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.064)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.613)
-Trichloroethene (8.003)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.598)
-1,2-Dichloropropane (8.747)
-Bromodichloromethane (8.858)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
-Toluene D8 (9.881)
-Toluene (9.946)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-1,1,2-Trichloroethane (10.597)
-Methyl Methacrylate (10.653)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (11.006)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
Ethylbenzene (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.744)
-1,1,2,2-Tetrachloroethane (12.875)
-4-Chlorotoluene (13.172)
-sec-Butylbenzene (13.562)
-1,3-Dichlorobenzene (13.730)
-1,2,3-Trimethylbenzene (13.888)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.570)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228859-5
Analytical Date: 05/22/18 22:57
Lab File ID : D1493.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/22/18 08:30 05/22/18 11:28
Column ID:

	Compound	$\overline{\text{RRF}}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.60335	0.60803	0.60803	0.010	0.77475	20.00000	Averaged	
2	Chloromethane	0.65000	0.56048	0.56048	0.100	-13.77297	20.00000	Averaged	
3	Vinyl chloride	0.51950	0.48757	0.48757	0.010	-6.14707	20.00000	Averaged	
4	Bromomethane	0.27699	0.25048	0.25048	0.010	-9.57100	20.00000	Averaged	
5	Chloroethane	0.26784	0.27630	0.27630	0.010	3.15991	20.00000	Averaged	
6	Trichlorofluoromethane	0.88581	0.97522	0.97522	0.010	10.09383	20.00000	Averaged	
9	1,1-Dichloroethene	0.38384	0.36845	0.36845	0.100	-4.00911	20.00000	Averaged	
10	Carbon Disulfide	1.11001	1.11719	1.11719	0.010	0.64695	20.00000	Averaged	
11	Freon-113	0.28217	0.29078	0.29078	0.010	3.05382	20.00000	Averaged	
14	Methylene Chloride	0.53551	0.52294	0.52294	0.010	-2.34570	20.00000	Averaged	
15	Acetone	0.17357	0.17428	0.17428	0.010	0.40556	20.00000	Averaged	
17	trans-1,2-Dichloroethene	0.50598	0.45828	0.45828	0.010	-9.42815	20.00000	Averaged	
19	Methyl tert-butyl ether	1.30189	1.28962	1.28962	0.010	-0.94266	20.00000	Averaged	
25	1,1-Dichloroethane	1.00288	1.01582	1.01582	0.100	1.29109	20.00000	Averaged	
29	cis-1,2-Dichloroethene	0.52290	0.50447	0.50447	0.010	-3.52455	20.00000	Averaged	
32	2,2-Dichloropropane	0.74617	0.57898	0.57898	0.010	-22.40609	20.00000	Averaged	*
33	Bromochloromethane	0.26158	0.26442	0.26442	0.010	1.08621	20.00000	Averaged	
34	Chloroform	1.05953	1.08935	1.08935	0.010	2.81420	20.00000	Averaged	
35	Carbon Tetrachloride	0.47340	0.49004	0.49004	0.010	3.51624	20.00000	Averaged	
38	1,1,1-Trichloroethane	0.91787	0.94005	0.94005	0.010	2.41601	20.00000	Averaged	
39	1,1-Dichloropropene	0.46383	0.46398	0.46398	0.010	0.03249	20.00000	Averaged	
40	2-Butanone	250	273	0.26137	0.010	9.26043	20.00000	Linear	
41	Benzene	1.21376	1.19460	1.19460	0.010	-1.57894	20.00000	Averaged	
47	1,2-Dichloroethane	0.59486	0.63791	0.63791	0.010	7.23649	20.00000	Averaged	
48	Trichloroethene	0.34102	0.35387	0.35387	0.010	3.76663	20.00000	Averaged	
50	Dibromomethane	0.23108	0.24755	0.24755	0.010	7.12981	20.00000	Averaged	
51	1,2-Dichloropropane	0.33347	0.34106	0.34106	0.010	2.27707	20.00000	Averaged	
52	Bromodichloromethane	0.48433	0.53046	0.53046	0.010	9.52423	20.00000	Averaged	
53	cis-1,3-dichloropropene	50.00000	48.26997	0.58559	0.010	-3.46006	20.00000	Linear	
57	Toluene	0.73457	0.73594	0.73594	0.010	0.18635	20.00000	Averaged	
58	4-methyl-2-pentanone	250	296	0.36225	0.010	18.57088	20.00000	Linear	
59	Tetrachloroethene	0.27457	0.25085	0.25085	0.010	-8.63923	20.00000	Averaged	
60	trans-1,3-Dichloropropene	0.49560	0.53873	0.53873	0.010	8.70283	20.00000	Averaged	
61	1,1,2-Trichloroethane	0.25789	0.27869	0.27869	0.010	8.06398	20.00000	Averaged	
62	Dibromochloromethane	0.37704	0.41141	0.41141	0.010	9.11366	20.00000	Averaged	
63	1,3-Dichloropropane	0.60434	0.63619	0.63619	0.010	5.26966	20.00000	Averaged	
64	1,2-Dibromoethane	0.30671	0.33826	0.33826	0.010	10.28829	20.00000	Averaged	
65	2-Hexanone	250	284	0.27352	0.010	13.78117	20.00000	Linear	
67	Chlorobenzene	0.92062	0.91541	0.91541	0.300	-0.56527	20.00000	Averaged	
68	Ethylbenzene	1.63671	1.64896	1.64896	0.010	0.74839	20.00000	Averaged	
69	1,1,1,2-Tetrachloroethane	0.34196	0.36276	0.36276	0.010	6.08458	20.00000	Averaged	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228859-5
Analytical Date: 05/22/18 22:57
Lab File ID : D1493.d
Instrument ID: GCMS-D
Initial Calibration Date(s): 05/22/18 08:30 05/22/18 11:28
Column ID:

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
71 m+p-Xylenes	1.24708	1.29537	1.29537	0.010	3.87256	20.00000	Averaged
72 o-Xylene	1.22932	1.32068	1.32068	0.010	7.43151	20.00000	Averaged
73 Styrene	50.00000	49.86178	0.96480	0.010	-0.27643	20.00000	Linear
74 Bromoform	0.21901	0.24845	0.24845	0.100	13.44452	20.00000	Averaged
75 Isopropylbenzene	2.69780	2.76575	2.76575	0.010	2.51876	20.00000	Averaged
79 Bromobenzene	0.73080	0.72493	0.72493	0.010	-0.80399	20.00000	Averaged
80 N-Propylbenzene	3.62532	3.58249	3.58249	0.010	-1.18136	20.00000	Averaged
81 1,1,2,2-Tetrachloroethane	0.82529	0.85660	0.85660	0.300	3.79320	20.00000	Averaged
82 1,3,5-Trimethylbenzene	2.37150	2.44657	2.44657	0.010	3.16541	20.00000	Averaged
83 2-Chlorotoluene	2.15222	2.19449	2.19449	0.010	1.96404	20.00000	Averaged
84 1,2,3-Trichloropropane	0.74500	0.80446	0.80446	0.010	7.98091	20.00000	Averaged
85 4-Chlorotoluene	2.32149	2.35468	2.35468	0.010	1.42955	20.00000	Averaged
86 tert-Butylbenzene	2.20135	2.27522	2.27522	0.010	3.35572	20.00000	Averaged
88 1,2,4-Trimethylbenzene	2.41779	2.55933	2.55933	0.010	5.85427	20.00000	Averaged
89 P-Isopropyltoluene	2.29592	2.38032	2.38032	0.010	3.67625	20.00000	Averaged
90 1,3-Dichlorobenzene	1.32445	1.31876	1.31876	0.010	-0.43013	20.00000	Averaged
92 1,4-Dichlorobenzene	1.38797	1.36196	1.36196	0.010	-1.87379	20.00000	Averaged
93 N-Butylbenzene	2.24636	2.33993	2.33993	0.010	4.16562	20.00000	Averaged
94 sec-Butylbenzene	2.83736	2.88161	2.88161	0.010	1.55934	20.00000	Averaged
95 1,2-Dichlorobenzene	1.23973	1.27777	1.27777	0.010	3.06788	20.00000	Averaged
96 1,2-Dibromo-3-Chloropropane	50.00000	50.59800	0.12718	0.010	1.19600	20.00000	Linear
98 Hexachlorobutadiene	0.35123	0.32386	0.32386	0.010	-7.79313	20.00000	Averaged
99 1,2,4-Trichlorobenzene	0.71880	0.74690	0.74690	0.010	3.91004	20.00000	Averaged
101 Naphthalene	50.00000	52.33686	1.64413	0.010	4.67372	20.00000	Linear
102 1,2,3-Trichlorobenzene	50.00000	52.89891	0.63028	0.010	5.79782	20.00000	Linear
37 Dibromofluoromethane	0.61398	0.63468	0.63468	0.010	3.37209	20.00000	Averaged
45 1,2-Dichloroethane-D4	0.89197	0.98821	0.98821	0.010	10.79014	20.00000	Averaged
55 Toluene-D8	1.23800	1.25062	1.25062	0.010	1.01972	20.00000	Averaged
76 P-Bromofluorobenzene	0.50070	0.54229	0.54229	0.010	8.30536	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG228859-5
Lab File ID : D1493.d
Initial Calibration Date(s): 05/22/18 08:30 05/22/18 11:28

SDG: SL3902
Analytical Date: 05/22/18 22:57
Instrument ID: GCMS-D
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1493.d
Report Date: 23-May-2018 11:35

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D052218B.b\D1493.d
Lab Smp Id: WG228859-5
Inj Date : 22-MAY-2018 22:57 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228859-5,SL3902
Misc Info : WG228859,WG228847-4,SL3902-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D052218B.b\D8A05(23)D.m
Meth Date : 23-May-2018 11:33 gcms-d.i Quant Type: ISTD
Cal Date : 22-MAY-2018 11:28 Cal File: D1475.d
Als bottle: 18 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

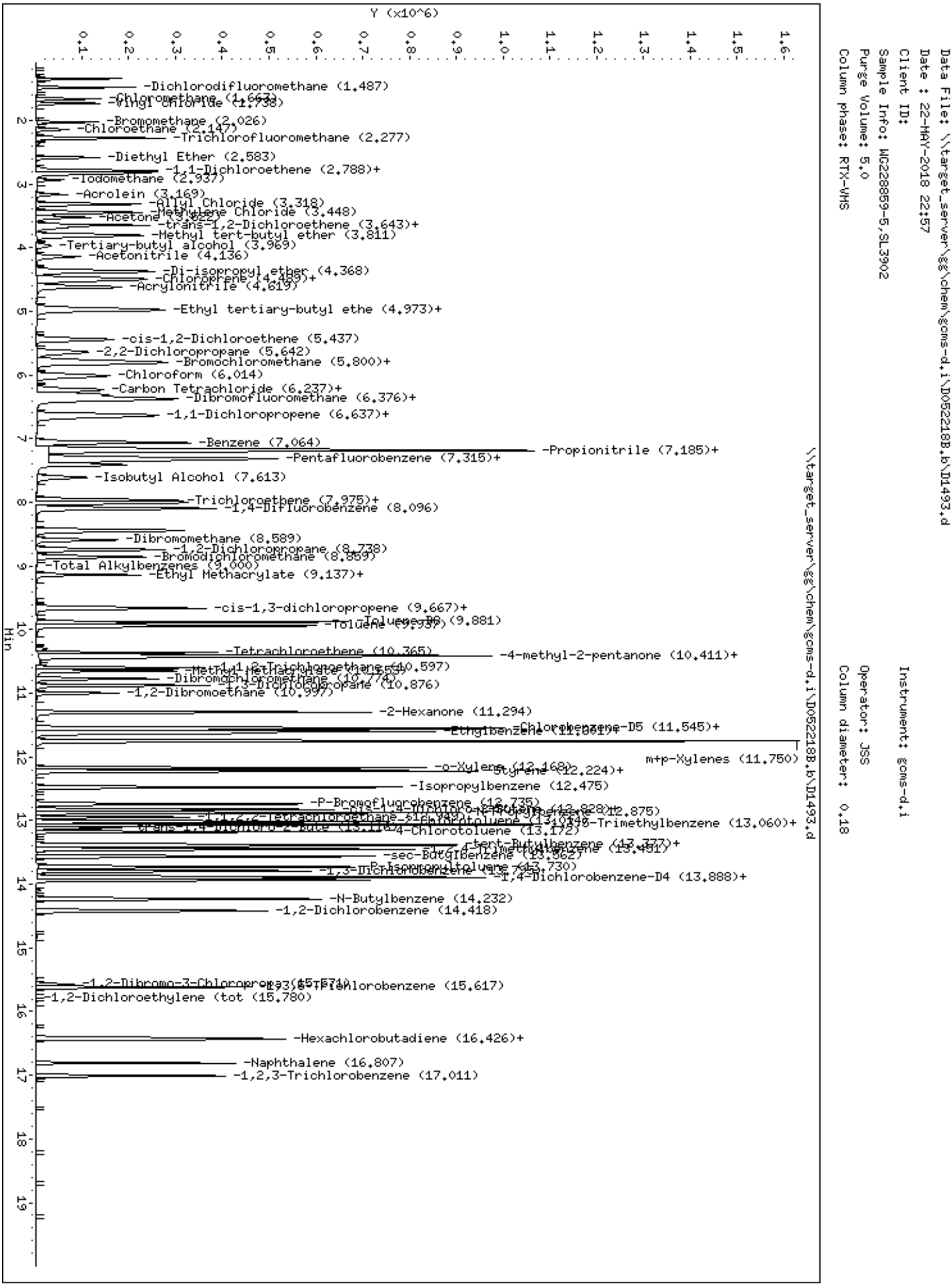
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	131177	50.0000	50.4	
2	Chloromethane	50	1.663	1.654	(0.227)	120918	50.0000	43.1	
3	Vinyl chloride	62	1.737	1.728	(0.238)	105189	50.0000	46.9	
4	Bromomethane	94	2.025	2.025	(0.277)	54038	50.0000	45.2	
5	Chloroethane	64	2.146	2.146	(0.293)	59610	50.0000	51.6	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	210396	50.0000	55.0	
7	Diethyl Ether	59	2.583	2.584	(0.353)	72648	50.0000	50.6	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	37889	250.000	272	
9	1,1-Dichloroethene	96	2.787	2.779	(0.381)	79490	50.0000	48.0	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	241024	50.0000	50.3	
11	Freon-113	151	2.834	2.835	(0.387)	62734	50.0000	51.5	
12	Iodomethane	142	2.936	2.937	(0.401)	66682	50.0000	51.6	
13	Acrolein	56	3.169	3.160	(0.433)	60581	250.000	228	
14	Methylene Chloride	84	3.448	3.448	(0.471)	112821	50.0000	48.8	
15	Acetone	43	3.522	3.522	(0.482)	187996	250.000	251	
16	Isobutyl Alcohol	43	7.612	7.604	(1.041)	86770	1000.00	1160	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	98870	50.0000	45.3	
18	Allyl Chloride	41	3.317	3.318	(0.454)	154809	50.0000	50.5	
19	Methyl tert-butyl ether	73	3.810	3.801	(0.521)	278225	50.0000	49.5	
20	Acetonitrile	39	4.135	4.136	(0.565)	31701	500.000	548	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	340001	50.0000	50.2	
22	Chloroprene	53	4.479	4.480	(0.612)	181720	50.0000	52.1	
23	Propionitrile	54	7.147	7.148	(0.977)	160245	500.000	557	
24	Methacrylonitrile	41	7.185	7.176	(0.982)	799067	500.000	578	

Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1493.d
Report Date: 23-May-2018 11:35

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	219156	50.0000	50.6	
	26	Acrylonitrile	52	4.619	4.610	(0.631)	176674	250.000	270	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	302316	50.0000	51.4	
	28	Vinyl Acetate	43	4.981	4.982	(0.615)	267359	50.0000	55.3	
	29	cis-1,2-Dichloroethene	96	5.437	5.438	(0.743)	108835	50.0000	48.2	
M	30	1,2-Dichloroethylene (total)	96				207705	50.0000	93.5	
	31	Methyl Methacrylate	41	10.652	10.643	(1.316)	115531	50.0000	54.5	
	32	2,2-Dichloropropane	77	5.641	5.642	(0.771)	124910	50.0000	38.8	
	33	Bromochloromethane	128	5.809	5.809	(0.794)	57046	50.0000	50.5	
	34	Chloroform	83	6.013	6.014	(0.822)	235019	50.0000	51.4	
	35	Carbon Tetrachloride	117	6.227	6.228	(0.769)	169718	50.0000	51.8	
	36	Tetrahydrofuran	42	6.311	6.302	(0.863)	155744	250.000	263	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	136927	50.0000	51.7	
	38	1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	202808	50.0000	51.2	
	39	1,1-Dichloropropene	75	6.627	6.618	(0.819)	160693	50.0000	50.0	
	40	2-Butanone	43	6.655	6.655	(0.910)	281939	250.000	273	
	41	Benzene	78	7.064	7.055	(0.873)	413728	50.0000	49.2	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	215742	50.0000		
	43	Cyclohexane	56	5.790	5.781	(0.792)	160789	50.0000	50.2	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	73729	50.0000	50.9	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	213199	50.0000	55.4	
	46	Tertiary-amyl methyl ether	73	7.343	7.334	(1.004)	249653	50.0000	50.3	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	220928	50.0000	53.6	
	48	Trichloroethene	95	8.003	8.003	(0.989)	122556	50.0000	51.9	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	346333	50.0000		
	50	Dibromomethane	93	8.588	8.589	(1.061)	85735	50.0000	53.6	
	51	1,2-Dichloropropane	63	8.737	8.738	(1.079)	118121	50.0000	51.1	
	52	Bromodichloromethane	83	8.858	8.849	(1.094)	183717	50.0000	54.8	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	202808	50.0000	48.3	
	54	1,4-Dioxane	88	9.137	9.137	(1.129)	18732	1000.00	1110	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	433131	50.0000	50.5	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	57868	50.0000	47.7	
	57	Toluene	92	9.936	9.937	(1.227)	254880	50.0000	50.1	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	627290	250.000	296	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	80915	50.0000	45.7	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	186580	50.0000	54.4	
	61	1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	96520	50.0000	54.0	
	62	Dibromochloromethane	129	10.773	10.774	(0.934)	132703	50.0000	54.6	
	63	1,3-Dichloropropane	76	10.875	10.876	(0.943)	205208	50.0000	52.6	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	117151	50.0000	55.1	
	65	2-Hexanone	43	11.294	11.294	(0.979)	441125	250.000	284	
*	66	Chlorobenzene-D5	117	11.535	11.536	(1.000)	322559	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.002)	295275	50.0000	49.7	
	68	Ethylbenzene	91	11.600	11.601	(1.006)	531887	50.0000	50.4	
	69	1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	117012	50.0000	53.0	
M	70	Xylenes (total)	106				1261664	150.000	158	
	71	m+p-Xylenes	91	11.749	11.750	(1.019)	835668	100.000	104	
	72	o-Xylene	91	12.168	12.168	(1.055)	425996	50.0000	53.7	
	73	Styrene	104	12.223	12.224	(1.060)	311205	50.0000	49.9	
	74	Bromoform	173	12.233	12.233	(1.060)	80140	50.0000	56.7	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	472305	50.0000	51.2	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	187812	50.0000	54.2	
	77	cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	46553	50.0000	48.8	
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	38704	50.0000	54.5	

Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1493.d
Report Date: 23-May-2018 11:35

		QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
Compounds									
79	Bromobenzene	156	12.828	12.828	(0.924)	123795	50.0000	49.6	
80	N-Propylbenzene	91	12.874	12.875	(0.928)	611778	50.0000	49.4	
81	1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	146280	50.0000	51.9	
82	1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	417798	50.0000	51.6	
83	2-Chlorotoluene	91	13.014	13.014	(0.938)	374751	50.0000	51.0	
84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	137377	50.0000	54.0	
85	4-Chlorotoluene	91	13.172	13.172	(0.949)	402106	50.0000	50.7	
86	tert-Butylbenzene	119	13.376	13.377	(0.964)	388537	50.0000	51.7	
87	Pentachloroethane	117	13.395	13.395	(0.965)	94165	50.0000	54.8	
88	1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	437055	50.0000	52.9	
89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	406485	50.0000	51.8	
90	1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	225203	50.0000	49.8	
* 91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	170769	50.0000		
92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	232581	50.0000	49.1	
93	N-Butylbenzene	91	14.231	14.232	(1.025)	399588	50.0000	52.1	
94	sec-Butylbenzene	105	13.562	13.563	(0.977)	492089	50.0000	50.8	
95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	218203	50.0000	51.5	
96	1,2-Dibromo-3-Chloropropane	157	15.570	15.571	(1.122)	21719	50.0000	50.6	
97	1,3,5-Trichlorobenzene	180	15.616	15.617	(1.125)	146185	50.0000	50.3	
98	Hexachlorobutadiene	225	16.416	16.407	(1.183)	55305	50.0000	46.1	
99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	127548	50.0000	52.0	
100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	436535	50.0000	51.8	
101	Naphthalene	128	16.806	16.806	(1.211)	280766	50.0000	52.3	
102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	107633	50.0000	52.9	
103	Methyl Acetate	43	3.689	3.690	(0.504)	94002	50.0000	52.1	
104	Methylcyclohexane	83	7.966	7.966	(1.089)	154477	50.0000	52.2	
M 153	Total Alkylbenzenes	100				3153330	50.0000	360	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Date : 22-MAY-2018 22:57
Client ID:
Sample Info: WG228859-5,SL3902
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D052218B.b\D1493.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)
-Vinyl Chloride (1.738)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.583)
-1,1-Dichloroethene (2.788)+
-Iodomethane (2.937)
-Acrolein (3.169)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.622)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.489)+
-Acrylonitrile (4.619)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.437)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)+
-Dibromofluoromethane (6.376)+
-1,1-Dichloropropene (6.637)+
-Benzene (7.064)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.975)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.859)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)+
-Toluene (9.937)
-Toluene-D8 (9.881)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.411)+
-1,1,2-Trichloroethane (10.597)
-Methyl Methacrylate (10.653)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-Ethylbenzene (11.661)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-Bromoform (12.828)
-cis-1,4-Dichloro-2-Butene (12.875)
-1,1,2,2-Tetrachloroethane (12.949)
-1,2,3-Trimethylbenzene (13.060)+
-trans-1,4-Dichloro-2-Bute (13.116)
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.377)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.562)
-P-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.795)
-1,4-Dichlorobenzene-D4 (13.888)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropa (15.571)
-1,3,5-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)

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Date : 10-MAY-2018 07:31

Client ID:

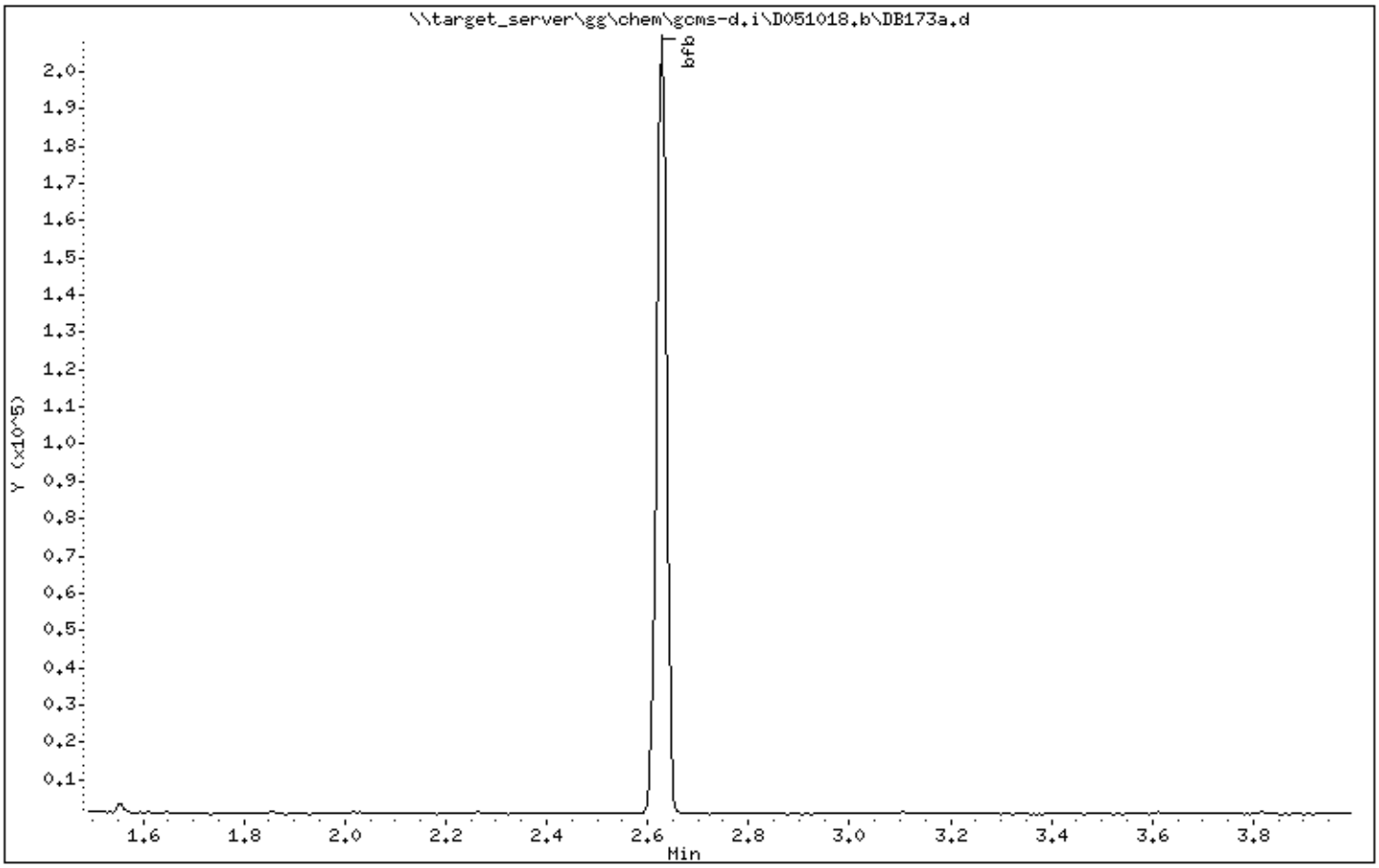
Instrument: gcms-d.i

Sample Info: WG227999-10,SL3902

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18



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Date : 10-MAY-2018 07:31

Client ID:

Instrument: gcms-d.i

Sample Info: WG227999-10,SL3902

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18

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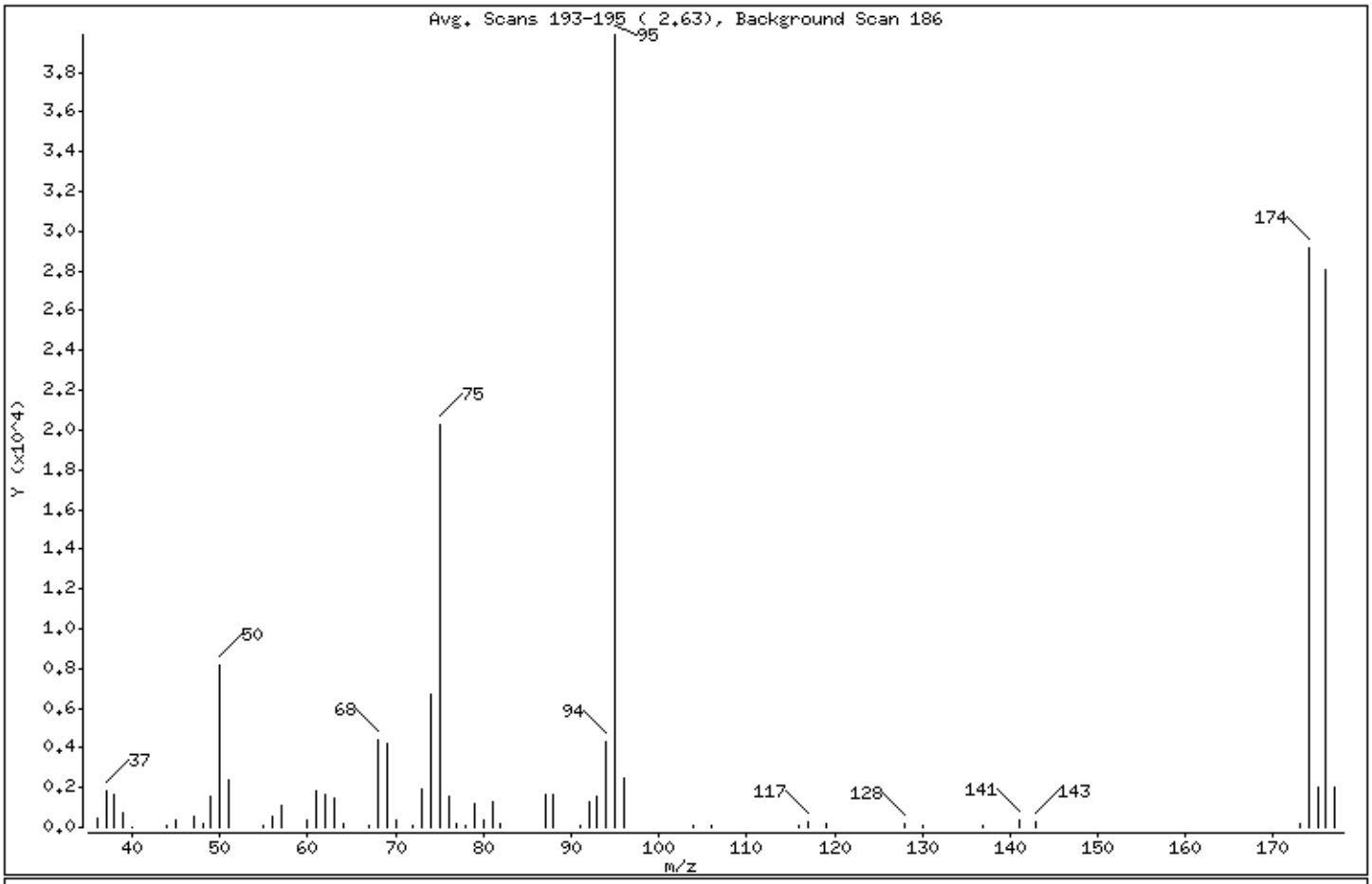


m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	20.46
75	30.00 - 60.00% of mass 95	50.88
96	5.00 - 9.00% of mass 95	6.32
173	Less than 2.00% of mass 174	0.38 (0.51)
174	Greater than 50.00% of mass 95	73.06
175	5.00 - 9.00% of mass 174	4.94 (6.77)
176	95.00 - 101.00% of mass 174	70.32 (96.24)
177	5.00 - 9.00% of mass 176	5.09 (7.24)

Date : 10-MAY-2018 07:31

Client ID: Instrument: gcms-d.i

Sample Info: WG227999-10,SL3902

Operator: JSS

Column phase: RTX-VMS Column diameter: 0.18

Data File: DB173a.d
Spectrum: Avg. Scans 193-195 (2.63), Background Scan 186
Location of Maximum: 95.00
Number of points: 58

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	435	60.00	338	78.00	66	116.00	107
37.00	1821	61.00	1822	79.00	1175	117.00	244
38.00	1677	62.00	1652	80.00	343	119.00	146
39.00	701	63.00	1453	81.00	1254	128.00	158
40.00	30	64.00	208	82.00	166	130.00	52
44.00	130	67.00	80	87.00	1639	137.00	53
45.00	339	68.00	4378	88.00	1692	141.00	409
47.00	521	69.00	4229	91.00	115	143.00	306
48.00	225	70.00	359	92.00	1286	173.00	150
49.00	1557	72.00	83	93.00	1592	174.00	29144
50.00	8160	73.00	1901	94.00	4342	175.00	1972
51.00	2418	74.00	6709	95.00	39888	176.00	28048
55.00	51	75.00	20296	96.00	2520	177.00	2032
56.00	590	76.00	1590	104.00	102		
57.00	1075	77.00	227	106.00	112		

Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\DB179a.d

Date : 16-MAY-2018 12:14

Client ID:

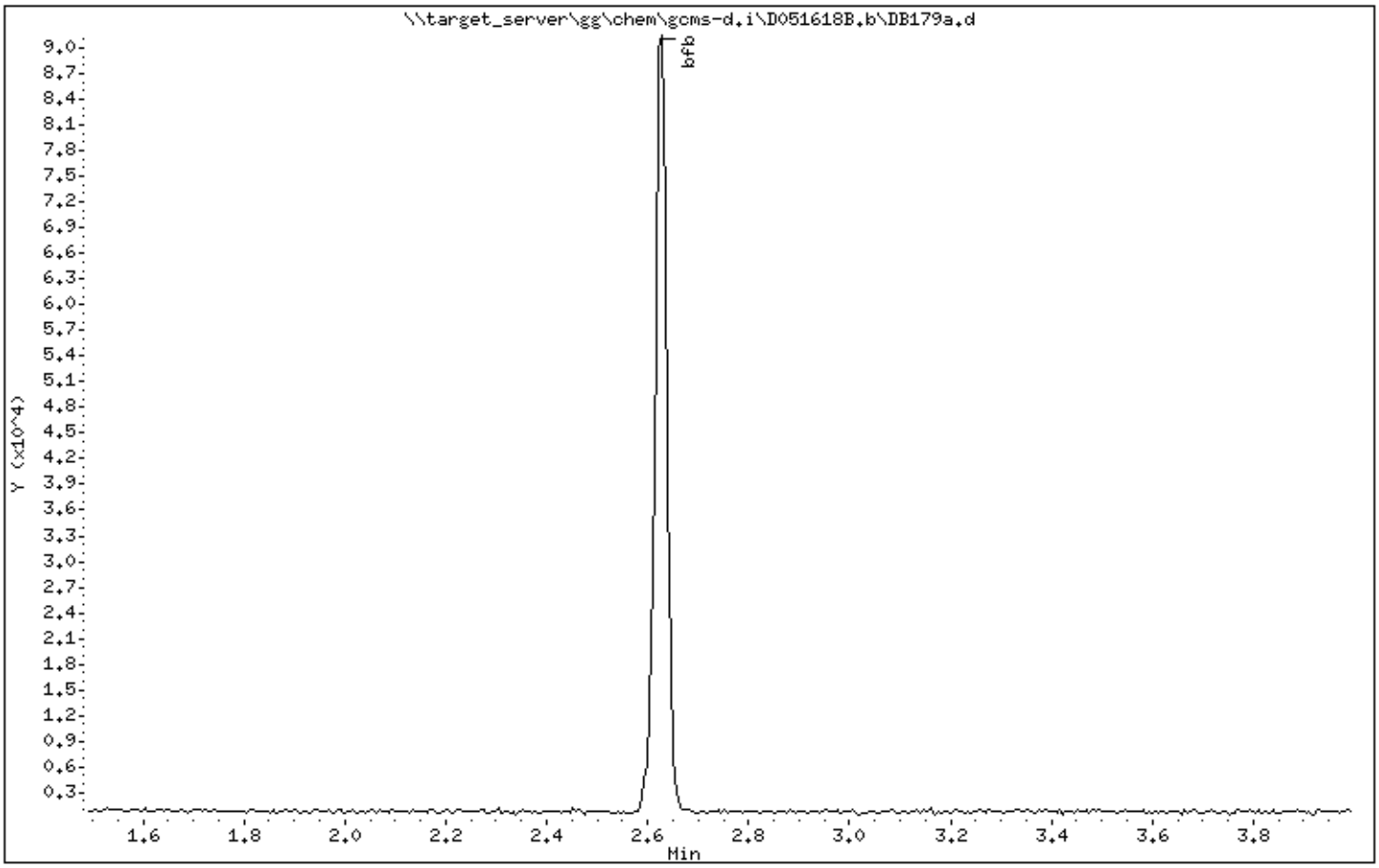
Instrument: gcms-d.i

Sample Info: WG228421-3,SL3902

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\DB179a.d

Date : 16-MAY-2018 12:14

Client ID:

Instrument: gcms-d.i

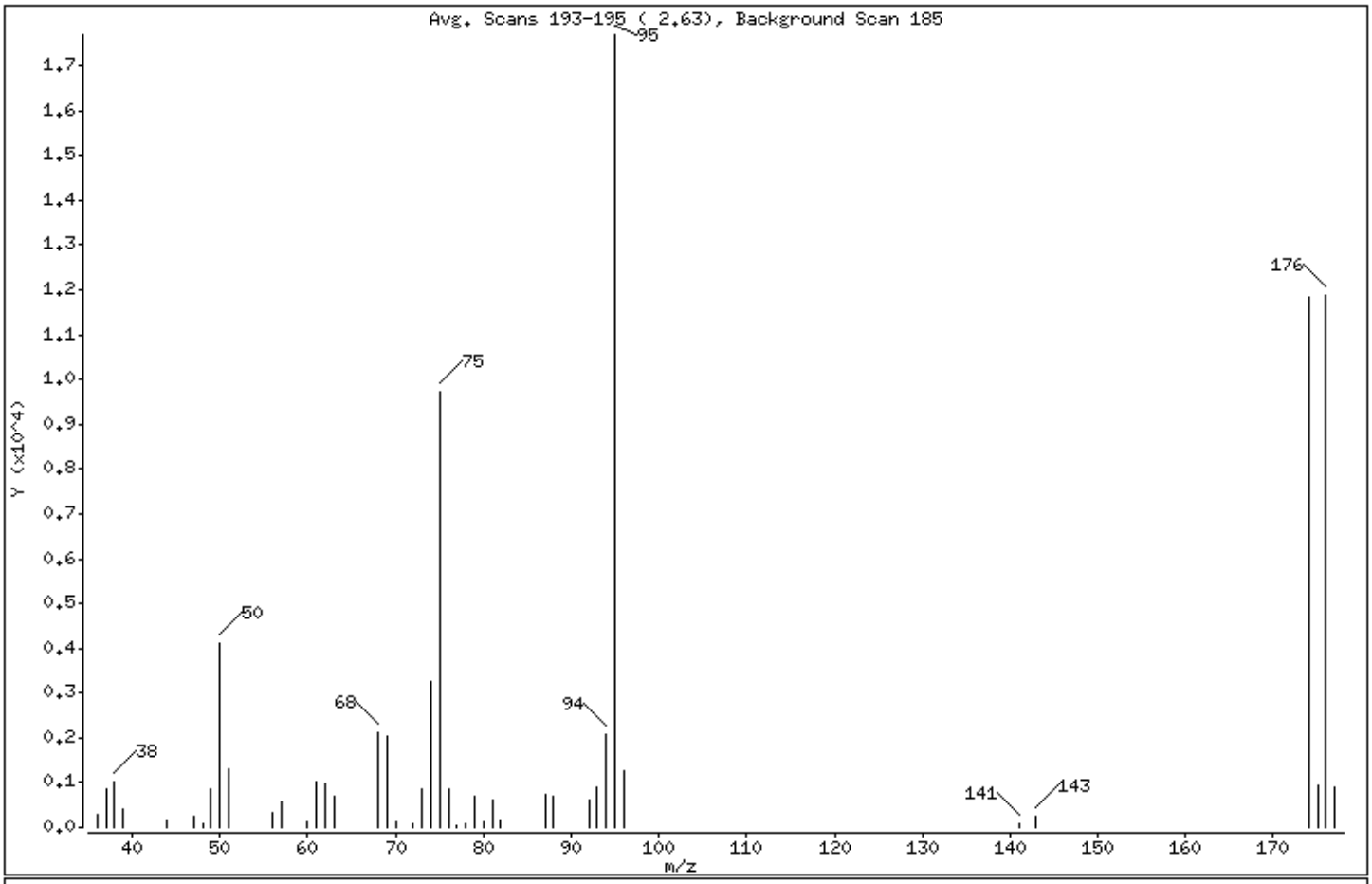
Sample Info: WG228421-3,SL3902

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	23.27
75	30.00 - 60.00% of mass 95	55.00
96	5.00 - 9.00% of mass 95	7.18
173	Less than 2.00% of mass 174	0.00 (0.00)
174	Greater than 50.00% of mass 95	66.96
175	5.00 - 9.00% of mass 174	5.32 (7.95)
176	95.00 - 101.00% of mass 174	67.02 (100.09)
177	5.00 - 9.00% of mass 176	5.08 (7.58)

Date : 16-MAY-2018 12:14

Client ID: Instrument: gcms-d.i

Sample Info: WG228421-3,SL3902

Operator: JSS

Column phase: RTX-VMS Column diameter: 0.18

Data File: DB179a.d
Spectrum: Avg. Scans 193-195 (2.63), Background Scan 185
Location of Maximum: 95.00
Number of points: 43

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	280	57.00	578	75.00	9732	93.00	877
37.00	840	60.00	126	76.00	863	94.00	2088
38.00	1015	61.00	1033	77.00	50	95.00	17696
39.00	411	62.00	956	78.00	79	96.00	1271
44.00	150	63.00	673	79.00	701	141.00	73
47.00	231	68.00	2103	80.00	117	143.00	262
48.00	65	69.00	2019	81.00	606	174.00	11849
49.00	861	70.00	118	82.00	159	175.00	942
50.00	4117	72.00	62	87.00	745	176.00	11860
51.00	1293	73.00	870	88.00	673	177.00	899
56.00	309	74.00	3264	92.00	623		

Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\DB180A.d

Date : 17-MAY-2018 07:31

Client ID:

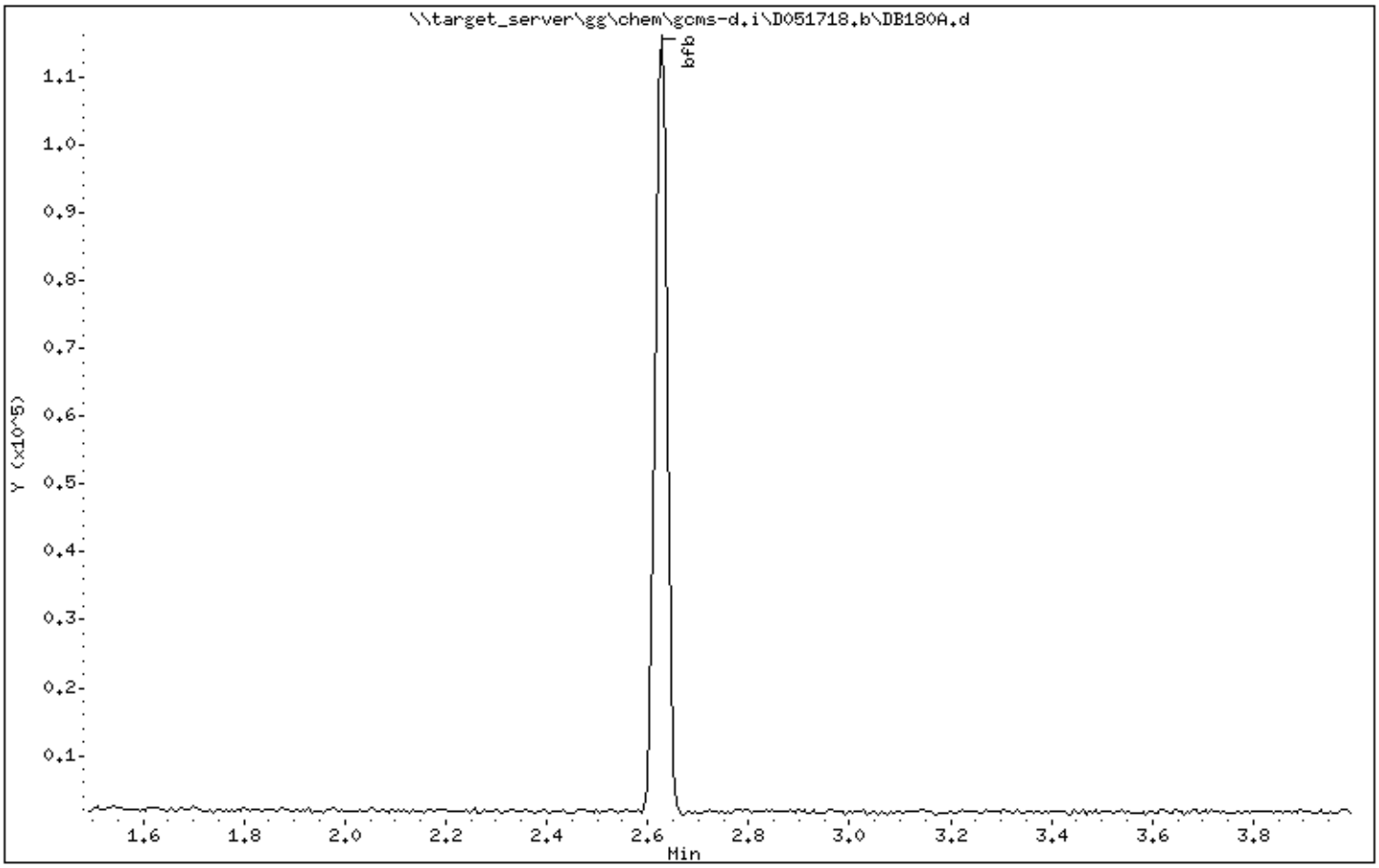
Instrument: gcms-d.i

Sample Info: WG228547-7,SL3902

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\DB180A.d

Date : 17-MAY-2018 07:31

Client ID:

Instrument: gcms-d.i

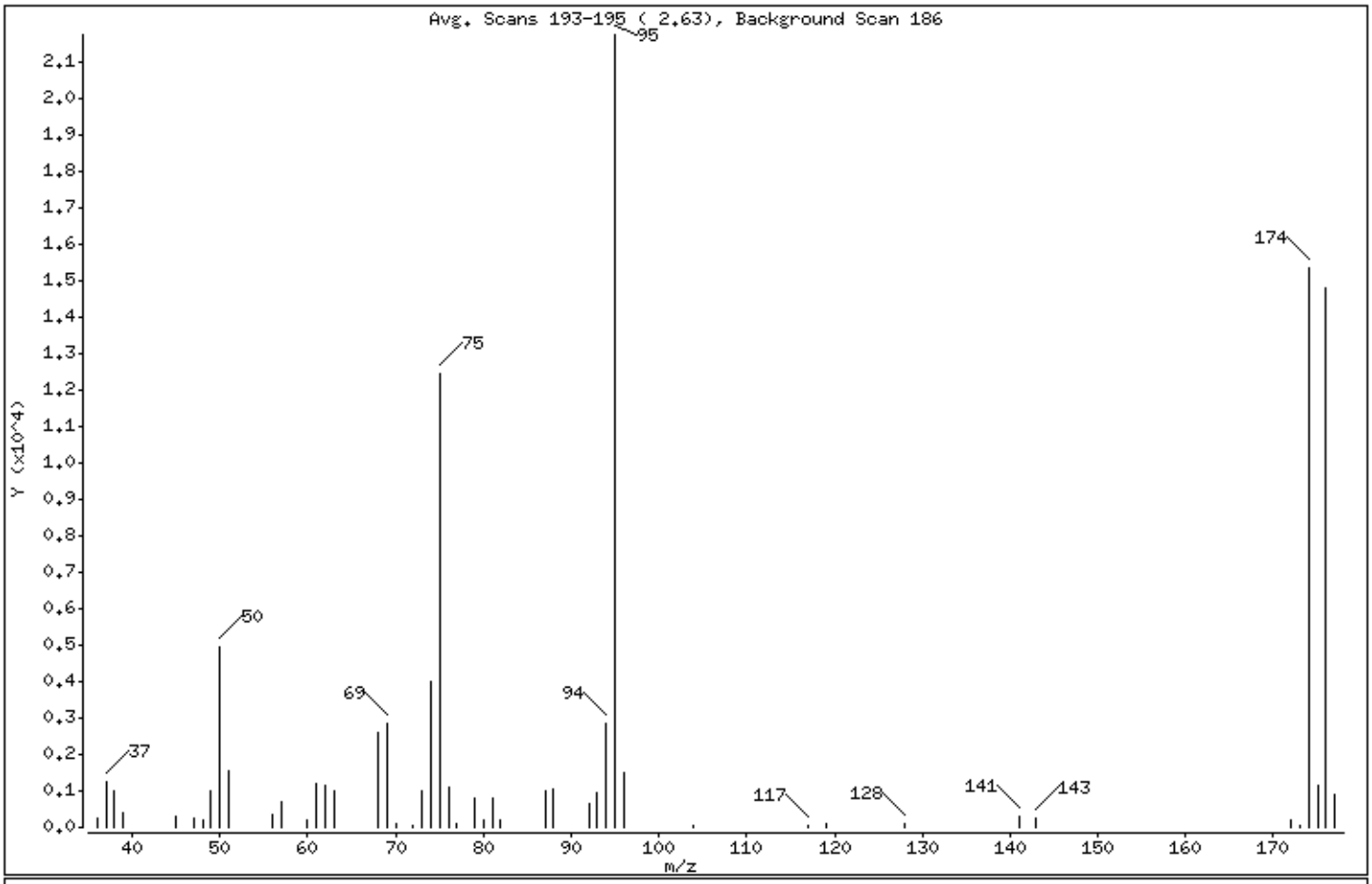
Sample Info: WG228547-7,SL3902

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	22.71
75	30.00 - 60.00% of mass 95	57.31
96	5.00 - 9.00% of mass 95	6.79
173	Less than 2.00% of mass 174	0.24 (0.34)
174	Greater than 50.00% of mass 95	70.66
175	5.00 - 9.00% of mass 174	5.37 (7.60)
176	95.00 - 101.00% of mass 174	68.02 (96.27)
177	5.00 - 9.00% of mass 176	4.12 (6.06)

Data File: \\target_server\gg\chem\gcms-d.i\D051718.b\DB180A.d

Date : 17-MAY-2018 07:31

Client ID:

Instrument: gcms-d.i

Sample Info: WG228547-7,SL3902

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18

Data File: DB180A.d
Spectrum: Avg. Scans 193-195 (2.63), Background Scan 186
Location of Maximum: 95.00
Number of points: 48

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	227	61.00	1184	80.00	202	128.00	121
37.00	1268	62.00	1174	81.00	802	141.00	308
38.00	1006	63.00	1007	82.00	225	143.00	275
39.00	409	68.00	2619	87.00	1001	172.00	223
45.00	288	69.00	2850	88.00	1036	173.00	53
47.00	275	70.00	119	92.00	674	174.00	15369
48.00	210	72.00	62	93.00	972	175.00	1168
49.00	980	73.00	1006	94.00	2848	176.00	14795
50.00	4940	74.00	4025	95.00	21752	177.00	896
51.00	1527	75.00	12467	96.00	1477		
56.00	370	76.00	1081	104.00	65		
57.00	714	77.00	87	117.00	56		
60.00	198	79.00	807	119.00	120		

Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\DB181.d

Date : 17-MAY-2018 11:45

Client ID:

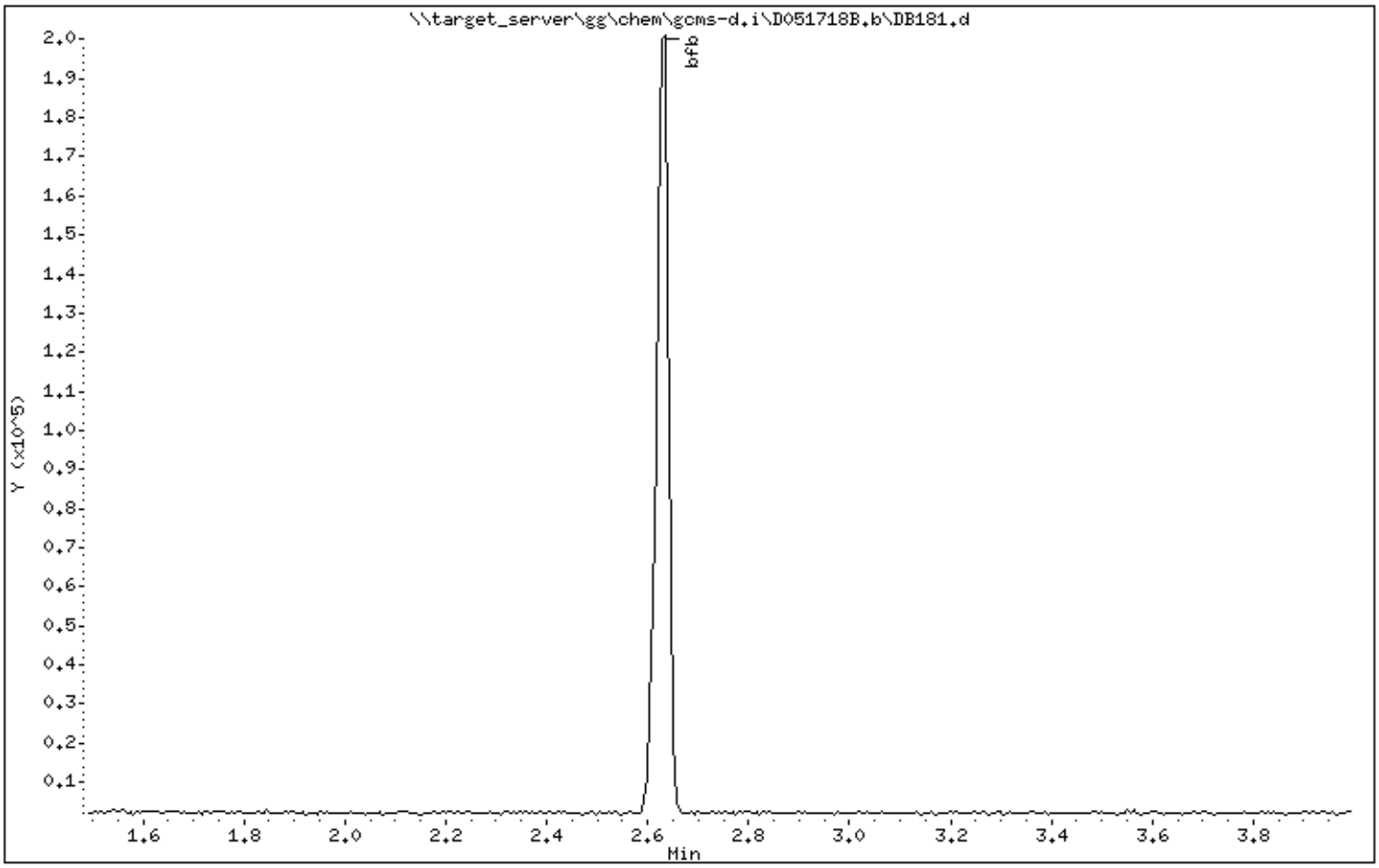
Instrument: gcms-d.i

Sample Info: WG228566-3,SL3902

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\DB181.d

Date : 17-MAY-2018 11:45

Client ID:

Instrument: gcms-d.i

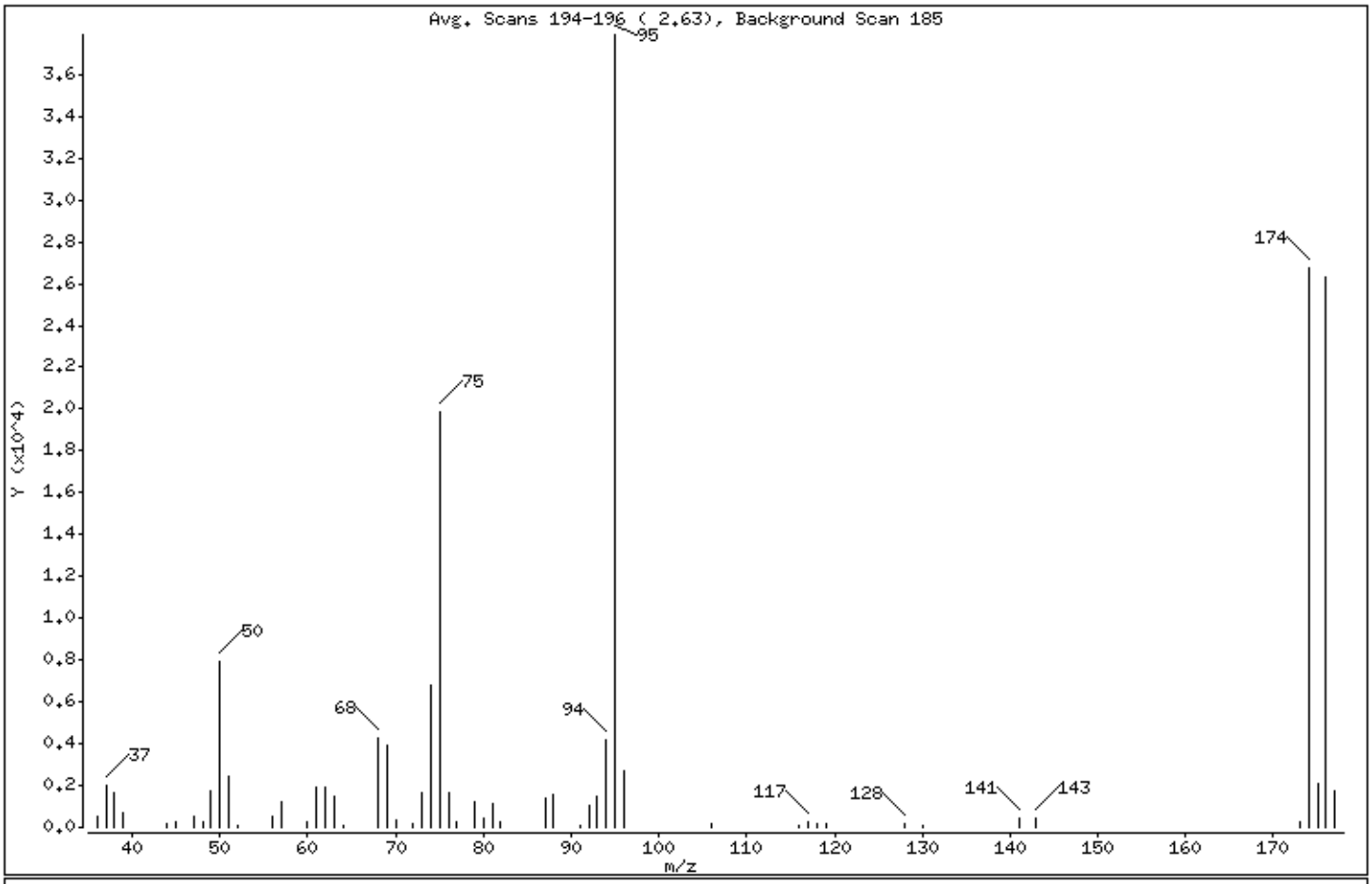
Sample Info: WG228566-3,SL3902

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	21.00
75	30.00 - 60.00% of mass 95	52.48
96	5.00 - 9.00% of mass 95	7.03
173	Less than 2.00% of mass 174	0.60 (0.85)
174	Greater than 50.00% of mass 95	70.55
175	5.00 - 9.00% of mass 174	5.55 (7.87)
176	95.00 - 101.00% of mass 174	69.39 (98.35)
177	5.00 - 9.00% of mass 176	4.68 (6.74)

Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\DB181.d

Date : 17-MAY-2018 11:45

Client ID:

Instrument: gcms-d.i

Sample Info: WG228566-3,SL3902

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18

Data File: DB181.d
Spectrum: Avg. Scans 194-196 (2.63), Background Scan 185
Location of Maximum: 95.00
Number of points: 54

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	480	60.00	293	79.00	1221	117.00	271
37.00	1963	61.00	1894	80.00	449	118.00	149
38.00	1685	62.00	1902	81.00	1155	119.00	153
39.00	671	63.00	1478	82.00	281	128.00	201
44.00	132	64.00	95	87.00	1416	130.00	63
45.00	297	68.00	4284	88.00	1563	141.00	400
47.00	507	69.00	3939	91.00	74	143.00	398
48.00	299	70.00	309	92.00	1009	173.00	227
49.00	1703	72.00	194	93.00	1505	174.00	26736
50.00	7958	73.00	1691	94.00	4173	175.00	2103
51.00	2412	74.00	6826	95.00	37896	176.00	26296
52.00	81	75.00	19888	96.00	2664	177.00	1772
56.00	552	76.00	1650	106.00	198		
57.00	1185	77.00	282	116.00	129		

Data File: \\target_server\gg\chem\gcms-d.i\D052218.b\DB188a.d

Date : 22-MAY-2018 08:04

Client ID:

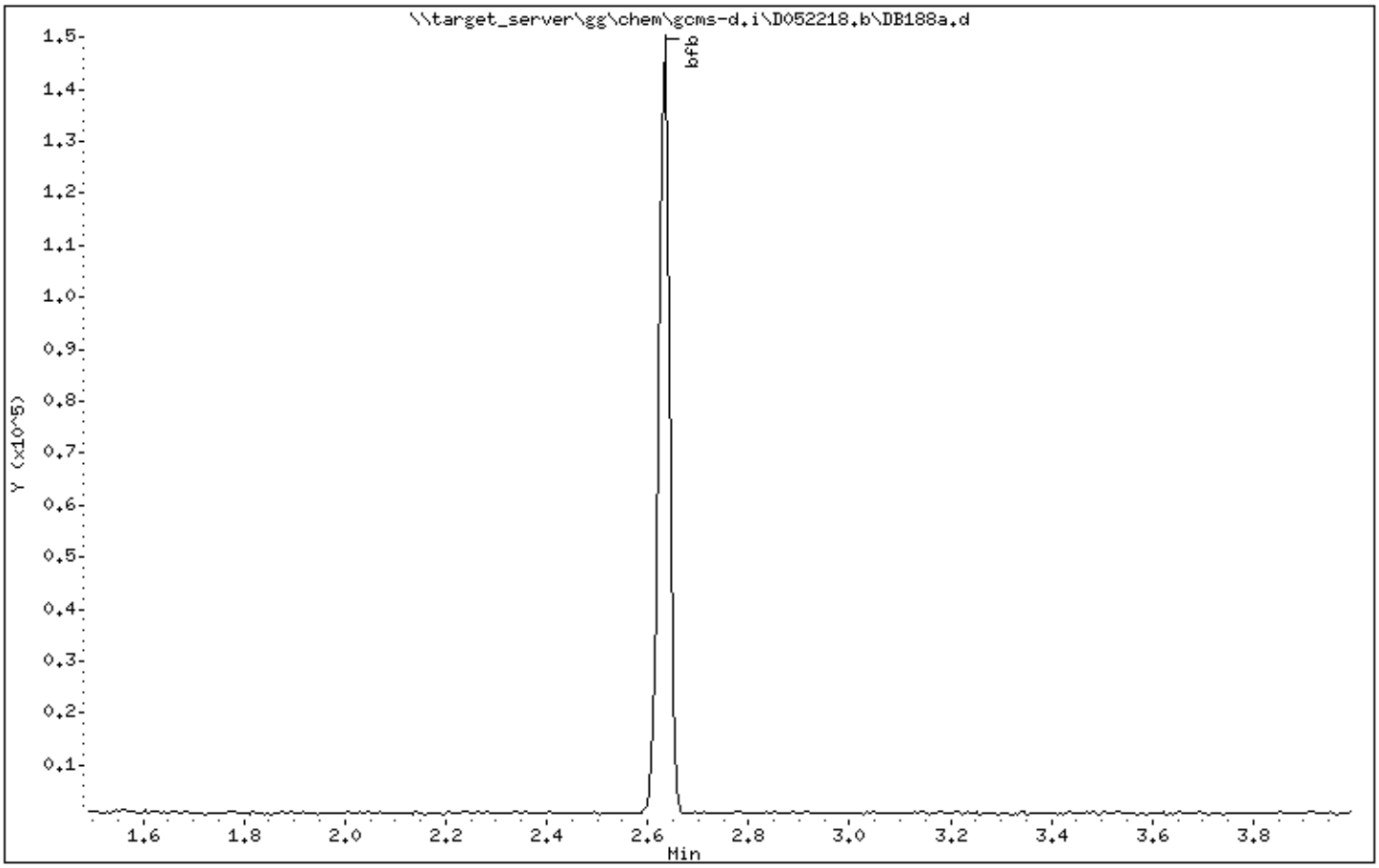
Instrument: gcms-d.i

Sample Info: WG228847-7,SL3901

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-d.i\D052218.b\DB188a.d

Date : 22-MAY-2018 08:04

Client ID:

Instrument: gcms-d.i

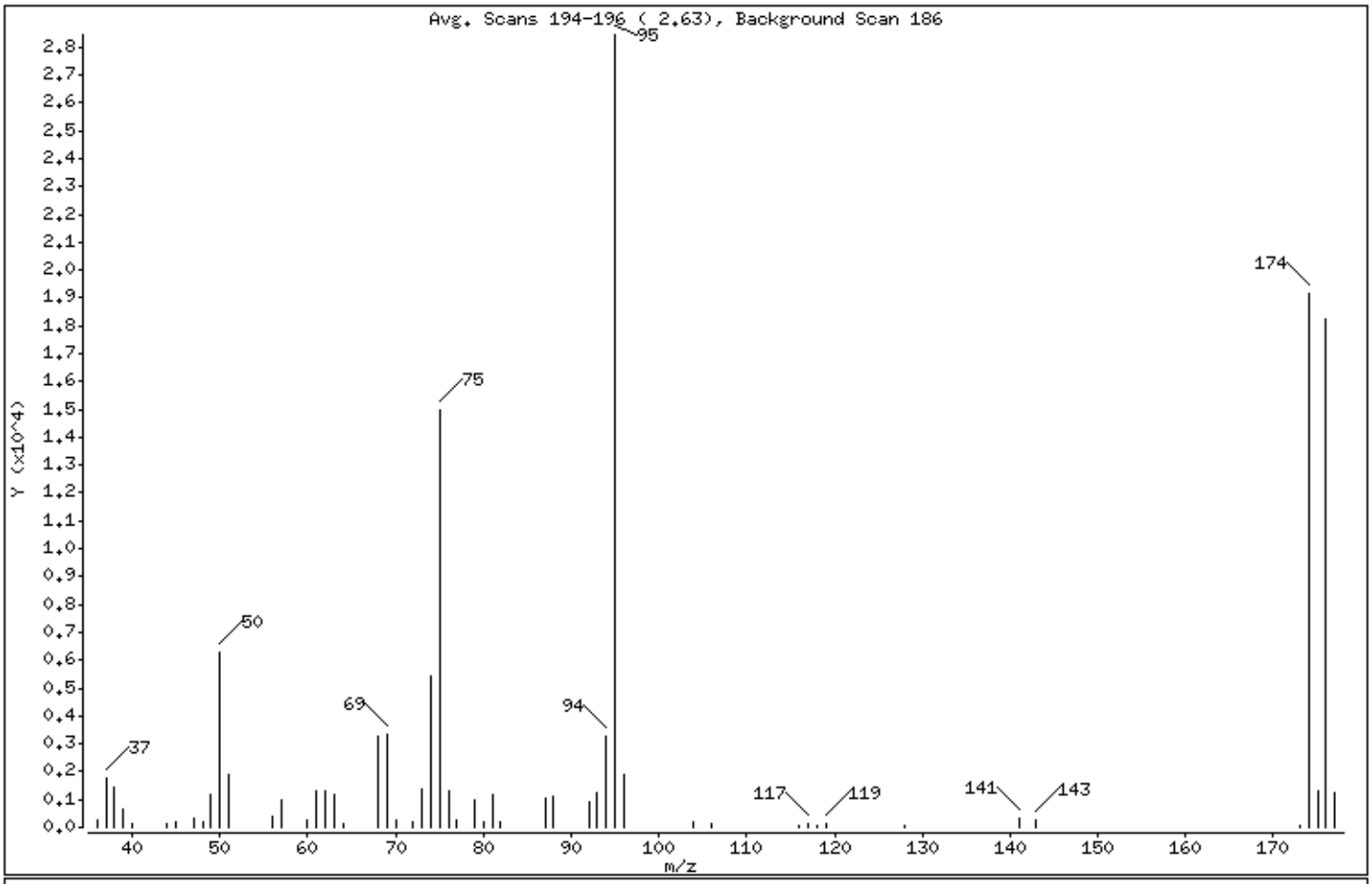
Sample Info: WG228847-7,SL3901

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	22.06
75	30.00 - 60.00% of mass 95	52.73
96	5.00 - 9.00% of mass 95	6.66
173	Less than 2.00% of mass 174	0.20 (0.30)
174	Greater than 50.00% of mass 95	67.43
175	5.00 - 9.00% of mass 174	4.54 (6.74)
176	95.00 - 101.00% of mass 174	64.11 (95.08)
177	5.00 - 9.00% of mass 176	4.27 (6.65)

Date : 22-MAY-2018 08:04

Client ID:

Instrument: gcms-d.i

Sample Info: WG228847-7,SL3901

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18

Data File: DB188a.d
Spectrum: Avg. Scans 194-196 (2.63), Background Scan 186
Location of Maximum: 95.00
Number of points: 53

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	286	60.00	257	79.00	998	117.00	138
37.00	1756	61.00	1338	80.00	200	118.00	74
38.00	1439	62.00	1320	81.00	1173	119.00	117
39.00	665	63.00	1167	82.00	206	128.00	62
40.00	143	64.00	107	87.00	1024	141.00	329
44.00	126	68.00	3254	88.00	1124	143.00	292
45.00	224	69.00	3366	92.00	892	173.00	57
47.00	325	70.00	267	93.00	1224	174.00	19176
48.00	183	72.00	168	94.00	3275	175.00	1292
49.00	1157	73.00	1369	95.00	28440	176.00	18232
50.00	6273	74.00	5410	96.00	1894	177.00	1213
51.00	1884	75.00	14996	104.00	179		
56.00	408	76.00	1302	106.00	109		
57.00	978	77.00	236	116.00	57		

Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\DB189a.D

Date : 22-MAY-2018 12:02

Client ID:

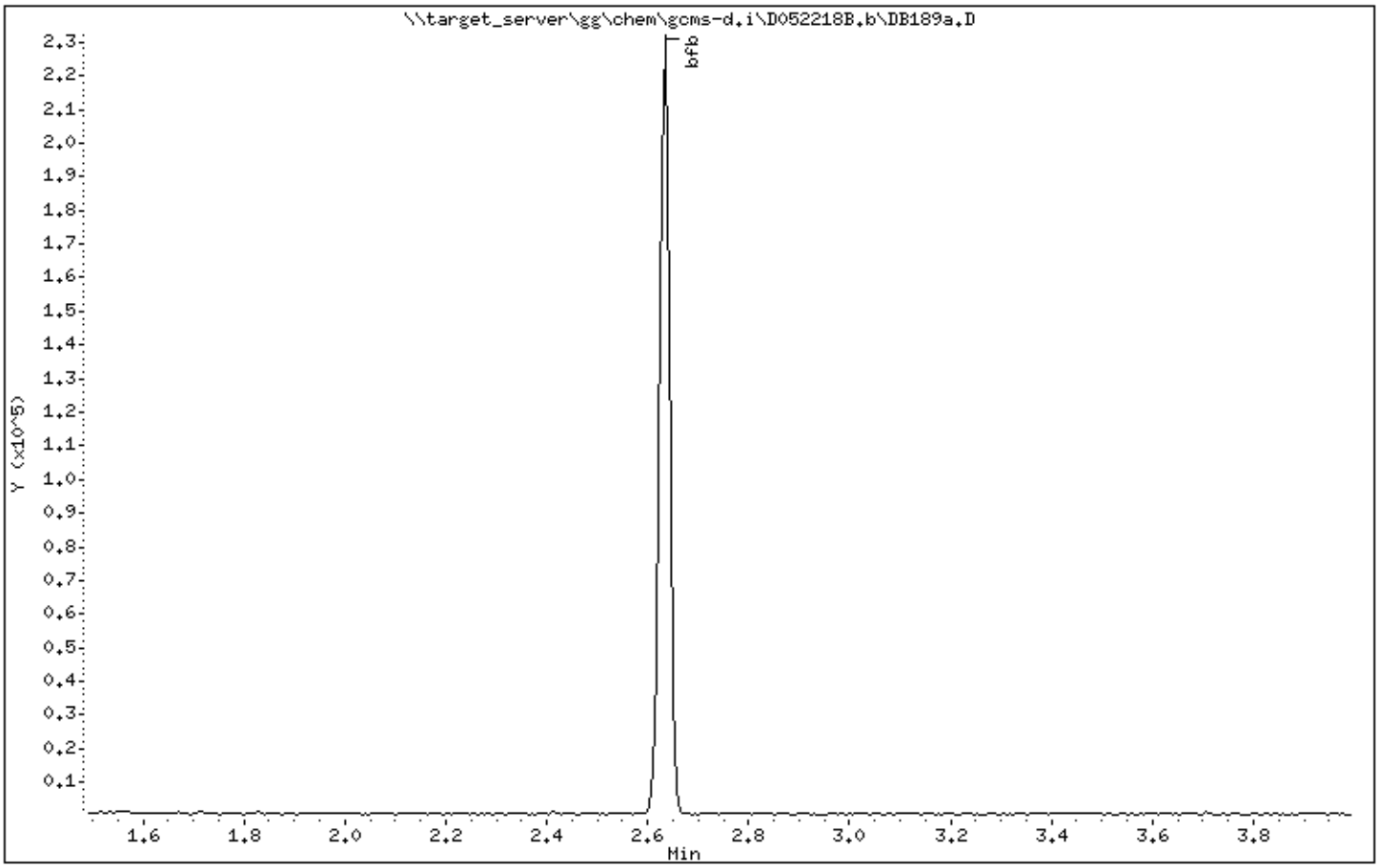
Instrument: gcms-d.i

Sample Info: WG228859-3,SL3902

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\DB189a.D

Date : 22-MAY-2018 12:02

Client ID:

Instrument: gcms-d.i

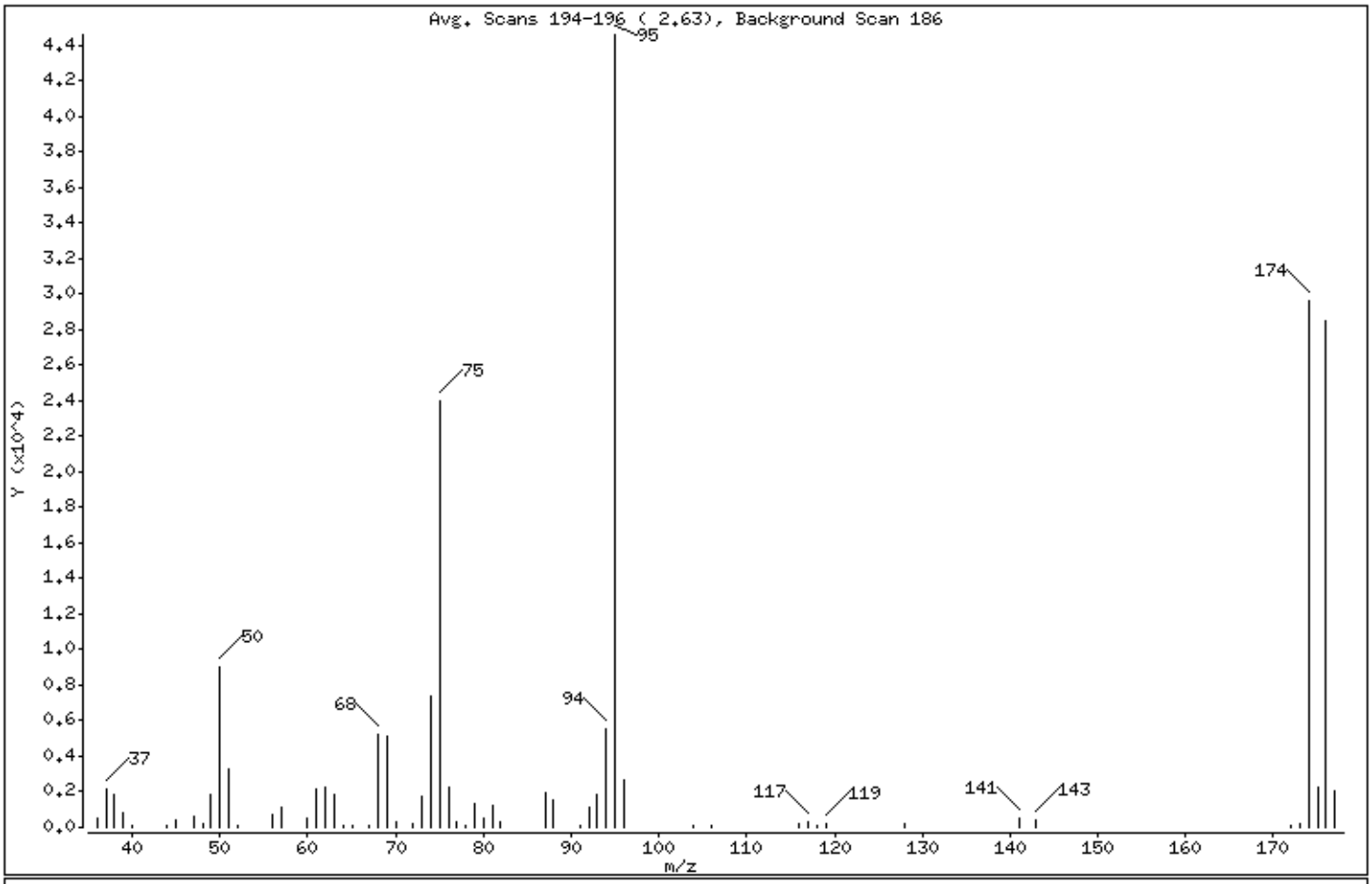
Sample Info: WG228859-3,SL3902

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	20.34
75	30.00 - 60.00% of mass 95	53.88
96	5.00 - 9.00% of mass 95	5.88
173	Less than 2.00% of mass 174	0.35 (0.53)
174	Greater than 50.00% of mass 95	66.40
175	5.00 - 9.00% of mass 174	5.10 (7.67)
176	95.00 - 101.00% of mass 174	63.96 (96.33)
177	5.00 - 9.00% of mass 176	4.57 (7.14)

Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\DB189a.D

Date : 22-MAY-2018 12:02

Client ID:

Instrument: gcms-d.i

Sample Info: WG228859-3,SL3902

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18

Data File: DB189a.D
Spectrum: Avg. Scans 194-196 (2.63), Background Scan 186
Location of Maximum: 95.00
Number of points: 59

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	546	60.00	462	77.00	314	106.00	131
37.00	2182	61.00	2103	78.00	137	116.00	198
38.00	1882	62.00	2251	79.00	1322	117.00	261
39.00	822	63.00	1796	80.00	516	118.00	61
40.00	83	64.00	59	81.00	1241	119.00	217
44.00	55	65.00	56	82.00	275	128.00	166
45.00	427	67.00	121	87.00	1953	141.00	483
47.00	618	68.00	5246	88.00	1580	143.00	456
48.00	193	69.00	5105	91.00	128	172.00	54
49.00	1864	70.00	354	92.00	1165	173.00	157
50.00	9070	72.00	161	93.00	1874	174.00	29616
51.00	3246	73.00	1749	94.00	5526	175.00	2273
52.00	138	74.00	7422	95.00	44600	176.00	28528
56.00	706	75.00	24032	96.00	2621	177.00	2037
57.00	1130	76.00	2303	104.00	118		

Raw QC Data Section

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG228421-2
Client ID: Method Blank Sample
Project:
SDG: SL3902
Lab File ID: D1331.D

Sample Date:
Received Date:
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG228421-2
Client ID: Method Blank Sample
Project:
SDG: SL3902
Lab File ID: D1331.D

Sample Date:
Received Date:
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		108.	%					
1,2-Dichloroethane-d4		119.	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG228421-2
Client ID: Method Blank Sample
Project:
SDG: SL3902
Lab File ID: D1331.D

Sample Date:
Received Date:
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		99.2	%					
P-Bromofluorobenzene		98.7	%					

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Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1331.d
Report Date: 21-May-2018 14:26

Katahdin Analytical Services

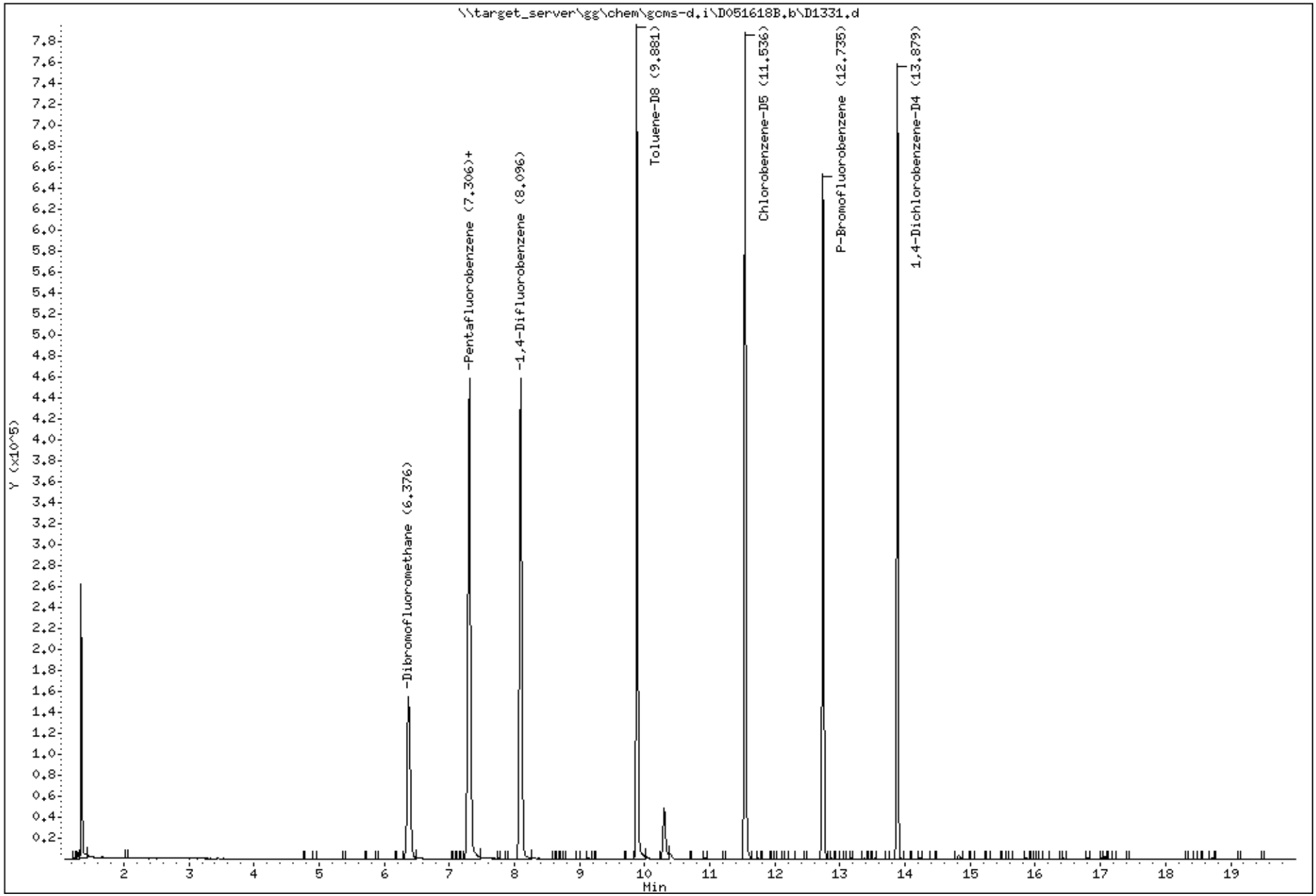
Data file : \\target_server\gg\chem\gcms-d.i\D051618B.b\D1331.d
Lab Smp Id: WG228421-2
Inj Date : 16-MAY-2018 14:47 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228421-2,SL3902
Misc Info : WG228421,WG227999-4,SL3902-1
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-d.i\D051618B.b\D8A05(21)D.m
Meth Date : 21-May-2018 14:24 gcms-d.i Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 4 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	163490	53.7538	53.8	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	258692	50.0000		
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	229617	59.7090	59.7	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	435671	50.0000		
$	55 Toluene-D8	98	9.881	9.881	(1.220)	526753	49.5780	49.6	
*	66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	395426	50.0000		
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	209354	49.3630	49.4	
*	91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	192344	50.0000		

Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1331.d
Date : 16-MAY-2018 14:47
Client ID:
Instrument: gcms-d.i
Sample Info: WG228421-2,SL3902



Katahdin Analytical Services 1000228

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG228566-2
Client ID: Method Blank Sample
Project:
SDG: SL3902
Lab File ID: D1360.D

Sample Date:
Received Date:
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG228566-2
Client ID: Method Blank Sample
Project:
SDG: SL3902
Lab File ID: D1360.D

Sample Date:
Received Date:
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		97.1	%					
1,2-Dichloroethane-d4		98.4	%					

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Report of Analytical Results

Client:
Lab ID: WG228566-2
Client ID: Method Blank Sample
Project:
SDG: SL3902
Lab File ID: D1360.D

Sample Date:
Received Date:
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		98.4	%					
P-Bromofluorobenzene		95.6	%					

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Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1360.d
Report Date: 21-May-2018 14:32

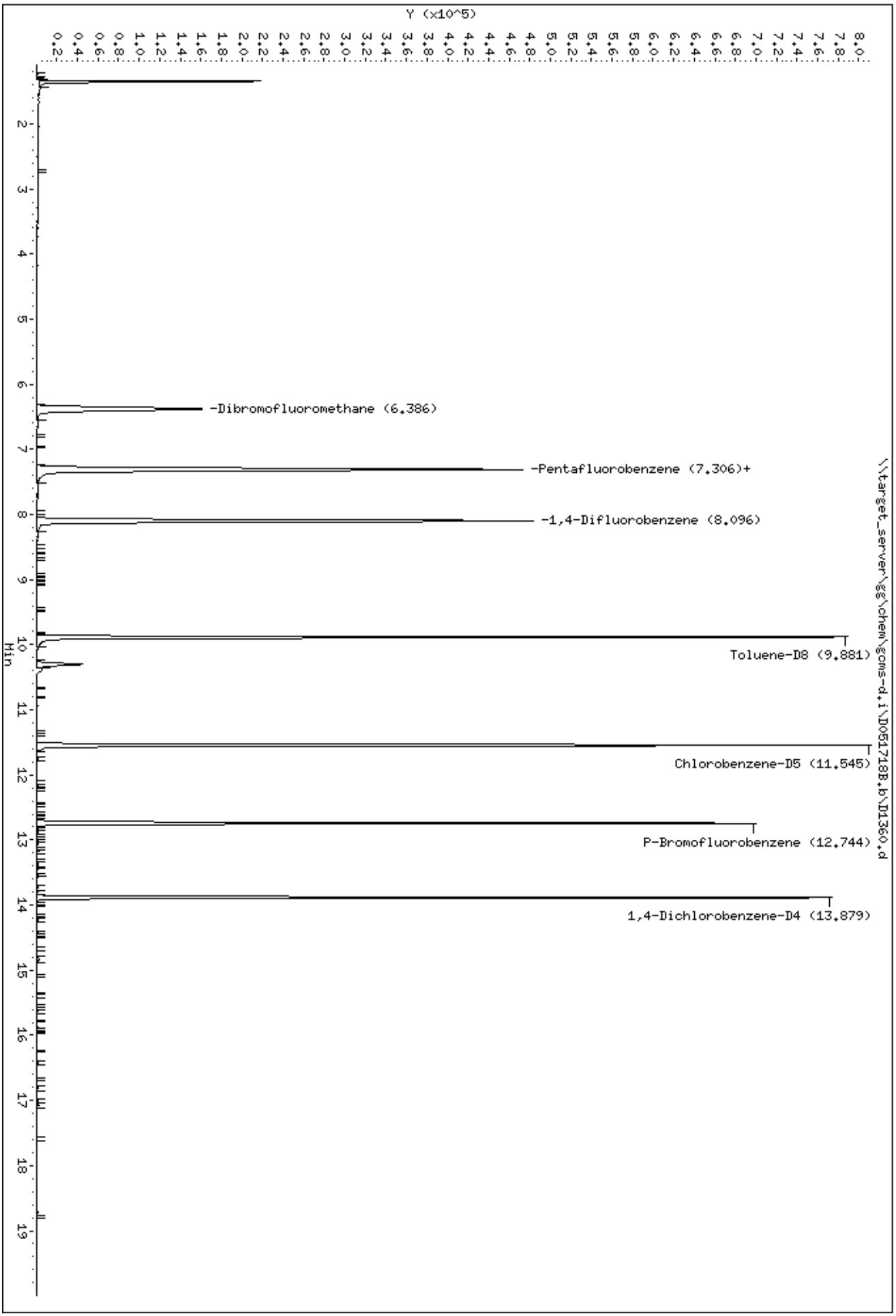
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051718B.b\D1360.d
Lab Smp Id: WG228566-2 Client Smp ID: WG228566-Blank
Inj Date : 17-MAY-2018 14:16 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228566-2,SL3902
Misc Info : WG228566,WG228547-4,SL3902-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051718B.b\D8A05(22)D.m
Meth Date : 21-May-2018 14:29 gcms-d.i Quant Type: ISTD
Cal Date : 17-MAY-2018 11:09 Cal File: D1356.d
Als bottle: 4 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	170773	48.5368	48.5	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	287163	50.0000		
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	236193	49.2026	49.2	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	470146	50.0000		
$	55 Toluene-D8	98	9.881	9.881	(1.220)	563751	49.1963	49.2	
*	66 Chlorobenzene-D5	117	11.545	11.536	(1.000)	418916	50.0000		
$	76 P-Bromofluorobenzene	95	12.744	12.735	(1.574)	225503	47.7752	47.8	
*	91 1,4-Dichlorobenzene-D4	152	13.887	13.879	(1.000)	208569	50.0000		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Date : 17-MAY-2018 14:16
Client ID: WG228566-Blank
Sample Info: WG228566-2,SL3902
Instrument: gcms-d.i
Y (x10^5)
Min
-Dibromofluoromethane (6.386)
-Pentafluorobenzene (7.306)+
-1,4-Difluorobenzene (8.096)
Toluene-D8 (9.881)
Chlorobenzene-D5 (11.545)
P-Bromofluorobenzene (12.744)
1,4-Dichlorobenzene-D4 (13.879)
\\target_server\gg\chem\gcms-d.i\D051718B.b\D1360.d

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG228859-2
Client ID: Method Blank Sample
Project:
SDG: SL3902
Lab File ID: D1479.D

Sample Date:
Received Date:
Extract Date: 22-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228859

Analysis Date: 22-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client:
Lab ID: WG228859-2
Client ID: Method Blank Sample
Project:
SDG: SL3902
Lab File ID: D1479.D

Sample Date:
Received Date:
Extract Date: 22-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228859

Analysis Date: 22-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	J	0.57	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		99.5	%					
1,2-Dichloroethane-d4		100.	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG228859-2
Client ID: Method Blank Sample
Project:
SDG: SL3902
Lab File ID: D1479.D

Sample Date:
Received Date:
Extract Date: 22-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228859

Analysis Date: 22-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		98.4	%					
P-Bromofluorobenzene		95.3	%					

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P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1479.d
Report Date: 23-May-2018 11:35

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Data file : \\target_server\gg\chem\gcms-d.i\D052218B.b\D1479.d
Lab Smp Id: WG228859-2 Client Smp ID: WG228859-Blank
Inj Date : 22-MAY-2018 14:37 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228859-2,SL3902
Misc Info : WG228859,WG228847-4,SL3902-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D052218B.b\D8A05(23)D.m
Meth Date : 23-May-2018 11:33 gcms-d.i Quant Type: ISTD
Cal Date : 22-MAY-2018 11:28 Cal File: D1475.d
Als bottle: 4 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

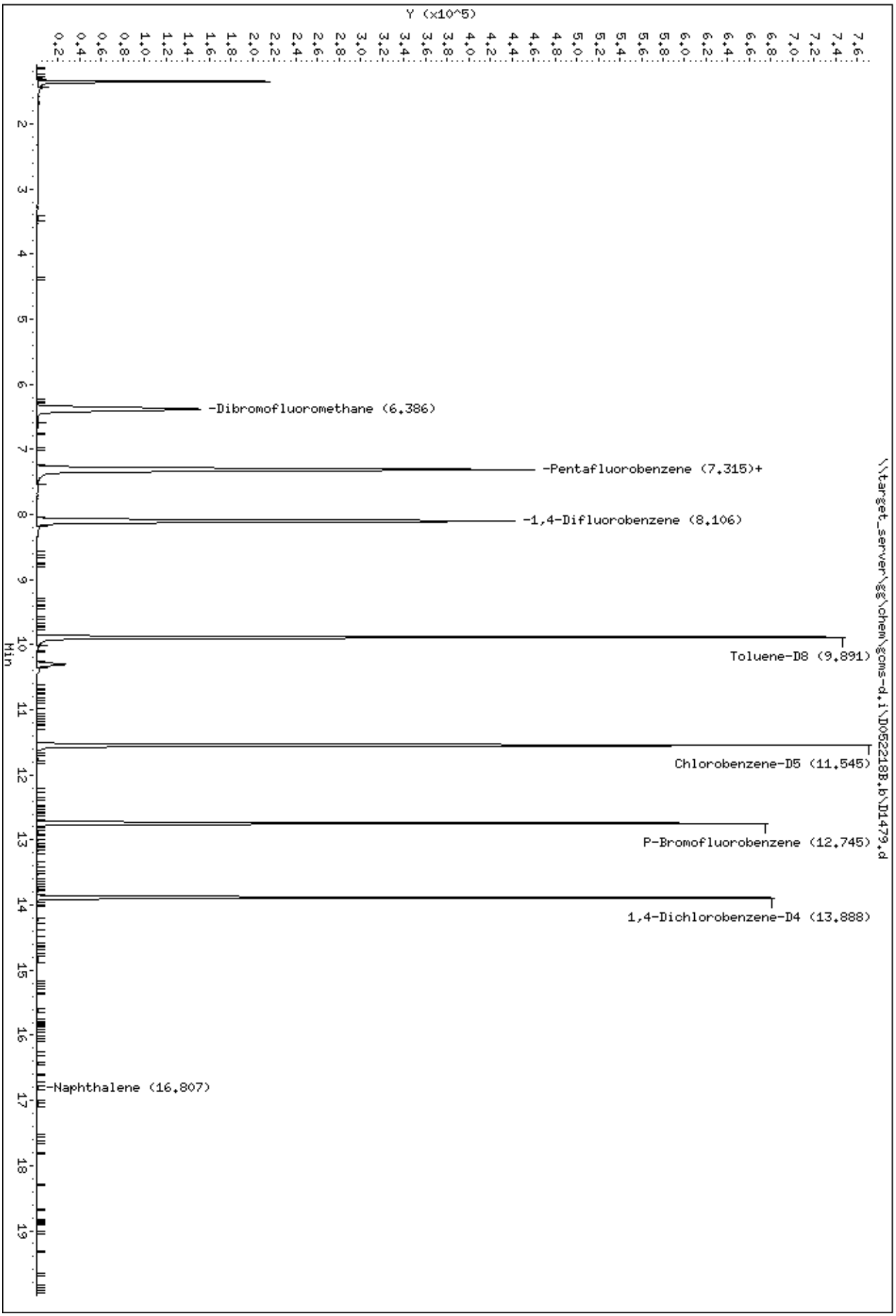
Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$ 37 Dibromofluoromethane	113	6.385	6.376	(0.873)	161777	49.7492	49.7	
* 42 Pentafluorobenzene	168	7.315	7.315	(1.000)	264819	50.0000		
$ 45 1,2-Dichloroethane-D4	65	7.306	7.297	(0.999)	237453	50.2631	50.3	
* 49 1,4-Difluorobenzene	114	8.105	8.096	(1.000)	430134	50.0000		
$ 55 Toluene-D8	98	9.890	9.881	(1.220)	523757	49.1787	49.2	
* 66 Chlorobenzene-D5	117	11.545	11.536	(1.000)	375644	50.0000		
$ 76 P-Bromofluorobenzene	95	12.744	12.735	(1.572)	205301	47.6626	47.7	
* 91 1,4-Dichlorobenzene-D4	152	13.888	13.879	(1.000)	183358	50.0000		
101 Naphthalene	128	16.807	16.806	(1.210)	1116	0.56878	0.57(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Y (x10^5)
Min
-Dibromofluoromethane (6.386)
-Pentafluorobenzene (7.315)+
-1,4-Difluorobenzene (8.106)
Toluene-D8 (9.891)
Chlorobenzene-D5 (11.545)
P-Bromofluorobenzene (12.745)
1,4-Dichlorobenzene-D4 (13.888)
-Naphthalene (16.807)
\\target_server\gg\chem\gcms-d.i\D052218B.b\D1479.d
Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1479.d
Date : 22-MAY-2018 14:37
Client ID: WG228859-Blank
Sample Info: WG228859-2,SL3902
Instrument: gcms-d.i

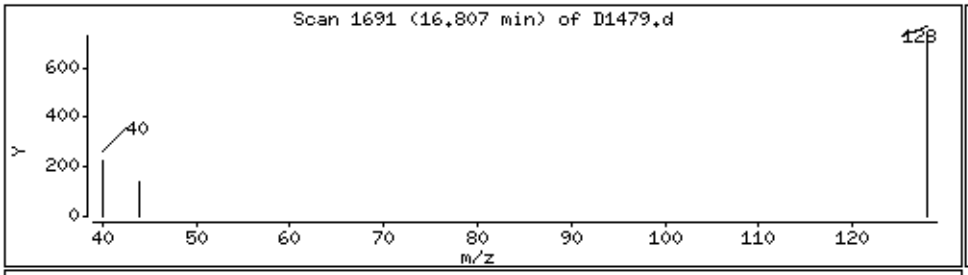
Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1479.d

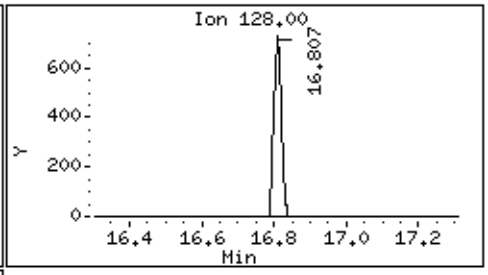
Date : 22-MAY-2018 14:37

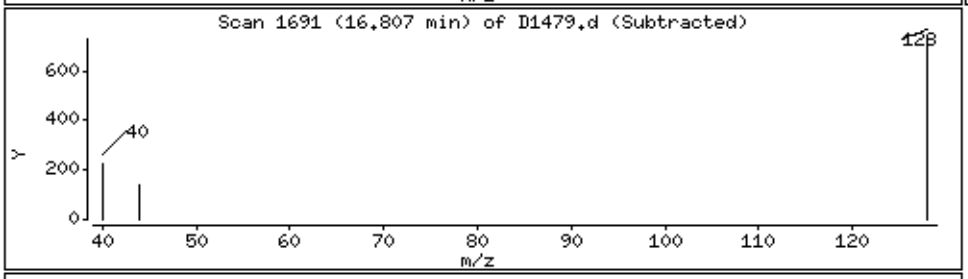
Client ID: WG228859-Blank Instrument: gcms-d.i

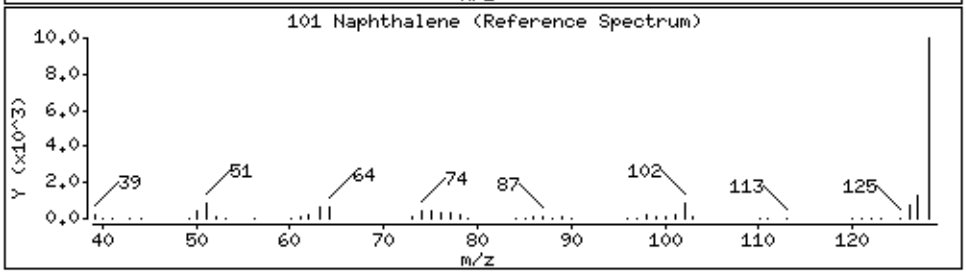
Sample Info: WG228859-2,SL3902

101 Naphthalene Concentration: 0.57 ug/l









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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG228421-1
Client ID: LCS
Project:
SDG: SL3902
LCS File ID: D1329.D

Sample Date:
Received Date:
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	98.8	50.0	49.4	ug/L	78-125
1,1,1-Trichloroethane	98.8	50.0	49.4	ug/L	74-131
1,1,2,2-Tetrachloroethane	97.4	50.0	48.7	ug/L	71-121
Freon-113	85.6	50.0	42.8	ug/L	70-136
1,1,2-Trichloroethane	96.6	50.0	48.3	ug/L	80-120
1,1-Dichloroethane	104.	50.0	52.0	ug/L	77-125
1,1-Dichloroethene	96.0	50.0	48.0	ug/L	71-131
1,1-Dichloropropene	95.0	50.0	47.5	ug/L	79-125
1,2,3-Trichlorobenzene	98.0	50.0	49.0	ug/L	69-129
1,2,3-Trichloropropane	98.0	50.0	49.0	ug/L	73-122
1,2,4-Trichlorobenzene	98.8	50.0	49.4	ug/L	69-130
1,2,4-Trimethylbenzene	98.4	50.0	49.2	ug/L	76-124
1,2-Dibromo-3-Chloropropane	103.	50.0	51.7	ug/L	62-128
1,2-Dichlorobenzene	94.2	50.0	47.1	ug/L	80-120
1,2-Dichloroethane	100.	50.0	50.0	ug/L	73-128
1,2-Dichloropropane	97.0	50.0	48.5	ug/L	78-122
1,3,5-Trimethylbenzene	98.2	50.0	49.1	ug/L	75-124
1,3-Dichlorobenzene	94.0	50.0	47.0	ug/L	80-120
1,3-Dichloropropane	94.4	50.0	47.2	ug/L	80-120
1,4-Dichlorobenzene	91.8	50.0	45.9	ug/L	79-120
2,2-Dichloropropane	95.8	50.0	47.9	ug/L	60-139
2-Butanone	102.	50.0	50.9	ug/L	56-143
2-Chlorotoluene	96.4	50.0	48.2	ug/L	79-122
2-Hexanone	103.	50.0	51.6	ug/L	57-139
4-Chlorotoluene	97.6	50.0	48.8	ug/L	78-122
P-Isopropyltoluene	101.	50.0	50.7	ug/L	77-127
4-Methyl-2-Pentanone	104.	50.0	51.8	ug/L	67-130
Acetone	104.	50.0	52.0	ug/L	39-160
Benzene	93.8	50.0	46.9	ug/L	79-120
Bromobenzene	92.0	50.0	46.0	ug/L	80-120
Bromoform	94.8	50.0	47.4	ug/L	66-130
Bromomethane	100.	50.0	50.0	ug/L	53-141
Carbon Disulfide	97.6	50.0	48.8	ug/L	64-133
Carbon Tetrachloride	98.2	50.0	49.1	ug/L	72-136
Chlorobenzene	92.8	50.0	46.4	ug/L	82-120

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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LCS Recovery Report

Client:
Lab ID: WG228421-1
Client ID: LCS
Project:
SDG: SL3902
LCS File ID: D1329.D

Sample Date:
Received Date:
Extract Date: 16-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228421

Analysis Date: 16-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	98.0	50.0	49.0	ug/L	78-123
Dibromochloromethane	104.	50.0	51.9	ug/L	74-126
Chloroethane	114.	50.0	56.9	ug/L	60-138
Chloroform	98.4	50.0	49.2	ug/L	79-124
Chloromethane	112.	50.0	56.2	ug/L	50-139
cis-1,2-Dichloroethene	93.6	50.0	46.8	ug/L	78-123
cis-1,3-Dichloropropene	99.8	50.0	49.9	ug/L	75-124
Dibromomethane	102.	50.0	51.0	ug/L	79-123
Bromodichloromethane	104.	50.0	52.2	ug/L	79-125
Dichlorodifluoromethane	127.	50.0	63.6	ug/L	32-152
Ethylbenzene	94.8	50.0	47.4	ug/L	79-121
1,2-Dibromoethane	98.6	50.0	49.3	ug/L	77-121
Hexachlorobutadiene	103.	50.0	51.6	ug/L	66-134
Isopropylbenzene	102.	50.0	51.1	ug/L	72-131
Methyl tert-butyl Ether	96.6	50.0	48.3	ug/L	71-124
Methylene Chloride	94.0	50.0	47.0	ug/L	74-124
m+p-Xylenes	96.1	100.	96.1	ug/L	80-121
Naphthalene	91.4	50.0	45.7	ug/L	61-128
N-Butylbenzene	106.	50.0	53.2	ug/L	75-128
N-Propylbenzene	95.8	50.0	47.9	ug/L	76-126
o-Xylene	98.0	50.0	49.0	ug/L	78-122
sec-Butylbenzene	100.	50.0	50.2	ug/L	77-126
Styrene	99.6	50.0	49.8	ug/L	78-123
tert-Butylbenzene	98.8	50.0	49.4	ug/L	78-124
Tetrachloroethene	91.0	50.0	45.5	ug/L	74-129
Toluene	92.6	50.0	46.3	ug/L	80-121
trans-1,2-Dichloroethene	91.4	50.0	45.7	ug/L	75-124
trans-1,3-Dichloropropene	107.	50.0	53.6	ug/L	73-127
Trichloroethene	94.6	50.0	47.3	ug/L	79-123
Trichlorofluoromethane	102.	50.0	51.0	ug/L	65-141
Vinyl Chloride	107.	50.0	53.7	ug/L	58-137
Dibromofluoromethane	104.				80-120
1,2-Dichloroethane-d4	110.				81-120
Toluene-d8	99.7				89-120
P-Bromofluorobenzene	101.				85-120

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Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1329.d
Report Date: 21-May-2018 14:26

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Data file : \\target_server\gg\chem\gcms-d.i\D051618B.b\D1329.d
Lab Smp Id: WG228421-1
Inj Date : 16-MAY-2018 13:32 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228421-1,SL3902
Misc Info : WG228421,WG227999-4,SL3902-1
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-d.i\D051618B.b\D8A05(21)D.m
Meth Date : 21-May-2018 14:24 gcms-d.i Quant Type: ISTD
Cal Date : 10-MAY-2018 11:34 Cal File: D1264.d
Als bottle: 2 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	221093	63.6445	63.6	
2	Chloromethane	50	1.663	1.663	(0.227)	209740	56.1746	56.2	
3	Vinyl chloride	62	1.728	1.728	(0.236)	156799	53.7409	53.7	
4	Bromomethane	94	2.025	2.025	(0.277)	75412	50.0570	50.0	
5	Chloroethane	64	2.146	2.137	(0.293)	75972	56.8956	56.9	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	231008	51.0313	51.0	
7	Diethyl Ether	59	2.583	2.583	(0.353)	77099	51.5148	51.5	
8	Tertiary-butyl alcohol	59	3.959	3.969	(0.541)	47364	243.193	243	
9	1,1-Dichloroethene	96	2.778	2.788	(0.380)	93096	47.9820	48.0	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	293009	48.8335	48.8	
11	Freon-113	151	2.834	2.835	(0.387)	72689	42.8323	42.8	
12	Iodomethane	142	2.936	2.937	(0.401)	104879	51.9790	52.0	
13	Acrolein	56	3.160	3.160	(0.432)	116750	239.968	240	
14	Methylene Chloride	84	3.448	3.448	(0.471)	152145	46.9766	47.0	
15	Acetone	43	3.522	3.522	(0.482)	46745	51.9703	52.0	
16	Isobutyl Alcohol	43	7.603	7.604	(1.039)	114169	935.742	936	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	135448	45.7121	45.7	
18	Allyl Chloride	41	3.318	3.318	(0.454)	213426	49.2518	49.2	
19	Methyl tert-butyl ether	73	3.801	3.811	(0.520)	370215	48.3095	48.3	
20	Acetonitrile	39	4.136	4.136	(0.565)	41549	507.888	508	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	461224	50.3630	50.4	
22	Chloroprene	53	4.480	4.480	(0.612)	226511	49.4216	49.4	
23	Propionitrile	54	7.148	7.148	(0.977)	208409	498.313	498	
24	Methacrylonitrile	41	7.176	7.185	(0.981)	995221	533.506	534	

Data File: \\target_server\gg\chem\gcms-d.i\D051618B.b\D1329.d
Report Date: 21-May-2018 14:26

			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	288284	52.0368	52.0	
	26	Acrylonitrile	52	4.610	4.610	(0.630)	246934	253.500	254	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	390091	50.4947	50.5	
	28	Vinyl Acetate	43	4.982	4.982	(0.615)	393856	58.7017	58.7	
	29	cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	147726	46.8357	46.8	
M	30	1,2-Dichloroethylene (total)	96				283174	92.5478	92.5	
	31	Methyl Methacrylate	41	10.643	10.643	(1.315)	141016	49.4477	49.4	
	32	2,2-Dichloropropane	77	5.642	5.642	(0.771)	174779	47.8864	47.9	
	33	Bromochloromethane	128	5.809	5.809	(0.794)	76219	49.0130	49.0	
	34	Chloroform	83	6.014	6.014	(0.822)	285574	49.1739	49.2	
	35	Carbon Tetrachloride	117	6.227	6.237	(0.769)	199433	49.1267	49.1	
	36	Tetrahydrofuran	42	6.311	6.302	(0.863)	41448	49.8889	49.9	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	175423	51.9867	52.0	
	38	1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	236122	49.4157	49.4	
	39	1,1-Dichloropropene	75	6.618	6.627	(0.817)	204839	47.5385	47.5	
	40	2-Butanone	43	6.655	6.655	(0.910)	71034	50.9416	50.9	
	41	Benzene	78	7.055	7.055	(0.871)	544796	46.8734	46.9	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	287009	50.0000		
	43	Cyclohexane	56	5.790	5.791	(0.792)	210746	44.6525	44.6	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	99390	44.6903	44.7	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	235612	55.2231	55.2	
	46	Tertiary-amyl methyl ether	73	7.334	7.334	(1.003)	310081	48.3748	48.4	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	242978	50.0104	50.0	
	48	Trichloroethene	95	8.003	8.003	(0.989)	149822	47.2815	47.3	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	471055	50.0000		
	50	Dibromomethane	93	8.589	8.589	(1.061)	109248	51.0030	51.0	
	51	1,2-Dichloropropane	63	8.737	8.738	(1.079)	152324	48.4764	48.5	
	52	Bromodichloromethane	83	8.849	8.859	(1.093)	227328	52.2020	52.2	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	252716	49.8804	49.9	
	54	1,4-Dioxane	88	9.137	9.137	(1.129)	28684	892.717	893	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	572762	49.8590	49.8	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	96426	49.2913	49.3	
	57	Toluene	92	9.937	9.937	(1.227)	329103	46.3431	46.3	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	148623	51.8194	51.8	
	59	Tetrachloroethene	164	10.364	10.365	(0.898)	105539	45.5318	45.5	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	235309	53.5904	53.6	
	61	1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	120916	48.3429	48.3	
	62	Dibromochloromethane	129	10.773	10.774	(0.934)	165718	51.8983	51.9	
	63	1,3-Dichloropropane	76	10.876	10.876	(0.943)	245344	47.2125	47.2	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	148681	49.2999	49.3	
	65	2-Hexanone	43	11.294	11.294	(0.979)	101334	51.6488	51.6	
*	66	Chlorobenzene-D5	117	11.536	11.536	(1.000)	425102	50.0000		
	67	Chlorobenzene	112	11.554	11.555	(1.002)	364841	46.4312	46.4	
	68	Ethylbenzene	91	11.601	11.601	(1.006)	637872	47.3730	47.4	
	69	1,1,1,2-Tetrachloroethane	131	11.629	11.629	(1.008)	138348	49.4108	49.4	
M	70	Xylenes (total)	106				1489781	145.092	145	
	71	m+p-Xylenes	91	11.749	11.750	(1.019)	983705	96.0957	96.1	
	72	o-Xylene	91	12.168	12.168	(1.055)	506076	48.9964	49.0	
	73	Styrene	104	12.223	12.224	(1.060)	388988	49.7793	49.8	
	74	Bromoform	173	12.233	12.233	(1.060)	101219	47.3518	47.4	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	592054	51.1049	51.1	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	231555	50.4965	50.5	
	77	cis-1,4-Dichloro-2-Butene	53	12.809	12.810	(0.923)	59129	48.3135	48.3	
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	47478	47.6765	47.7	

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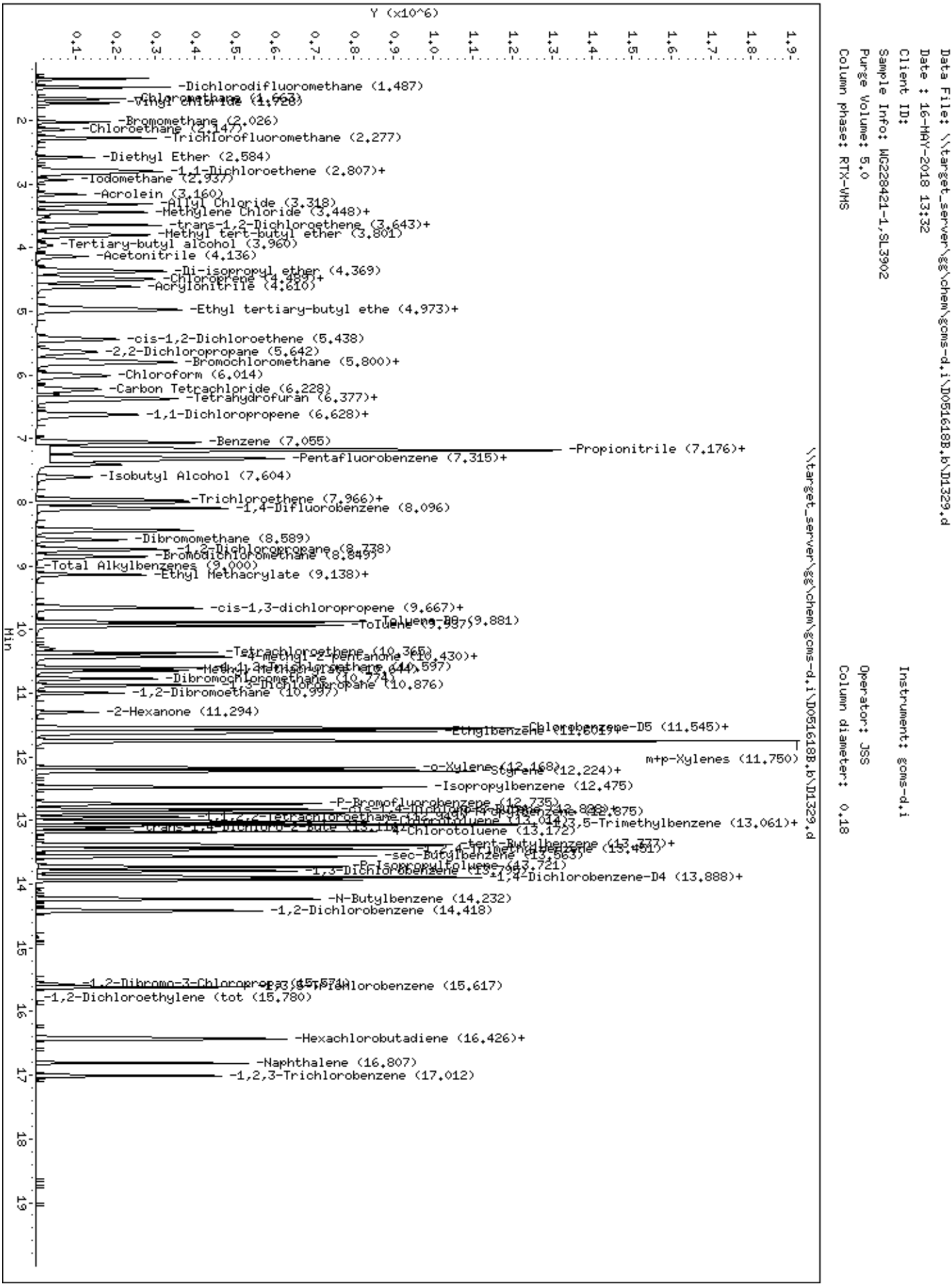
Report Date: 21-May-2018 14:26

			QUANT SIG					CONCENTRATIONS ON-COLUMN	CONCENTRATIONS FINAL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	79	Bromobenzene	156	12.828	12.828	(0.924)	150253	46.0534	46.0	
	80	N-Propylbenzene	91	12.874	12.875	(0.928)	726411	47.9407	47.9	
	81	1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.933)	184747	48.6773	48.7	
	82	1,3,5-Trimethylbenzene	105	13.060	13.061	(0.941)	493784	49.1323	49.1	
	83	2-Chlorotoluene	91	13.014	13.014	(0.938)	437238	48.1765	48.2	
	84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	160015	48.9585	49.0	
	85	4-Chlorotoluene	91	13.172	13.172	(0.949)	470696	48.8104	48.8	
	86	tert-Butylbenzene	119	13.376	13.377	(0.964)	467265	49.4041	49.4	
	87	Pentachloroethane	117	13.395	13.395	(0.965)	111231	49.0512	49.0	
	88	1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	511881	49.1595	49.2	
	89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	491522	50.7002	50.7	
	90	1,3-Dichlorobenzene	146	13.795	13.795	(0.994)	273484	47.0033	47.0	
*	91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	218190	50.0000		
	92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	277409	45.9451	45.9	
	93	N-Butylbenzene	91	14.231	14.232	(1.025)	480683	53.2105	53.2	
	94	sec-Butylbenzene	105	13.562	13.563	(0.977)	599518	50.2396	50.2	
	95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	260120	47.1264	47.1	
	96	1,2-Dibromo-3-Chloropropane	75	15.570	15.571	(1.122)	31177	51.7152	51.7	
	97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	182577	49.0203	49.0	
	98	Hexachlorobutadiene	225	16.416	16.416	(1.183)	66909	51.5987	51.6	
	99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	160287	49.3742	49.4	
	100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	514697	49.1590	49.2	
	101	Naphthalene	128	16.807	16.806	(1.211)	358477	45.7120	45.7	
	102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	129889	48.9839	49.0	
	103	Methyl Acetate	43	3.689	3.690	(0.504)	118656	46.2872	46.3	
	104	Methylcyclohexane	83	7.966	7.966	(1.089)	199532	44.9869	45.0	
M	153	Total Alkylbenzenes	100				3771064	349.787	350	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Date : 16-MAY-2018 13:32
Client ID:
Sample Info: WG228421-1,SL3902
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051618B.b\D1329.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)
-Vinyl chloride (1.728)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)+
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.801)
-Tertiary-butyl alcohol (3.960)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.369)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.438)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.228)
-Tetrahydrofuran (6.377)+
-1,1-Dichloropropene (6.628)+
-Benzene (7.055)
-Propionitrile (7.176)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.604)
-Trichloroethene (7.966)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.849)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.881)
-Toluene (9.937)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.430)+
-Methyl Methacrylate (10.644)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-Ethylbenzene (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-cis-1,4-Dichloro-2-Butene (12.828)+
-N-Propylbenzene (12.875)
-1,1,2,2-Tetrachloroethane (12.949)
-2-Chlorotoluene (13.014)
-1,3,5-Trimethylbenzene (13.061)+
-trans-1,4-Dichloro-2-Bute (13.116)
-4-Chlorotoluene (13.172)
-tert-Butylbenzene (13.337)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.563)
-P-Isopropyltoluene (13.721)
-1,3-Dichlorobenzene (13.795)
-1,4-Dichlorobenzene-D4 (13.888)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.571)
-1,3,5-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)

Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG228566-1
Client ID: LCS
Project:
SDG: SL3902
LCS File ID: D1358.D

Sample Date:
Received Date:
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	101.	50.0	50.4	ug/L	78-125
1,1,1-Trichloroethane	93.2	50.0	46.6	ug/L	74-131
1,1,2,2-Tetrachloroethane	93.0	50.0	46.5	ug/L	71-121
Freon-113	94.4	50.0	47.2	ug/L	70-136
1,1,2-Trichloroethane	94.8	50.0	47.4	ug/L	80-120
1,1-Dichloroethane	101.	50.0	50.4	ug/L	77-125
1,1-Dichloroethene	94.0	50.0	47.0	ug/L	71-131
1,1-Dichloropropene	97.6	50.0	48.8	ug/L	79-125
1,2,3-Trichlorobenzene	90.8	50.0	45.4	ug/L	69-129
1,2,3-Trichloropropane	89.6	50.0	44.8	ug/L	73-122
1,2,4-Trichlorobenzene	98.6	50.0	49.3	ug/L	69-130
1,2,4-Trimethylbenzene	102.	50.0	50.8	ug/L	76-124
1,2-Dibromo-3-Chloropropane	81.8	50.0	40.9	ug/L	62-128
1,2-Dichlorobenzene	99.2	50.0	49.6	ug/L	80-120
1,2-Dichloroethane	89.6	50.0	44.8	ug/L	73-128
1,2-Dichloropropane	99.6	50.0	49.8	ug/L	78-122
1,3,5-Trimethylbenzene	102.	50.0	50.9	ug/L	75-124
1,3-Dichlorobenzene	97.8	50.0	48.9	ug/L	80-120
1,3-Dichloropropane	94.6	50.0	47.3	ug/L	80-120
1,4-Dichlorobenzene	94.4	50.0	47.2	ug/L	79-120
2,2-Dichloropropane	95.8	50.0	47.9	ug/L	60-139
2-Butanone	89.2	50.0	44.6	ug/L	56-143
2-Chlorotoluene	98.0	50.0	49.0	ug/L	79-122
2-Hexanone	94.6	50.0	47.3	ug/L	57-139
4-Chlorotoluene	98.0	50.0	49.0	ug/L	78-122
P-Isopropyltoluene	103.	50.0	51.4	ug/L	77-127
4-Methyl-2-Pentanone	92.4	50.0	46.2	ug/L	67-130
Acetone	86.8	50.0	43.4	ug/L	39-160
Benzene	99.8	50.0	49.9	ug/L	79-120
Bromobenzene	98.6	50.0	49.3	ug/L	80-120
Bromoform	101.	50.0	50.5	ug/L	66-130
Bromomethane	90.6	50.0	45.3	ug/L	53-141
Carbon Disulfide	93.4	50.0	46.7	ug/L	64-133
Carbon Tetrachloride	94.6	50.0	47.3	ug/L	72-136
Chlorobenzene	97.0	50.0	48.5	ug/L	82-120

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG228566-1
Client ID: LCS
Project:
SDG: SL3902
LCS File ID: D1358.D

Sample Date:
Received Date:
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	101.	50.0	50.5	ug/L	78-123
Dibromochloromethane	104.	50.0	52.2	ug/L	74-126
Chloroethane	92.8	50.0	46.4	ug/L	60-138
Chloroform	95.0	50.0	47.5	ug/L	79-124
Chloromethane	91.8	50.0	45.9	ug/L	50-139
cis-1,2-Dichloroethene	99.8	50.0	49.9	ug/L	78-123
cis-1,3-Dichloropropene	91.2	50.0	45.6	ug/L	75-124
Dibromomethane	96.0	50.0	48.0	ug/L	79-123
Bromodichloromethane	101.	50.0	50.4	ug/L	79-125
Dichlorodifluoromethane	95.2	50.0	47.6	ug/L	32-152
Ethylbenzene	96.4	50.0	48.2	ug/L	79-121
1,2-Dibromoethane	94.4	50.0	47.2	ug/L	77-121
Hexachlorobutadiene	89.4	50.0	44.7	ug/L	66-134
Isopropylbenzene	107.	50.0	53.5	ug/L	72-131
Methyl tert-butyl Ether	99.6	50.0	49.8	ug/L	71-124
Methylene Chloride	96.4	50.0	48.2	ug/L	74-124
m+p-Xylenes	99.4	100.	99.4	ug/L	80-121
Naphthalene	84.2	50.0	42.1	ug/L	61-128
N-Butylbenzene	101.	50.0	50.5	ug/L	75-128
N-Propylbenzene	96.6	50.0	48.3	ug/L	76-126
o-Xylene	103.	50.0	51.4	ug/L	78-122
sec-Butylbenzene	100.	50.0	50.0	ug/L	77-126
Styrene	105.	50.0	52.7	ug/L	78-123
tert-Butylbenzene	101.	50.0	50.5	ug/L	78-124
Tetrachloroethene	99.4	50.0	49.7	ug/L	74-129
Toluene	96.4	50.0	48.2	ug/L	80-121
trans-1,2-Dichloroethene	98.4	50.0	49.2	ug/L	75-124
trans-1,3-Dichloropropene	103.	50.0	51.5	ug/L	73-127
Trichloroethene	94.0	50.0	47.0	ug/L	79-123
Trichlorofluoromethane	84.8	50.0	42.4	ug/L	65-141
Vinyl Chloride	93.6	50.0	46.8	ug/L	58-137
Dibromofluoromethane	97.3				80-120
1,2-Dichloroethane-d4	91.3				81-120
Toluene-d8	99.4				89-120
P-Bromofluorobenzene	96.4				85-120

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
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Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1358.d
Report Date: 21-May-2018 14:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051718B.b\D1358.d
Lab Smp Id: WG228566-1
Inj Date : 17-MAY-2018 12:58 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228566-1,SL3902
Misc Info : WG228566,WG228547-4,SL3902-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051718B.b\D8A05(22)D.m
Meth Date : 21-May-2018 14:29 gcms-d.i Quant Type: ISTD
Cal Date : 17-MAY-2018 11:09 Cal File: D1356.d
Als bottle: 2 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.486	(0.203)	259858	47.5599	47.6	
2	Chloromethane	50	1.663	1.654	(0.227)	229891	45.8619	45.9	
3	Vinyl chloride	62	1.737	1.728	(0.238)	183870	46.8203	46.8	
4	Bromomethane	94	2.025	2.025	(0.277)	90118	45.3498	45.3	
5	Chloroethane	64	2.146	2.137	(0.293)	84882	46.4315	46.4	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	261859	42.4564	42.4	
7	Diethyl Ether	59	2.583	2.583	(0.353)	99201	51.3158	51.3	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.543)	45680	205.495	205	
9	1,1-Dichloroethene	96	2.788	2.779	(0.381)	108091	47.0423	47.0	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	346067	46.7175	46.7	
11	Freon-113	151	2.834	2.834	(0.387)	88886	47.1651	47.2	
12	Iodomethane	142	2.936	2.937	(0.401)	102826	43.6657	43.7	
13	Acrolein	56	3.160	3.160	(0.432)	83766	195.544	196	
14	Methylene Chloride	84	3.448	3.448	(0.471)	167759	48.1835	48.2	
15	Acetone	43	3.522	3.522	(0.482)	44223	43.3986	43.4	
16	Isobutyl Alcohol	43	7.613	7.613	(1.041)	104067	824.703	825	
17	trans-1,2-Dichloroethene	96	3.652	3.643	(0.499)	156343	49.2363	49.2	
18	Allyl Chloride	41	3.318	3.318	(0.454)	240818	49.8466	49.8	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	411336	49.8228	49.8	
20	Acetonitrile	39	4.136	4.136	(0.565)	39701	460.994	461	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	522859	47.5561	47.6	
22	Chloroprene	53	4.480	4.480	(0.612)	253925	49.8641	49.9	
23	Propionitrile	54	7.148	7.148	(0.977)	200649	470.116	470	
24	Methacrylonitrile	41	7.185	7.185	(0.982)	963145	474.556	474	

Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1358.d
Report Date: 21-May-2018 14:32

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	322107	50.4576	50.4	
	26	Acrylonitrile	52	4.619	4.610	(0.631)	238936	232.586	232	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	445057	46.8853	46.9	
	28	Vinyl Acetate	43	4.991	4.982	(0.616)	399110	54.4910	54.5	
	29	cis-1,2-Dichloroethene	96	5.446	5.437	(0.745)	167752	49.9027	49.9	
M	30	1,2-Dichloroethylene (total)	96				324095	99.1390	99.1	
	31	Methyl Methacrylate	41	10.652	10.643	(1.316)	143885	44.6745	44.7	
	32	2,2-Dichloropropane	77	5.651	5.642	(0.773)	214149	47.9369	47.9	
	33	Bromochloromethane	128	5.818	5.809	(0.795)	84976	50.5038	50.5	
	34	Chloroform	83	6.014	6.014	(0.822)	317508	47.5045	47.5	
	35	Carbon Tetrachloride	117	6.237	6.237	(0.770)	227863	47.2619	47.3	
	36	Tetrahydrofuran	42	6.311	6.311	(0.863)	39195	44.8492	44.8	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	186916	48.6537	48.6	
	38	1,1,1-Trichloroethane	97	6.385	6.376	(0.873)	268353	46.5502	46.6	
	39	1,1-Dichloropropene	75	6.627	6.627	(0.819)	233454	48.7690	48.8	
	40	2-Butanone	43	6.655	6.655	(0.910)	67624	44.6456	44.6	
	41	Benzene	78	7.064	7.064	(0.873)	619105	49.8953	49.9	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	313553	50.0000		
	43	Cyclohexane	56	5.790	5.791	(0.792)	254024	49.9154	49.9	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	100004	43.5831	43.6	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	239236	45.6421	45.6	
	46	Tertiary-amyl methyl ether	73	7.334	7.334	(1.003)	345550	44.9739	45.0	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	260274	44.7742	44.8	
	48	Trichloroethene	95	8.012	8.003	(0.990)	167383	46.9700	47.0	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	507874	50.0000		
	50	Dibromomethane	93	8.589	8.589	(1.061)	113066	48.0504	48.0	
	51	1,2-Dichloropropane	63	8.747	8.738	(1.080)	171239	49.7684	49.8	
	52	Bromodichloromethane	83	8.858	8.858	(1.094)	245470	50.3522	50.4	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	276494	45.5790	45.6	
	54	1,4-Dioxane	88	9.146	9.137	(1.130)	28178	960.720	961	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	615356	49.7105	49.7	
	56	2-Chloroethylvinylether	63	9.639	9.639	(1.191)	100529	50.3980	50.4	
	57	Toluene	92	9.946	9.937	(1.228)	369878	48.1634	48.2	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	144374	46.1596	46.2	
	59	Tetrachloroethene	164	10.364	10.364	(0.898)	121312	49.6639	49.7	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	253937	51.4754	51.5	
	61	1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	126383	47.4066	47.4	
	62	Dibromochloromethane	129	10.773	10.774	(0.933)	177476	52.2154	52.2	
	63	1,3-Dichloropropane	76	10.876	10.876	(0.942)	257867	47.3162	47.3	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	152068	47.1957	47.2	
	65	2-Hexanone	43	11.294	11.294	(0.978)	97157	47.2701	47.3	
*	66	Chlorobenzene-D5	117	11.545	11.536	(1.000)	455386	50.0000		
	67	Chlorobenzene	112	11.554	11.554	(1.001)	404901	48.4626	48.5	
	68	Ethylbenzene	91	11.601	11.601	(1.005)	713114	48.1677	48.2	
	69	1,1,1,2-Tetrachloroethane	131	11.629	11.629	(1.007)	153609	50.4142	50.4	
M	70	Xylenes (total)	106				1670846	150.769	151	
	71	m+p-Xylenes	91	11.749	11.750	(1.018)	1111730	99.3786	99.4	
	72	o-Xylene	91	12.168	12.168	(1.054)	559116	51.3903	51.4	
	73	Styrene	104	12.224	12.224	(1.059)	426364	52.7328	52.7	
	74	Bromoform	173	12.233	12.233	(1.060)	99689	50.4831	50.5	
	75	Isopropylbenzene	105	12.475	12.475	(0.899)	658956	53.5305	53.5	
$	76	P-Bromofluorobenzene	95	12.744	12.735	(1.574)	245917	48.2298	48.2	
	77	cis-1,4-Dichloro-2-Butene	53	12.818	12.809	(0.924)	53847	40.8363	40.8	
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	43368	41.0822	41.1	

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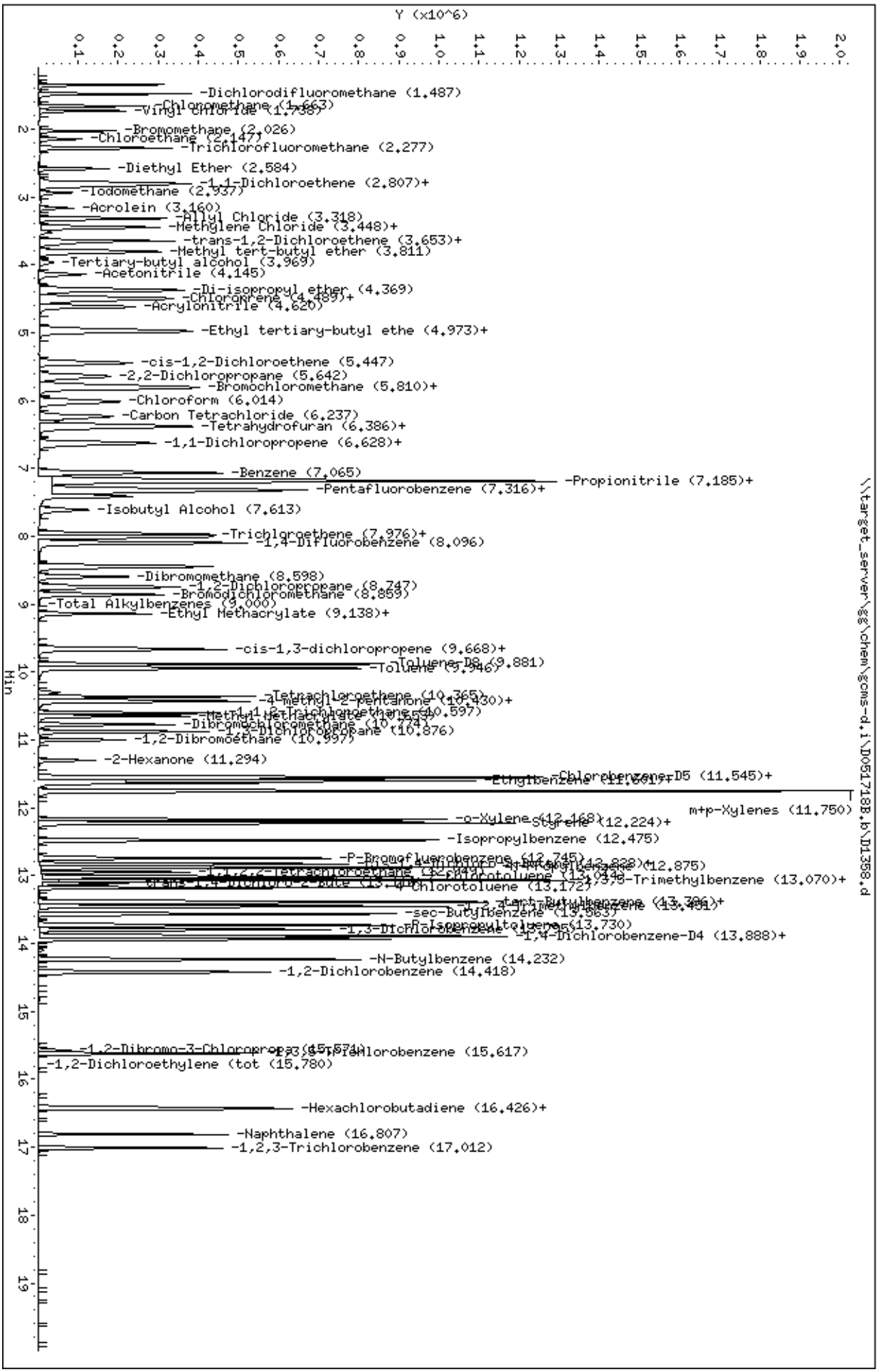
Report Date: 21-May-2018 14:32

		QUANT SIG					CONCENTRATIONS ON-COLUMN	CONCENTRATIONS FINAL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	79 Bromobenzene	156	12.837	12.828	(0.925)	166277	49.3465	49.3	
	80 N-Propylbenzene	91	12.874	12.874	(0.928)	806851	48.2804	48.3	
	81 1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.933)	178913	46.5112	46.5	
	82 1,3,5-Trimethylbenzene	105	13.069	13.060	(0.942)	544531	50.9157	50.9	
	83 2-Chlorotoluene	91	13.014	13.014	(0.938)	478778	49.0311	49.0	
	84 1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	153778	44.8418	44.8	
	85 4-Chlorotoluene	91	13.181	13.172	(0.950)	512206	48.9916	49.0	
	86 tert-Butylbenzene	119	13.376	13.377	(0.964)	511922	50.5407	50.5	
	87 Pentachloroethane	117	13.395	13.395	(0.965)	117686	49.4810	49.5	
	88 1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	561552	50.8446	50.8	
	89 P-Isopropyltoluene	119	13.730	13.720	(0.989)	548221	51.4467	51.4	
	90 1,3-Dichlorobenzene	146	13.795	13.795	(0.994)	297270	48.8811	48.9	
*	91 1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	229479	50.0000		
	92 1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	299142	47.2332	47.2	
	93 N-Butylbenzene	91	14.232	14.222	(1.025)	527302	50.5393	50.5	
	94 sec-Butylbenzene	105	13.562	13.562	(0.977)	659938	50.0086	50.0	
	95 1,2-Dichlorobenzene	146	14.427	14.418	(1.040)	280898	49.6320	49.6	
	96 1,2-Dibromo-3-Chloropropane	75	15.570	15.570	(1.122)	26879	40.8874	40.9	
	97 1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	190763	49.2015	49.2	
	98 Hexachlorobutadiene	225	16.416	16.407	(1.183)	73485	44.7338	44.7	
	99 1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	164745	49.2665	49.3	
	100 1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	553531	50.6668	50.7	
	101 Naphthalene	128	16.807	16.806	(1.211)	326952	42.1013	42.1	
	102 1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	126862	45.4582	45.4	
	103 Methyl Acetate	43	3.689	3.690	(0.504)	115426	43.6679	43.7	
	104 Methylcyclohexane	83	7.975	7.966	(1.090)	243874	47.0221	47.0	
M	153 Total Alkylbenzenes	100				4160317	352.576	352	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Date : 17-MAY-2018 12:58
Client ID:
Sample Info: WG228566-1,SL3902
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051718B.b\D1358.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)
-Vinyl Chloride (1.738)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.160)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)+
-trans-1,2-Dichloroethene (3.653)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.145)
-Di-isopropyl ether (4.369)
-Chloroprene (4.489)+
-Acrylonitrile (4.620)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.447)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.810)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)
-Tetrahydrofuran (6.386)+
-1,1-Dichloropropene (6.628)+
-Benzene (7.065)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.316)+
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.976)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.598)
-1,2-Dichloropropane (8.747)
-Bromodichloromethane (8.859)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.668)+
-Toluene-D8 (9.881)
-Toluene (9.946)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.430)+
-Methyl methacrylate (10.597)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-Ethylbenzene (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.745)
-Bromoform (12.828)+
-1,1,2,2-Tetrachloroethane (12.875)
-Bromobenzene (13.044)
-1,2,3-Trimethylbenzene (13.070)+
-4-Chlorotoluene (13.172)
-n-propylbenzene (13.306)+
-1,3,5-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.563)
-p-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4 (13.888)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.574)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)

Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG228859-1
Client ID: LCS
Project:
SDG: SL3902
LCS File ID: D1477.D

Sample Date:
Received Date:
Extract Date: 22-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228859

Analysis Date: 22-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	102.	50.0	50.8	ug/L	78-125
1,1,1-Trichloroethane	93.4	50.0	46.7	ug/L	74-131
1,1,2,2-Tetrachloroethane	94.4	50.0	47.2	ug/L	71-121
Freon-113	89.8	50.0	44.9	ug/L	70-136
1,1,2-Trichloroethane	97.0	50.0	48.5	ug/L	80-120
1,1-Dichloroethane	101.	50.0	50.5	ug/L	77-125
1,1-Dichloroethene	88.6	50.0	44.3	ug/L	71-131
1,1-Dichloropropene	98.6	50.0	49.3	ug/L	79-125
1,2,3-Trichlorobenzene	90.0	50.0	45.0	ug/L	69-129
1,2,3-Trichloropropane	90.4	50.0	45.2	ug/L	73-122
1,2,4-Trichlorobenzene	99.4	50.0	49.7	ug/L	69-130
1,2,4-Trimethylbenzene	103.	50.0	51.4	ug/L	76-124
1,2-Dibromo-3-Chloropropane	82.4	50.0	41.2	ug/L	62-128
1,2-Dichlorobenzene	99.8	50.0	49.9	ug/L	80-120
1,2-Dichloroethane	90.0	50.0	45.0	ug/L	73-128
1,2-Dichloropropane	101.	50.0	50.3	ug/L	78-122
1,3,5-Trimethylbenzene	102.	50.0	50.9	ug/L	75-124
1,3-Dichlorobenzene	98.6	50.0	49.3	ug/L	80-120
1,3-Dichloropropane	96.2	50.0	48.1	ug/L	80-120
1,4-Dichlorobenzene	94.8	50.0	47.4	ug/L	79-120
2,2-Dichloropropane	89.0	50.0	44.5	ug/L	60-139
2-Butanone	80.8	50.0	40.4	ug/L	56-143
2-Chlorotoluene	99.4	50.0	49.7	ug/L	79-122
2-Hexanone	81.8	50.0	40.9	ug/L	57-139
4-Chlorotoluene	98.0	50.0	49.0	ug/L	78-122
P-Isopropyltoluene	104.	50.0	52.0	ug/L	77-127
4-Methyl-2-Pentanone	85.4	50.0	42.7	ug/L	67-130
Acetone	85.6	50.0	42.8	ug/L	39-160
Benzene	99.6	50.0	49.8	ug/L	79-120
Bromobenzene	98.8	50.0	49.4	ug/L	80-120
Bromoform	102.	50.0	51.0	ug/L	66-130
Bromomethane	104.	50.0	52.2	ug/L	53-141
Carbon Disulfide	99.0	50.0	49.5	ug/L	64-133
Carbon Tetrachloride	95.2	50.0	47.6	ug/L	72-136
Chlorobenzene	97.0	50.0	48.5	ug/L	82-120

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG228859-1
Client ID: LCS
Project:
SDG: SL3902
LCS File ID: D1477.D

Sample Date:
Received Date:
Extract Date: 22-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228859

Analysis Date: 22-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	99.8	50.0	49.9	ug/L	78-123
Dibromochloromethane	106.	50.0	52.9	ug/L	74-126
Chloroethane	105.	50.0	52.6	ug/L	60-138
Chloroform	96.2	50.0	48.1	ug/L	79-124
Chloromethane	109.	50.0	54.5	ug/L	50-139
cis-1,2-Dichloroethene	98.8	50.0	49.4	ug/L	78-123
cis-1,3-Dichloropropene	90.0	50.0	45.0	ug/L	75-124
Dibromomethane	97.6	50.0	48.8	ug/L	79-123
Bromodichloromethane	103.	50.0	51.6	ug/L	79-125
Dichlorodifluoromethane	127.	50.0	63.6	ug/L	32-152
Ethylbenzene	97.2	50.0	48.6	ug/L	79-121
1,2-Dibromoethane	98.0	50.0	49.0	ug/L	77-121
Hexachlorobutadiene	90.4	50.0	45.2	ug/L	66-134
Isopropylbenzene	107.	50.0	53.4	ug/L	72-131
Methyl tert-butyl Ether	102.	50.0	51.2	ug/L	71-124
Methylene Chloride	97.6	50.0	48.8	ug/L	74-124
m+p-Xylenes	98.7	100.	98.7	ug/L	80-121
Naphthalene	88.6	50.0	44.3	ug/L	61-128
N-Butylbenzene	103.	50.0	51.4	ug/L	75-128
N-Propylbenzene	97.6	50.0	48.8	ug/L	76-126
o-Xylene	103.	50.0	51.3	ug/L	78-122
sec-Butylbenzene	102.	50.0	50.8	ug/L	77-126
Styrene	98.6	50.0	49.3	ug/L	78-123
tert-Butylbenzene	103.	50.0	51.3	ug/L	78-124
Tetrachloroethene	95.2	50.0	47.6	ug/L	74-129
Toluene	98.6	50.0	49.3	ug/L	80-121
trans-1,2-Dichloroethene	94.2	50.0	47.1	ug/L	75-124
trans-1,3-Dichloropropene	104.	50.0	52.1	ug/L	73-127
Trichloroethene	96.2	50.0	48.1	ug/L	79-123
Trichlorofluoromethane	92.8	50.0	46.4	ug/L	65-141
Vinyl Chloride	111.	50.0	55.5	ug/L	58-137
Dibromofluoromethane	98.5				80-120
1,2-Dichloroethane-d4	92.2				81-120
Toluene-d8	101.				89-120
P-Bromofluorobenzene	97.7				85-120

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P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1477.d
Report Date: 23-May-2018 11:35

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D052218B.b\D1477.d
Lab Smp Id: WG228859-1
Inj Date : 22-MAY-2018 13:18 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228859-1,SL3902
Misc Info : WG228859,WG228847-4,SL3902-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D052218B.b\D8A05(23)D.m
Meth Date : 23-May-2018 11:33 gcms-d.i Quant Type: ISTD
Cal Date : 22-MAY-2018 11:28 Cal File: D1475.d
Als bottle: 2 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.487	(0.203)	224904	63.6487	63.6	
2	Chloromethane	50	1.663	1.654	(0.227)	207576	54.5290	54.5	
3	Vinyl chloride	62	1.737	1.728	(0.238)	168827	55.4903	55.5	
4	Bromomethane	94	2.025	2.025	(0.277)	84605	52.1558	52.2	
5	Chloroethane	64	2.146	2.146	(0.293)	82566	52.6370	52.6	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	240887	46.4341	46.4	
7	Diethyl Ether	59	2.583	2.584	(0.353)	94414	48.4583	48.4	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	45338	239.925	240	
9	1,1-Dichloroethene	96	2.788	2.779	(0.381)	99620	44.3162	44.3	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	321591	49.4700	49.5	
11	Freon-113	151	2.834	2.835	(0.387)	74144	44.8678	44.9	
12	Iodomethane	142	2.936	2.937	(0.401)	102725	57.7805	57.8	
13	Acrolein	56	3.169	3.160	(0.433)	75164	208.766	209	
14	Methylene Chloride	84	3.448	3.448	(0.471)	153012	48.7893	48.8	
15	Acetone	43	3.522	3.522	(0.482)	43535	42.8268	42.8	
16	Isobutyl Alcohol	43	7.612	7.604	(1.041)	95650	943.255	943	
17	trans-1,2-Dichloroethene	96	3.652	3.643	(0.499)	139637	47.1224	47.1	
18	Allyl Chloride	41	3.317	3.318	(0.454)	213518	51.3338	51.3	
19	Methyl tert-butyl ether	73	3.810	3.801	(0.521)	390023	51.1539	51.2	
20	Acetonitrile	39	4.145	4.136	(0.567)	36317	462.189	462	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	486500	52.9322	52.9	
22	Chloroprene	53	4.489	4.480	(0.614)	232798	49.2138	49.2	
23	Propionitrile	54	7.148	7.148	(0.977)	182359	467.348	467	
24	Methacrylonitrile	41	7.185	7.176	(0.982)	892432	476.011	476	

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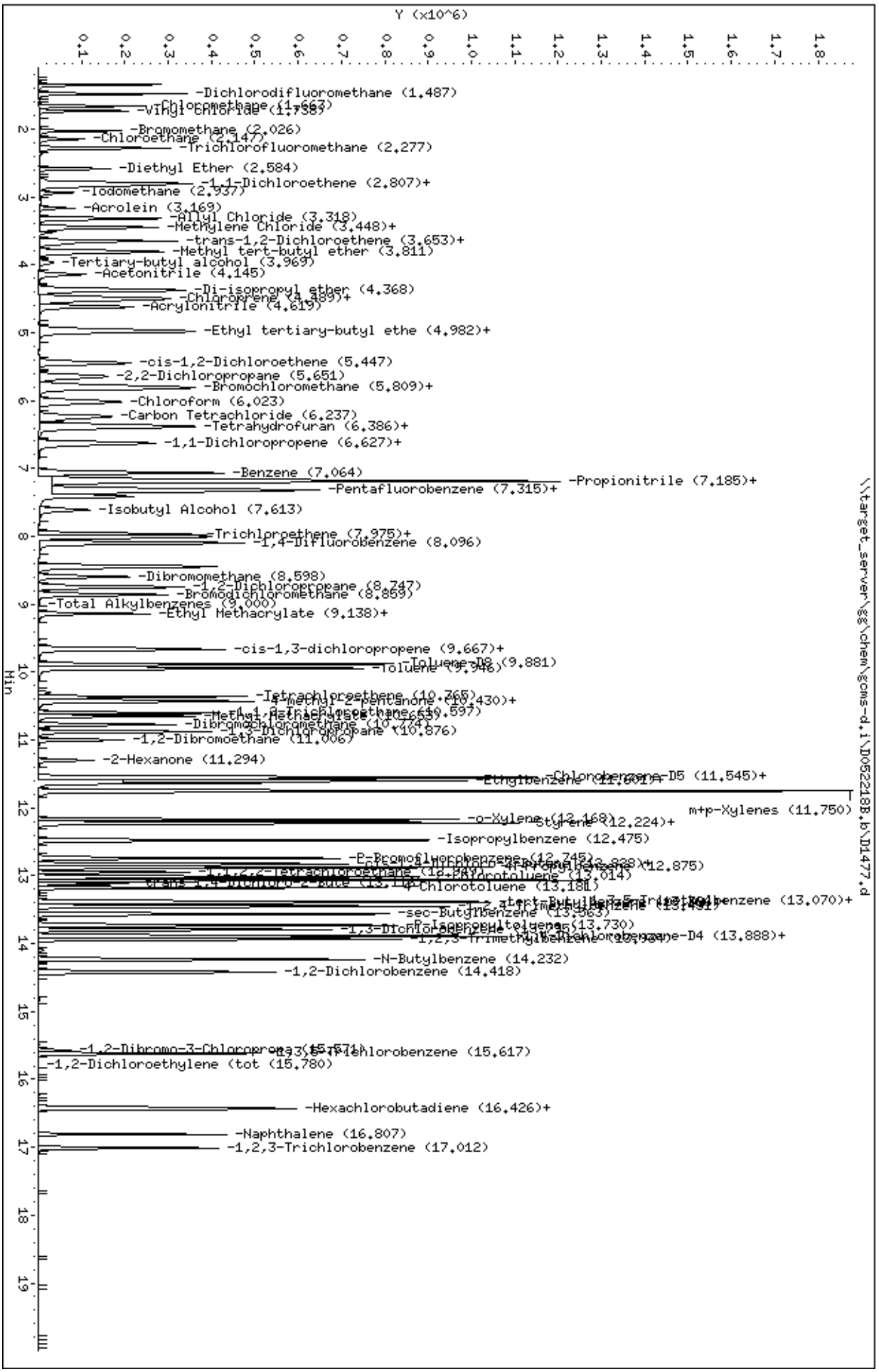
Report Date: 23-May-2018 11:35

							CONCENTRATIONS		
		QUANT SIG					ON-COLUMN	FINAL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	25 1,1-Dichloroethane	63	4.517	4.517	(0.617)	296772	50.5288	50.5	
	26 Acrylonitrile	52	4.619	4.610	(0.631)	211248	237.548	238	
	27 Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	422806	52.9748	53.0	
	28 Vinyl Acetate	43	4.991	4.982	(0.616)	378555	58.1829	58.2	
	29 cis-1,2-Dichloroethene	96	5.446	5.438	(0.745)	151251	49.3906	49.4	
M	30 1,2-Dichloroethylene (total)	96				290888	96.5130	96.5	
	31 Methyl Methacrylate	41	10.652	10.643	(1.316)	132979	46.8206	46.8	
	32 2,2-Dichloropropane	77	5.651	5.642	(0.773)	194656	44.5447	44.5	
	33 Bromochloromethane	128	5.818	5.809	(0.795)	76486	49.9283	49.9	
	34 Chloroform	83	6.023	6.014	(0.823)	298406	48.0901	48.1	
	35 Carbon Tetrachloride	117	6.237	6.228	(0.770)	210093	47.6063	47.6	
	36 Tetrahydrofuran	42	6.320	6.302	(0.864)	34884	44.2030	44.2	
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	177112	49.2561	49.2	
	38 1,1,1-Trichloroethane	97	6.385	6.376	(0.873)	251002	46.6937	46.7	
	39 1,1-Dichloropropene	75	6.627	6.618	(0.819)	213025	49.2660	49.3	
	40 2-Butanone	43	6.655	6.655	(0.910)	62130	40.3941	40.4	
	41 Benzene	78	7.064	7.055	(0.873)	563230	49.7773	49.8	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	292824	50.0000		
	43 Cyclohexane	56	5.800	5.781	(0.793)	221055	50.9054	50.9	
	44 Ethyl Methacrylate	69	9.137	9.137	(1.129)	90868	46.6913	46.7	
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	240919	46.1195	46.1	
	46 Tertiary-amyl methyl ether	73	7.343	7.334	(1.004)	337446	50.0746	50.1	
	47 1,2-Dichloroethane	62	7.408	7.408	(0.915)	249322	44.9599	45.0	
	48 Trichloroethene	95	8.012	8.003	(0.990)	152954	48.1124	48.1	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	466113	50.0000		
	50 Dibromomethane	93	8.598	8.589	(1.062)	105056	48.7692	48.8	
	51 1,2-Dichloropropane	63	8.747	8.738	(1.080)	156327	50.2872	50.3	
	52 Bromodichloromethane	83	8.858	8.849	(1.094)	232901	51.5828	51.6	
	53 cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	253752	44.9582	45.0	
	54 1,4-Dioxane	88	9.146	9.137	(1.130)	25080	1105.94	1100	
$	55 Toluene-D8	98	9.881	9.881	(1.220)	583367	50.5477	50.5	
	56 2-Chloroethylvinylether	63	9.639	9.639	(1.191)	91137	55.7922	55.8	
	57 Toluene	92	9.946	9.937	(1.228)	337831	49.3338	49.3	
	58 4-methyl-2-pentanone	43	10.411	10.411	(1.286)	131581	42.7181	42.7	
	59 Tetrachloroethene	164	10.364	10.365	(0.898)	108040	47.6519	47.6	
	60 trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	240590	52.0746	52.1	
	61 1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	116637	48.5146	48.5	
	62 Dibromochloromethane	129	10.773	10.774	(0.933)	164647	52.8831	52.9	
	63 1,3-Dichloropropane	76	10.875	10.876	(0.942)	239844	48.0621	48.1	
	64 1,2-Dibromoethane	107	11.006	10.997	(1.359)	140073	48.9903	49.0	
	65 2-Hexanone	43	11.294	11.294	(0.978)	89121	40.9396	40.9	
*	66 Chlorobenzene-D5	117	11.545	11.536	(1.000)	412871	50.0000		
	67 Chlorobenzene	112	11.554	11.555	(1.001)	368749	48.5073	48.5	
	68 Ethylbenzene	91	11.601	11.601	(1.005)	657080	48.6185	48.6	
	69 1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.007)	143400	50.7850	50.8	
M	70 Xylenes (total)	106				1537240	150.011	150	
	71 m+p-Xylenes	91	11.749	11.750	(1.018)	1016735	98.7347	98.7	
	72 o-Xylene	91	12.168	12.168	(1.054)	520505	51.2762	51.3	
	73 Styrene	104	12.223	12.224	(1.059)	393884	49.3106	49.3	
	74 Bromoform	173	12.233	12.233	(1.060)	92224	50.9968	51.0	
	75 Isopropylbenzene	105	12.484	12.475	(0.899)	601289	53.4551	53.4	
$	76 P-Bromofluorobenzene	95	12.744	12.735	(1.574)	228128	48.8740	48.9	
	77 cis-1,4-Dichloro-2-Butene	53	12.818	12.810	(0.923)	49965	43.0772	43.1	
	78 trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.944)	40505	46.7125	46.7	

Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1477.d
Report Date: 23-May-2018 11:35

		QUANT SIG					CONCENTRATIONS ON-COLUMN	CONCENTRATIONS FINAL	
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
79	Bromobenzene	156	12.837	12.828	(0.924)	150680	49.4506	49.4	
80	N-Propylbenzene	91	12.874	12.875	(0.927)	736939	48.7530	48.8	
81	1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.932)	162397	47.1940	47.2	
82	1,3,5-Trimethylbenzene	105	13.069	13.061	(0.941)	503321	50.9024	50.9	
83	2-Chlorotoluene	91	13.014	13.014	(0.937)	446017	49.7028	49.7	
84	1,2,3-Trichloropropane	75	13.069	13.070	(0.941)	140494	45.2289	45.2	
85	4-Chlorotoluene	91	13.181	13.172	(0.949)	474828	49.0552	49.0	
86	tert-Butylbenzene	119	13.376	13.377	(0.963)	470708	51.2836	51.3	
87	Pentachloroethane	117	13.395	13.395	(0.965)	110042	52.4703	52.5	
88	1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	518545	51.4380	51.4	
89	P-Isopropyltoluene	119	13.729	13.730	(0.989)	497900	52.0118	52.0	
90	1,3-Dichlorobenzene	146	13.794	13.795	(0.993)	272470	49.3398	49.3	
* 91	1,4-Dichlorobenzene-D4	152	13.887	13.879	(1.000)	208475	50.0000		
92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	274343	47.4056	47.4	
93	N-Butylbenzene	91	14.231	14.232	(1.025)	481441	51.4020	51.4	
94	sec-Butylbenzene	105	13.562	13.563	(0.977)	600618	50.7691	50.8	
95	1,2-Dichlorobenzene	146	14.417	14.418	(1.038)	258038	49.9196	49.9	
96	1,2-Dibromo-3-Chloropropane	157	15.570	15.571	(1.121)	21452	41.1589	41.2	
97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	176889	49.8492	49.8	
98	Hexachlorobutadiene	225	16.416	16.407	(1.182)	66225	45.2216	45.2	
99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.183)	148960	49.7025	49.7	
100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.003)	513630	49.9398	49.9	
101	Naphthalene	128	16.807	16.806	(1.210)	289958	44.3325	44.3	
102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.225)	111727	44.9583	45.0	
103	Methyl Acetate	43	3.689	3.690	(0.504)	106047	43.3196	43.3	
104	Methylcyclohexane	83	7.975	7.966	(1.090)	203250	50.6398	50.6	
M 153	Total Alkylbenzenes	100				3809472	356.560	356	


Data File: \\target_server\gg\chem\gcms-d.i\D052218B.b\D1477.d
Date : 22-MAY-2018 13:18
Client ID:
Sample Info: WG228859-1,SL3902
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D052218B.b\D1477.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.667)
-Vinyl Chloride (1.758)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.584)
-1,1-Dichloroethene (2.807)+
-Iodomethane (2.937)
-Acrolein (3.169)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)+
-trans-1,2-Dichloroethene (3.653)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.145)
-Di-isopropyl ether (4.368)
-Chloroprene (4.489)+
-Acrylonitrile (4.619)
-Ethyl tertiary-butyl ethe (4.982)+
-cis-1,2-Dichloroethene (5.447)
-2,2-Dichloropropane (5.651)
-Bromochloromethane (5.809)+
-Chloroform (6.023)
-Carbon Tetrachloride (6.237)
-Tetrahydrofuran (6.386)+
-1,1-Dichloropropene (6.627)+
-Benzene (7.064)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.975)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.598)
-1,2-Dichloropropane (8.747)
-Bromodichloromethane (8.859)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.667)+
-Toluene-D8 (9.881)
-Toluene (9.946)
-Tetrachloroethene (10.365)
-4-Methyl-2-pentanone (10.430)+
-Methyl Methacrylate (10.597)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (11.006)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-Ethylbenzene (11.601)+
m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-Bromofluorobenzene (12.745)
-Bromoform (12.828)+
-Isopropyltoluene (12.875)
-1,1,2,2-Tetrachloroethane (12.947)
-4-Chlorotoluene (13.181)
-n-Propylbenzene (13.070)+
-sec-Butylbenzene (13.363)
-1,3-Dichlorobenzene (13.730)
-1,4-Dichlorobenzene-D4 (13.888)+
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropane (15.571)
-1,2,4-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)

Katahdin
ANALYTICAL SERVICES

MS/MSD Recovery Report

MS ID: WG228566-6
MSD ID: WG228566-7
Sample ID: SL3902-12
Client ID: CHAAP-19C-LGIA-DPT06
Project:
SDG: SL3902
MS File ID: D1372.D

Received Date:
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566
Report Date: 23-MAY-18
MSD File ID: D1373.d

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
1,1,1,2-Tetrachloroethane	50.0	50.0	ug/L	U0.50	49.9	50.5	99.8	101.	1	20	78-125
1,1,1-Trichloroethane	50.0	50.0	ug/L	U0.50	48.6	48.6	97.2	97.2	0	20	74-131
1,1,2,2-Tetrachloroethane	50.0	50.0	ug/L	U0.50	48.3	47.3	96.6	94.6	2	20	71-121
Freon-113	50.0	50.0	ug/L	EMM620	606.	592.	0*	0*	2	20	70-136
1,1,2-Trichloroethane	50.0	50.0	ug/L	U0.50	48.8	47.4	97.6	94.8	3	20	80-120
1,1-Dichloroethane	50.0	50.0	ug/L	U0.50	50.7	52.1	101.	104.	3	20	77-125
1,1-Dichloroethene	50.0	50.0	ug/L	U0.50	47.5	48.8	95.0	97.6	3	20	71-131
1,1-Dichloropropene	50.0	50.0	ug/L	U0.50	48.8	49.8	97.6	99.6	2	20	79-125
1,2,3-Trichlorobenzene	50.0	50.0	ug/L	U0.50	46.5	46.3	93.0	92.6	0	20	69-129
1,2,3-Trichloropropane	50.0	50.0	ug/L	U0.50	47.9	46.8	95.8	93.6	2	20	73-122
1,2,4-Trichlorobenzene	50.0	50.0	ug/L	U0.50	48.3	48.2	96.6	96.4	0	20	69-130
1,2,4-Trimethylbenzene	50.0	50.0	ug/L	U0.50	49.6	48.8	99.2	97.6	2	20	76-124
1,2-Dibromo-3-Chloropropane	50.0	50.0	ug/L	U0.50	46.4	48.7	92.8	97.4	5	20	62-128
1,2-Dichlorobenzene	50.0	50.0	ug/L	U0.50	48.2	47.5	96.4	95.0	1	20	80-120
1,2-Dichloroethane	50.0	50.0	ug/L	U0.50	49.4	47.8	98.8	95.6	3	20	73-128
1,2-Dichloropropane	50.0	50.0	ug/L	U0.50	49.2	48.2	98.4	96.4	2	20	78-122
1,3,5-Trimethylbenzene	50.0	50.0	ug/L	U0.50	49.6	49.2	99.2	98.4	1	20	75-124
1,3-Dichlorobenzene	50.0	50.0	ug/L	U0.50	47.6	47.1	95.2	94.2	1	20	80-120
1,3-Dichloropropane	50.0	50.0	ug/L	U0.50	47.0	46.8	94.0	93.6	0	20	80-120
1,4-Dichlorobenzene	50.0	50.0	ug/L	U0.50	45.8	45.2	91.6	90.4	1	20	79-120
2,2-Dichloropropane	50.0	50.0	ug/L	U0.50	44.3	44.2	88.6	88.4	0	20	60-139
2-Butanone	50.0	50.0	ug/L	U2.5	48.9	48.3	97.8	96.6	1	20	56-143
2-Chlorotoluene	50.0	50.0	ug/L	U0.50	48.2	47.8	96.4	95.6	1	20	79-122
2-Hexanone	50.0	50.0	ug/L	U2.5	48.6	50.0	97.2	100.	3	20	57-139
4-Chlorotoluene	50.0	50.0	ug/L	U0.50	48.0	47.6	96.0	95.2	1	20	78-122
P-Isopropyltoluene	50.0	50.0	ug/L	U0.50	49.3	49.2	98.6	98.4	0	20	77-127
4-Methyl-2-Pentanone	50.0	50.0	ug/L	U2.5	50.8	48.8	102.	97.6	4	20	67-130
Acetone	50.0	50.0	ug/L	U2.5	50.2	51.6	100.	103.	3	20	39-160
Benzene	50.0	50.0	ug/L	U0.50	48.7	48.6	97.4	97.2	0	20	79-120
Bromobenzene	50.0	50.0	ug/L	U0.50	46.3	46.3	92.6	92.6	0	20	80-120
Bromoform	50.0	50.0	ug/L	U0.50	51.9	54.5	104.	109.	5	20	66-130
Bromomethane	50.0	50.0	ug/L	U1.0	40.6	43.2	81.2	86.4	6	20	53-141
Carbon Disulfide	50.0	50.0	ug/L	U0.50	47.8	47.8	95.6	95.6	0	20	64-133

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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ANALYTICAL SERVICES

MS/MSD Recovery Report

MS ID: WG228566-6
MSD ID: WG228566-7
Sample ID: SL3902-12
Client ID: CHAAP-19C-LGIA-DPT06
Project:
SDG: SL3902
MS File ID: D1372.D

Received Date:
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566
Report Date: 23-MAY-18
MSD File ID: D1373.d

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Carbon Tetrachloride	50.0	50.0	ug/L	U0.50	50.0	49.5	100.	99.0	1	20	72-136
Chlorobenzene	50.0	50.0	ug/L	U0.50	47.1	46.8	94.2	93.6	1	20	82-120
Bromochloromethane	50.0	50.0	ug/L	U0.50	47.8	49.6	95.6	99.2	4	20	78-123
Dibromochloromethane	50.0	50.0	ug/L	U0.50	51.8	52.9	104.	106.	2	20	74-126
Chloroethane	50.0	50.0	ug/L	U1.0	49.2	51.0	98.4	102.	4	20	60-138
Chloroform	50.0	50.0	ug/L	U0.50	49.3	49.0	98.6	98.0	1	20	79-124
Chloromethane	50.0	50.0	ug/L	U1.0	50.2	51.8	100.	104.	3	20	50-139
cis-1,2-Dichloroethene	50.0	50.0	ug/L	U0.50	46.4	48.3	92.8	96.6	4	20	78-123
cis-1,3-Dichloropropene	50.0	50.0	ug/L	U0.50	42.7	42.6	85.4	85.2	0	20	75-124
Dibromomethane	50.0	50.0	ug/L	U0.50	50.3	49.1	101.	98.2	2	20	79-123
Bromodichloromethane	50.0	50.0	ug/L	U0.50	52.6	52.7	105.	105.	0	20	79-125
Dichlorodifluoromethane	50.0	50.0	ug/L	J1.6	51.4	52.3	99.6	101.	2	20	32-152
Ethylbenzene	50.0	50.0	ug/L	U0.50	47.9	48.1	95.8	96.2	0	20	79-121
1,2-Dibromoethane	50.0	50.0	ug/L	U0.50	48.8	47.6	97.6	95.2	2	20	77-121
Hexachlorobutadiene	50.0	50.0	ug/L	U0.75	42.4	43.0	84.8	86.0	1	20	66-134
Isopropylbenzene	50.0	50.0	ug/L	U0.50	51.4	51.5	103.	103.	0	20	72-131
Methyl tert-butyl Ether	50.0	50.0	ug/L	U0.50	46.2	48.4	92.4	96.8	5	20	71-124
Methylene Chloride	50.0	50.0	ug/L	U2.5	45.9	46.7	91.8	93.4	2	20	74-124
m+p-Xylenes	100.	100.	ug/L	U1.0	99.2	99.0	99.2	99.0	0	20	80-121
Naphthalene	50.0	50.0	ug/L	U0.50	43.6	44.0	87.2	88.0	1	20	61-128
N-Butylbenzene	50.0	50.0	ug/L	U0.50	50.1	49.3	100.	98.6	2	20	75-128
N-Propylbenzene	50.0	50.0	ug/L	U0.50	47.1	47.0	94.2	94.0	0	20	76-126
o-Xylene	50.0	50.0	ug/L	U0.50	51.0	51.1	102.	102.	0	20	78-122
sec-Butylbenzene	50.0	50.0	ug/L	U0.50	49.0	48.8	98.0	97.6	0	20	77-126
Styrene	50.0	50.0	ug/L	U0.50	51.4	50.2	103.	100.	2	20	78-123
tert-Butylbenzene	50.0	50.0	ug/L	U0.50	49.5	49.1	99.0	98.2	1	20	78-124
Tetrachloroethene	50.0	50.0	ug/L	U0.50	46.2	47.6	92.4	95.2	3	20	74-129
Toluene	50.0	50.0	ug/L	U0.50	48.6	47.5	97.2	95.0	2	20	80-121
trans-1,2-Dichloroethene	50.0	50.0	ug/L	U0.50	46.5	47.3	93.0	94.6	2	20	75-124
trans-1,3-Dichloropropene	50.0	50.0	ug/L	U0.50	52.6	52.0	105.	104.	1	20	73-127
Trichloroethene	50.0	50.0	ug/L	U0.50	48.8	47.6	97.6	95.2	2	20	79-123
Trichlorofluoromethane	50.0	50.0	ug/L	U1.0	49.4	47.5	98.8	95.0	4	20	65-141
Vinyl Chloride	50.0	50.0	ug/L	U1.0	45.7	49.7	91.4	99.4	8	20	58-137

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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ANALYTICAL SERVICES

MS/MSD Recovery Report

MS ID: WG228566-6
MSD ID: WG228566-7
Sample ID: SL3902-12
Client ID: CHAAP-19C-LGIA-DPT06
Project:
SDG: SL3902
MS File ID: D1372.D

Received Date:
Extract Date: 17-MAY-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG228566
Report Date: 23-MAY-18
MSD File ID: D1373.d

Analysis Date: 17-MAY-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA

Dibromofluoromethane	101.	100.	80-120
1,2-Dichloroethane-d4	106.	103.	81-120
Toluene-d8	101.	99.8	89-120
P-Bromofluorobenzene	105.	101.	85-120

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1372.d
Report Date: 21-May-2018 14:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-d.i\D051718B.b\D1372.d
Lab Smp Id: WG228566-6
Inj Date : 17-MAY-2018 21:22 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228566-6,SL3902
Misc Info : WG228566,WG228547-4,SL3902-12
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051718B.b\D8A05(22)D.m
Meth Date : 21-May-2018 14:29 gcms-d.i Quant Type: ISTD
Cal Date : 17-MAY-2018 11:09 Cal File: D1356.d
Als bottle: 16 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.486	(0.203)	218630	51.4057	51.4	
2	Chloromethane	50	1.663	1.654	(0.227)	195911	50.2094	50.2	
3	Vinyl chloride	62	1.737	1.728	(0.238)	139663	45.6879	45.7	
4	Bromomethane	94	2.025	2.025	(0.277)	62882	40.6525	40.6	
5	Chloroethane	64	2.146	2.137	(0.293)	70063	49.2360	49.2	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	237108	49.3877	49.4	
7	Diethyl Ether	59	2.583	2.583	(0.353)	75675	50.2903	50.3	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.542)	37552	216.755	217	
9	1,1-Dichloroethene	96	2.788	2.779	(0.381)	84988	47.5174	47.5	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	275774	47.8265	47.8	
11	Freon-113	151	2.834	2.834	(0.387)	888310	605.548	606(AR)	
12	Iodomethane	142	2.936	2.937	(0.401)	70684	38.8842	38.9	
13	Acrolein	56	3.169	3.160	(0.433)	87700	263.010	263	
14	Methylene Chloride	84	3.448	3.448	(0.471)	124509	45.9420	45.9	
15	Acetone	43	3.522	3.522	(0.482)	39829	50.2138	50.2	
16	Isobutyl Alcohol	43	7.612	7.613	(1.041)	94670	959.472	959	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	114901	46.4866	46.5	
18	Allyl Chloride	41	3.317	3.318	(0.454)	186521	49.5988	49.6	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	297137	46.2364	46.2	
20	Acetonitrile	39	4.136	4.136	(0.565)	34918	520.882	521	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	388107	45.3972	45.4	
22	Chloroprene	53	4.479	4.480	(0.612)	211470	53.3492	53.3	
23	Propionitrile	54	7.148	7.148	(0.977)	175395	527.936	528	
24	Methacrylonitrile	41	7.185	7.185	(0.982)	855713	541.653	542	

Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1372.d
Report Date: 21-May-2018 14:32

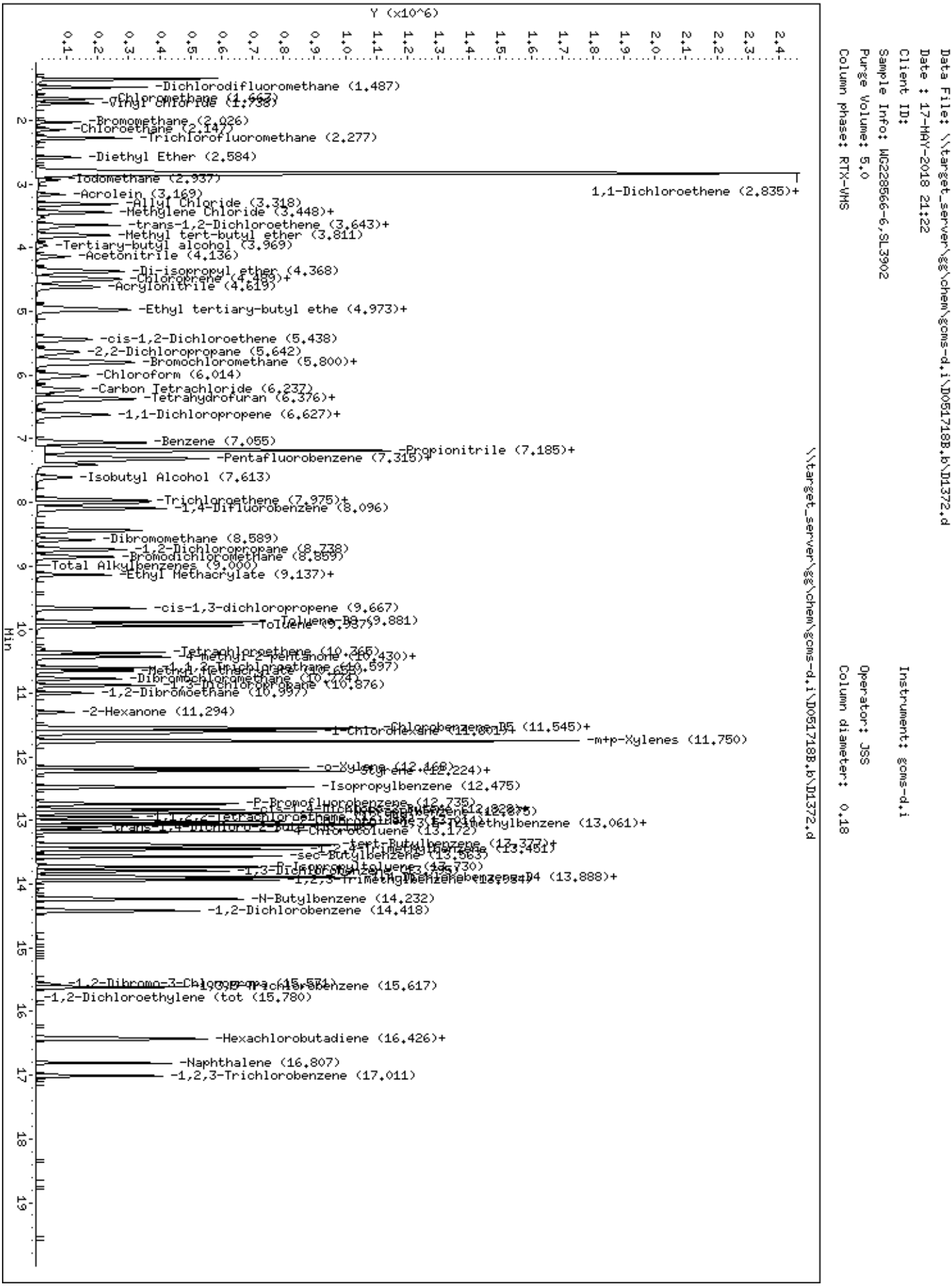
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	25	1,1-Dichloroethane	63	4.517	4.517	(0.617)	251969	50.7073	50.7	
	26	Acrylonitrile	52	4.619	4.610	(0.631)	202518	253.258	253	
	27	Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	330060	44.7382	44.7	
	28	Vinyl Acetate	43	4.981	4.982	(0.615)	307133	53.9969	54.0	
	29	cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	121460	46.4180	46.4	
M	30	1,2-Dichloroethylene (total)	96				236361	92.9046	92.9	
	31	Methyl Methacrylate	41	10.643	10.643	(1.315)	123119	49.0851	49.1	
	32	2,2-Dichloropropane	77	5.642	5.642	(0.771)	154106	44.3169	44.3	
	33	Bromochloromethane	128	5.818	5.809	(0.795)	62550	47.7586	47.8	
	34	Chloroform	83	6.013	6.014	(0.822)	256445	49.2913	49.3	
	35	Carbon Tetrachloride	117	6.237	6.237	(0.770)	187085	49.9674	50.0	
	36	Tetrahydrofuran	42	6.311	6.311	(0.863)	32507	47.7856	47.8	
$	37	Dibromofluoromethane	113	6.376	6.376	(0.872)	151159	50.5475	50.5	
	38	1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	218142	48.6128	48.6	
	39	1,1-Dichloropropene	75	6.627	6.627	(0.819)	181591	48.8481	48.8	
	40	2-Butanone	43	6.655	6.655	(0.910)	57656	48.9011	48.9	
	41	Benzene	78	7.055	7.064	(0.871)	469110	48.6833	48.7	
*	42	Pentafluorobenzene	168	7.315	7.315	(1.000)	244070	50.0000		
	43	Cyclohexane	56	5.790	5.791	(0.792)	192751	48.6579	48.6	
	44	Ethyl Methacrylate	69	9.137	9.137	(1.129)	81456	45.6412	45.6	
$	45	1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	215605	52.8438	52.8	
	46	Tertiary-amyl methyl ether	73	7.333	7.334	(1.003)	264474	44.2476	44.2	
	47	1,2-Dichloroethane	62	7.408	7.408	(0.915)	222960	49.3895	49.4	
	48	Trichloroethene	95	8.003	8.003	(0.989)	134997	48.7803	48.8	
*	49	1,4-Difluorobenzene	114	8.096	8.096	(1.000)	394408	50.0000		
	50	Dibromomethane	93	8.588	8.589	(1.061)	92005	50.3485	50.3	
	51	1,2-Dichloropropane	63	8.737	8.738	(1.079)	131352	49.1584	49.2	
	52	Bromodichloromethane	83	8.858	8.858	(1.094)	199150	52.6030	52.6	
	53	cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	200718	42.6963	42.7	
	54	1,4-Dioxane	88	9.137	9.137	(1.129)	22381	982.599	982	
$	55	Toluene-D8	98	9.881	9.881	(1.220)	486983	50.6577	50.6	
	57	Toluene	92	9.936	9.937	(1.227)	289858	48.6020	48.6	
	58	4-methyl-2-pentanone	43	10.411	10.411	(1.286)	123357	50.7863	50.8	
	59	Tetrachloroethene	164	10.364	10.364	(0.898)	91786	46.2233	46.2	
	60	trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	201357	52.5595	52.6	
	61	1,1,2-Trichloroethane	83	10.596	10.597	(1.309)	101125	48.8449	48.8	
	62	Dibromochloromethane	129	10.773	10.774	(0.934)	142998	51.7530	51.8	
	63	1,3-Dichloropropane	76	10.875	10.876	(0.943)	208411	47.0415	47.0	
	64	1,2-Dibromoethane	107	10.996	10.997	(1.358)	122252	48.8575	48.8	
	65	2-Hexanone	43	11.294	11.294	(0.979)	81269	48.6389	48.6	
*	66	Chlorobenzene-D5	117	11.535	11.536	(1.000)	370197	50.0000		
	67	Chlorobenzene	112	11.554	11.554	(1.002)	320136	47.1345	47.1	
	152	1-Chlorohexane	91	11.601	11.601	(1.006)	577029			(aR)
	68	Ethylbenzene	91	11.601	11.601	(1.006)	577029	47.9448	47.9	
	69	1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	123506	49.8622	49.9	
M	70	Xylenes (total)	106				1353658	150.251	150	
	71	m+p-Xylenes	91	11.749	11.750	(1.019)	902132	99.1997	99.2	
	72	o-Xylene	91	12.168	12.168	(1.055)	451526	51.0515	51.0	
	73	Styrene	104	12.223	12.224	(1.060)	338010	51.4253	51.4	
	74	Bromoform	173	12.233	12.233	(1.060)	83383	51.9426	51.9	
	75	Isopropylbenzene	105	12.474	12.475	(0.899)	535135	51.4133	51.4	
$	76	P-Bromofluorobenzene	95	12.735	12.735	(1.573)	207919	52.5088	52.5	
	77	cis-1,4-Dichloro-2-Butene	53	12.809	12.809	(0.923)	48215	43.1815	43.2	
	78	trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	40526	45.3452	45.3	

Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1372.d
Report Date: 21-May-2018 14:32

		QUANT SIG					CONCENTRATIONS ON-COLUMN	CONCENTRATIONS FINAL	
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
79	Bromobenzene	156	12.828	12.828	(0.924)	131939	46.3089	46.3	
80	N-Propylbenzene	91	12.874	12.874	(0.928)	666082	47.1381	47.1	
81	1,1,2,2-Tetrachloroethane	83	12.948	12.949	(0.933)	157131	48.3109	48.3	
82	1,3,5-Trimethylbenzene	105	13.060	13.060	(0.941)	448545	49.6024	49.6	
83	2-Chlorotoluene	91	13.014	13.014	(0.938)	397984	48.2026	48.2	
84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	138894	47.9004	47.9	
85	4-Chlorotoluene	91	13.172	13.172	(0.949)	424228	47.9892	48.0	
86	tert-Butylbenzene	119	13.376	13.377	(0.964)	423670	49.4689	49.5	
87	Pentachloroethane	117	13.395	13.395	(0.965)	101064	50.2548	50.2	
88	1,2,4-Trimethylbenzene	105	13.450	13.451	(0.969)	463334	49.6154	49.6	
89	P-Isopropyltoluene	119	13.729	13.720	(0.989)	444286	49.3096	49.3	
90	1,3-Dichlorobenzene	146	13.794	13.795	(0.994)	244782	47.6033	47.6	
* 91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	194033	50.0000		
92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	245178	45.7846	45.8	
93	N-Butylbenzene	91	14.231	14.222	(1.025)	442208	50.1261	50.1	
94	sec-Butylbenzene	105	13.562	13.562	(0.977)	547303	49.0498	49.0	
95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	230575	48.1829	48.2	
96	1,2-Dibromo-3-Chloropropane	75	15.570	15.570	(1.122)	25794	46.4047	46.4	
97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	160316	48.9022	48.9	
98	Hexachlorobutadiene	225	16.416	16.407	(1.183)	58963	42.4506	42.4	
99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	136691	48.3444	48.3	
100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	471698	51.0638	51.1	
101	Naphthalene	128	16.806	16.806	(1.211)	286938	43.6300	43.6	
102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	109674	46.4785	46.5	
103	Methyl Acetate	43	3.689	3.690	(0.504)	91701	44.5687	44.6	
104	Methylcyclohexane	83	7.966	7.966	(1.089)	188984	46.8150	46.8	
M 153	Total Alkylbenzenes	100				3435428	344.310	344	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.
R - Spike/Surrogate failed recovery limits.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Date : 17-MAY-2018 21:22
Client ID:
Sample Info: WG228566-6,SL3902
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051718B.b\D1372.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)
-Vinyl chloride (1.738)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.584)
-Iodomethane (2.937)
1,1-Dichloroethene (2.835)+
-Acrolein (3.169)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)+
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.489)+
-Acrylonitrile (4.619)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.438)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)
-Tetrahydrofuran (6.376)+
-1,1-Dichloropropene (6.627)+
-Benzene (7.055)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.315)+
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.975)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.859)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.137)+
-cis-1,3-dichloropropene (9.667)
-Toluene (9.937)
-Toluene-D8 (9.881)
-Tetrachloroethene (10.365)
-4-methyl-2-pentanone (10.430)+
-Methyl Methacrylate (10.655)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-1-Chlorohexane (11.601)+
-m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Styrene (12.224)+
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-1,1,2,2-Tetrachloroethane (12.875)
-trans-1,4-Dichloro-2-Butene (13.014)
-4-Chlorotoluene (13.172)
-1,3,5-Trimethylbenzene (13.061)+
-tert-Butylbenzene (13.377)+
-1,2,4-Trimethylbenzene (13.451)
-sec-Butylbenzene (13.563)
-P-Isopropyltoluene (13.730)
-1,3-Dichlorobenzene (13.795)
-1,4-Dichlorobenzene-D4 (13.888)+
-1,2,3-Trimethylbenzene (13.934)
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dibromo-3-Chloropropa (15.571)
-1,3,5-Trichlorobenzene (15.617)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.011)

Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1373.d
Report Date: 21-May-2018 14:32

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Data file : \\target_server\gg\chem\gcms-d.i\D051718B.b\D1373.d
Lab Smp Id: WG228566-7
Inj Date : 17-MAY-2018 21:58 MS Autotune Date: 05-OCT-2017 14:30
Operator : JSS Inst ID: gcms-d.i
Smp Info : WG228566-7,SL3902
Misc Info : WG228566,WG228547-4,SL3902-12
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-d.i\D051718B.b\D8A05(22)D.m
Meth Date : 21-May-2018 14:29 gcms-d.i Quant Type: ISTD
Cal Date : 17-MAY-2018 11:09 Cal File: D1356.d
Als bottle: 17 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.486	1.486	(0.203)	234707	52.3293	52.3	
2	Chloromethane	50	1.663	1.654	(0.227)	213236	51.8208	51.8	
3	Vinyl chloride	62	1.737	1.728	(0.238)	160260	49.7122	49.7	
4	Bromomethane	94	2.025	2.025	(0.277)	70551	43.2495	43.2	
5	Chloroethane	64	2.146	2.137	(0.293)	76554	51.0128	51.0	
6	Trichlorofluoromethane	101	2.276	2.277	(0.311)	240296	47.4610	47.5	
7	Diethyl Ether	59	2.583	2.583	(0.353)	84045	52.9616	53.0	
8	Tertiary-butyl alcohol	59	3.968	3.969	(0.543)	41525	227.070	227	
9	1,1-Dichloroethene	96	2.788	2.779	(0.381)	92120	48.8390	48.8	
10	Carbon Disulfide	76	2.806	2.807	(0.384)	290857	47.8314	47.8	
11	Freon-113	151	2.834	2.834	(0.387)	916401	592.362	592(AR)	
12	Iodomethane	142	2.936	2.937	(0.401)	83062	43.0129	43.0	
13	Acrolein	56	3.169	3.160	(0.433)	91292	259.611	260	
14	Methylene Chloride	84	3.448	3.448	(0.471)	133441	46.6892	46.7	
15	Acetone	43	3.522	3.522	(0.482)	43183	51.6243	51.6	
16	Isobutyl Alcohol	43	7.603	7.613	(1.039)	96979	932.736	933	
17	trans-1,2-Dichloroethene	96	3.643	3.643	(0.498)	123363	47.3267	47.3	
18	Allyl Chloride	41	3.318	3.318	(0.454)	199980	50.4252	50.4	
19	Methyl tert-butyl ether	73	3.810	3.811	(0.521)	327792	48.3664	48.4	
20	Acetonitrile	39	4.145	4.136	(0.567)	35550	502.860	503	
21	Di-isopropyl ether	45	4.368	4.368	(0.597)	419213	46.4725	46.5	
22	Chloroprene	53	4.480	4.480	(0.612)	224189	53.6304	53.6	
23	Propionitrile	54	7.148	7.148	(0.977)	183201	522.889	523	
24	Methacrylonitrile	41	7.185	7.185	(0.982)	881596	529.151	529	

Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1373.d
Report Date: 21-May-2018 14:32

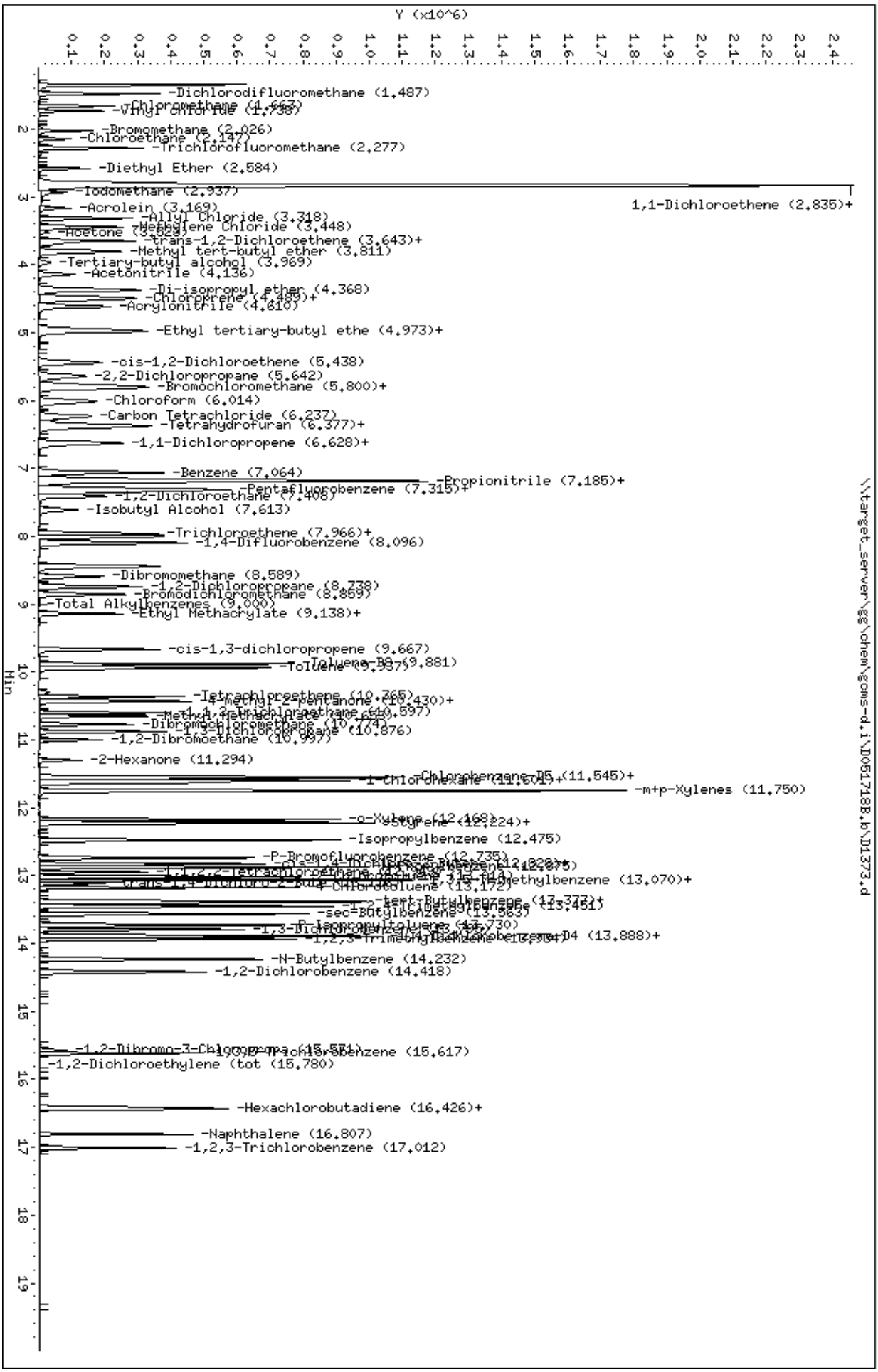
							CONCENTRATIONS		
		QUANT SIG					ON-COLUMN	FINAL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	25 1,1-Dichloroethane	63	4.517	4.517	(0.617)	273045	52.1045	52.1	
	26 Acrylonitrile	52	4.610	4.610	(0.630)	210735	249.893	250	
	27 Ethyl tertiary-butyl ether	59	4.963	4.963	(0.678)	360273	46.2548	46.2	
	28 Vinyl Acetate	43	4.982	4.982	(0.615)	324774	53.4217	53.4	
	29 cis-1,2-Dichloroethene	96	5.437	5.437	(0.743)	133184	48.2639	48.3	
M	30 1,2-Dichloroethylene (total)	96				256547	95.5906	95.6	
	31 Methyl Methacrylate	41	10.643	10.643	(1.315)	126089	47.0895	47.1	
	32 2,2-Dichloropropane	77	5.642	5.642	(0.771)	161966	44.1664	44.2	
	33 Bromochloromethane	128	5.809	5.809	(0.794)	68504	49.5973	49.6	
	34 Chloroform	83	6.013	6.014	(0.822)	268636	48.9619	49.0	
	35 Carbon Tetrachloride	117	6.237	6.237	(0.770)	198006	49.4790	49.5	
	36 Tetrahydrofuran	42	6.311	6.311	(0.863)	34593	48.2199	48.2	
$	37 Dibromofluoromethane	113	6.376	6.376	(0.872)	158513	50.2630	50.3	
	38 1,1,1-Trichloroethane	97	6.376	6.376	(0.872)	230142	48.6324	48.6	
	39 1,1-Dichloropropene	75	6.627	6.627	(0.819)	197901	49.8076	49.8	
	40 2-Butanone	43	6.655	6.655	(0.910)	60098	48.3339	48.3	
	41 Benzene	78	7.064	7.064	(0.873)	501110	48.6556	48.6	
*	42 Pentafluorobenzene	168	7.315	7.315	(1.000)	257393	50.0000		
	43 Cyclohexane	56	5.790	5.791	(0.792)	206985	49.5465	49.5	
	44 Ethyl Methacrylate	69	9.137	9.137	(1.129)	88550	46.3963	46.4	
$	45 1,2-Dichloroethane-D4	65	7.296	7.297	(0.997)	222113	51.6211	51.6	
	46 Tertiary-amyl methyl ether	73	7.334	7.334	(1.003)	286503	45.4090	45.4	
	47 1,2-Dichloroethane	62	7.408	7.408	(0.915)	230785	47.8310	47.8	
	48 Trichloroethene	95	8.003	8.003	(0.989)	140850	47.6180	47.6	
*	49 1,4-Difluorobenzene	114	8.096	8.096	(1.000)	421552	50.0000		
	50 Dibromomethane	93	8.589	8.589	(1.061)	95885	49.0931	49.1	
	51 1,2-Dichloropropane	63	8.737	8.738	(1.079)	137803	48.2519	48.2	
	52 Bromodichloromethane	83	8.858	8.858	(1.094)	213107	52.6651	52.7	
	53 cis-1,3-dichloropropene	75	9.667	9.667	(1.194)	214045	42.6025	42.6	
	54 1,4-Dioxane	88	9.137	9.137	(1.129)	23950	983.778	984	
$	55 Toluene-D8	98	9.881	9.881	(1.220)	512719	49.9006	49.9	
	57 Toluene	92	9.937	9.937	(1.227)	303042	47.5408	47.5	
	58 4-methyl-2-pentanone	43	10.411	10.411	(1.286)	126799	48.8420	48.8	
	59 Tetrachloroethene	164	10.364	10.364	(0.898)	98083	47.6074	47.6	
	60 trans-1,3-Dichloropropene	75	10.429	10.430	(1.288)	212961	52.0091	52.0	
	61 1,1,2-Trichloroethane	83	10.597	10.597	(1.309)	104864	47.3895	47.4	
	62 Dibromochloromethane	129	10.773	10.774	(0.934)	151651	52.8990	52.9	
	63 1,3-Dichloropropane	76	10.875	10.876	(0.943)	215254	46.8283	46.8	
	64 1,2-Dibromoethane	107	10.996	10.997	(1.358)	127385	47.6308	47.6	
	65 2-Hexanone	43	11.294	11.294	(0.979)	86776	50.0559	50.0	
*	66 Chlorobenzene-D5	117	11.535	11.536	(1.000)	384093	50.0000		
	67 Chlorobenzene	112	11.554	11.554	(1.002)	329927	46.8186	46.8	
	152 1-Chlorohexane	91	11.601	11.601	(1.006)	600129			(aR)
	68 Ethylbenzene	91	11.601	11.601	(1.006)	600129	48.0601	48.1	
	69 1,1,1,2-Tetrachloroethane	131	11.628	11.629	(1.008)	129779	50.4991	50.5	
M	70 Xylenes (total)	106				1403220	150.121	150	
	71 m+p-Xylenes	91	11.749	11.750	(1.019)	933953	98.9832	99.0	
	72 o-Xylene	91	12.168	12.168	(1.055)	469267	51.1378	51.1	
	73 Styrene	104	12.223	12.224	(1.060)	342705	50.2533	50.2	
	74 Bromoform	173	12.233	12.233	(1.060)	90854	54.5489	54.5	
	75 Isopropylbenzene	105	12.474	12.475	(0.899)	552511	51.4954	51.5	
$	76 P-Bromofluorobenzene	95	12.735	12.735	(1.573)	214451	50.6711	50.7	
	77 cis-1,4-Dichloro-2-Butene	53	12.809	12.809	(0.923)	49784	43.2517	43.2	
	78 trans-1,4-Dichloro-2-Butene	53	13.116	13.116	(0.945)	40423	43.8953	43.9	

Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1373.d
Report Date: 21-May-2018 14:32

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	79	Bromobenzene	156	12.828	12.828	(0.924)	135997	46.3058	46.3	
	80	N-Propylbenzene	91	12.874	12.874	(0.928)	685466	47.0593	47.0	
	81	1,1,2,2-Tetrachloroethane	83	12.949	12.949	(0.933)	158605	47.3059	47.3	
	82	1,3,5-Trimethylbenzene	105	13.069	13.060	(0.942)	459069	49.2481	49.2	
	83	2-Chlorotoluene	91	13.014	13.014	(0.938)	406514	47.7634	47.8	
	84	1,2,3-Trichloropropane	75	13.069	13.070	(0.942)	139742	46.7518	46.8	
	85	4-Chlorotoluene	91	13.172	13.172	(0.949)	433869	47.6122	47.6	
	86	tert-Butylbenzene	119	13.376	13.377	(0.964)	433804	49.1375	49.1	
	87	Pentachloroethane	117	13.395	13.395	(0.965)	104719	50.5152	50.5	
	88	1,2,4-Trimethylbenzene	105	13.451	13.451	(0.969)	469493	48.7716	48.8	
	89	P-Isopropyltoluene	119	13.729	13.720	(0.989)	457299	49.2362	49.2	
	90	1,3-Dichlorobenzene	146	13.795	13.795	(0.994)	249510	47.0718	47.1	
*	91	1,4-Dichlorobenzene-D4	152	13.878	13.879	(1.000)	200014	50.0000		
	92	1,4-Dichlorobenzene	146	13.897	13.897	(1.001)	249376	45.1760	45.2	
	93	N-Butylbenzene	91	14.231	14.222	(1.025)	448585	49.3284	49.3	
	94	sec-Butylbenzene	105	13.562	13.562	(0.977)	561402	48.8088	48.8	
	95	1,2-Dichlorobenzene	146	14.417	14.418	(1.039)	234243	47.4857	47.5	
	96	1,2-Dibromo-3-Chloropropane	75	15.570	15.570	(1.122)	27887	48.6699	48.7	
	97	1,3,5-Trichlorobenzene	180	15.617	15.617	(1.125)	159588	47.2244	47.2	
	98	Hexachlorobutadiene	225	16.416	16.407	(1.183)	61551	42.9888	43.0	
	99	1,2,4-Trichlorobenzene	180	16.435	16.434	(1.184)	140446	48.1871	48.2	
	100	1,2,3-Trimethylbenzene	105	13.934	13.934	(1.004)	476762	50.0686	50.1	
	101	Naphthalene	128	16.807	16.806	(1.211)	298402	44.0003	44.0	
	102	1,2,3-Trichlorobenzene	180	17.011	17.011	(1.226)	112650	46.3121	46.3	
	103	Methyl Acetate	43	3.689	3.690	(0.504)	98358	45.3297	45.3	
	104	Methylcyclohexane	83	7.966	7.966	(1.089)	195182	45.8612	45.9	
M	153	Total Alkylbenzenes	100				3515118	341.590	342	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.
R - Spike/Surrogate failed recovery limits.


Data File: \\target_server\gg\chem\gcms-d.i\D051718B.b\D1373.d
Date : 17-MAY-2018 21:58
Client ID:
Sample Info: WG228566-7,SL3902
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-d.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-d.i\D051718B.b\D1373.d
Y (x10^6)
Min
-Dichlorodifluoromethane (1.487)
-Chloromethane (1.663)
-Vinyl chloride (1.738)
-Bromomethane (2.026)
-Chloroethane (2.147)
-Trichlorofluoromethane (2.277)
-Diethyl Ether (2.584)
-Iodomethane (2.937)
1,1-Dichloroethene (2.835)+
-Acrolein (3.169)
-Allyl Chloride (3.318)
-Methylene Chloride (3.448)
-Acetone (3.523)
-trans-1,2-Dichloroethene (3.643)+
-Methyl tert-butyl ether (3.811)
-Tertiary-butyl alcohol (3.969)
-Acetonitrile (4.136)
-Di-isopropyl ether (4.368)
-Chloroprene (4.489)+
-Acrylonitrile (4.610)
-Ethyl tertiary-butyl ethe (4.973)+
-cis-1,2-Dichloroethene (5.438)
-2,2-Dichloropropane (5.642)
-Bromochloromethane (5.800)+
-Chloroform (6.014)
-Carbon Tetrachloride (6.237)
-Tetrahydrofuran (6.377)+
-1,1-Dichloropropene (6.628)+
-Benzene (7.064)
-Propionitrile (7.185)+
-Pentafluorobenzene (7.315)+
-1,2-Dichloroethane (7.406)
-Isobutyl Alcohol (7.613)
-Trichloroethene (7.966)+
-1,4-Difluorobenzene (8.096)
-Dibromomethane (8.589)
-1,2-Dichloropropane (8.738)
-Bromodichloromethane (8.859)
-Total Alkylbenzenes (9.000)
-Ethyl Methacrylate (9.138)+
-cis-1,3-dichloropropene (9.667)
-Toluene (9.937)
-Tetrachloroethene (10.265)
-4-methyl-2-pentanone (10.430)+
-Methyl Methacrylate (10.597)
-Dibromochloromethane (10.774)
-1,3-Dichloropropane (10.876)
-1,2-Dibromoethane (10.997)
-2-Hexanone (11.294)
-Chlorobenzene-D5 (11.545)+
-m+p-Xylenes (11.750)
-o-Xylene (12.168)
-Isopropylbenzene (12.475)
-P-Bromofluorobenzene (12.735)
-Bromoform (13.070)+
-sec-Butylbenzene (13.563)
-N-Butylbenzene (14.232)
-1,2-Dichlorobenzene (14.418)
-1,2-Dichloroethylene (tot (15.780)
-Hexachlorobutadiene (16.426)+
-Naphthalene (16.807)
-1,2,3-Trichlorobenzene (17.012)

Logbooks and Supporting Documents

KATAHDIN ANALYTICAL SERVICES

GCMS-D INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 051018

					PREP METHOD			Criteria			pH Paper Lot #			KI Paper Lot #	
SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	5030	5035	1311	KAS	DoD	QAPP	Y/N	ANALYST	PH	TRC	COMMENTS
WG227999-10	DB173	1	1	10ABFBA2							Y	KJ	NA	NA	
Rinse	D1258	1	1	D8A05(21)							N				
WG227999-4	59	1	2								Y				
-3	60	1	3								Y				
-2	61	1	4								Y				
-1	62	1	5								Y				
-6	63	1	6								Y				
-5	64	1	7								Y				
-7	65	1	8								N				
-7	66	1	9								N				
-7	67	1	10								N				
VBLK	68	1	11								N				
WG227999-9	69	1	12								N				

STANDARD	CODE
BFB	V1052
CAL. STD.	
LCS/MS MIX	
EXTRAS MIX	

STANDARD	CODE
IS MIX	V1084
SS MIX	

5-11-18

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

Katahdin Analytical Services 1000270

GCMS-D INSTRUMENT RUNLOG

KATAHDIN ANALYTICAL SERVICES

DATE/TIME OF BFB INJECTION: 051118 7:52

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	5035	1311	Criteria KAS	DoD	QAPP	pH Paper Lot #: Y/N	ANALYST	PH	TRC	KI Paper Lot # COMMENTS
WG228096 -3	DB174	1	-1	VOABFBAQ2							Y	HG			
-4	D1271	1	1	D8A05(21)							Y				
-1/9	72	1	2								Y				Ind
VBLKA	73	1	3								N				
WG228096 -2	74	1	4								Y				
SL3807-5 B	75	1	5						5.0		N		<2		No CCV
SL3992-9 B	76	1	6						↓		N		<2		
SL4035-2DL A	77	20	7				X		5.1		N		—		
SL3992-8 B	78	1	8						5.0		N		<2		
-7 B	79	1	9								N		<2		
-2DL D	80	4	10								N		<2		Over-dilute Run 11
-6DL E	81	2	11								N		<2		DL 1:10
-2 D	82	1	12						↓		N		<2		↓
SL3777-1RA G	83	1	13					X			Y		<2		1556✓
SL3992-2MS E	84	1	14						5.0						Didn't run, Archon fault
-2MSD F	85	1	15												
-6MS G	86	1	16												
-6MSD F	87	1	17						↓						
CCV1	88	1	18												
2	89	1	19												
3	90	1	20												
Rinse	91	1	21												
Rinse	92	1	22												

TTC 5/4/18

STANDARD	CODE
BFB	V1052
CAL. STD.	V1092/V1093A
LCS/MS MIX	V1096
EXTRAS MIX	V1094

STANDARD	CODE
IS MIX	V1084
SS MIX	↓

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM	EPA 624
(heated purge)	EPA 524

GCMS-D INSTRUMENT RUNLOG

KATAHDIN ANALYTICAL SERVICES

DATE/TIME OF BFB INJECTION: 5-16-18 12:14

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	PREP METHOD 5035	PREP METHOD 1311	Criteria KAS	Criteria DoD	Criteria QAPP	pH Paper Lot #: Y/N	ANALYST	PH	TRC	KI Paper Lot # COMMENTS
WG228421-3	D3179	1	—	[illegible]	✓						Y	TB			
rstd50	D1328		1	D8A05(21)							Y				
LCS	29		2								Y				
rBlmkA	30		3								N				~~1ss↑~~
↓ B	31		4								Y				1ss↑ ~~no hits~~ no hits
SL3902-1A	32		5						5.0		Y		<2		1ss↑
↓ -14A	33		6								Y				
SL3841-4B	34		7								Y				1ss↑
-6B	35		8								Y				1ss↑
-8B	36		9								Y				1ss↑
-10B	37		10								Y				1ss↑
-12B	38		11								Y				1ss↑
-14B	39		12								Y				1ss↑
-16B	40		13								Y				1ss↑
-18B	41		14								Y				1ss↑
SL3902-2B	42		15								Y				1ss↑
-4B	43		16								Y				1ss↑
-6B	44		17								Y				1ss↑
CCV1	45		18								Y				23:06 ✓
2	46		19								N				not needed
3	47		20								N				↓
Rmse	48		21												
↓	49		22												

TB 5-17-18

STANDARD	CODE
BFB	V1098
CAL. STD.	V1099/V1093B
LCS/MS MIX	V1090
EXTRAS MIX	V1094

STANDARD	CODE
IS MIX	V1084
SS MIX	↓

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

VOA-012 - Revision 2 - 11/22/2017

QAMS655

0000014

Katahdin Analytical Services 1000272

KATAHDIN ANALYTICAL SERVICES

GCMS-D INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 5-17-18 7:31

					PREP METHOD			Criteria			pH Paper Lot #:				KI Paper Lot #
SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	5030	5035	1311	KAS	DoD	QAPP	Y/N	ANALYST	PH	TRC	COMMENTS
W0228547-7	DB180	1	—	10ABCB150	✓						Y	[illegible]			
50 -4	D1351		1	D8A95(22)							Y				
20 -3	52		2								Y				
5 -2	53		3								Y				[illegible]
1 -1	54		4								Y				
150 -6	55		5								Y				[illegible]
100 -5	56		6												
															5-17-18

STANDARD	CODE
BFB	V1095
CAL. STD.	V1102 | V1100A
LCS/MS MIX	V1094
EXTRAS MIX	V1103

STANDARD	CODE
IS MIX	V1095
SS MIX	

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM	EPA 624
(heated purge)	EPA 524

GCMS-D INSTRUMENT RUNLOG

KATAHDIN ANALYTICAL SERVICES

DATE/TIME OF BFB INJECTION: 5-17-18 D 11:45

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	5035	1311	Criteria KAS	DoD	QAPP	pH Paper Lot #: Y/N	ANALYST	PH	TRC	KI Paper Lot # COMMENTS
VG22856-3	D3151	1	—	VOAMS05	✓						Y	R	7		
VSTD50	D1357		1	DFAOS(22)							Y				
LCS	58		2								Y				(A)=IND-8
VBlankA	59		3								N				Target hits
↓ B	60		4								Y				
SL3952-1A	61		5						5.0		Y		<2		
↓ -1BA	62		6								Y		<2		
SL3902-8A	63		7								Y		<2		
↓ -10A	64		8								Y		<2		
SL3952-2A	65		9								Y		<2		
-4A	66		10								Y		<2		
-6A	67		11								Y		<2		
-8A	68		12								Y		<2		
-10A	69		13								Y		<2		
-12A	70		14								Y		<2		
SL3902-12A	71		15								Y		<2		DC 1:0
12MS3-6	72		16								Y		<2		
12MS5-7	73		17								Y		<2		
CCV1 -5	74		18								Y				2234✓
↓ 2	75		19								N				Not noted
↓ 3	76		20								N				↓
Rinse	77		21								—				
↓	78		22		↓							↓	↓		

STANDARD	CODE
BFB	V1098
CAL. STD.	V1102/V1102A
LCS/MS MIX	V1091C
EXTRAS MIX	V1103

STANDARD	CODE
IS MIX	V1095
SS MIX	↓

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

TJC 5/18/18

KATAHDIN ANALYTICAL SERVICES

GCMS-D INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 5-22-18

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	5035	1311	Criteria KAS	DoD	QAPP	pH Paper Lot # Y/N	ANALYST	PH	KI Paper Lot # TRC	COMMENTS
W6228847-	DB[illegible]	1	–	[illegible]	✓						Y	[illegible]			
50 -4	D1470	1	1	[illegible]							Y				
20 -3	71	1	2								Y				Come
5 -2	72	1	3								Y				okay
1 -1	73	1	4								Y				5-22-18
150 -6	74	1	5								Y				
100 -5	75	1	6								Y				

[illegible] 5-22-18

STANDARD	CODE
BFB	V1098
CAL. STD.	V1105 / V1105A
LCS/MS MIX	V1096
EXTRAS MIX	V1107

STANDARD	CODE
IS MIX	V1110
SS MIX	✓

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

GCMS-D INSTRUMENT RUNLOG

KATAHDIN ANALYTICAL SERVICES

DATE/TIME OF BFB INJECTION: 5-22-18 12:02

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	5035	1311	Criteria KAS	DoD	QAPP	pH Paper Lot #: Y/N	ANALYST	PH	TRC	KI Paper Lot # COMMENTS
WG228859-3	DB189	1	–	KABCBDD	✓						Y	[illegible]		NA	
VStd50	D1476	1	1	D8A05(23)							Y				
Ind/LCS	77	1	2								Y				Ind ↑ DCDDM (A)-6
VBlankA	78	1	3								N				target hits
B	79	1	4								Y				
SL4233-1A	80	1	5						5.0		Y		<2		
SL4278-1A	81	1	6						5.0		Y		<2		
-2A	82	1	7						✓		Y		<2		
SL3902-12DL	83	10	8						5.0		Y		<2		
SL4206-7	84	1	9						5.0		Y		<2		
-8	85	1	10								Y		<2		1SS↑ no target hits
-9	86	1	11								Y		<2		
SL4278-3	87	1	12								Y		<2		1SS↑ no target hits
-4	88	1	13								Y		<2		1SS↑ no target hits
-5	89	1	14								Y		<2		1SS↑
-6	90	1	15								Y		<2		1SS↑
-7	91	1	16								Y		<2		1SS↑
-8	92	1	17								Y		<2		1SS↑ no target hits
CCV1	93	1	18								N				22:57 ✓
2	94	1	19								N				
3	95	1	20								N				
Rinse	96	1	21								N				
Rinse	97	1	21												

STANDARD	CODE
BFB	V1098
CAL. STD.	V1105 / V1105A
LCS/MS MIX	V1096
EXTRAS MIX	V1107

STANDARD	CODE
IS MIX	V1110
SS MIX	✓

Circle Methods:

SW846 8260
SW846 8260 SIM
SW846 8260 SIM (heated purge)
OLM 04.2
OLC 03.2
EPA 624
EPA 524

VOA-012 - Revision 2 - 11/22/2017

QAMS655

0000024

Katahdin Analytical Services 1000276

SW8270 SIM
POLYNUCLEAR AROMATIC HYDROCARBONS DATA

QC Summary Section

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** AQ
Lab Code: KAS **SDG:** SL3902

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
CHAAP-19C-LGIA-DPT10	SL3902-10RA		86.7		86.3		90.9	
CHAAP-19C-LGIA-DPT06	SL3902-12RA		71.1		74.7		71.8	
CHAAP-EB-050418-DPT	SL3902-14RA		86.3		85.2		94.2	
CHAAP-19C-LGIA-DPT10	SL3902-2RA		85.1		83.5		84.4	
CHAAP-19C-LGIA-DPT09	SL3902-4RA		85.4		82.5		86.4	
CHAAP-19C-LGIA-DPT08	SL3902-6RA		85.0		83.6		88.4	
CHAAP-19C-LGIA-DPT07	SL3902-8RA		84.7		85.0		82.4	
Method Blank Sample	WG227901-1RA		89.5		88.6		99.1	
Laboratory Control S	WG227901-2RA		88.3		85.8		93.0	
Matrix Spike	WG227901-3RA		81.7		80.9		84.4	
Matrix Spike Duplica	WG227901-4RA		77.3		76.7		78.5	

		QC Limits
FLO	FLUORENE-D10	29-120
PYR	PYRENE-D10	53-166
2MN	2-METHYLNAPHTHALENE-D10	43-120

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : N8644.D
Instrument ID : GCMS-N
Matrix : AQ

SDG : SL3902
Lab Sample ID : WG227901-1RA
Date Extracted : 09-MAY-18
Date Analyzed : 22-MAY-18
Time Analyzed : 18:28

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG227901-2RA	N8645.D	05/22/18	18:59
CHAAP-19C-LGIA-DPT10	SL3902-2RA	N8672.D	05/23/18	18:14
CHAAP-19C-LGIA-DPT09	SL3902-4RA	N8673.D	05/23/18	18:46
CHAAP-19C-LGIA-DPT08	SL3902-6RA	N8674.D	05/23/18	19:18
CHAAP-19C-LGIA-DPT07	SL3902-8RA	N8675.D	05/23/18	19:51
CHAAP-19C-LGIA-DPT107	SL3902-10RA	N8676.D	05/23/18	20:23
CHAAP-19C-LGIA-DPT06	SL3902-12RA	N8677.D	05/23/18	20:55
CHAAP-EB-050418-DPT	SL3902-14RA	N8678.D	05/23/18	21:27
Matrix Spike	WG227901-3RA	N8679.D	05/23/18	21:59
Matrix Spike Duplica	WG227901-4RA	N8680.D	05/23/18	22:31

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Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : ND521.D
Instrument ID : GCMS-N

SDG : SL3902
Date Analyzed : 22-MAY-18
Time Analyzed : 14:01

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	42.4		
68	Less than 2.0% of mass 69	0.7	1.58	1
69	Less than 100.0% of mass 198	45.7		
70	Less than 2.0% of mass 69	0.2	0.47	1
127	40.0 - 60.0% of mass 198	59.9		
197	Less than 1.0% of mass 198	0.4		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	7.3		
275	10.0 - 30.0% of mass 198	23.8		
365	1.0 - 100.0% of mass 198	3.0		
441	0.0 - 100.0% of mass 443	9.8	81.09	2
442	40.0 - 100.0% of mass 198	66.0		
443	17.0 - 23.0% of mass 442	12.0	18.24	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG228848-4	N8636.D	05/22/18	14:18
Initial Calibration	WG228848-2	N8637.D	05/22/18	14:49
Initial Calibration	WG228848-3	N8638.D	05/22/18	15:20
Initial Calibration	WG228848-5	N8639.D	05/22/18	15:51
Initial Calibration	WG228848-6	N8640.D	05/22/18	16:23
Initial Calibration	WG228848-7	N8641.D	05/22/18	16:54
Independent Source	WG228848-8	N8642.D	05/22/18	17:25
Method Blank Sample	WG227901-1RA	N8644.D	05/22/18	18:28
Laboratory Control S	WG227901-2RA	N8645.D	05/22/18	18:59
Continuing Calibrati	WG228848-9	N8657.D	05/23/18	01:24

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : ND522.D
Instrument ID : GCMS-N

SDG : SL3902
Date Analyzed : 23-MAY-18
Time Analyzed : 09:06

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	43.8		
68	Less than 2.0% of mass 69	0.6	1.40	1
69	Less than 100.0% of mass 198	45.2		
70	Less than 2.0% of mass 69	0.3	0.60	1
127	40.0 - 60.0% of mass 198	59.9		
197	Less than 1.0% of mass 198	0.2		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.5		
275	10.0 - 30.0% of mass 198	22.4		
365	1.0 - 100.0% of mass 198	2.8		
441	0.0 - 100.0% of mass 443	8.6	74.11	2
442	40.0 - 100.0% of mass 198	60.0		
443	17.0 - 23.0% of mass 442	11.6	19.27	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG228910-4	N8660.D	05/23/18	09:22
Initial Calibration	WG228910-2	N8661.D	05/23/18	09:55
Initial Calibration	WG228910-3	N8662.D	05/23/18	10:26
Initial Calibration	WG228910-5	N8663.D	05/23/18	10:58
Initial Calibration	WG228910-6	N8664.D	05/23/18	11:29
Initial Calibration	WG228910-7	N8665.D	05/23/18	12:01
Independent Source	WG228910-8	N8666.D	05/23/18	12:32

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : ND523.D
Instrument ID : GCMS-N

SDG : SL3902
Date Analyzed : 23-MAY-18
Time Analyzed : 15:21

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	37.6		
68	Less than 2.0% of mass 69	0.4	0.98	1
69	Less than 100.0% of mass 198	41.9		
70	Less than 2.0% of mass 69	0.3	0.63	1
127	40.0 - 60.0% of mass 198	56.6		
197	Less than 1.0% of mass 198	0.6		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.5		
275	10.0 - 30.0% of mass 198	23.2		
365	1.0 - 100.0% of mass 198	2.7		
441	0.0 - 100.0% of mass 443	9.5	72.59	2
442	40.0 - 100.0% of mass 198	65.6		
443	17.0 - 23.0% of mass 442	13.1	19.93	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG228941-2	N8667.D	05/23/18	15:37
CHAAP-19C-LGIA-DPT10	SL3902-2RA	N8672.D	05/23/18	18:14
CHAAP-19C-LGIA-DPT09	SL3902-4RA	N8673.D	05/23/18	18:46
CHAAP-19C-LGIA-DPT08	SL3902-6RA	N8674.D	05/23/18	19:18
CHAAP-19C-LGIA-DPT07	SL3902-8RA	N8675.D	05/23/18	19:51
CHAAP-19C-LGIA-DPT107	SL3902-10RA	N8676.D	05/23/18	20:23
CHAAP-19C-LGIA-DPT06	SL3902-12RA	N8677.D	05/23/18	20:55
CHAAP-EB-050418-DPT	SL3902-14RA	N8678.D	05/23/18	21:27
Matrix Spike	WG227901-3RA	N8679.D	05/23/18	21:59
Matrix Spike Duplica	WG227901-4RA	N8680.D	05/23/18	22:31
Continuing Calibrati	WG228941-3	N8688.D	05/24/18	02:51

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG228848-4
Lab File ID : N8636.D

SDG: SL3902
Analytical Date: 05/22/18 14:18
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	53740		7.47		177171		9.10		73557		11.43	
	Upper Limit	107480		7.64		354342		9.27		147114		11.60	
	Lower Limit	26870		7.30		88585.5		8.93		36778.5		11.27	
Client Sample ID	Lab Sample ID												
Method Blank Sample	WG227901-1RA	46075		7.48		150702		9.10		61276		11.44	
Laboratory Control S	WG227901-2RA	47961		7.47		161713		9.10		68604		11.43	
Continuing Calibrati	WG228848-9	46587		7.47		151160		9.10		62341		11.43	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG228848-4
Lab File ID : N8636.D

SDG: SL3902
Analytical Date: 05/22/18 14:18
Instrument ID: GCMS-N

		PHENANTHRENE-D10			CHRYSENE-D12			PERYLENE-D12		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	112762		13.42		40569		17.22		23975		20.24	
	Upper Limit	225524		13.59		81138		17.38		47950		20.41	
	Lower Limit	56381		13.25		20284.5		17.05		11987.5		20.08	
Client Sample ID	Lab Sample ID												
Method Blank Sample	WG227901-1RA	102718		13.42		35900		17.23		18331		20.23	
Laboratory Control S	WG227901-2RA	105234		13.42		39755		17.22		22388		20.23	
Continuing Calibrati	WG228848-9	91066		13.42		32905		17.23		18532		20.26	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

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* Values outside of QC limits.

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG228910-4
Lab File ID : N8660.D

SDG: SL3902
Analytical Date: 05/23/18 09:22
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4				NAPHTHALENE-D8				ACENAPHTHENE-D10			
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	49533		7.47		159597		9.10		66847		11.43	
	Upper Limit	99066		7.64		319194		9.27		133694		11.60	
	Lower Limit	24766.5		7.30		79798.5		8.93		33423.5		11.27	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG228941-2	58316		7.48		192142		9.10		76875		11.43	
CHAAP-19C-LGIA-DI	SL3902-2RA	59062		7.48		195386		9.11		83301		11.43	
CHAAP-19C-LGIA-DI	SL3902-4RA	58687		7.47		200773		9.10		87885		11.43	
CHAAP-19C-LGIA-DI	SL3902-6RA	56860		7.47		192209		9.10		82884		11.43	
CHAAP-19C-LGIA-DI	SL3902-8RA	58768		7.47		203433		9.10		88437		11.43	
CHAAP-19C-LGIA-DI	SL3902-10RA	60068		7.47		203538		9.10		87269		11.43	
CHAAP-19C-LGIA-DI	SL3902-12RA	65480		7.47		225260		9.10		95578		11.43	
CHAAP-EB-050418-D	SL3902-14RA	55673		7.47		190357		9.10		84312		11.43	
Matrix Spike	WG227901-3RA	56968		7.47		198983		9.10		89333		11.43	
Matrix Spike Duplica	WG227901-4RA	60651		7.47		209620		9.10		93449		11.43	
Continuing Calibrati	WG228941-3	59643		7.47		203418		9.10		87535		11.43	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG228910-4
Lab File ID : N8660.D

SDG: SL3902
Analytical Date: 05/23/18 09:22
Instrument ID: GCMS-N

		PHENANTHRENE-D10			CHRYSENE-D12			PERYLENE-D12		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	97537		13.42		37300		17.23		20220		20.26	
	Upper Limit	195074		13.59		74600		17.39		40440		20.42	
	Lower Limit	48768.5		13.25		18650		17.06		10110		20.09	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG228941-2	118415		13.42		57971		17.23		34723		20.24	
CHAAP-19C-LGIA-DI	SL3902-2RA	139844		13.42		57823		17.23		34169		20.23	
CHAAP-19C-LGIA-DI	SL3902-4RA	146428		13.42		61400		17.23		35386		20.23	
CHAAP-19C-LGIA-DI	SL3902-6RA	134140		13.42		53921		17.22		32725		20.23	
CHAAP-19C-LGIA-DI	SL3902-8RA	146854		13.42		68894		17.22		41646	*	20.23	
CHAAP-19C-LGIA-DI	SL3902-10RA	137390		13.42		54225		17.23		30660		20.23	
CHAAP-19C-LGIA-DI	SL3902-12RA	156052		13.42		73069		17.22		47129	*	20.23	
CHAAP-EB-050418-D	SL3902-14RA	136563		13.42		50927		17.22		28754		20.23	
Matrix Spike	WG227901-3RA	146597		13.42		63324		17.22		35248		20.23	
Matrix Spike Duplica	WG227901-4RA	156361		13.41		66453		17.22		36359		20.23	
Continuing Calibrati	WG228941-3	139905		13.41		65689		17.22		38044		20.23	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
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Sample Data Section

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

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Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-2RA
Client ID: CHAAP-19C-LGIA-DPT10
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: N8672.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 09-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227901

Analysis Date: 23-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 24-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.098	ug/L	1	.2	0.20	0.063	0.098
2-Methylnaphthalene	U	0.098	ug/L	1	.2	0.20	0.075	0.098
Acenaphthylene	U	0.098	ug/L	1	.2	0.20	0.053	0.098
Acenaphthene	U	0.098	ug/L	1	.2	0.20	0.063	0.098
Fluorene	U	0.098	ug/L	1	.2	0.20	0.060	0.098
Phenanthrene	U	0.098	ug/L	1	.2	0.20	0.050	0.098
Anthracene	U	0.098	ug/L	1	.2	0.20	0.043	0.098
Fluoranthene	U	0.098	ug/L	1	.2	0.20	0.072	0.098
Pyrene	U	0.098	ug/L	1	.2	0.20	0.058	0.098
Benzo(a)anthracene	U	0.098	ug/L	1	.2	0.20	0.045	0.098
Chrysene	U	0.098	ug/L	1	.2	0.20	0.035	0.098
Benzo(b)Fluoranthene	J	0.18	ug/L	1	.2	0.20	0.087	0.098
Benzo(k)fluoranthene	U	0.098	ug/L	1	.2	0.20	0.048	0.098
Benzo(a)pyrene	U	0.098	ug/L	1	.2	0.20	0.065	0.098
Indeno(1,2,3-cd)pyrene	U	0.098	ug/L	1	.2	0.20	0.051	0.098
Dibenzo(a,h)anthracene	U	0.098	ug/L	1	.2	0.20	0.069	0.098
Benzo(g,h,i)perylene	U	0.098	ug/L	1	.2	0.20	0.064	0.098
2-Methylnaphthalene-D10		85.1	%					
Fluorene-D10		83.5	%					
Pyrene-D10		84.4	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8672.D
Report Date: 24-May-2018 08:11

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052318B.b\N8672.D
Lab Smp Id: SL3902-2RA Client Smp ID: HAAP-19C-LGIA-DPT10
Inj Date : 23-MAY-2018 18:14 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL3902-2RA
Misc Info : WG228941,WG227901,WG228910-4
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N052318B.b\NSPSIM96.m
Meth Date : 24-May-2018 07:40 cgomez Quant Type: ISTD
Cal Date : 23-MAY-2018 12:01 Cal File: N8665.D
Als bottle: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

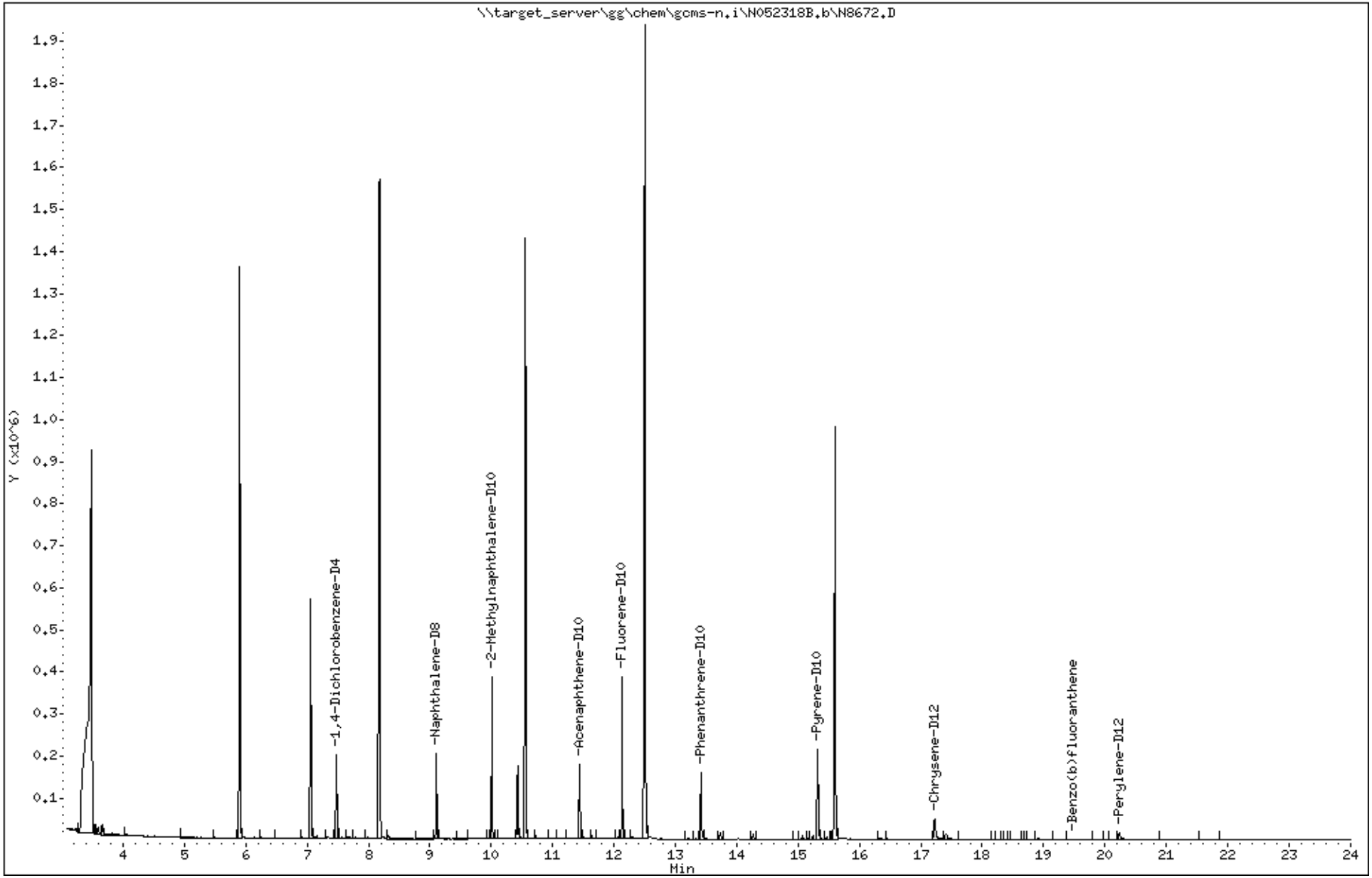
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.020	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.479	7.470	(1.000)	59062	0.80000	(aQ)	
*	26 Naphthalene-D8	136	9.110	9.101	(1.000)	195386	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	10.013	10.004	(1.099)	187363	1.70162	1.67	
*	47 Acenaphthene-D10	164	11.433	11.433	(1.000)	83301	0.80000	(a)	
$	55 Fluorene-D10	174	12.130	12.131	(1.061)	161635	1.66982	1.64	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	139844	0.80000	(a)	
$	71 Pyrene-D10	212	15.322	15.323	(0.889)	181142	1.68791	1.65	
*	76 Chrysene-D12	240	17.227	17.228	(1.000)	57823	0.80000	(a)	
	80 Benzo(b)fluoranthene	252	19.438	19.438	(0.961)	1145	0.18679	0.183(a)	
*	83 Perylene-D12	264	20.233	20.233	(1.000)	34169	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8672.D
Date : 23-MAY-2018 18:14
Client ID: HAAP-19C-LGIA-DPT10
Instrument: gcms-n.i
Sample Info: SL3902-2RA
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000017

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8672.D

Date : 23-MAY-2018 18:14

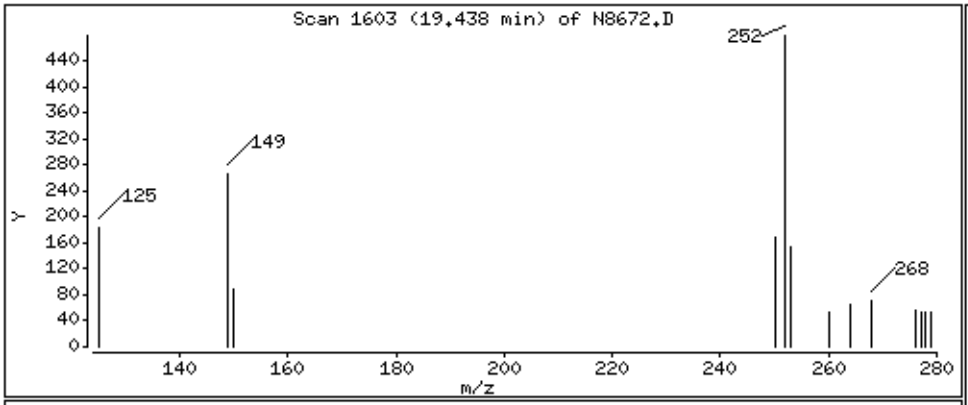
Client ID: HAAP-19C-LGIA-DPT10 Instrument: gcms-n.i

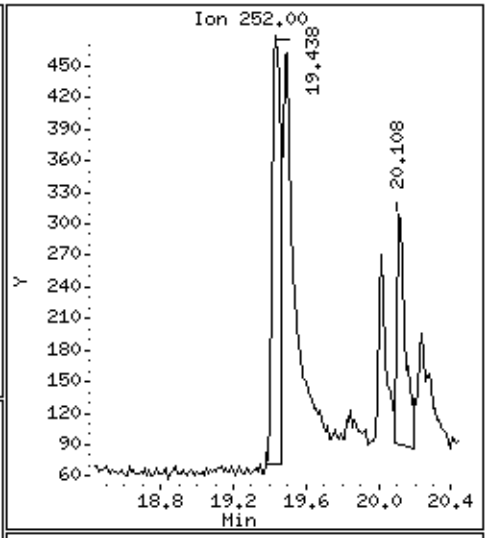
Sample Info: SL3902-2RA

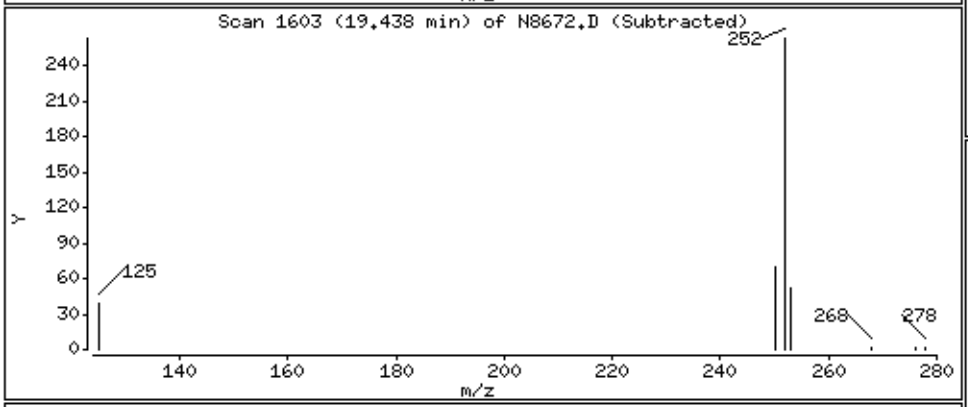
Volume Injected (uL): 1.0 Operator: JCG

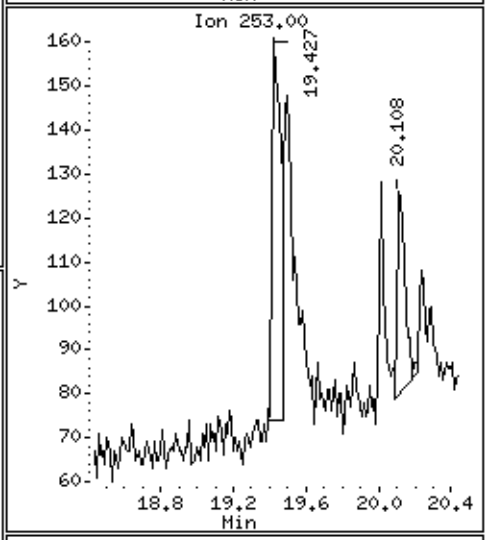
Column phase: ZB5-MS Column diameter: 0.25

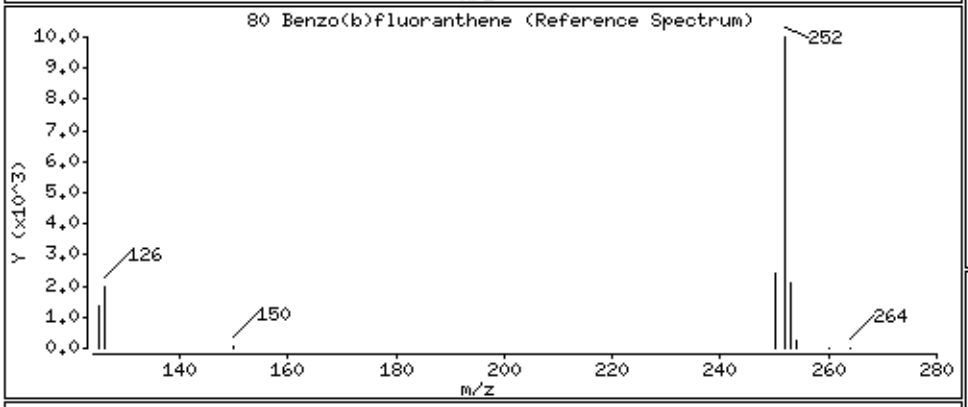
80 Benzo(b)fluoranthene Concentration: 0.183 ug/L

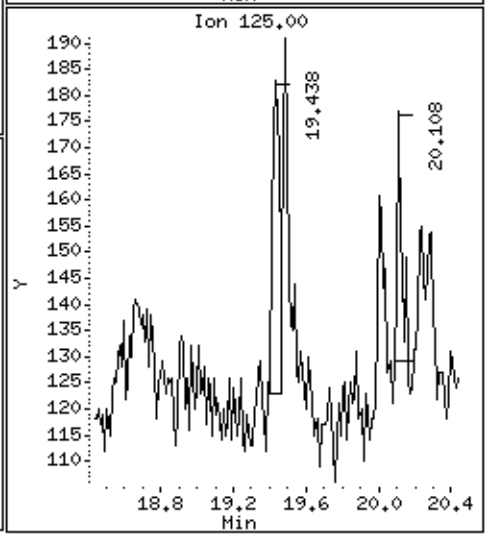


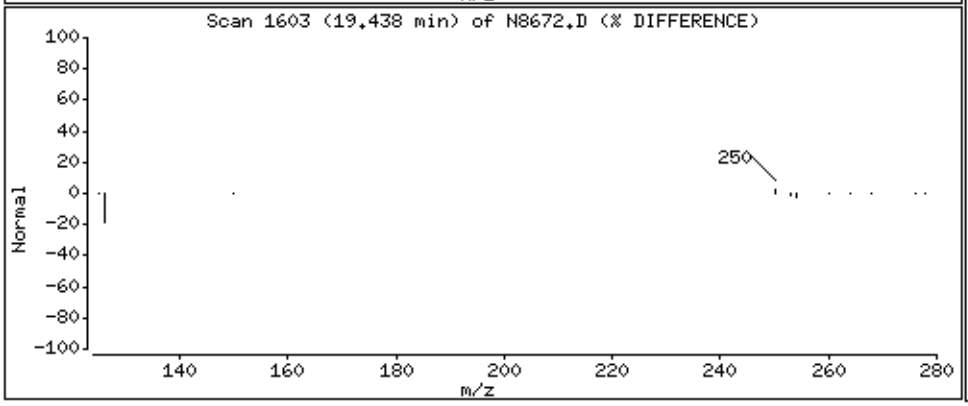












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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-4RA
Client ID: CHAAP-19C-LGIA-DPT09
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: N8673.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 09-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227901

Analysis Date: 23-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 24-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.099	ug/L	1	.2	0.20	0.063	0.099
2-Methylnaphthalene	U	0.099	ug/L	1	.2	0.20	0.076	0.099
Acenaphthylene	U	0.099	ug/L	1	.2	0.20	0.053	0.099
Acenaphthene	U	0.099	ug/L	1	.2	0.20	0.063	0.099
Fluorene	U	0.099	ug/L	1	.2	0.20	0.060	0.099
Phenanthrene	U	0.099	ug/L	1	.2	0.20	0.050	0.099
Anthracene	U	0.099	ug/L	1	.2	0.20	0.044	0.099
Fluoranthene	U	0.099	ug/L	1	.2	0.20	0.072	0.099
Pyrene	U	0.099	ug/L	1	.2	0.20	0.058	0.099
Benzo(a)anthracene	U	0.099	ug/L	1	.2	0.20	0.046	0.099
Chrysene	U	0.099	ug/L	1	.2	0.20	0.036	0.099
Benzo(b)Fluoranthene	J	0.19	ug/L	1	.2	0.20	0.088	0.099
Benzo(k)fluoranthene	U	0.099	ug/L	1	.2	0.20	0.048	0.099
Benzo(a)pyrene	U	0.099	ug/L	1	.2	0.20	0.065	0.099
Indeno(1,2,3-cd)pyrene	U	0.099	ug/L	1	.2	0.20	0.051	0.099
Dibenzo(a,h)anthracene	U	0.099	ug/L	1	.2	0.20	0.069	0.099
Benzo(g,h,i)perylene	U	0.099	ug/L	1	.2	0.20	0.064	0.099
2-Methylnaphthalene-D10		85.4	%					
Fluorene-D10		82.5	%					
Pyrene-D10		86.4	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8673.D
Report Date: 24-May-2018 08:11

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052318B.b\N8673.D
Lab Smp Id: SL3902-4RA Client Smp ID: HAAP-19C-LGIA-DPT09
Inj Date : 23-MAY-2018 18:46 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL3902-4RA
Misc Info : WG228941,WG227901,WG228910-4
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N052318B.b\NSPSIM96.m
Meth Date : 24-May-2018 07:40 cgomez Quant Type: ISTD
Cal Date : 23-MAY-2018 12:01 Cal File: N8665.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

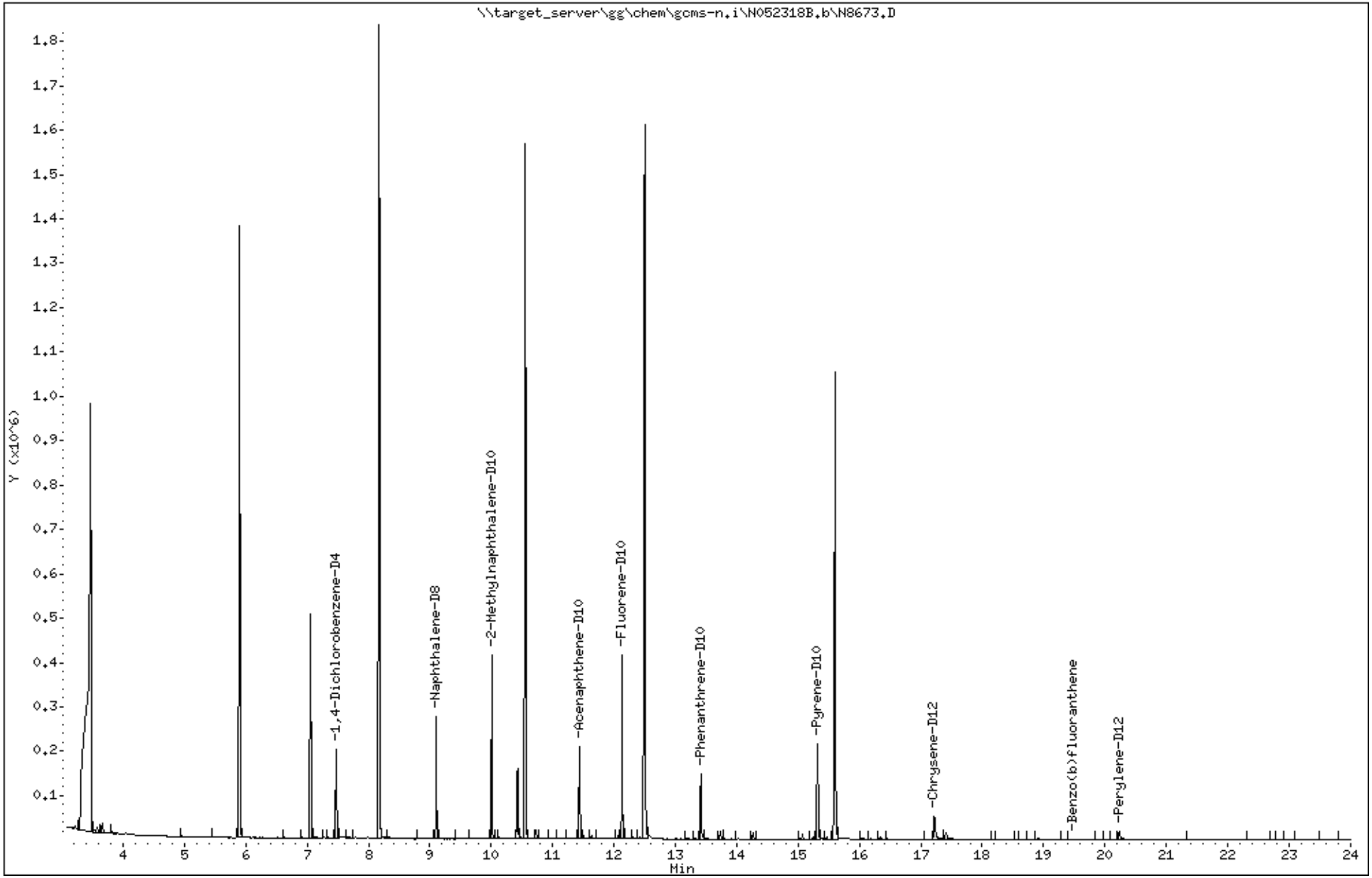
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.010	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.470	(1.000)	58687	0.80000	(aQ)	
*	26 Naphthalene-D8	136	9.100	9.101	(1.000)	200773	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	10.004	10.004	(1.099)	193178	1.70736	1.69	
*	47 Acenaphthene-D10	164	11.432	11.433	(1.000)	87885	0.80000	(a)	
$	55 Fluorene-D10	174	12.130	12.131	(1.061)	168539	1.65033	1.63	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	146428	0.80000	(a)	
$	71 Pyrene-D10	212	15.322	15.323	(0.889)	196976	1.72852	1.71	
*	76 Chrysene-D12	240	17.227	17.228	(1.000)	61400	0.80000	(a)	
	80 Benzo(b)fluoranthene	252	19.438	19.438	(0.961)	1387	0.19042	0.188(a)	
*	83 Perylene-D12	264	20.232	20.233	(1.000)	35386	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8673.D
Date : 23-MAY-2018 18:46
Client ID: HAAP-19C-LGIA-DPT09
Instrument: gcms-n.i
Sample Info: SL3902-4RA
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000021

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8673.D

Date : 23-MAY-2018 18:46

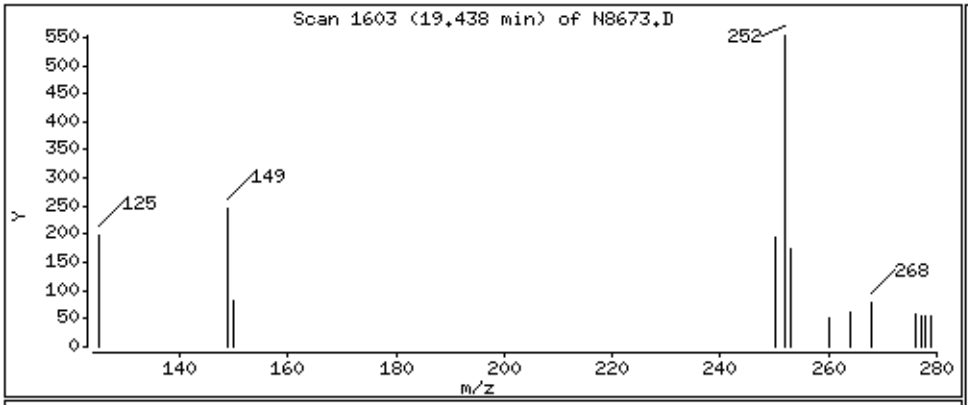
Client ID: HAAP-19C-LGIA-DPT09 Instrument: gcms-n.i

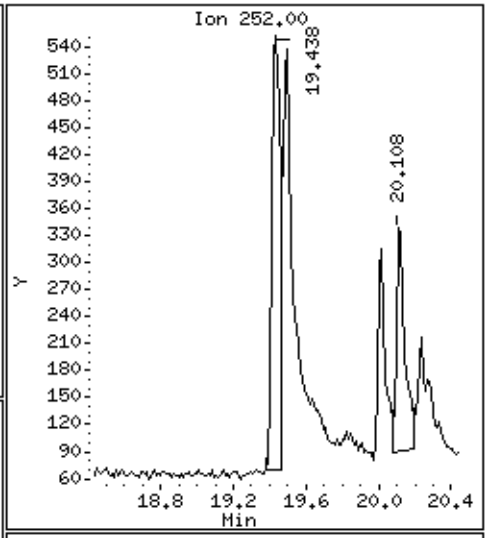
Sample Info: SL3902-4RA

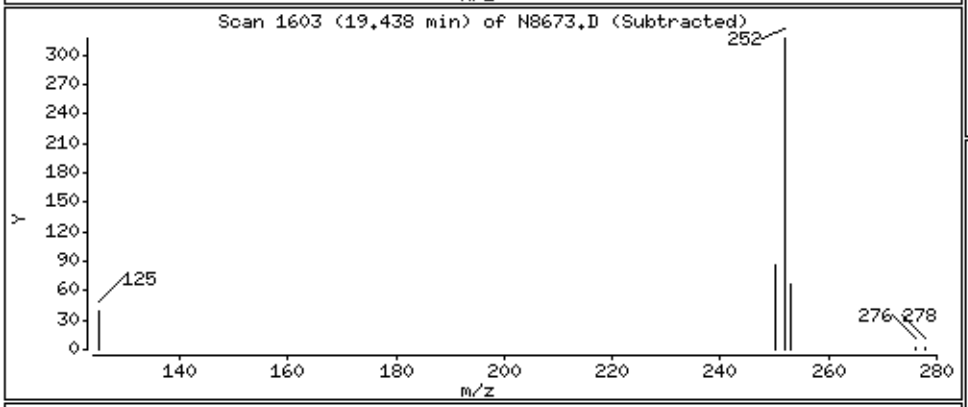
Volume Injected (uL): 1.0 Operator: JCG

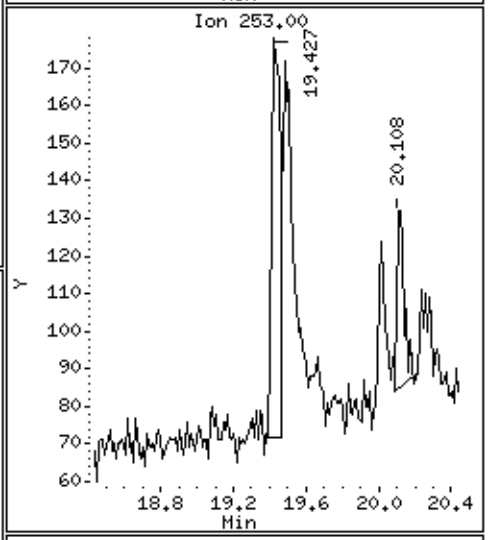
Column phase: ZB5-MS Column diameter: 0.25

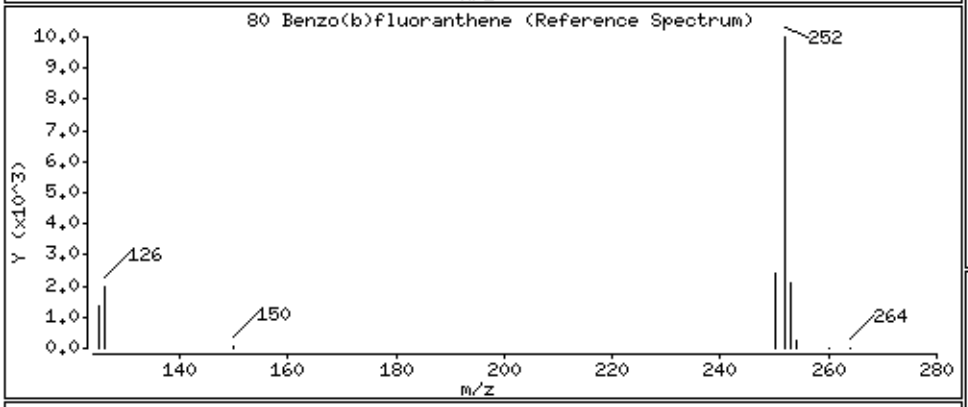
80 Benzo(b)fluoranthene Concentration: 0.188 ug/L

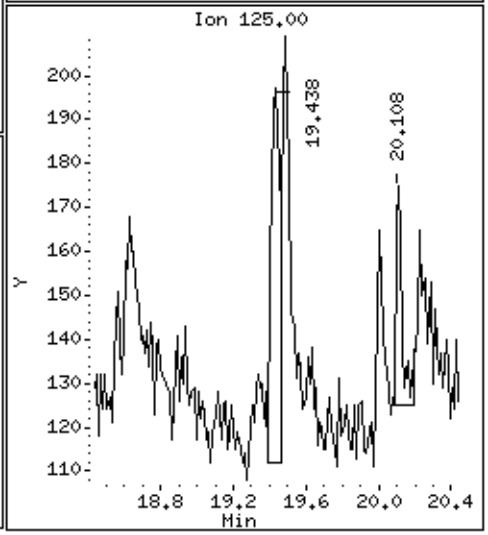


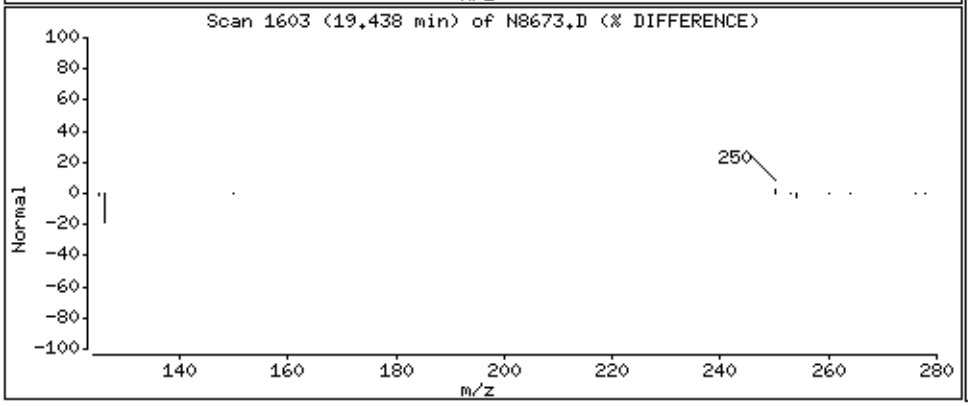












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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-6RA
Client ID: CHAAP-19C-LGIA-DPT08
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: N8674.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 09-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227901

Analysis Date: 23-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 24-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.078	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.055	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.062	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.045	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.074	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.060	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.047	0.10
Chrysene	U	0.10	ug/L	1	.2	0.20	0.037	0.10
Benzo(b)Fluoranthene		0.20	ug/L	1	.2	0.20	0.091	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.050	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.067	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.053	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.071	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
2-Methylnaphthalene-D10		85.0	%					
Fluorene-D10		83.6	%					
Pyrene-D10		88.4	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8674.D
Report Date: 24-May-2018 08:11

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052318B.b\N8674.D
Lab Smp Id: SL3902-6RA Client Smp ID: HAAP-19C-LGIA-DPT08
Inj Date : 23-MAY-2018 19:18 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL3902-6RA
Misc Info : WG228941,WG227901,WG228910-4
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N052318B.b\NSPSIM96.m
Meth Date : 24-May-2018 07:40 cgomez Quant Type: ISTD
Cal Date : 23-MAY-2018 12:01 Cal File: N8665.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

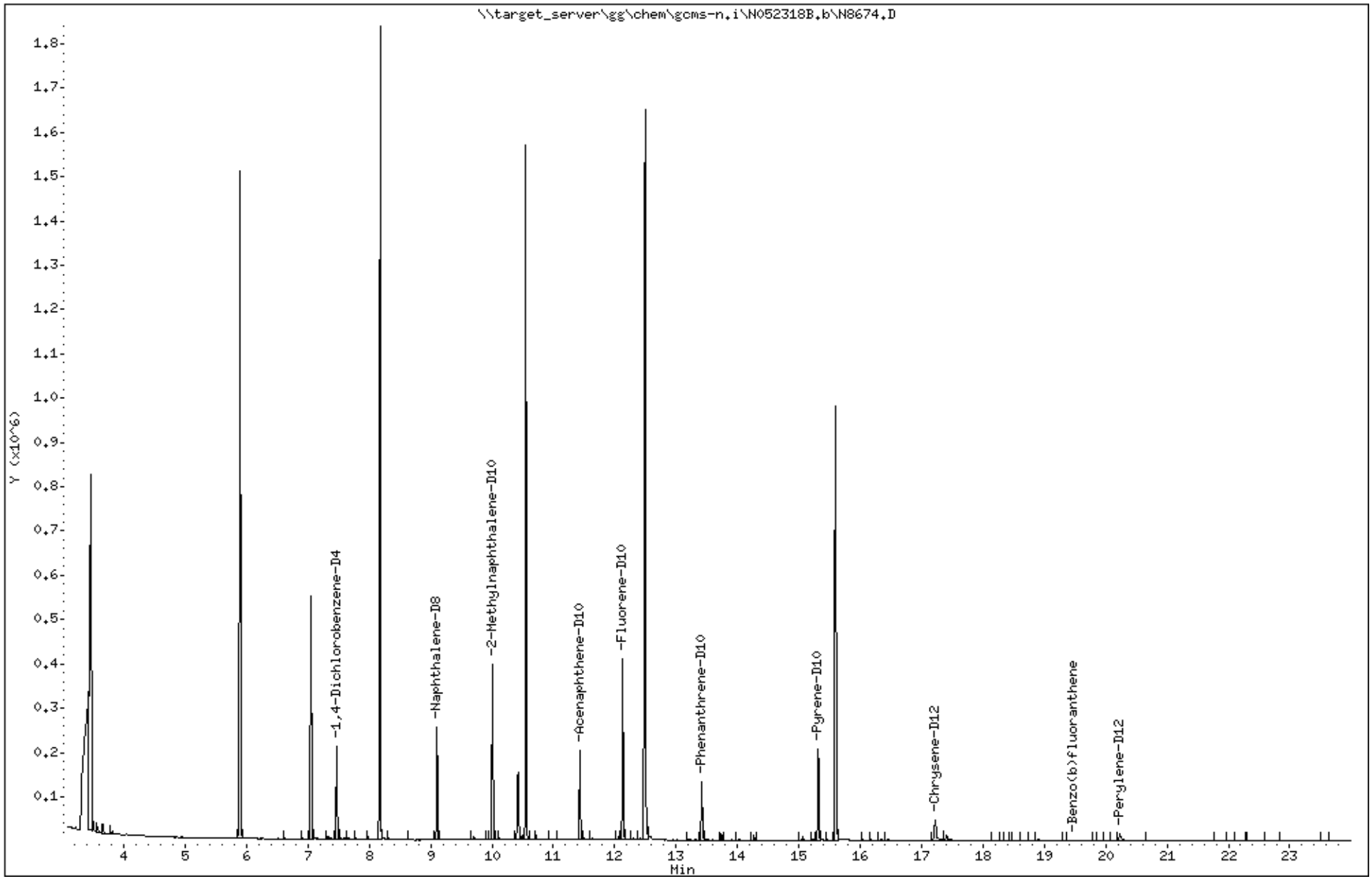
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	0.98000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.470	(1.000)	56860	0.80000	(aQ)	
*	26 Naphthalene-D8	136	9.100	9.101	(1.000)	192209	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	10.004	10.004	(1.099)	184241	1.70093	1.74	
*	47 Acenaphthene-D10	164	11.433	11.433	(1.000)	82884	0.80000	(a)	
$	55 Fluorene-D10	174	12.130	12.131	(1.061)	161013	1.67176	1.70	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	134140	0.80000	(a)	
$	71 Pyrene-D10	212	15.313	15.323	(0.889)	177047	1.76914	1.80	
*	76 Chrysene-D12	240	17.218	17.228	(1.000)	53921	0.80000	(a)	
	80 Benzo(b)fluoranthene	252	19.438	19.438	(0.961)	1545	0.19554	0.200(a)	
*	83 Perylene-D12	264	20.233	20.233	(1.000)	32725	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8674.D
Date : 23-MAY-2018 19:18
Client ID: HAAP-19C-LGIA-DPT08
Instrument: gcms-n.i
Sample Info: SL3902-6RA
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000025

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8674.D

Date : 23-MAY-2018 19:18

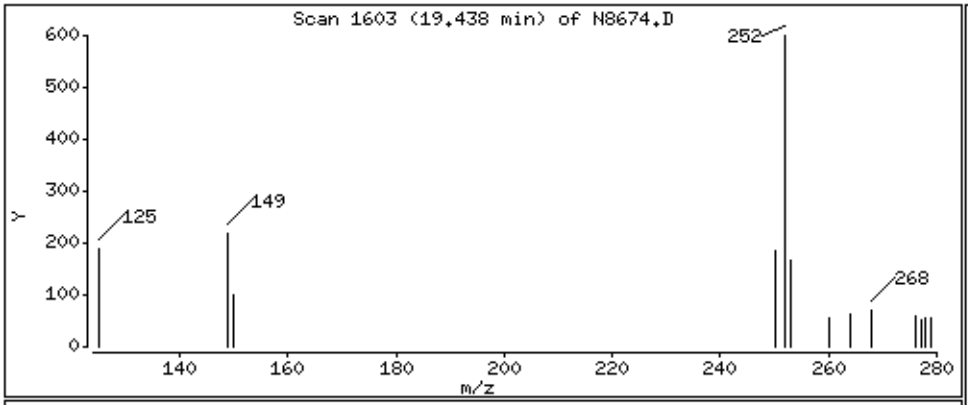
Client ID: HAAP-19C-LGIA-DPT08 Instrument: gcms-n.i

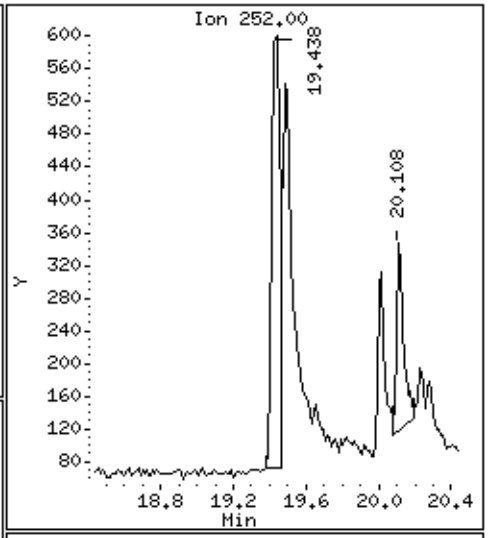
Sample Info: SL3902-6RA

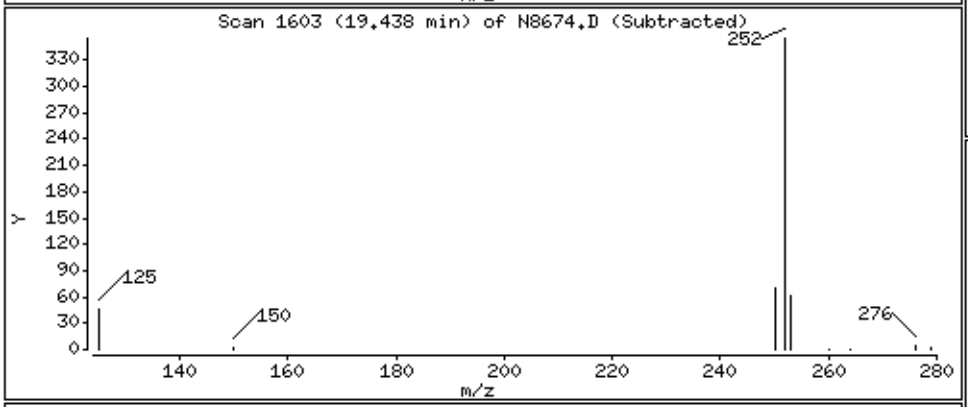
Volume Injected (uL): 1.0 Operator: JCG

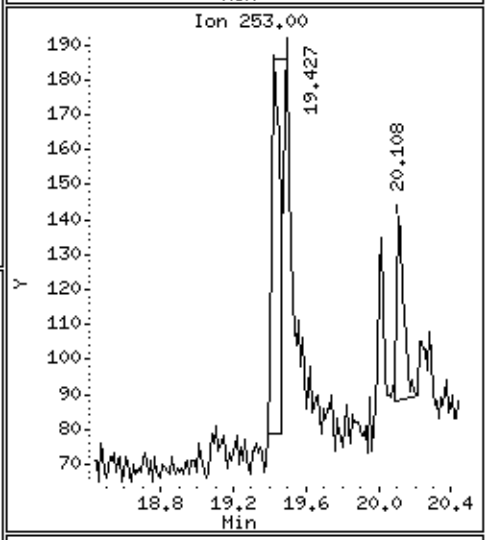
Column phase: ZB5-MS Column diameter: 0.25

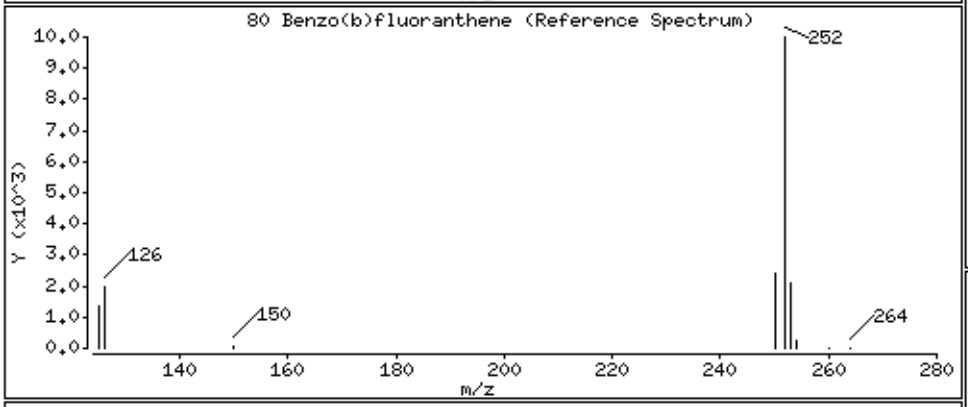
80 Benzo(b)fluoranthene Concentration: 0.200 ug/L

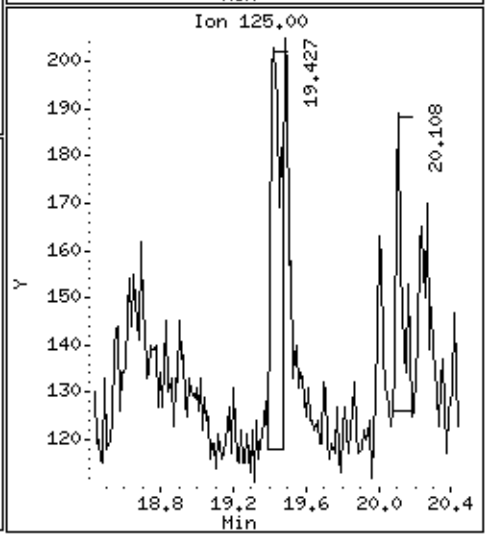


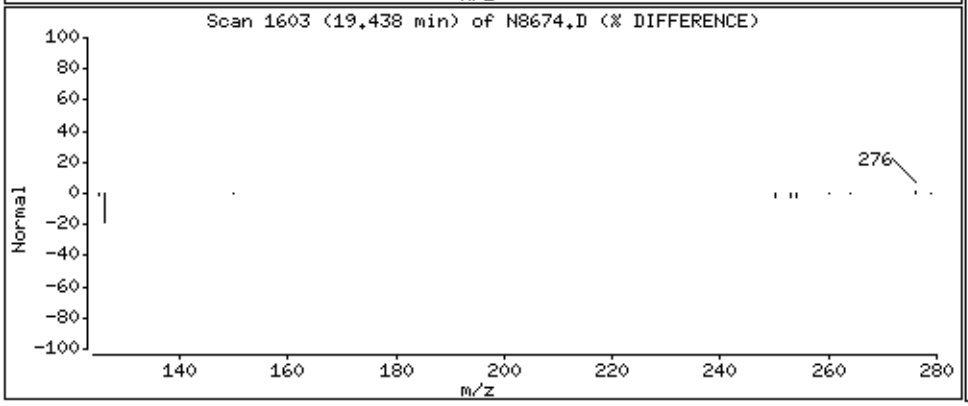












Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-8RA
Client ID: CHAAP-19C-LGIA-DPT07
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: N8675.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 09-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227901

Analysis Date: 23-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 24-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
2-Methylnaphthalene	U	0.095	ug/L	1	.2	0.19	0.073	0.095
Acenaphthylene	U	0.095	ug/L	1	.2	0.19	0.051	0.095
Acenaphthene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
Fluorene	U	0.095	ug/L	1	.2	0.19	0.058	0.095
Phenanthrene	U	0.095	ug/L	1	.2	0.19	0.048	0.095
Anthracene	U	0.095	ug/L	1	.2	0.19	0.042	0.095
Fluoranthene	U	0.095	ug/L	1	.2	0.19	0.070	0.095
Pyrene	U	0.095	ug/L	1	.2	0.19	0.056	0.095
Benzo(a)anthracene	U	0.095	ug/L	1	.2	0.19	0.044	0.095
Chrysene	U	0.095	ug/L	1	.2	0.19	0.034	0.095
Benzo(b)Fluoranthene	J	0.18	ug/L	1	.2	0.19	0.085	0.095
Benzo(k)fluoranthene	U	0.095	ug/L	1	.2	0.19	0.047	0.095
Benzo(a)pyrene	U	0.095	ug/L	1	.2	0.19	0.063	0.095
Indeno(1,2,3-cd)pyrene	U	0.095	ug/L	1	.2	0.19	0.050	0.095
Dibenzo(a,h)anthracene	U	0.095	ug/L	1	.2	0.19	0.067	0.095
Benzo(g,h,i)perylene	U	0.095	ug/L	1	.2	0.19	0.062	0.095
2-Methylnaphthalene-D10		84.7	%					
Fluorene-D10		85.0	%					
Pyrene-D10		82.4	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8675.D
Report Date: 24-May-2018 08:11

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052318B.b\N8675.D
Lab Smp Id: SL3902-8RA Client Smp ID: HAAP-19C-LGIA-DPT07
Inj Date : 23-MAY-2018 19:51 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL3902-8RA
Misc Info : WG228941,WG227901,WG228910-4
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N052318B.b\NSPSIM96.m
Meth Date : 24-May-2018 07:40 cgomez Quant Type: ISTD
Cal Date : 23-MAY-2018 12:01 Cal File: N8665.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

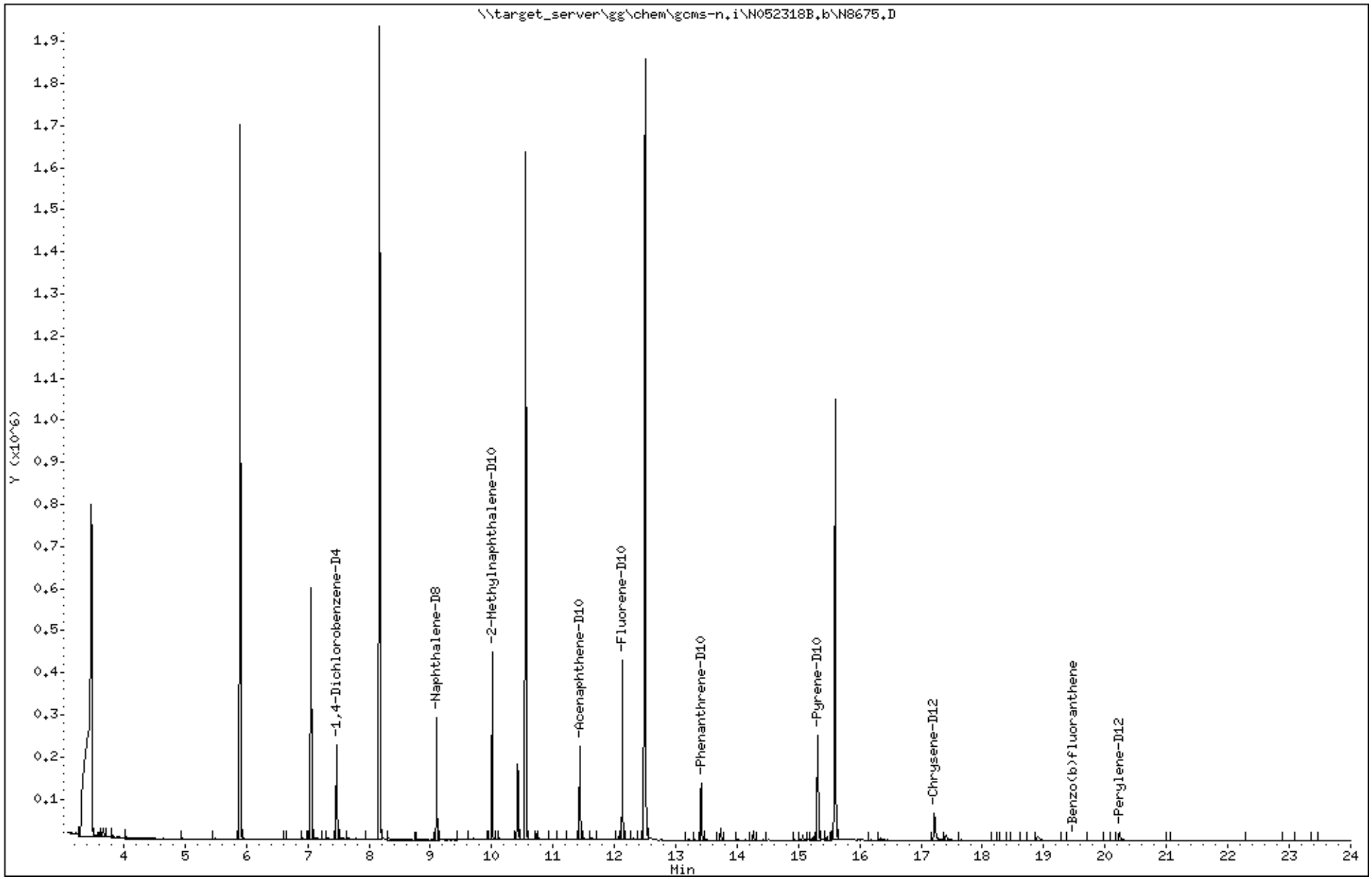
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.470	(1.000)	58768	0.80000	(aQ)	
*	26 Naphthalene-D8	136	9.100	9.101	(1.000)	203433	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	10.004	10.004	(1.099)	194188	1.69385	1.61	
*	47 Acenaphthene-D10	164	11.433	11.433	(1.000)	88437	0.80000	(a)	
$	55 Fluorene-D10	174	12.130	12.131	(1.061)	174705	1.70003	1.62	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	146854	0.80000	(a)	
$	71 Pyrene-D10	212	15.313	15.323	(0.889)	210795	1.64858	1.57	
*	76 Chrysene-D12	240	17.218	17.228	(1.000)	68894	0.80000	(a)	
	80 Benzo(b)fluoranthene	252	19.426	19.438	(0.960)	1642	0.19057	0.181(a)	
*	83 Perylene-D12	264	20.233	20.233	(1.000)	41646	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8675.D
Date : 23-MAY-2018 19:51
Client ID: HAAP-19C-LGIA-DPT07
Instrument: gcms-n.i
Sample Info: SL3902-8RA
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000029

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8675.D

Date : 23-MAY-2018 19:51

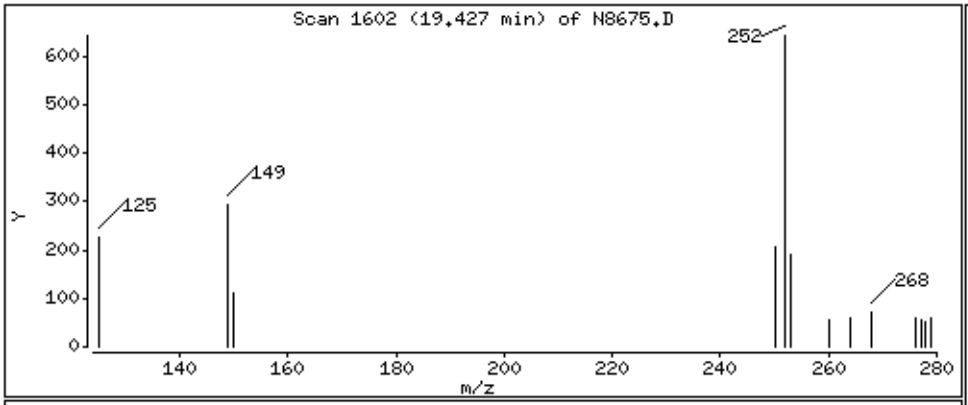
Client ID: HAAP-19C-LGIA-DPT07 Instrument: gcms-n.i

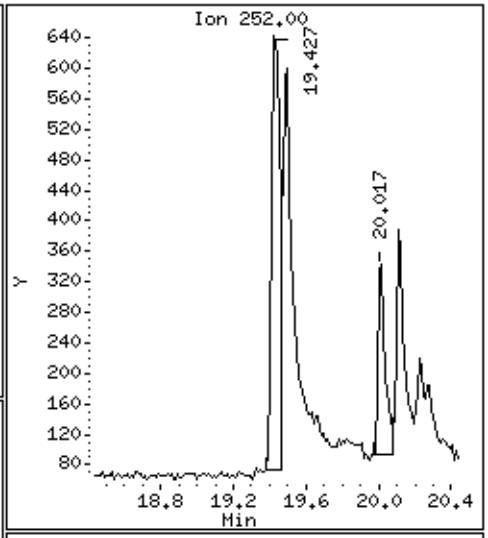
Sample Info: SL3902-8RA

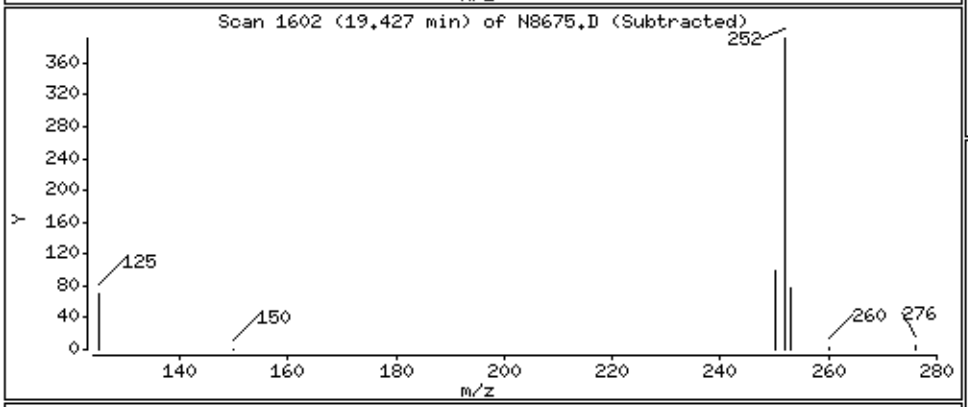
Volume Injected (uL): 1.0 Operator: JCG

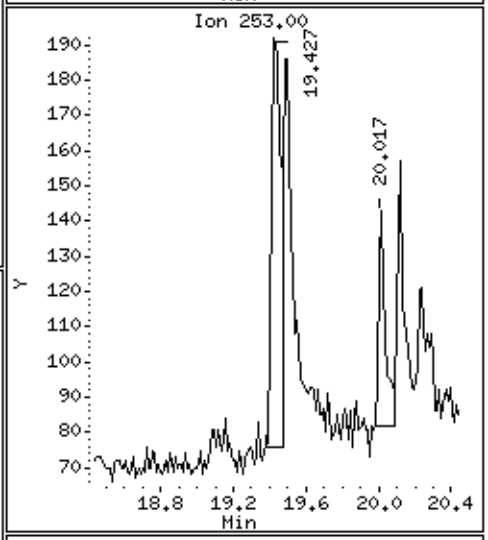
Column phase: ZB5-MS Column diameter: 0.25

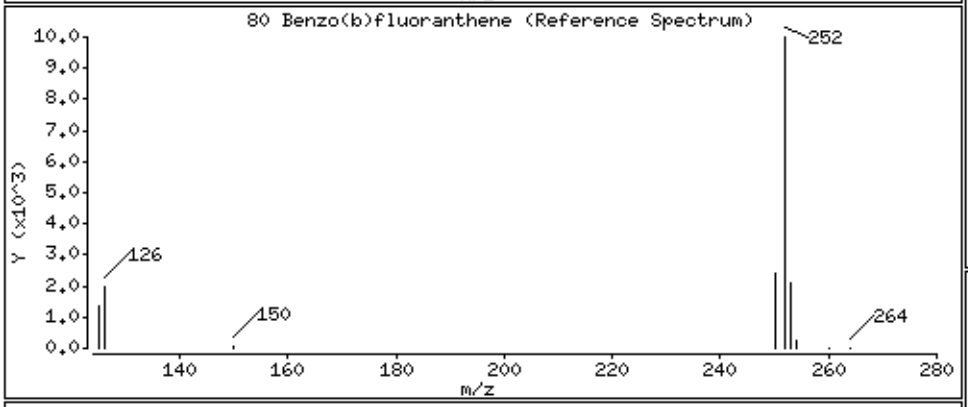
80 Benzo(b)fluoranthene Concentration: 0.181 ug/L

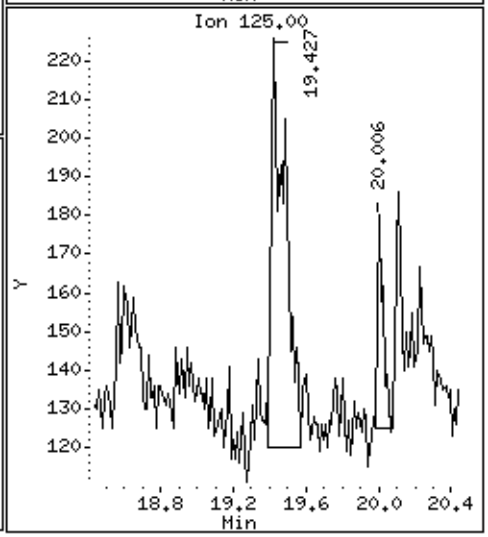


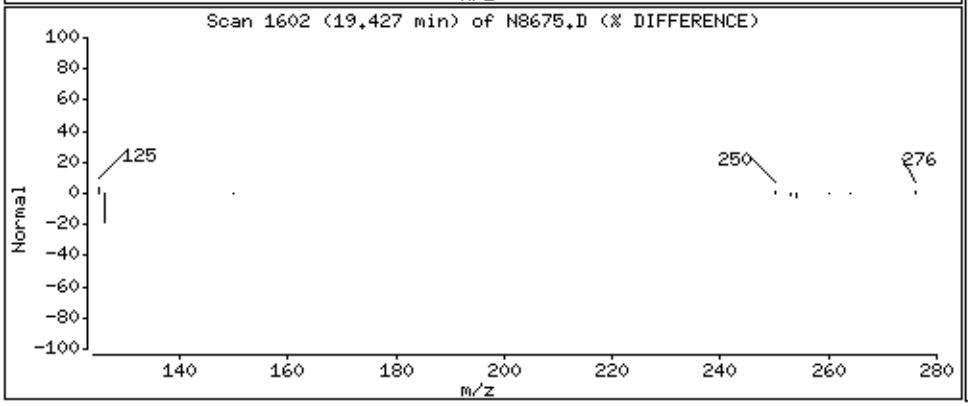












Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-10RA
Client ID: CHAAP-19C-LGIA-DPT107
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: N8676.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 09-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227901

Analysis Date: 23-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 24-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.21	0.066	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.21	0.079	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.21	0.056	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.21	0.066	0.10
Fluorene	U	0.10	ug/L	1	.2	0.21	0.063	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.21	0.052	0.10
Anthracene	U	0.10	ug/L	1	.2	0.21	0.045	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.21	0.075	0.10
Pyrene	U	0.10	ug/L	1	.2	0.21	0.061	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.21	0.047	0.10
Chrysene	U	0.10	ug/L	1	.2	0.21	0.037	0.10
Benzo(b)Fluoranthene	J	0.20	ug/L	1	.2	0.21	0.092	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.21	0.050	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.21	0.068	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.21	0.054	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.21	0.072	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.21	0.067	0.10
2-Methylnaphthalene-D10		86.7	%					
Fluorene-D10		86.3	%					
Pyrene-D10		90.9	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
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Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8676.D
Report Date: 24-May-2018 08:11

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052318B.b\N8676.D
Lab Smp Id: SL3902-10RA Client Smp ID: HAAP-19C-LGIA-DPT10
Inj Date : 23-MAY-2018 20:23 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL3902-10RA
Misc Info : WG228941,WG227901,WG228910-4
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N052318B.b\NSPSIM96.m
Meth Date : 24-May-2018 07:40 cgomez Quant Type: ISTD
Cal Date : 23-MAY-2018 12:01 Cal File: N8665.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

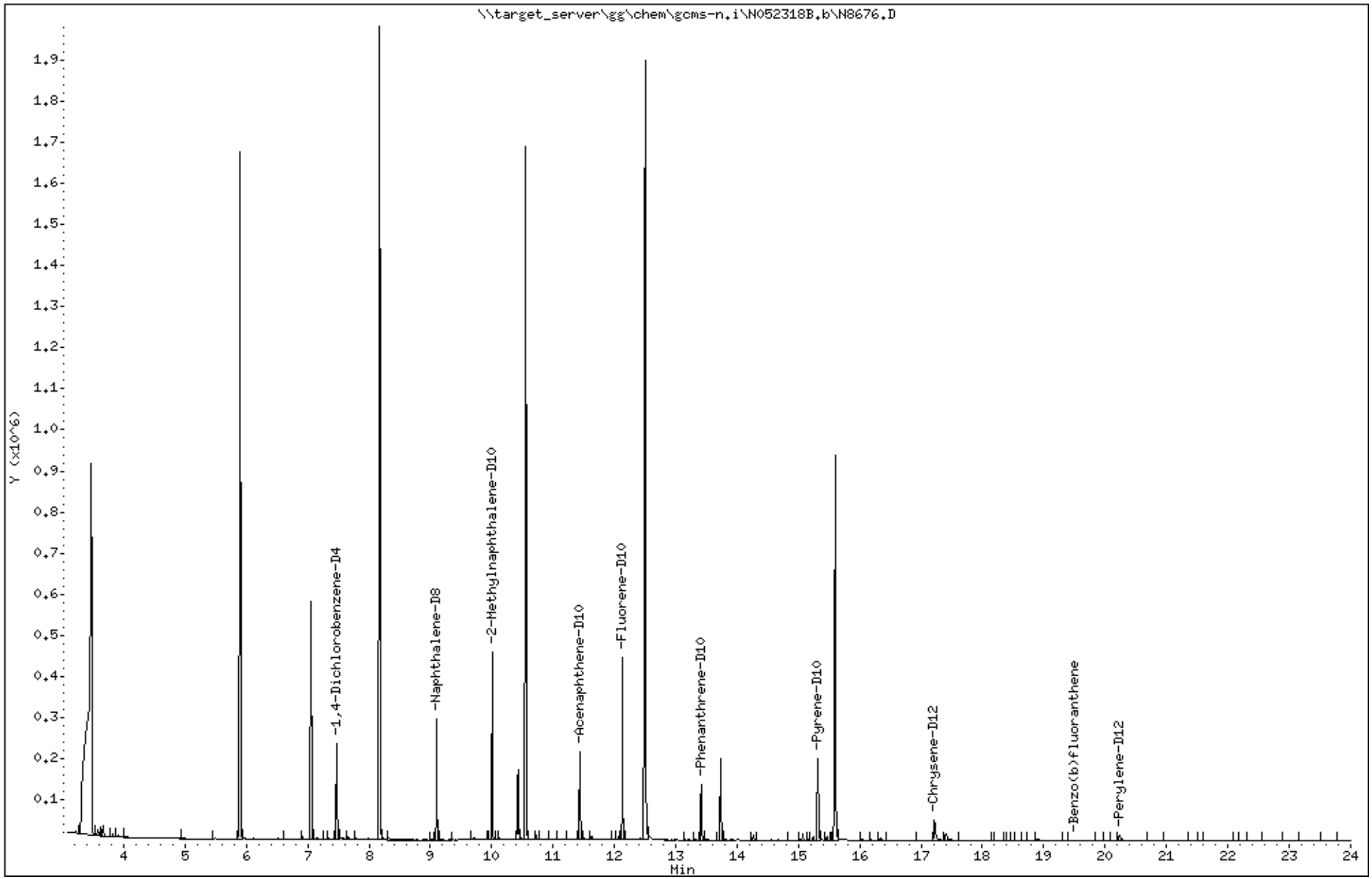
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	0.97000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.470	(1.000)	60068	0.80000	(aQ)	
*	26 Naphthalene-D8	136	9.100	9.101	(1.000)	203538	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	10.004	10.004	(1.099)	198885	1.73392	1.79	
*	47 Acenaphthene-D10	164	11.432	11.433	(1.000)	87269	0.80000	(a)	
$	55 Fluorene-D10	174	12.130	12.131	(1.061)	174966	1.72535	1.78	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	137390	0.80000	(a)	
$	71 Pyrene-D10	212	15.322	15.323	(0.889)	183004	1.81841	1.87	
*	76 Chrysene-D12	240	17.227	17.228	(1.000)	54225	0.80000	(a)	
	80 Benzo(b)fluoranthene	252	19.426	19.438	(0.960)	1509	0.19682	0.203(a)	
*	83 Perylene-D12	264	20.233	20.233	(1.000)	30660	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8676.D
Date : 23-MAY-2018 20:23
Client ID: HAAP-19C-LGIA-DPT10
Instrument: gcms-n.i
Sample Info: SL3902-10RA
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000033

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8676.D

Date : 23-MAY-2018 20:23

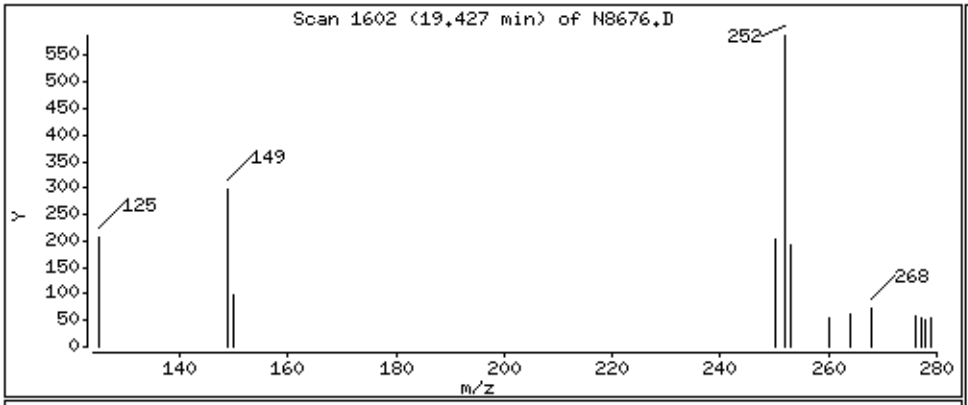
Client ID: HAAP-19C-LGIA-DPT10 Instrument: gcms-n.i

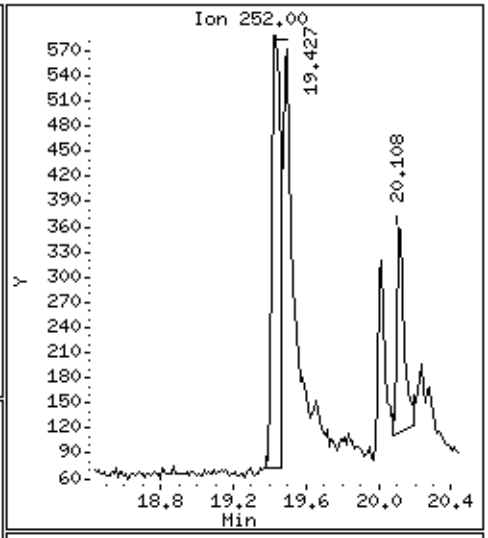
Sample Info: SL3902-10RA

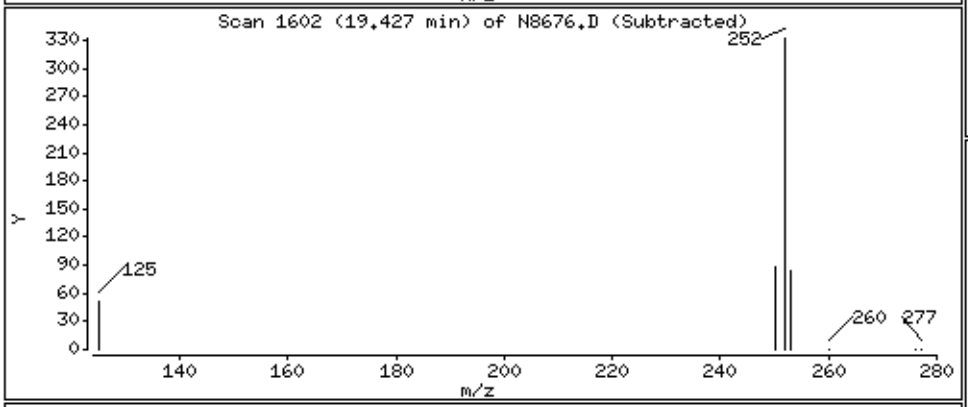
Volume Injected (uL): 1.0 Operator: JCG

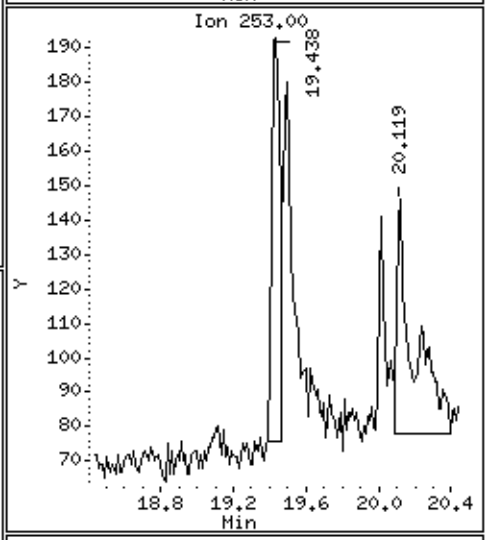
Column phase: ZB5-MS Column diameter: 0.25

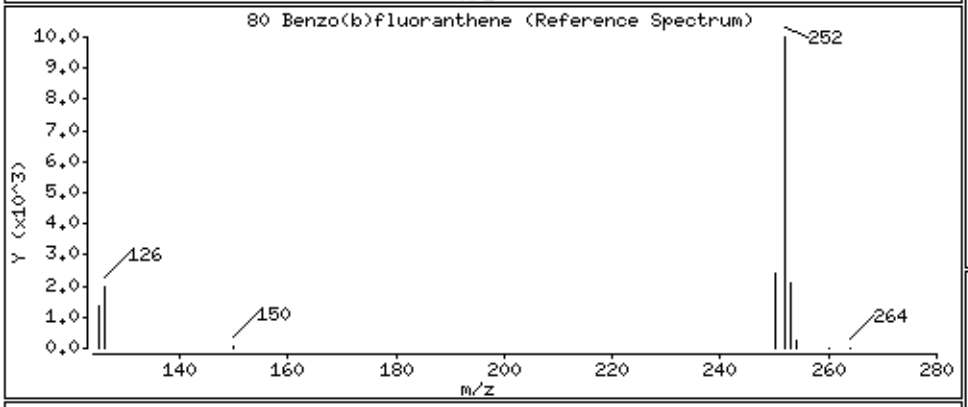
80 Benzo(b)fluoranthene Concentration: 0.203 ug/L

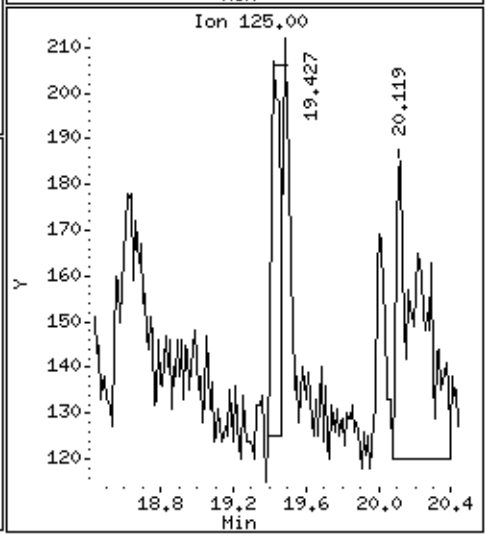


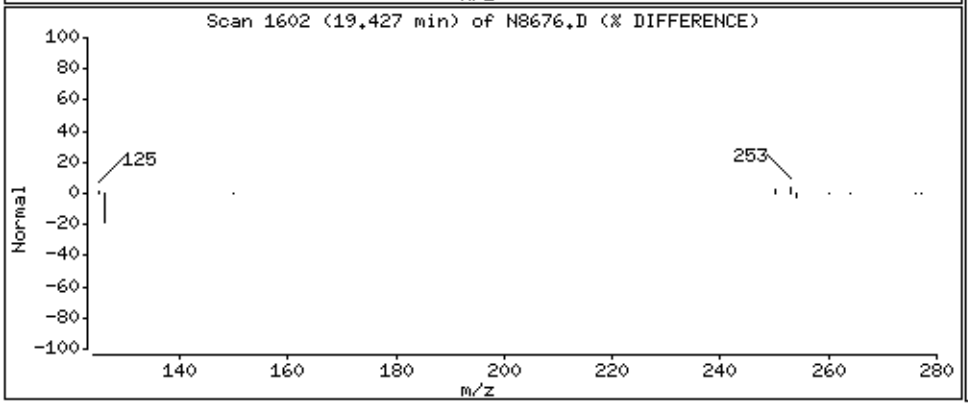












Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-12RA
Client ID: CHAAP-19C-LGIA-DPT06
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: N8677.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 09-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227901

Analysis Date: 23-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 24-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.061	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.046	0.10
Chrysene	U	0.10	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	J	0.19	ug/L	1	.2	0.20	0.089	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene-D10		71.1	%					
Fluorene-D10		74.7	%					
Pyrene-D10		71.8	%					

600 Technology Way
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Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8677.D
Report Date: 24-May-2018 08:11

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052318B.b\N8677.D
Lab Smp Id: SL3902-12RA Client Smp ID: HAAP-19C-LGIA-DPT06
Inj Date : 23-MAY-2018 20:55 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL3902-12RA
Misc Info : WG228941,WG227901,WG228910-4
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N052318B.b\NSPSIM96.m
Meth Date : 24-May-2018 07:40 cgomez Quant Type: ISTD
Cal Date : 23-MAY-2018 12:01 Cal File: N8665.D
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

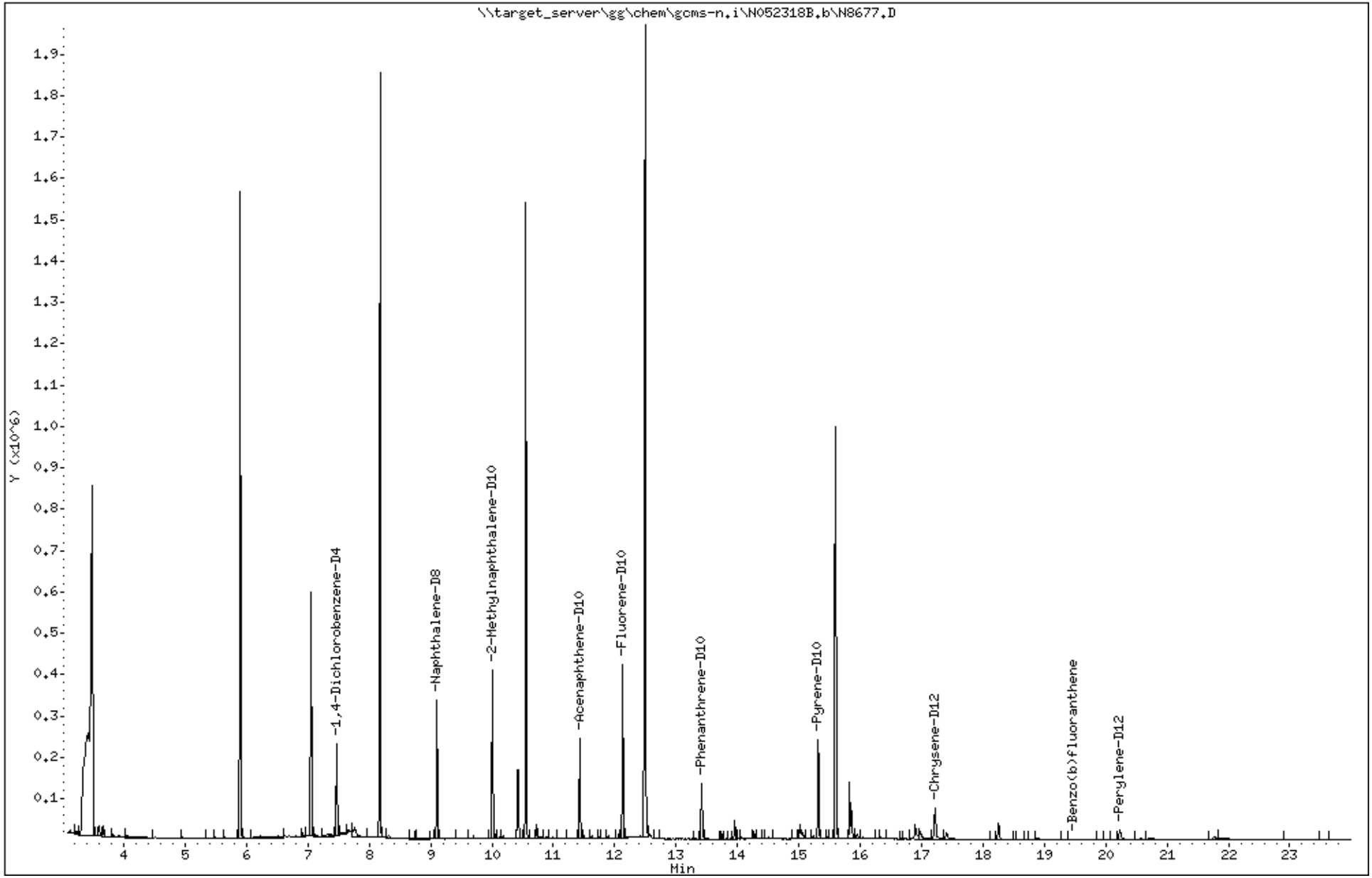
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.470	(1.000)	65480	0.80000	(aQ)	
*	26 Naphthalene-D8	136	9.100	9.101	(1.000)	225260	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	10.003	10.004	(1.099)	180631	1.42292	1.42	
*	47 Acenaphthene-D10	164	11.432	11.433	(1.000)	95578	0.80000	(a)	
$	55 Fluorene-D10	174	12.130	12.131	(1.061)	166030	1.49490	1.49	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	156052	0.80000	(a)	
$	71 Pyrene-D10	212	15.313	15.323	(0.889)	194624	1.43514	1.44	
*	76 Chrysene-D12	240	17.217	17.228	(1.000)	73069	0.80000	(a)	
	80 Benzo(b)fluoranthene	252	19.426	19.438	(0.960)	2130	0.19425	0.194(a)	
*	83 Perylene-D12	264	20.232	20.233	(1.000)	47129	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8677.D
Date : 23-MAY-2018 20:55
Client ID: HAAP-19C-LGIA-DPT06
Instrument: gcms-n.i
Sample Info: SL3902-12RA
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000037

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8677.D

Date : 23-MAY-2018 20:55

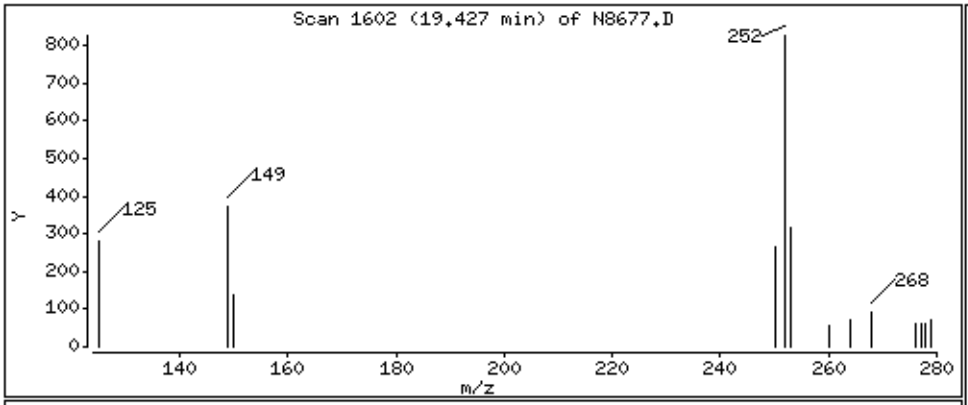
Client ID: HAAP-19C-LGIA-DPT06 Instrument: gcms-n.i

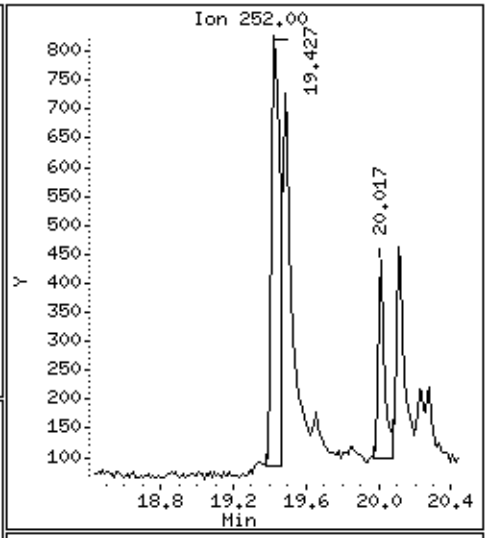
Sample Info: SL3902-12RA

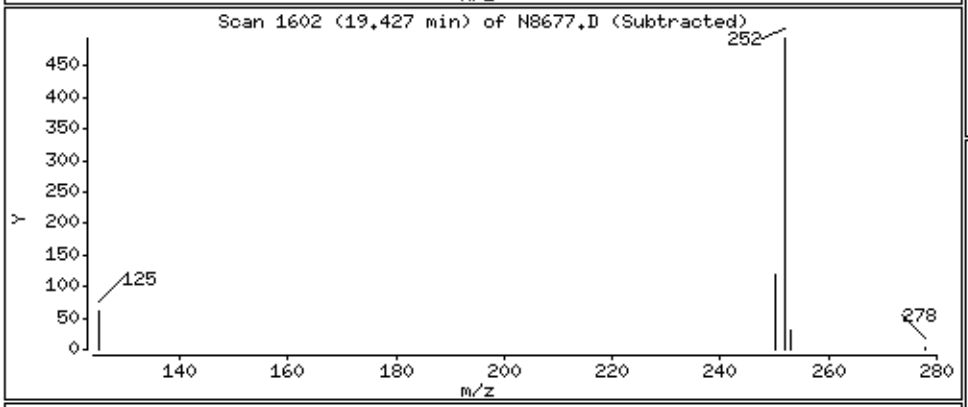
Volume Injected (uL): 1.0 Operator: JCG

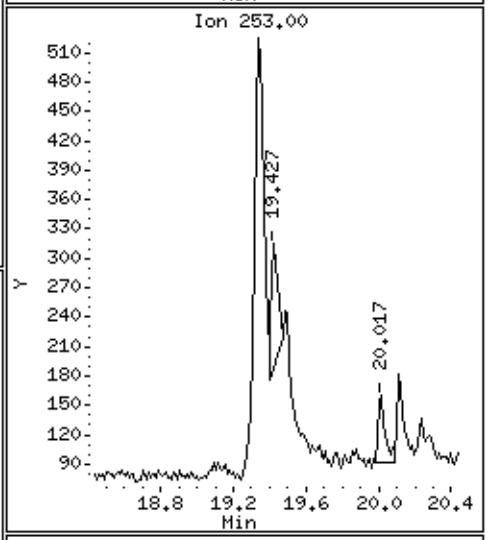
Column phase: ZB5-MS Column diameter: 0.25

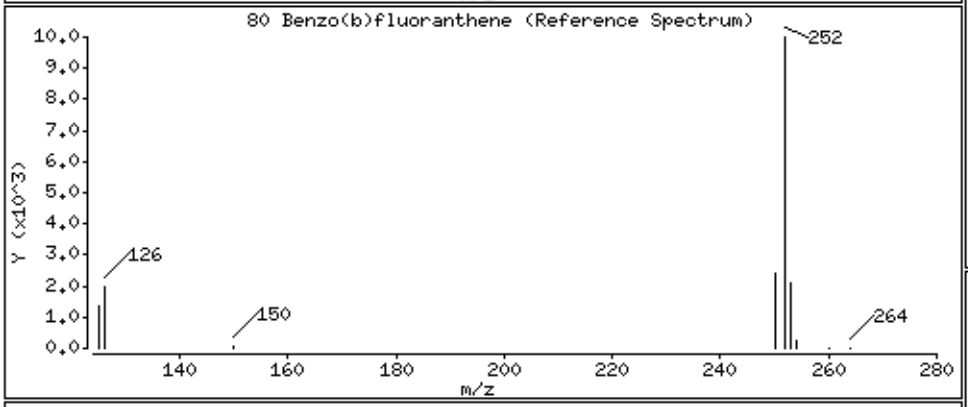
80 Benzo(b)fluoranthene Concentration: 0.194 ug/L

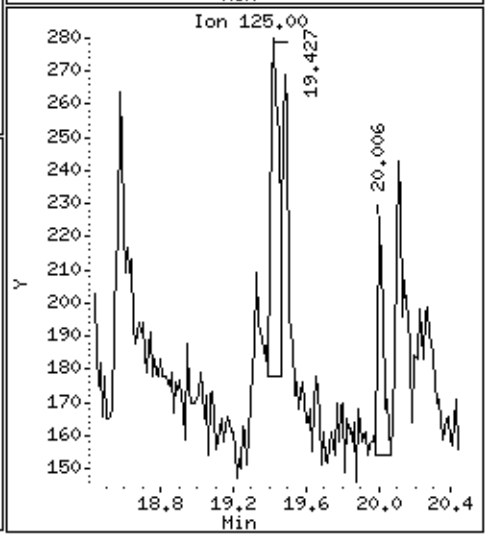


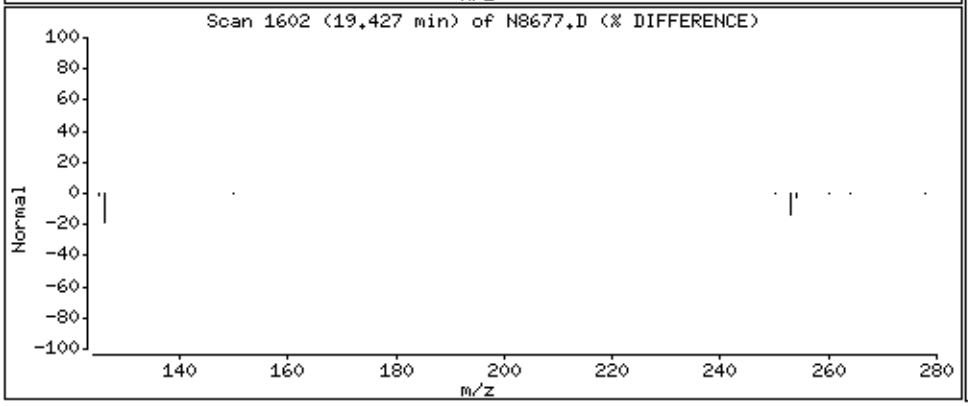












Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL3902-14RA
Client ID: CHAAP-EB-050418-DPT
Project: Cornhusker Army Ammunition Plant
SDG: SL3902
Lab File ID: N8678.D

Sample Date: 04-MAY-18
Received Date: 05-MAY-18
Extract Date: 09-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227901

Analysis Date: 23-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 24-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
2-Methylnaphthalene	U	0.097	ug/L	1	.2	0.19	0.075	0.097
Acenaphthylene	U	0.097	ug/L	1	.2	0.19	0.052	0.097
Acenaphthene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
Fluorene	U	0.097	ug/L	1	.2	0.19	0.059	0.097
Phenanthrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Anthracene	U	0.097	ug/L	1	.2	0.19	0.043	0.097
Fluoranthene	U	0.097	ug/L	1	.2	0.19	0.071	0.097
Pyrene	U	0.097	ug/L	1	.2	0.19	0.057	0.097
Benzo(a)anthracene	U	0.097	ug/L	1	.2	0.19	0.045	0.097
Chrysene	U	0.097	ug/L	1	.2	0.19	0.035	0.097
Benzo(b)Fluoranthene		0.20	ug/L	1	.2	0.19	0.086	0.097
Benzo(k)fluoranthene	U	0.097	ug/L	1	.2	0.19	0.048	0.097
Benzo(a)pyrene	U	0.097	ug/L	1	.2	0.19	0.064	0.097
Indeno(1,2,3-cd)pyrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Dibenzo(a,h)anthracene	U	0.097	ug/L	1	.2	0.19	0.068	0.097
Benzo(g,h,i)perylene	U	0.097	ug/L	1	.2	0.19	0.063	0.097
2-Methylnaphthalene-D10		86.3	%					
Fluorene-D10		85.2	%					
Pyrene-D10		94.2	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8678.D
Report Date: 24-May-2018 08:12

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052318B.b\N8678.D
Lab Smp Id: SL3902-14RA Client Smp ID: CHAAP-EB-050418-DPT
Inj Date : 23-MAY-2018 21:27 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL3902-14RA
Misc Info : WG228941,WG227901,WG228910-4
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N052318B.b\NSPSIM96.m
Meth Date : 24-May-2018 07:40 cgomez Quant Type: ISTD
Cal Date : 23-MAY-2018 12:01 Cal File: N8665.D
Als bottle: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

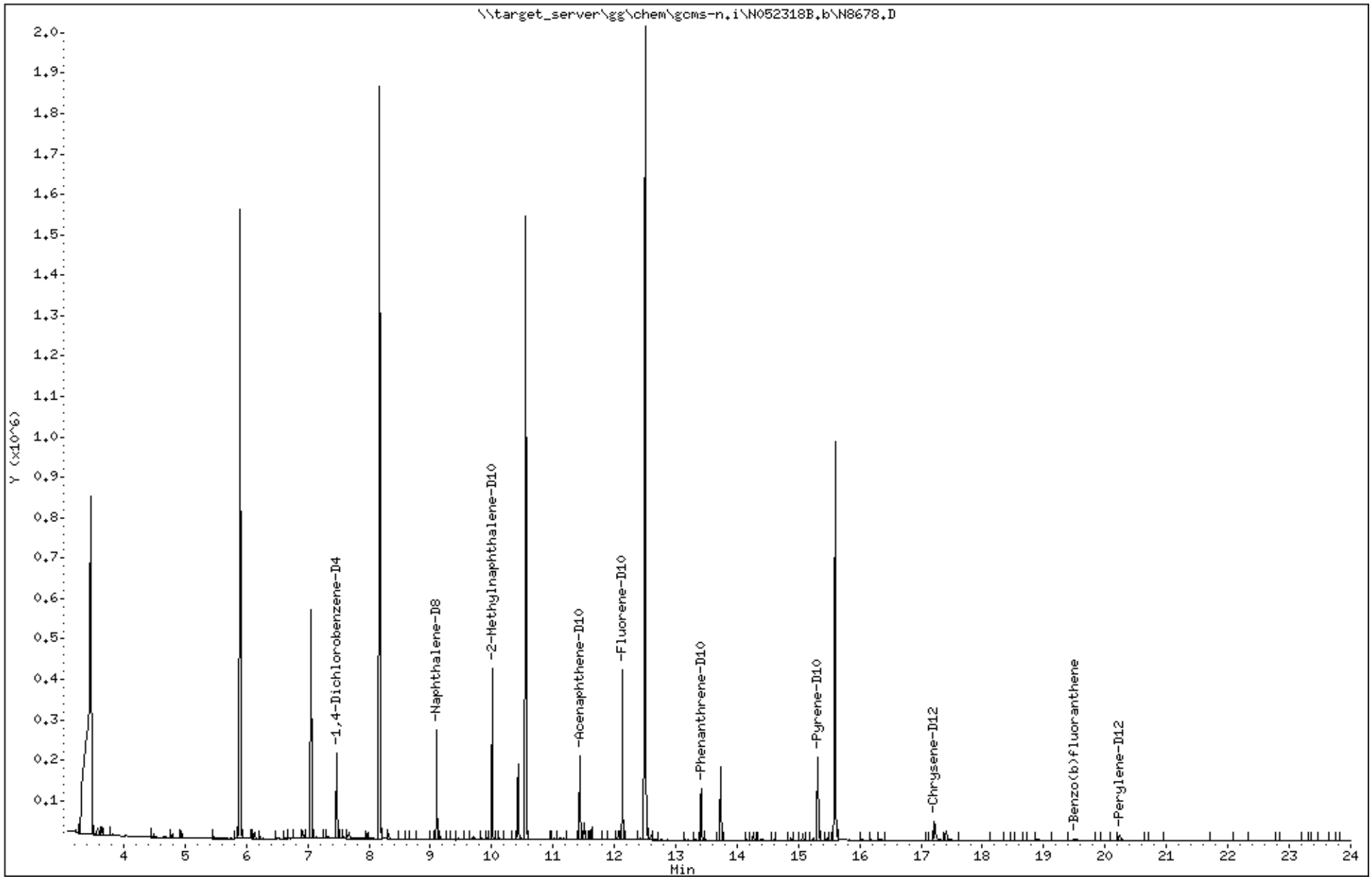
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.030	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.470	(1.000)	55673	0.80000	(aQ)	
*	26 Naphthalene-D8	136	9.100	9.101	(1.000)	190357	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	10.004	10.004	(1.099)	185118	1.72565	1.68	
*	47 Acenaphthene-D10	164	11.432	11.433	(1.000)	84312	0.80000	(a)	
$	55 Fluorene-D10	174	12.130	12.131	(1.061)	166858	1.70311	1.65	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	136563	0.80000	(a)	
$	71 Pyrene-D10	212	15.313	15.323	(0.889)	177999	1.88322	1.83	
*	76 Chrysene-D12	240	17.218	17.228	(1.000)	50927	0.80000	(a)	
	80 Benzo(b)fluoranthene	252	19.438	19.438	(0.961)	1794	0.20524	0.199(Q)	
*	83 Perylene-D12	264	20.232	20.233	(1.000)	28754	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8678.D
Date : 23-MAY-2018 21:27
Client ID: CHAAP-EB-050418-DPT
Instrument: gcms-n.i
Sample Info: SL3902-14RA
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000041

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8678.D

Date : 23-MAY-2018 21:27

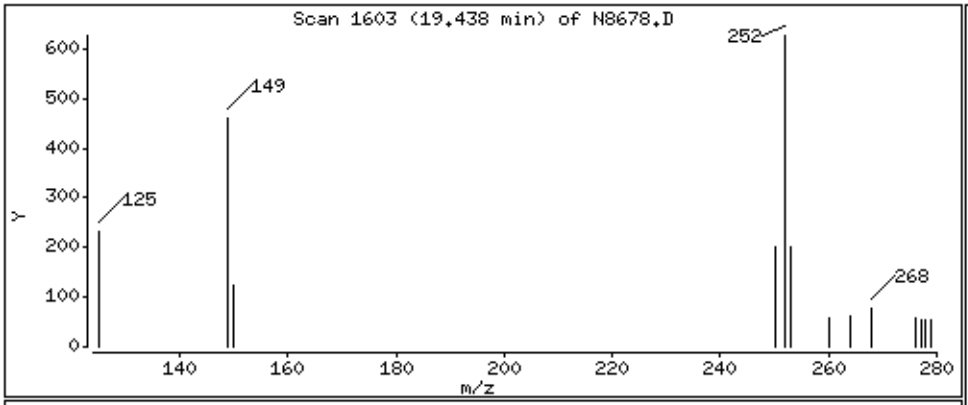
Client ID: CHAAP-EB-050418-DPT | Instrument: gcms-n.i

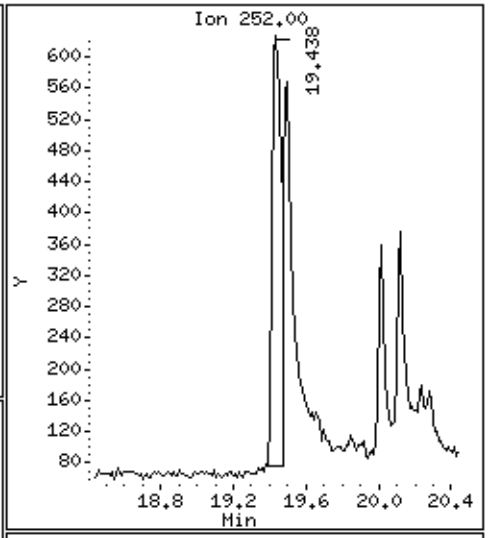
Sample Info: SL3902-14RA

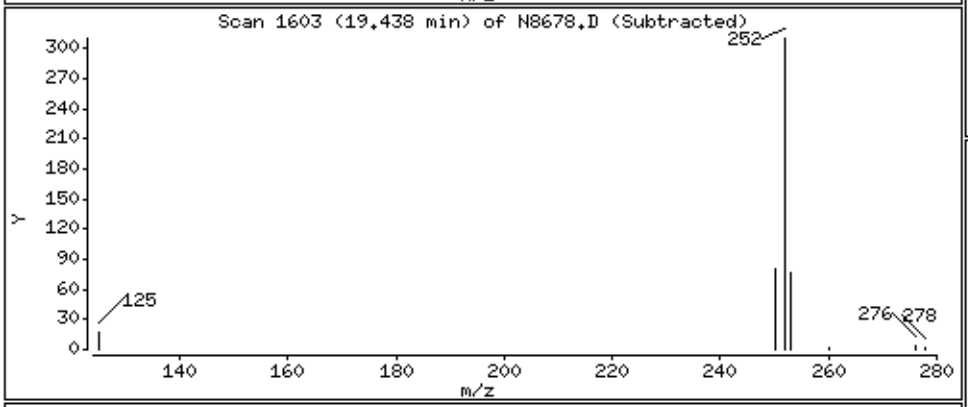
Volume Injected (uL): 1.0 | Operator: JCG

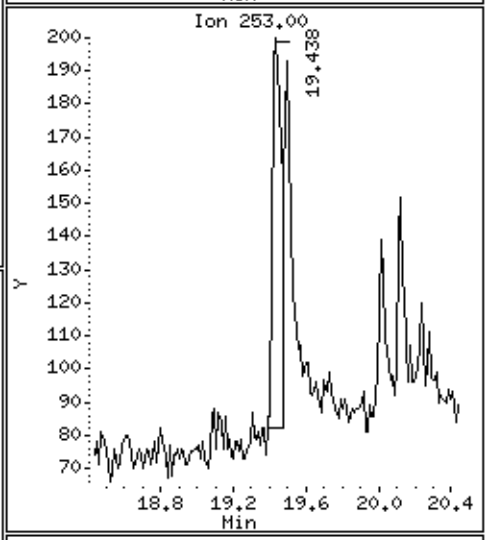
Column phase: ZB5-MS | Column diameter: 0.25

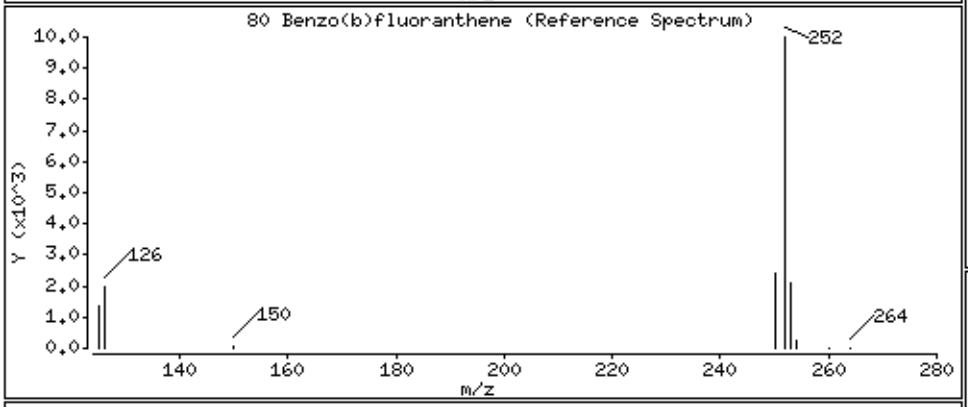
80 Benzo(b)fluoranthene | Concentration: 0.199 ug/L

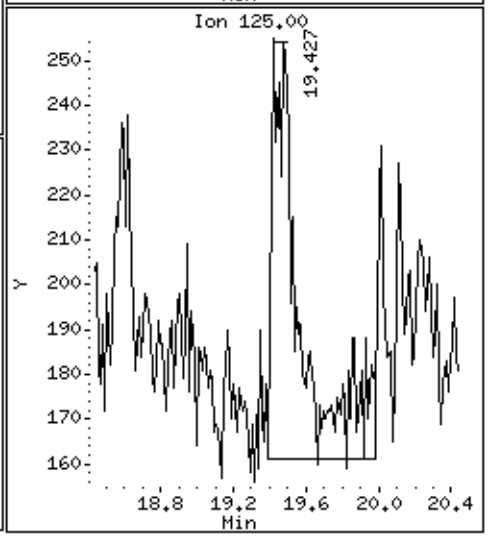


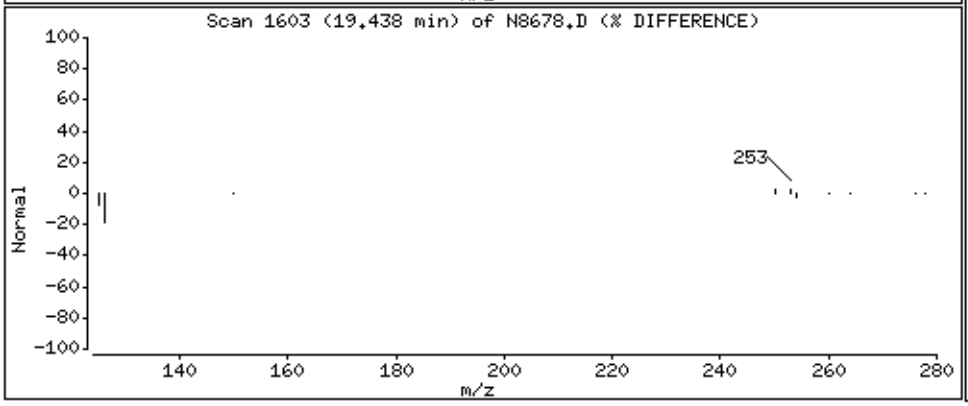












Standards Data Section

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3902
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-N
Lab File IDs : N8637.D N8638.D N8636.D N8639.D N8640.D N8641.D
Column ID:
Calibration Date(s): 22-MAY-18 14:18, 22-MAY-18 16:54

	Level 1 0.200000(	Level 2 0.500000(	Level 3 2.0000	Level 4 7.0000	Level 5 10.0000	Level 6 15.0000	Crv New	b	m1	m2	%RSD	Max %RSD	
Naphthalene	0.79987	0.92143	0.95524	0.90518	0.92255	0.86404	AVG		0.89472		6.16188	15.00000	O
2-Methylnaphthalene	0.56523	0.61210	0.59015	0.57187	0.58413	0.55947	AVG		0.58049		3.31769	15.00000	O
Acenaphthylene	1.80423	1.88356	2.02391	1.90674	1.95922	1.83575	AVG		1.90223		4.23483	15.00000	O
Acenaphthene	1.21376	1.21092	1.29177	1.20374	1.26406	1.18376	AVG		1.22800		3.33927	15.00000	O
Fluorene	1.24561	1.26227	1.31832	1.27038	1.31239	1.27367	AVG		1.28044		2.24898	15.00000	O
Phenanthrene	0.99881	1.00376	1.10004	1.07663	1.07734	1.03003	AVG		1.04777		4.06913	15.00000	O
Anthracene	1.09425	1.07368	1.11125	1.07216	1.07147	1.00396	AVG		1.07113		3.40835	15.00000	O
Fluoranthene	0.88630	0.92649	0.99155	1.01730	1.04093	0.98812	AVG		0.97512		5.94506	15.00000	O
Pyrene	2.80880	2.86948	2.82867	2.36164	2.21997	2.24978	AVG		2.55639		12.1326[illegible]	15.00000	O
Benzo(a)anthracene	1.13960	1.15169	1.22459	1.27598	1.31608	1.28593	AVG		1.23231		5.95810	15.00000	O
Chrysene	1.78910	1.52942	1.46296	1.30642	1.34988	1.29036	AVG		1.45469		12.95061	15.00000	O
Benzo(b)fluoranthene	1.05363	1.14046	1.16928	1.32974	1.38451	1.41453	AVG		1.24869		11.80199	15.00000	O
Benzo(k)fluoranthene	2.44055	2.25970	1.84777	1.82278	1.80955	1.73185	AVG		1.98537		14.65027	15.00000	O
Benzo(a)pyrene	1.16491	1.18858	1.13735	1.23445	1.26419	1.25192	AVG		1.20690		4.22557	15.00000	O
Indeno(1,2,3-cd)pyrene	3901	8463	51591	242259	386389	528114	LNR	0.08115	0.52035		0.99720	0.99000	O
Dibenzo(a,h)anthracene	2914	5089	36627	154710	263920	364914	LNR	0.22688	0.66300		0.99797	0.99000	O
Benzo(g,h,i)perylene	0.75516	0.77859	0.90311	0.95217	0.95533	0.93336	AVG		0.87962		10.18531	15.00000	O
2-Methylnaphthalene-D10	0.45470	0.43230	0.47686	0.44849	0.46738	0.43090	AVG		0.45177		4.09016	15.00000	
Fluorene-D10	0.96612	0.96678	0.97892	0.93524	0.96574	0.93528	AVG		0.95801		1.91023	15.00000	
Pyrene-D10	1.71920	1.68678	1.71336	1.47670	1.42144	1.37418	AVG		1.56528		10.1189(	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8642.D
Report Date: 23-May-2018 08:18

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: 021497
Sample Matrix: LIQUID Fraction: SV
Lab Smp Id: WG228848-8
Level: LOW Operator: JCG
Data Type: MS DATA SampleType: INDCHECK
SpikeList File: SIM_IND_CHK5.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-n.i\N052218.b\NSPSIM95.m
Misc Info: WG228848,WG228848,WG227848-4

SPIKE	COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
2	1,4-Dioxane	5.00	5.05	100.93	80-120
3	N-Nitrosodimethyla	5.00	5.29	105.89	80-120
4	Pyridine	5.00	5.81	116.27	80-120
5	Benzaldehyde	5.00	1.29	25.79*	80-120
7	Bis(2-Chloroethyl)	5.00	5.32	106.42	80-120
6	Phenol	5.00	5.59	111.86	80-120
8	2-Chlorophenol	5.00	5.24	104.74	80-120
9	1,3-Dichlorobenzen	5.00	5.28	105.65	80-120
11	1,4-Dichlorobenzen	5.00	5.28	105.60	80-120
12	1,2-Dichlorobenzen	5.00	5.18	103.69	80-120
14	2,2'-Oxybis(1-chlo	5.00	3.99	79.82*	80-120
13	2-Methylphenol	5.00	5.42	108.49	80-120
15	Acetophenone	5.00	5.10	102.12	80-120
16	N-Nitroso-di-n-pro	5.00	5.06	101.32	80-120
18	Hexachloroethane	5.00	5.48	109.61	80-120
17	3&4-Methylphenol	5.00	5.51	110.15	80-120
19	Nitrobenzene	5.00	4.90	98.00	80-120
20	Isophorone	5.00	5.14	102.80	80-120
21	2-Nitrophenol	5.00	5.46	109.20	80-120
22	2,4-Dimethylphenol	5.00	5.36	107.15	80-120
23	bis(2-Chloroethoxy	5.00	5.49	109.77	80-120
24	2,4-Dichlorophenol	5.00	5.44	108.70	80-120
25	1,2,4-Trichloroben	5.00	5.40	108.04	80-120
27	Naphthalene	5.00	5.49	109.77	80-120
28	4-Chloroaniline	5.00	5.64	112.87	80-120
29	Hexachlorobutadien	5.00	5.40	108.01	80-120
30	Caprolactam	5.00	5.96	119.28	80-120
33	2-Methylnaphthalen	5.00	5.35	107.10	80-120
31	4-Chloro-3-Methylp	5.00	5.20	104.00	80-120
34	1-Methylnaphthalen	5.00	5.37	107.34	80-120
35	1,2,4,5-Tetrachlor	5.00	5.14	102.86	80-120
36	Hexachlorocyclopen	5.00	3.58	71.70*	80-120
38	2,4,6-Trichlorophe	5.00	5.42	108.44	80-120
39	2,4,5-Trichlorophe	5.00	4.93	98.54	80-120
41	2-Chloronaphthalen	5.00	5.38	107.58	80-120
40	1,1'-Biphenyl	5.00	4.94	98.71	80-120
42	2-Nitroaniline	5.00	5.45	108.97	80-120
43	Dimethyl Phthalate	5.00	5.51	110.16	80-120
45	Acenaphthylene	5.00	5.02	100.51	80-120
44	2,6-Dinitrotoluene	5.00	5.60	111.96	80-120

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8642.D
Report Date: 23-May-2018 08:18

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
48 Acenaphthene	5.00	5.52	110.50	80-120
46 3-Nitroaniline	5.00	4.93	98.70	80-120
49 2,4-Dinitrophenol	5.00	4.49	89.75	80-120
52 Dibenzofuran	5.00	5.31	106.12	80-120
51 2,4-Dinitrotoluene	5.00	5.16	103.21	80-120
53 2,3,4,6-Tetrachlor	5.00	4.88	97.63	80-120
50 4-Nitrophenol	5.00	5.68	113.51	80-120
54 Diethylphthalate	5.00	5.67	113.33	80-120
56 Fluorene	5.00	5.54	110.77	80-120
57 4-Chlorophenyl-phe	5.00	5.30	106.12	80-120
59 4,6-Dinitro-2-Meth	5.00	5.38	107.69	80-120
58 4-Nitroaniline	5.00	4.78	95.69	80-120
60 N-Nitrosodiphenyla	5.00	4.65	92.96	80-120
61 4-Bromophenyl-phen	5.00	5.75	115.08	80-120
62 Hexachlorobenzene	5.00	5.48	109.59	80-120
63 Atrazine	5.00	5.32	106.50	80-120
64 Pentachlorophenol	5.00	5.45	108.99	80-120
66 Phenanthrene	5.00	5.66	113.30	80-120
67 Anthracene	5.00	5.17	103.42	80-120
68 Carbazole	5.00	5.34	106.90	80-120
69 Di-n-butylphthalat	5.00	5.93	118.62	80-120
70 Fluoranthene	5.00	5.89	117.87	80-120
72 Pyrene	5.00	5.11	102.16	80-120
73 Butylbenzylphthala	5.00	5.31	106.30	80-120
75 Benzo(a)anthracene	5.00	5.61	112.21	80-120
77 Chrysene	5.00	5.01	100.23	80-120
74 3,3'-Dichlorobenzi	5.00	2.92	58.46*	80-120
78 bis(2-Ethylhexyl)p	5.00	5.34	106.75	80-120
79 Di-n-octylphthalat	5.00	5.54	110.80	80-120
80 Benzo(b)fluoranthe	5.00	5.59	111.82	80-120
81 Benzo(k)fluoranthe	5.00	5.26	105.15	80-120
82 Benzo(a)pyrene	5.00	5.24	104.72	80-120
84 Indeno(1,2,3-cd)py	5.00	4.92	98.36	80-120
85 Dibenzo(a,h)anthra	5.00	4.71	94.24	80-120
86 Benzo(g,h,i)peryle	5.00	5.12	102.40	80-120

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 1,4-Dioxane-d8	2.00	0.000	*	30-150
$ 32 2-Methylnaphthale	2.00	0.000	*	43-92
$ 37 2,4-Dibromophenol	4.00	0.000	*	10-130
$ 55 Fluorene-D10	2.00	0.000	*	29-101
$ 71 Pyrene-D10	2.00	0.000	*	53-166

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8636.D
Report Date: 23-May-2018 14:43

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052218.b\N8636.D
Lab Smp Id: WG228848-4
Inj Date : 22-MAY-2018 14:18 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228848-4
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N052218.b\NSPSIM95.m
Meth Date : 23-May-2018 08:21 cgomez Quant Type: ISTD
Cal Date : 22-MAY-2018 14:18 Cal File: N8636.D
Als bottle: 2 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.642	3.632	(0.488)	64819	2.00000	2.04	
	2 1,4-Dioxane	88	3.684	3.674	(0.493)	68169	2.00000	2.01	
	3 N-Nitrosodimethylamine	74	4.104	4.094	(0.549)	99587	2.00000	2.13	
	4 Pyridine	79	4.146	4.115	(0.555)	167121	2.00000	2.18	
	5 Benzaldehyde	77	6.916	6.916	(0.926)	44205	2.00000	1.87	
	6 Phenol	94	7.067	7.067	(0.946)	434834	4.50000	4.62	
	7 Bis(2-Chloroethyl)ether	93	7.157	7.147	(0.958)	159483	2.00000	2.04	
	8 2-Chlorophenol	128	7.218	7.218	(0.966)	369305	4.50000	4.64	
	9 1,3-Dichlorobenzene	146	7.399	7.399	(0.991)	177411	2.00000	2.05	
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.469	(1.000)	53740	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	7.489	7.489	(1.003)	178379	2.00000	2.03	
	12 1,2-Dichlorobenzene	146	7.691	7.681	(1.030)	169428	2.00000	2.04	
	13 2-Methylphenol	108	7.822	7.821	(1.047)	310735	4.50000	4.72	
	14 2,2'-Oxybis(1-chloropropane)	45	7.842	7.842	(1.050)	206447	2.00000	2.15(Q)	
	15 Acetophenone	105	7.983	7.983	(0.877)	228394	2.00000	2.12	
	16 N-Nitroso-di-n-propylamine	70	8.003	8.003	(1.071)	107265	2.00000	1.96	
	17 3&4-Methylphenol	108	8.023	8.023	(1.074)	317088	4.50000	4.69	
	18 Hexachloroethane	117	8.114	8.113	(1.086)	67821	2.00000	2.16	
	19 Nitrobenzene	77	8.194	8.194	(0.900)	160660	2.00000	1.88	
	20 Isophorone	82	8.516	8.516	(0.936)	251781	2.00000	1.82	
	21 2-Nitrophenol	139	8.617	8.617	(0.947)	176113	4.50000	4.75	

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8636.D
Report Date: 23-May-2018 14:43

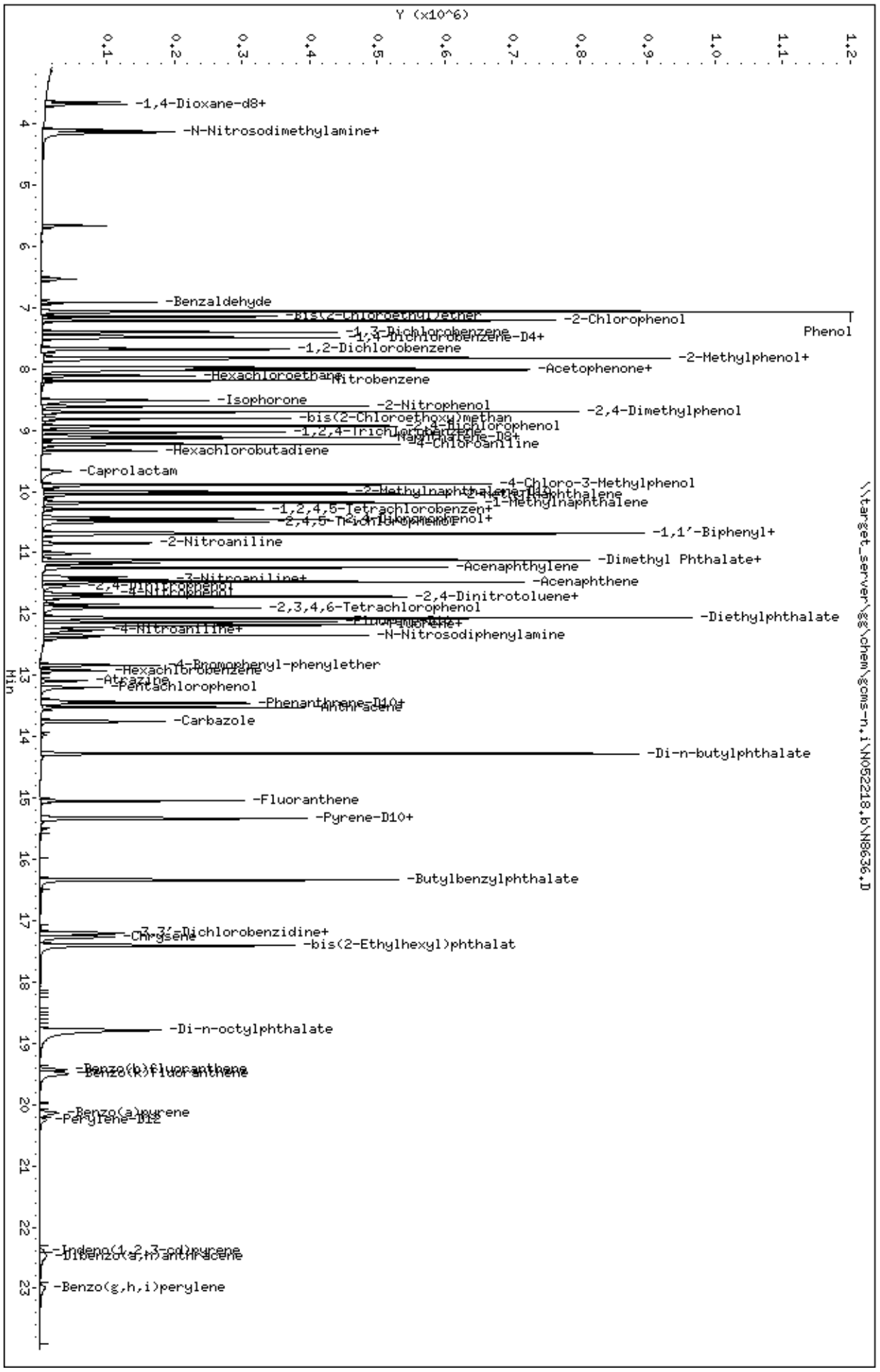
							AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/ml)	(ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.697	8.707	(0.956)	333588	4.50000	4.80	
	23 bis(2-Chloroethoxy)methane	93	8.808	8.808	(0.968)	187006	2.00000	2.14	
	24 2,4-Dichlorophenol	162	8.939	8.939	(0.982)	269217	4.50000	4.82	
	25 1,2,4-Trichlorobenzene	180	9.040	9.039	(0.993)	124388	2.00000	2.13	
*	26 Naphthalene-D8	136	9.100	9.100	(1.000)	177171	0.80000	(a)	
	27 Naphthalene	128	9.130	9.130	(1.003)	423101	2.00000	2.14	
	28 4-Chloroaniline	127	9.221	9.221	(1.013)	151975	2.00000	1.99	
	29 Hexachlorobutadiene	225	9.332	9.331	(1.025)	66829	2.00000	2.06	
	30 Caprolactam	113	9.669	9.689	(1.063)	39034	2.00000	2.17	
	31 4-Chloro-3-Methylphenol	107	9.886	9.895	(1.086)	278609	4.50000	4.57	
$	32 2-Methylnaphthalene-D10	152	10.004	10.004	(1.099)	211214	2.00000	2.11	
	33 2-Methylnaphthalene	142	10.053	10.053	(1.105)	261393	2.00000	2.03	
	34 1-Methylnaphthalene	142	10.181	10.181	(1.119)	249007	2.00000	2.08	
	35 1,2,4,5-Tetrachlorobenzene	216	10.289	10.289	(0.900)	113093	2.00000	2.09	
	36 Hexachlorocyclopentadiene	237	10.289	10.289	(0.900)	52361	2.00000	1.87	
$	37 2,4-Dibromophenol	252	10.427	10.427	(0.912)	56221	2.00000	2.09(Q)	
	38 2,4,6-Trichlorophenol	196	10.447	10.447	(0.914)	163037	4.50000	4.83	
	39 2,4,5-Trichlorophenol	196	10.496	10.496	(0.918)	172124	4.50000	4.51	
	40 1,1'-Biphenyl	154	10.683	10.683	(0.934)	329272	2.00000	2.15	
	41 2-Chloronaphthalene	164	10.693	10.693	(0.935)	80121	2.00000	2.08	
	42 2-Nitroaniline	65	10.840	10.840	(0.948)	72599	2.00000	2.07	
	43 Dimethyl Phthalate	163	11.117	11.117	(0.972)	617038	4.50000	4.64	
	44 2,6-Dinitrotoluene	165	11.171	11.182	(0.977)	61008	2.00000	2.08	
	45 Acenaphthylene	152	11.237	11.236	(0.983)	372182	2.00000	2.13	
	46 3-Nitroaniline	138	11.400	11.400	(0.997)	41759	2.00000	1.99	
*	47 Acenaphthene-D10	164	11.433	11.433	(1.000)	73557	0.80000	(a)	
	48 Acenaphthene	153	11.476	11.476	(1.004)	237547	2.00000	2.10	
	49 2,4-Dinitrophenol	184	11.553	11.541	(1.010)	35013	4.50000	4.08	
	50 4-Nitrophenol	109	11.661	11.661	(1.020)	57044	4.50000	4.64(Q)	
	51 2,4-Dinitrotoluene	165	11.716	11.716	(1.025)	73529	2.00000	1.92	
	52 Dibenzofuran	168	11.716	11.716	(1.025)	326171	2.00000	2.05	
	53 2,3,4,6-Tetrachlorophenol	232	11.901	11.901	(1.041)	128096	4.50000	4.64	
	54 Diethylphthalate	149	12.065	12.065	(1.055)	658510	4.50000	4.61	
$	55 Fluorene-D10	174	12.130	12.130	(1.061)	180016	2.00000	2.04	
	56 Fluorene	166	12.174	12.173	(1.065)	242429	2.00000	2.06	
	57 4-Chlorophenyl-phenylether	204	12.195	12.195	(1.067)	131466	2.00000	2.06	
	58 4-Nitroaniline	138	12.217	12.217	(1.069)	27646	2.00000	1.81	
	59 4,6-Dinitro-2-Methylphenol	198	12.261	12.261	(0.914)	60060	4.50000	4.15	
	60 N-Nitrosodiphenylamine	169	12.348	12.348	(0.920)	204995	2.00000	2.14	
	61 4-Bromophenyl-phenylether	248	12.834	12.844	(0.956)	63607	2.00000	2.09	
	62 Hexachlorobenzene	284	12.919	12.930	(0.963)	48694	2.00000	1.97	
	63 Atrazine	200	13.090	13.100	(0.975)	43450	2.00000	2.09	
	64 Pentachlorophenol	266	13.197	13.197	(0.983)	52518	4.50000	4.59	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	112762	0.80000	(a)	
	66 Phenanthrene	178	13.453	13.453	(1.002)	310107	2.00000	2.10	
	67 Anthracene	178	13.517	13.517	(1.007)	313267	2.00000	2.07	
	68 Carbazole	167	13.752	13.752	(1.025)	224827	2.00000	2.04	
	69 Di-n-butylphthalate	149	14.275	14.264	(1.064)	1001144	4.50000	4.61	
	70 Fluoranthene	202	15.041	15.050	(1.121)	279524	2.00000	2.03	
$	71 Pyrene-D10	212	15.323	15.322	(0.890)	173773	2.00000	2.19	
	72 Pyrene	202	15.341	15.351	(0.891)	286891	2.00000	2.21	
	73 Butylbenzylphthalate	149	16.336	16.336	(0.949)	372835	4.50000	4.87	
	74 3,3'-Dichlorobenzidine	252	17.208	17.199	(0.999)	23959	2.00000	1.98	
	75 Benzo(a)anthracene	228	17.199	17.208	(0.999)	124201	2.00000	1.99	

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8636.D
Report Date: 23-May-2018 14:43

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76	Chrysene-D12	240	17.218	17.218	(1.000)	40569	0.80000	(a)	
	77	Chrysene	228	17.265	17.264	(1.003)	148377	2.00000	2.01	
	78	bis(2-Ethylhexyl)phthalate	149	17.405	17.405	(1.011)	494970	4.50000	4.91	
	79	Di-n-octylphthalate	149	18.790	18.790	(1.091)	655882	4.50000	4.97	
	80	Benzo(b)fluoranthene	252	19.438	19.426	(0.960)	70084	2.00000	1.87	
	81	Benzo(k)fluoranthene	252	19.495	19.494	(0.963)	110751	2.00000	1.86(H)	
	82	Benzo(a)pyrene	252	20.131	20.119	(0.994)	68170	2.00000	1.88	
*	83	Perylene-D12	264	20.244	20.233	(1.000)	23975	0.80000	(a)	
	84	Indeno(1,2,3-cd)pyrene	276	22.379	22.356	(1.300)	51591	2.00000	2.02	
	85	Dibenzo(a,h)anthracene	278	22.470	22.424	(1.110)	36627	2.00000	2.02	
	86	Benzo(g,h,i)perylene	276	22.981	22.958	(1.135)	54130	2.00000	2.05	
M	87	Total PAHs	100				535563	36.0000	(a)	
M	88	Total Low PAHs	100				2160026	14.0000	(a)	
M	89	Total High PAHs	100				943790	12.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.


Data File: \\target_server\gg\chem\gcms-n,i\N052218,b\N8636,D
Date : 22-MAY-2018 14:18
Client ID:
Sample Info: WG228848-4
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N052218,b\N8636,D
Y (x10^6)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine+
-Benzaldehyde
-bis(2-Chloroethyl)ether
-2-Chlorophenol
Phenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-Hexachloroethane
Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
Naphthalene-D8+
4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene-D10
2-Methylnaphthalene
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4,5-Trichlorophenol
-1,1'-Biphenyl+
-2-Nitroaniline
-Dimethyl Phthalate+
-Acenaphthylene
-3-Nitroaniline+
-Acenaphthene
-2,4-Dinitrophenol
-4-Nitrophenol
-2,4-Dinitrotoluene+
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-Fluorene+
-4-Nitroaniline+
-N-Nitrosodiphenylamine
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenzo(a,h)anthracene
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8637.D
Report Date: 23-May-2018 14:43

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052218.b\N8637.D
Lab Smp Id: WG228848-2
Inj Date : 22-MAY-2018 14:49 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228848-2
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N052218.b\NSPSIM95.m
Meth Date : 23-May-2018 08:21 cgomez Quant Type: ISTD
Cal Date : 22-MAY-2018 14:49 Cal File: N8637.D
Als bottle: 3 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.663	3.632	(0.490)	6498	0.20000	0.195(a)	
	2 1,4-Dioxane	88	3.695	3.674	(0.494)	7797	0.20000	0.219(a)	
	3 N-Nitrosodimethylamine	74	4.136	4.094	(0.553)	8762	0.20000	0.178(a)	
	4 Pyridine	79	4.230	4.115	(0.566)	11652	0.20000	0.145(a)	
	5 Benzaldehyde	77	6.926	6.916	(0.926)	5712	0.20000	0.231	
	6 Phenol	94	7.077	7.067	(0.946)	90002	1.00000	0.912(a)	
	7 Bis(2-Chloroethyl)ether	93	7.167	7.147	(0.958)	16066	0.20000	0.196(a)	
	8 2-Chlorophenol	128	7.218	7.218	(0.965)	78338	1.00000	0.938(a)	
	9 1,3-Dichlorobenzene	146	7.409	7.399	(0.991)	17571	0.20000	0.193(a)	
*	10 1,4-Dichlorobenzene-D4	152	7.479	7.469	(1.000)	56386	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	7.499	7.489	(1.003)	17970	0.20000	0.194(a)	
	12 1,2-Dichlorobenzene	146	7.691	7.681	(1.028)	17046	0.20000	0.195(a)	
	13 2-Methylphenol	108	7.831	7.821	(1.047)	64579	1.00000	0.936(a)	
	14 2,2'-Oxybis(1-chloropropane)	45	7.852	7.842	(1.050)	15792	0.20000	0.157(aQ)	
	15 Acetophenone	105	8.003	7.983	(0.878)	19320	0.20000	0.173(a)	
	16 N-Nitroso-di-n-propylamine	70	8.043	8.003	(1.075)	6421	0.20000	0.155(aM)	M3
	17 3&4-Methylphenol	108	8.033	8.023	(1.074)	58335	1.00000	0.822(a)	
	18 Hexachloroethane	117	8.113	8.113	(1.085)	4644	0.20000	0.141(a)	
	19 Nitrobenzene	77	8.204	8.194	(0.901)	21048	0.20000	0.237	
	20 Isophorone	82	8.546	8.516	(0.938)	14002	0.20000	0.188(a)	
	21 2-Nitrophenol	139	8.627	8.617	(0.947)	29702	1.00000	0.772(a)	

JCG
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							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.707	8.707	(0.956)	53006	1.00000	0.736	
	23 bis(2-Chloroethoxy)methane	93	8.838	8.808	(0.970)	15944	0.20000	0.176(a)	
	24 2,4-Dichlorophenol	162	8.949	8.939	(0.982)	54132	1.00000	0.933	
	25 1,2,4-Trichlorobenzene	180	9.049	9.039	(0.993)	10400	0.20000	0.172(a)	
*	26 Naphthalene-D8	136	9.110	9.100	(1.000)	183805	0.80000	(a)	
	27 Naphthalene	128	9.130	9.130	(1.002)	36755	0.20000	0.179(a)	
	28 4-Chloroaniline	127	9.241	9.221	(1.014)	15265	0.20000	0.193(a)	
	29 Hexachlorobutadiene	225	9.331	9.331	(1.024)	3851	0.20000	0.0989(a)	
	30 Caprolactam	113	9.757	9.689	(1.071)	1949	0.20000	0.105(a)	
	31 4-Chloro-3-Methylphenol	107	9.905	9.895	(1.087)	59360	1.00000	0.939(a)	
$	32 2-Methylnaphthalene-D10	152	10.023	10.004	(1.100)	20894	0.20000	0.201(a)	
	33 2-Methylnaphthalene	142	10.063	10.053	(1.105)	25973	0.20000	0.195(a)	
	34 1-Methylnaphthalene	142	10.191	10.181	(1.119)	24337	0.20000	0.196(a)	
	35 1,2,4,5-Tetrachlorobenzene	216	10.299	10.289	(0.900)	11193	0.20000	0.194(a)	
	36 Hexachlorocyclopentadiene	237	10.299	10.289	(0.900)	2835	0.20000	0.277	
$	37 2,4-Dibromophenol	252	10.446	10.427	(0.913)	4968	0.20000	0.174(aQ)	
	38 2,4,6-Trichlorophenol	196	10.466	10.447	(0.915)	29873	1.00000	0.832(a)	
	39 2,4,5-Trichlorophenol	196	10.515	10.496	(0.919)	44118	1.00000	1.09	
	40 1,1'-Biphenyl	154	10.693	10.683	(0.934)	31826	0.20000	0.195(a)	
	41 2-Chloronaphthalene	164	10.702	10.693	(0.935)	7967	0.20000	0.195(a)	
	42 2-Nitroaniline	65	10.860	10.840	(0.949)	6485	0.20000	0.174(a)	
	43 Dimethyl Phthalate	163	11.127	11.117	(0.972)	136782	1.00000	0.966(a)	
	44 2,6-Dinitrotoluene	165	11.193	11.182	(0.978)	5432	0.20000	0.174(a)	
	45 Acenaphthylene	152	11.247	11.236	(0.983)	35292	0.20000	0.190(a)	
	46 3-Nitroaniline	138	11.422	11.400	(0.998)	3911	0.20000	0.175(aQ)	
*	47 Acenaphthene-D10	164	11.443	11.433	(1.000)	78243	0.80000	(a)	
	48 Acenaphthene	153	11.487	11.476	(1.004)	23742	0.20000	0.198(a)	
	49 2,4-Dinitrophenol	184	11.639	11.541	(1.017)	1076	1.00000	0.944(aQM)	M6
	50 4-Nitrophenol	109	11.716	11.661	(1.024)	8253	1.00000	0.789(aQ)	
	51 2,4-Dinitrotoluene	165	11.738	11.716	(1.026)	5583	0.20000	0.203(Q)	
	52 Dibenzofuran	168	11.727	11.716	(1.025)	33700	0.20000	0.199(aQ)	
	53 2,3,4,6-Tetrachlorophenol	232	11.912	11.901	(1.041)	22269	1.00000	0.759(a)	
	54 Diethylphthalate	149	12.075	12.065	(1.055)	144647	1.00000	0.953(a)	
$	55 Fluorene-D10	174	12.141	12.130	(1.061)	18898	0.20000	0.202(a)	
	56 Fluorene	166	12.173	12.173	(1.064)	24365	0.20000	0.194(a)	
	57 4-Chlorophenyl-phenylether	204	12.206	12.195	(1.067)	13076	0.20000	0.193(a)	
	58 4-Nitroaniline	138	12.250	12.217	(1.070)	3717	0.20000	0.229(Q)	
	59 4,6-Dinitro-2-Methylphenol	198	12.315	12.261	(0.917)	6815	1.00000	0.954(a)	
	60 N-Nitrosodiphenylamine	169	12.359	12.348	(0.920)	19800	0.20000	0.192(a)	
	61 4-Bromophenyl-phenylether	248	12.855	12.844	(0.957)	6576	0.20000	0.201	
	62 Hexachlorobenzene	284	12.930	12.930	(0.963)	5576	0.20000	0.209	
	63 Atrazine	200	13.111	13.100	(0.976)	3613	0.20000	0.161(a)	
	64 Pentachlorophenol	266	13.228	13.197	(0.985)	3131	1.00000	0.814(a)	
*	65 Phenanthrene-D10	188	13.431	13.421	(1.000)	121417	0.80000	(a)	
	66 Phenanthrene	178	13.463	13.453	(1.002)	30318	0.20000	0.191(a)	
	67 Anthracene	178	13.527	13.517	(1.007)	33215	0.20000	0.204	
	68 Carbazole	167	13.762	13.752	(1.025)	22099	0.20000	0.186(a)	
	69 Di-n-butylphthalate	149	14.275	14.264	(1.063)	220500	1.00000	0.944(a)	
	70 Fluoranthene	202	15.060	15.050	(1.121)	26903	0.20000	0.182(a)	
$	71 Pyrene-D10	212	15.332	15.322	(0.890)	17192	0.20000	0.220(a)	
	72 Pyrene	202	15.350	15.351	(0.891)	28088	0.20000	0.220	
	73 Butylbenzylphthalate	149	16.345	16.336	(0.948)	78609	1.00000	1.04	
	74 3,3'-Dichlorobenzidine	252	17.236	17.199	(1.000)	1594	0.20000	0.267	
	75 Benzo(a)anthracene	228	17.218	17.208	(0.999)	11396	0.20000	0.185(a)	



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Report Date: 23-May-2018 14:43

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76 Chrysene-D12	240	17.236	17.218	(1.000)	40000	0.80000	(a)	
	77 Chrysene	228	17.283	17.264	(1.003)	17891	0.20000	0.246	
	78 bis(2-Ethylhexyl)phthalate	149	17.415	17.405	(1.010)	101908	1.00000	1.02	
	79 Di-n-octylphthalate	149	18.813	18.790	(1.091)	119610	1.00000	0.920(a)	
	80 Benzo(b)fluoranthene	252	19.460	19.426	(0.960)	5747	0.20000	0.169(a)	
	81 Benzo(k)fluoranthene	252	19.517	19.494	(0.963)	13312	0.20000	0.246(M)	M6
	82 Benzo(a)pyrene	252	20.153	20.119	(0.994)	6354	0.20000	0.193(a)	
*	83 Perylene-D12	264	20.267	20.233	(1.000)	21818	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	22.424	22.356	(1.301)	3901	0.20000	0.215	
	85 Dibenzo(a,h)anthracene	278	22.515	22.424	(1.111)	2914	0.20000	0.343	
	86 Benzo(g,h,i)perylene	276	23.015	22.958	(1.136)	4119	0.20000	0.172(a)	
M	87 Total PAHs	100				51416	3.60000	(a)	
M	88 Total Low PAHs	100				209660	1.40000	(a)	
M	89 Total High PAHs	100				93546	1.20000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.



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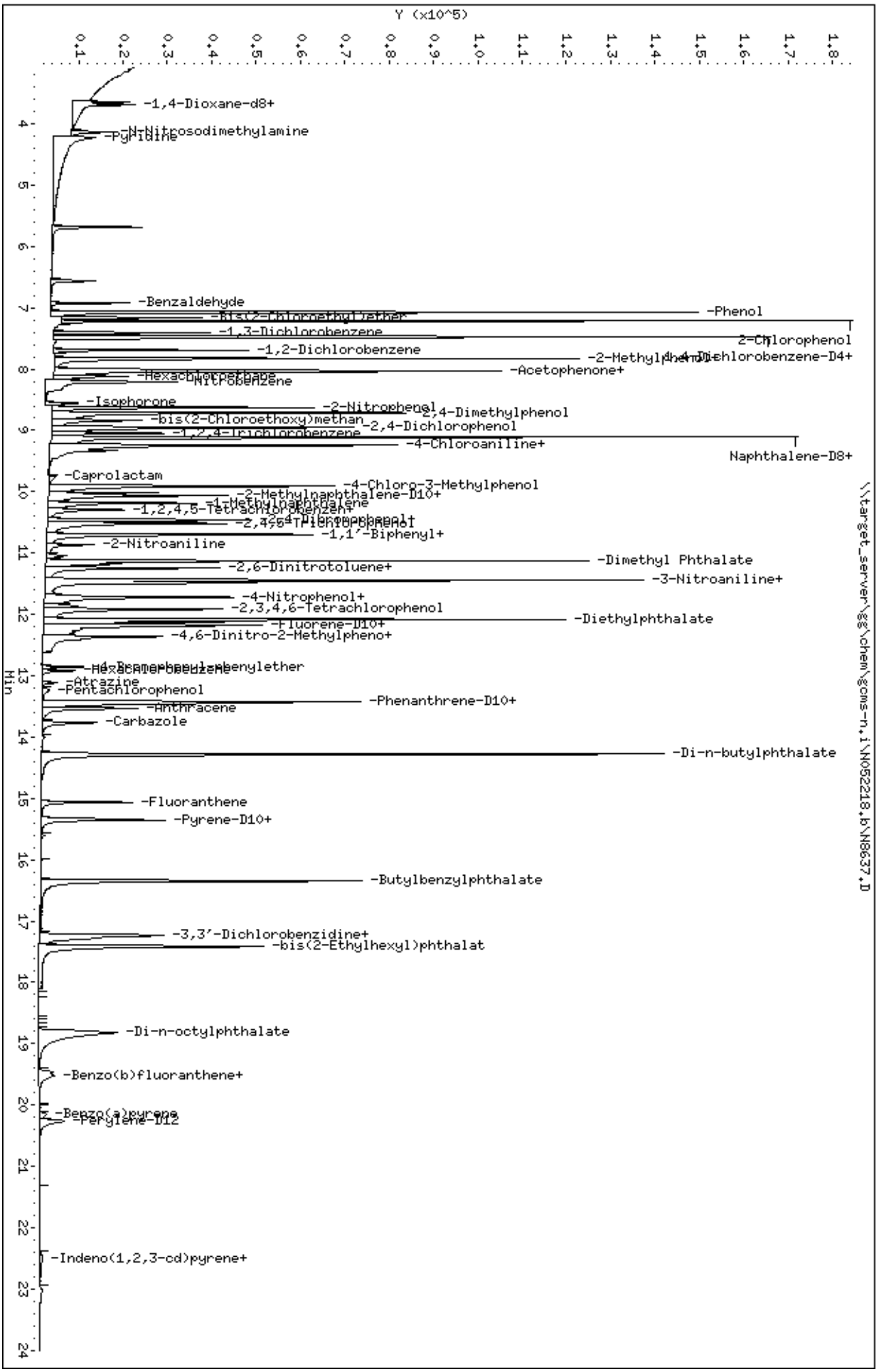

Data File: \\target_server\gg\chem\gcms-n,i\N052218,b\N8637,D
Date : 22-MAY-2018 14:49
Client ID:
Sample Info: WG228848-2
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N052218,b\N8637,D
Y (x10^5)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine
-Pyridine
-Benzaldehyde
-Phenol
-bis(2-Chloroethyl)ether
-1,3-Dichlorobenzene
2-Chlorophenol
-1,2-Dichlorobenzene
-2-Methylphenol
1,4-Dichlorobenzene-D4+
-Acetophenone+
-Hexachloroethane
Nitrobenzene
-Isophorone
-2-Nitrophenol
2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-4-Chloroaniline+
Naphthalene-D8+
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene-D10+
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4,6-Trichlorophenol
-1,1'-Biphenyl+
-2-Nitroaniline
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-4-Nitrophenol+
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-Fluorene-D10+
-4,6-Dinitro-2-Methylpheno+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8638.D
Report Date: 23-May-2018 14:43

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052218.b\N8638.D
Lab Smp Id: WG228848-3
Inj Date : 22-MAY-2018 15:20 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228848-3
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N052218.b\NSPSIM95.m
Meth Date : 23-May-2018 08:21 cgomez Quant Type: ISTD
Cal Date : 22-MAY-2018 15:20 Cal File: N8638.D
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.653	3.632	(0.489)	16322	0.50000	0.500(a)	
	2 1,4-Dioxane	88	3.695	3.674	(0.495)	17106	0.50000	0.491(a)	
	3 N-Nitrosodimethylamine	74	4.125	4.094	(0.552)	21807	0.50000	0.453	
	4 Pyridine	79	4.177	4.115	(0.559)	36809	0.50000	0.468	
	5 Benzaldehyde	77	6.926	6.916	(0.927)	13425	0.50000	0.553	
	6 Phenol	94	7.066	7.067	(0.946)	185263	2.00000	1.91	
	7 Bis(2-Chloroethyl)ether	93	7.157	7.147	(0.958)	39952	0.50000	0.498	
	8 2-Chlorophenol	128	7.217	7.218	(0.966)	163725	2.00000	2.00	
	9 1,3-Dichlorobenzene	146	7.409	7.399	(0.992)	44557	0.50000	0.500	
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.469	(1.000)	55277	0.80000	(a)	
	11 1,4-Dichlorobenzene	146	7.499	7.489	(1.004)	44932	0.50000	0.496	
	12 1,2-Dichlorobenzene	146	7.690	7.681	(1.030)	42991	0.50000	0.503	
	13 2-Methylphenol	108	7.821	7.821	(1.047)	127059	2.00000	1.88	
	14 2,2'-Oxybis(1-chloropropane)	45	7.841	7.842	(1.050)	49640	0.50000	0.503(Q)	
	15 Acetophenone	105	7.992	7.983	(0.878)	53538	0.50000	0.520	
	16 N-Nitroso-di-n-propylamine	70	8.023	8.003	(1.074)	19230	0.50000	0.380(Q)	
	17 3&4-Methylphenol	108	8.023	8.023	(1.074)	133385	2.00000	1.92	
	18 Hexachloroethane	117	8.113	8.113	(1.086)	16184	0.50000	0.500	
	19 Nitrobenzene	77	8.204	8.194	(0.902)	45861	0.50000	0.561	
	20 Isophorone	82	8.536	8.516	(0.938)	50999	0.50000	0.462	
	21 2-Nitrophenol	139	8.616	8.617	(0.947)	73279	2.00000	2.06	

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8638.D
Report Date: 23-May-2018 14:43

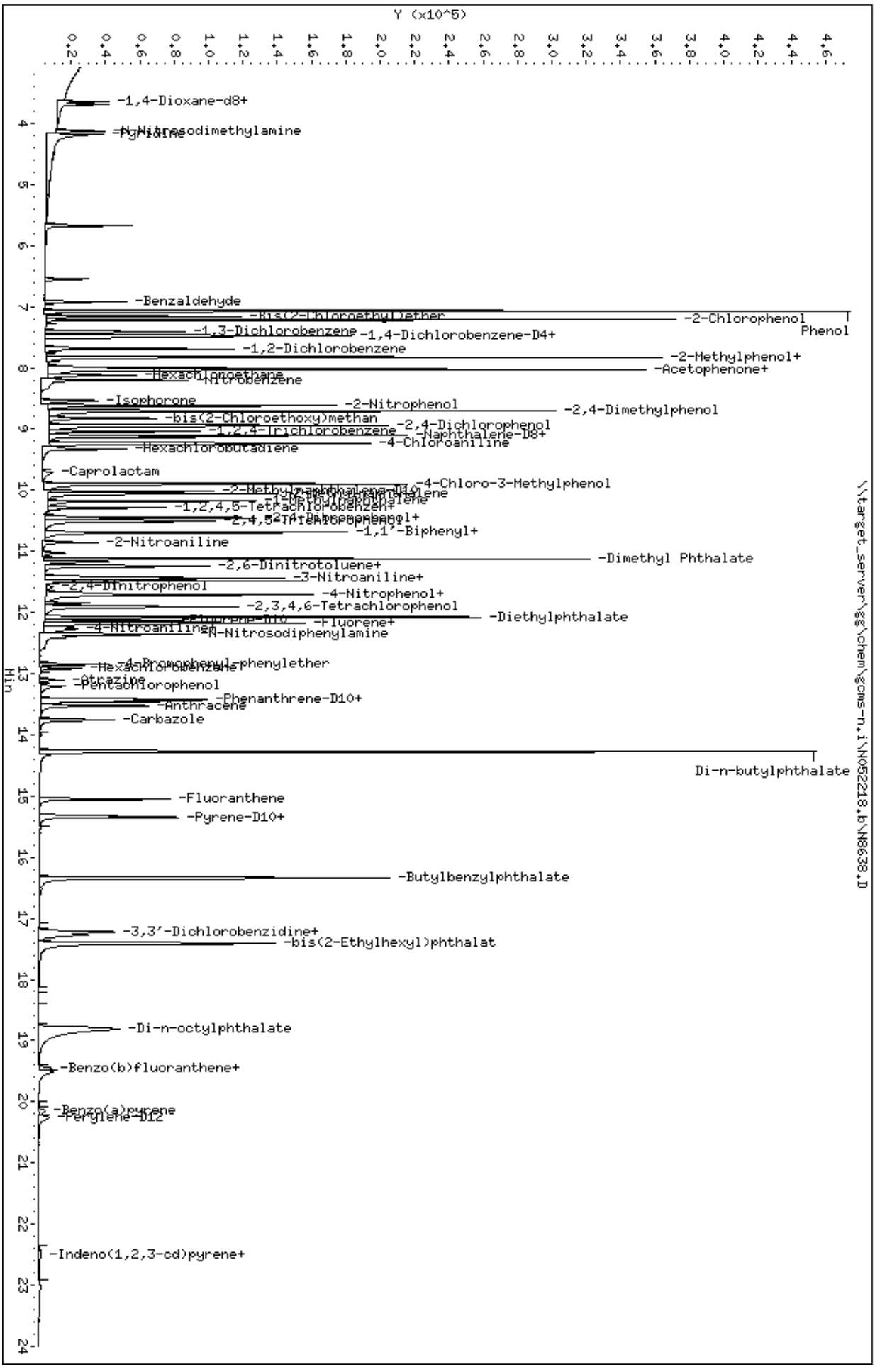
							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.707	8.707	(0.957)	132213	2.00000	1.99	
	23 bis(2-Chloroethoxy)methane	93	8.828	8.808	(0.970)	42914	0.50000	0.513	
	24 2,4-Dichlorophenol	162	8.939	8.939	(0.982)	101335	2.00000	1.90	
	25 1,2,4-Trichlorobenzene	180	9.039	9.039	(0.993)	29109	0.50000	0.522	
*	26 Naphthalene-D8	136	9.100	9.100	(1.000)	169456	0.80000	(a)	
	27 Naphthalene	128	9.130	9.130	(1.003)	97589	0.50000	0.515	
	28 4-Chloroaniline	127	9.231	9.221	(1.014)	39464	0.50000	0.542(a)	
	29 Hexachlorobutadiene	225	9.331	9.331	(1.025)	14935	0.50000	0.470	
	30 Caprolactam	113	9.708	9.689	(1.067)	7440	0.50000	0.433	
	31 4-Chloro-3-Methylphenol	107	9.895	9.895	(1.087)	123276	2.00000	2.12	
$	32 2-Methylnaphthalene-D10	152	10.013	10.004	(1.100)	45785	0.50000	0.478(a)	
	33 2-Methylnaphthalene	142	10.053	10.053	(1.105)	64827	0.50000	0.527	
	34 1-Methylnaphthalene	142	10.181	10.181	(1.119)	51807	0.50000	0.453	
	35 1,2,4,5-Tetrachlorobenzene	216	10.289	10.289	(0.900)	28289	0.50000	0.495	
	36 Hexachlorocyclopentadiene	237	10.289	10.289	(0.900)	8120	0.50000	0.438	
$	37 2,4-Dibromophenol	252	10.427	10.427	(0.912)	13161	0.50000	0.464(aQ)	
	38 2,4,6-Trichlorophenol	196	10.456	10.447	(0.915)	68846	2.00000	1.94	
	39 2,4,5-Trichlorophenol	196	10.505	10.496	(0.919)	83392	2.00000	2.07	
	40 1,1'-Biphenyl	154	10.683	10.683	(0.934)	82428	0.50000	0.510	
	41 2-Chloronaphthalene	164	10.702	10.693	(0.936)	20186	0.50000	0.498	
	42 2-Nitroaniline	65	10.850	10.840	(0.949)	16896	0.50000	0.457	
	43 Dimethyl Phthalate	163	11.116	11.117	(0.972)	281062	2.00000	2.00	
	44 2,6-Dinitrotoluene	165	11.182	11.182	(0.978)	13530	0.50000	0.437	
	45 Acenaphthylene	152	11.247	11.236	(0.984)	91269	0.50000	0.495	
	46 3-Nitroaniline	138	11.411	11.400	(0.998)	10759	0.50000	0.487	
*	47 Acenaphthene-D10	164	11.432	11.433	(1.000)	77529	0.80000	(a)	
	48 Acenaphthene	153	11.476	11.476	(1.004)	58676	0.50000	0.493	
	49 2,4-Dinitrophenol	184	11.574	11.541	(1.012)	6001	2.00000	1.40(Q)	
	50 4-Nitrophenol	109	11.683	11.661	(1.022)	23427	2.00000	1.96	
	51 2,4-Dinitrotoluene	165	11.727	11.716	(1.026)	16687	0.50000	0.470	
	52 Dibenzofuran	168	11.716	11.716	(1.025)	84980	0.50000	0.507	
	53 2,3,4,6-Tetrachlorophenol	232	11.912	11.901	(1.042)	54625	2.00000	1.88	
	54 Diethylphthalate	149	12.075	12.065	(1.056)	299654	2.00000	1.99	
$	55 Fluorene-D10	174	12.141	12.130	(1.062)	46846	0.50000	0.504(a)	
	56 Fluorene	166	12.173	12.173	(1.065)	61164	0.50000	0.493	
	57 4-Chlorophenyl-phenylether	204	12.195	12.195	(1.067)	33475	0.50000	0.499	
	58 4-Nitroaniline	138	12.239	12.217	(1.071)	8440	0.50000	0.524	
	59 4,6-Dinitro-2-Methylphenol	198	12.282	12.261	(0.915)	18572	2.00000	1.60	
	60 N-Nitrosodiphenylamine	169	12.359	12.348	(0.921)	51546	0.50000	0.490	
	61 4-Bromophenyl-phenylether	248	12.844	12.844	(0.957)	15670	0.50000	0.470	
	62 Hexachlorobenzene	284	12.929	12.930	(0.963)	13834	0.50000	0.509	
	63 Atrazine	200	13.100	13.100	(0.976)	10373	0.50000	0.454	
	64 Pentachlorophenol	266	13.207	13.197	(0.984)	13324	2.00000	1.54	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	123848	0.80000	(a)	
	66 Phenanthrene	178	13.453	13.453	(1.002)	77696	0.50000	0.479	
	67 Anthracene	178	13.527	13.517	(1.008)	83108	0.50000	0.501	
	68 Carbazole	167	13.751	13.752	(1.025)	59330	0.50000	0.489	
	69 Di-n-butylphthalate	149	14.275	14.264	(1.064)	484135	2.00000	2.03	
	70 Fluoranthene	202	15.050	15.050	(1.121)	71715	0.50000	0.475	
$	71 Pyrene-D10	212	15.322	15.322	(0.889)	44977	0.50000	0.539(a)	
	72 Pyrene	202	15.350	15.351	(0.891)	76513	0.50000	0.561	
	73 Butylbenzylphthalate	149	16.335	16.336	(0.948)	180073	2.00000	2.24	
	74 3,3'-Dichlorobenzidine	252	17.227	17.199	(1.000)	3872	0.50000	0.421	
	75 Benzo(a)anthracene	228	17.208	17.208	(0.999)	30709	0.50000	0.467	

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8638.D
Report Date: 23-May-2018 14:43

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76	Chrysene-D12	240	17.227	17.218	(1.000)	42663	0.80000	(a)	
	77	Chrysene	228	17.274	17.264	(1.003)	40781	0.50000	0.526	
	78	bis(2-Ethylhexyl)phthalate	149	17.414	17.405	(1.011)	237004	2.00000	2.24	
	79	Di-n-octylphthalate	149	18.801	18.790	(1.091)	286065	2.00000	2.06	
	80	Benzo(b)fluoranthene	252	19.449	19.426	(0.960)	15099	0.50000	0.457	
	81	Benzo(k)fluoranthene	252	19.506	19.494	(0.962)	29917	0.50000	0.569(H)	
	82	Benzo(a)pyrene	252	20.153	20.119	(0.994)	15736	0.50000	0.492	
*	83	Perylene-D12	264	20.266	20.233	(1.000)	21183	0.80000	(a)	
	84	Indeno(1,2,3-cd)pyrene	276	22.424	22.356	(1.302)	8463	0.50000	0.370	
	85	Dibenzo(a,h)anthracene	278	22.504	22.424	(1.110)	5089	0.50000	0.471	
	86	Benzo(g,h,i)perylene	276	23.015	22.958	(1.136)	10308	0.50000	0.442	
M	87	Total PAHs	100				115594	9.00000	(a)	
M	88	Total Low PAHs	100				534329	3.50000	(a)	
M	89	Total High PAHs	100				240543	3.00000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.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Date : 22-MAY-2018 15:20
Client ID:
Sample Info: WG228848-3
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N052218,b\N8638,D
Y (x10^5)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine
-Pyridine
-Benzaldehyde
-Bis(2-Chloroethyl)ether
-2-Chlorophenol
Phenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-Hexachloroethane
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene-D10
-2-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4,5-Trichlorophenol
-1,1'-Biphenyl+
-2-Nitroaniline
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-2,4-Dinitrophenol
-4-Nitrophenol+
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-Fluorene+
-4-Nitroaniline
-N-Nitrosodiphenylamine
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8639.D
Report Date: 23-May-2018 14:43

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052218.b\N8639.D
Lab Smp Id: WG228848-5
Inj Date : 22-MAY-2018 15:51 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228848-5
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N052218.b\NSPSIM95.m
Meth Date : 23-May-2018 08:21 cgomez Quant Type: ISTD
Cal Date : 22-MAY-2018 15:51 Cal File: N8639.D
Als bottle: 5 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.642	3.632	(0.488)	241038	7.00000	7.03	
	2 1,4-Dioxane	88	3.684	3.674	(0.493)	246035	7.00000	6.71	
	3 N-Nitrosodimethylamine	74	4.104	4.094	(0.549)	373149	7.00000	7.37	
	4 Pyridine	79	4.125	4.115	(0.552)	632917	7.00000	7.65	
	5 Benzaldehyde	77	6.916	6.916	(0.926)	173222	7.00000	6.78	
	6 Phenol	94	7.067	7.067	(0.946)	737890	7.00000	7.25(Q)	
	7 Bis(2-Chloroethyl)ether	93	7.147	7.147	(0.957)	591083	7.00000	7.00	
	8 2-Chlorophenol	128	7.218	7.218	(0.966)	608080	7.00000	7.06	
	9 1,3-Dichlorobenzene	146	7.399	7.399	(0.991)	660484	7.00000	7.05	
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.469	(1.000)	58133	0.80000	(a)	
	11 1,4-Dichlorobenzene	146	7.489	7.489	(1.003)	669832	7.00000	7.03	
	12 1,2-Dichlorobenzene	146	7.681	7.681	(1.028)	627788	7.00000	6.98	
	13 2-Methylphenol	108	7.822	7.821	(1.047)	509073	7.00000	7.15	
	14 2,2'-Oxybis(1-chloropropane)	45	7.842	7.842	(1.050)	763794	7.00000	7.35(Q)	
	15 Acetophenone	105	7.983	7.983	(0.877)	846233	7.00000	7.09	
	16 N-Nitroso-di-n-propylamine	70	8.003	8.003	(1.071)	422807	7.00000	7.03(Q)	
	17 3&4-Methylphenol	108	8.023	8.023	(1.074)	533638	7.00000	7.29	
	18 Hexachloroethane	117	8.113	8.113	(1.086)	256392	7.00000	7.53	
	19 Nitrobenzene	77	8.194	8.194	(0.900)	608692	7.00000	6.43	
	20 Isophorone	82	8.516	8.516	(0.936)	1120381	7.00000	7.04	
	21 2-Nitrophenol	139	8.617	8.617	(0.947)	295961	7.00000	7.20	

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8639.D
Report Date: 23-May-2018 14:43

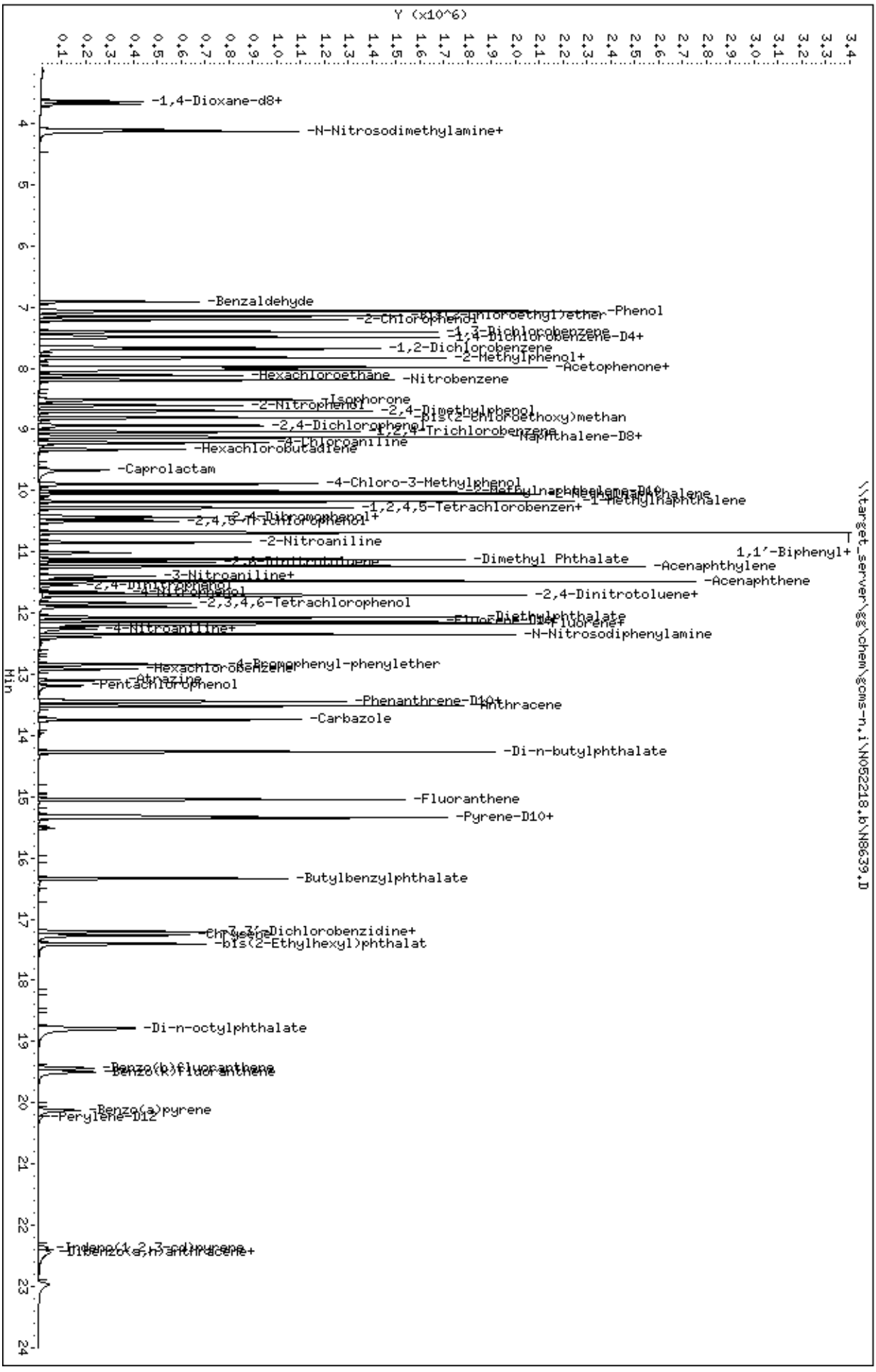
							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.697	8.707	(0.956)	569663	7.00000	7.40	
	23 bis(2-Chloroethoxy)methane	93	8.808	8.808	(0.968)	681209	7.00000	7.03	
	24 2,4-Dichlorophenol	162	8.939	8.939	(0.982)	435868	7.00000	7.03	
	25 1,2,4-Trichlorobenzene	180	9.040	9.039	(0.993)	456191	7.00000	7.06	
*	26 Naphthalene-D8	136	9.100	9.100	(1.000)	196402	0.80000	(a)	
	27 Naphthalene	128	9.130	9.130	(1.003)	1555565	7.00000	7.08	
	28 4-Chloroaniline	127	9.221	9.221	(1.013)	607129	7.00000	7.19	
	29 Hexachlorobutadiene	225	9.332	9.331	(1.025)	249894	7.00000	7.01	
	30 Caprolactam	113	9.659	9.689	(1.061)	165906	7.00000	8.34	
	31 4-Chloro-3-Methylphenol	107	9.886	9.895	(1.086)	459527	7.00000	6.80	
$	32 2-Methylnaphthalene-D10	152	10.004	10.004	(1.099)	770746	7.00000	6.95	
	33 2-Methylnaphthalene	142	10.053	10.053	(1.105)	982772	7.00000	6.90	
	34 1-Methylnaphthalene	142	10.181	10.181	(1.119)	944354	7.00000	7.12	
	35 1,2,4,5-Tetrachlorobenzene	216	10.279	10.289	(0.899)	428345	7.00000	6.99	
	36 Hexachlorocyclopentadiene	237	10.289	10.289	(0.900)	236503	7.00000	6.91	
$	37 2,4-Dibromophenol	252	10.417	10.427	(0.911)	222035	7.00000	7.30	
	38 2,4,6-Trichlorophenol	196	10.447	10.447	(0.914)	273846	7.00000	7.17	
	39 2,4,5-Trichlorophenol	196	10.496	10.496	(0.918)	284721	7.00000	6.60	
	40 1,1'-Biphenyl	154	10.683	10.683	(0.934)	1196164	7.00000	6.90	
	41 2-Chloronaphthalene	164	10.693	10.693	(0.935)	302584	7.00000	6.96	
	42 2-Nitroaniline	65	10.840	10.840	(0.948)	292847	7.00000	7.38	
	43 Dimethyl Phthalate	163	11.117	11.117	(0.972)	1050897	7.00000	6.98	
	44 2,6-Dinitrotoluene	165	11.171	11.182	(0.977)	247564	7.00000	7.45	
	45 Acenaphthylene	152	11.237	11.236	(0.983)	1388054	7.00000	7.02	
	46 3-Nitroaniline	138	11.400	11.400	(0.997)	175964	7.00000	7.42	
*	47 Acenaphthene-D10	164	11.433	11.433	(1.000)	83197	0.80000	(a)	
	48 Acenaphthene	153	11.476	11.476	(1.004)	876288	7.00000	6.86	
	49 2,4-Dinitrophenol	184	11.542	11.541	(1.010)	80708	7.00000	7.06	
	50 4-Nitrophenol	109	11.661	11.661	(1.020)	102797	7.00000	7.07(Q)	
	51 2,4-Dinitrotoluene	165	11.716	11.716	(1.025)	303497	7.00000	6.84(Q)	
	52 Dibenzofuran	168	11.716	11.716	(1.025)	1225209	7.00000	6.82(Q)	
	53 2,3,4,6-Tetrachlorophenol	232	11.901	11.901	(1.041)	236513	7.00000	7.58	
	54 Diethylphthalate	149	12.065	12.065	(1.055)	1126970	7.00000	6.98	
$	55 Fluorene-D10	174	12.130	12.130	(1.061)	680832	7.00000	6.83	
	56 Fluorene	166	12.174	12.173	(1.065)	924801	7.00000	6.94	
	57 4-Chlorophenyl-phenylether	204	12.184	12.195	(1.066)	491152	7.00000	6.82	
	58 4-Nitroaniline	138	12.217	12.217	(1.069)	126107	7.00000	7.29(Q)	
	59 4,6-Dinitro-2-Methylphenol	198	12.261	12.261	(0.914)	127149	7.00000	6.98	
	60 N-Nitrosodiphenylamine	169	12.348	12.348	(0.920)	779796	7.00000	7.09	
	61 4-Bromophenyl-phenylether	248	12.834	12.844	(0.956)	240871	7.00000	6.91	
	62 Hexachlorobenzene	284	12.919	12.930	(0.963)	194204	7.00000	6.84	
	63 Atrazine	200	13.090	13.100	(0.975)	177216	7.00000	7.42	
	64 Pentachlorophenol	266	13.197	13.197	(0.983)	95874	7.00000	6.78	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	129391	0.80000	(a)	
	66 Phenanthrene	178	13.453	13.453	(1.002)	1218933	7.00000	7.19	
	67 Anthracene	178	13.517	13.517	(1.007)	1213869	7.00000	7.01	
	68 Carbazole	167	13.741	13.752	(1.024)	940939	7.00000	7.42	
	69 Di-n-butylphthalate	149	14.264	14.264	(1.063)	1756472	7.00000	7.05	
	70 Fluoranthene	202	15.041	15.050	(1.121)	1151761	7.00000	7.30	
$	71 Pyrene-D10	212	15.323	15.322	(0.890)	720946	7.00000	6.60	
	72 Pyrene	202	15.341	15.351	(0.891)	1152989	7.00000	6.47	
	73 Butylbenzylphthalate	149	16.336	16.336	(0.949)	676321	7.00000	6.43	
	74 3,3'-Dichlorobenzidine	252	17.208	17.199	(0.999)	106027	7.00000	6.40	
	75 Benzo(a)anthracene	228	17.199	17.208	(0.999)	622953	7.00000	7.25	

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8639.D
Report Date: 23-May-2018 14:43

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76	Chrysene-D12	240	17.218	17.218	(1.000)	55796	0.80000	(a)	
	77	Chrysene	228	17.265	17.264	(1.003)	637813	7.00000	6.29	
	78	bis(2-Ethylhexyl)phthalate	149	17.405	17.405	(1.011)	876970	7.00000	6.32	
	79	Di-n-octylphthalate	149	18.779	18.790	(1.091)	1168169	7.00000	6.44	
	80	Benzo(b)fluoranthene	252	19.426	19.426	(0.960)	347347	7.00000	7.45	
	81	Benzo(k)fluoranthene	252	19.495	19.494	(0.963)	476135	7.00000	6.43(H)	
	82	Benzo(a)pyrene	252	20.119	20.119	(0.994)	322456	7.00000	7.16	
*	83	Perylene-D12	264	20.244	20.233	(1.000)	29853	0.80000	(a)	
	84	Indeno(1,2,3-cd)pyrene	276	22.368	22.356	(1.299)	242259	7.00000	6.74	
	85	Dibenzo(a,h)anthracene	278	22.447	22.424	(1.109)	154710	7.00000	6.43	
	86	Benzo(g,h,i)perylene	276	22.958	22.958	(1.134)	248719	7.00000	7.58	
M	87	Total PAHs	100				2258814	126.000	(a)	
M	88	Total Low PAHs	100				8160282	49.0000	(a)	
M	89	Total High PAHs	100				4042682	42.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.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Date : 22-MAY-2018 15:51
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Sample Info: WG228848-5
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N052218,b\N8639,D
Y (x10^6)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine+
-Benzaldehyde
-Phenol
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-Hexachloroethane
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene-D10
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4,5-Trichlorophenol
-2-Nitroaniline
1,1'-Biphenyl+
-Dimethyl Phthalate
-Acenaphthylene
-3-Nitroaniline+
-Acenaphthene
-2,4-Dinitrophenol
-4-Nitrophenol
-2,4-Dinitrotoluene+
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-Fluorene+
-4-Nitroaniline+
-N-Nitrosodiphenylamine
-Hexachlorobenzene
-4-Bromophenyl-phenylether
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenzo(a,h)anthracene+

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Report Date: 23-May-2018 14:43

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052218.b\N8640.D
Lab Smp Id: WG228848-6
Inj Date : 22-MAY-2018 16:23 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228848-6
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N052218.b\NSPSIM95.m
Meth Date : 23-May-2018 08:21 cgomez Quant Type: ISTD
Cal Date : 22-MAY-2018 16:23 Cal File: N8640.D
Als bottle: 6 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.632	3.632	(0.486)	304280	10.0000	10.2	
	2 1,4-Dioxane	88	3.674	3.674	(0.492)	318804	10.0000	9.98	
	3 N-Nitrosodimethylamine	74	4.083	4.094	(0.547)	466572	10.0000	10.6	
	4 Pyridine	79	4.115	4.115	(0.551)	784492	10.0000	10.9	
	5 Benzaldehyde	77	6.916	6.916	(0.926)	207332	10.0000	9.32	
	6 Phenol	94	7.067	7.067	(0.946)	935452	10.0000	10.5	
	7 Bis(2-Chloroethyl)ether	93	7.147	7.147	(0.957)	751681	10.0000	10.2	
	8 2-Chlorophenol	128	7.208	7.218	(0.965)	766964	10.0000	10.2	
	9 1,3-Dichlorobenzene	146	7.399	7.399	(0.991)	834849	10.0000	10.2	
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.469	(1.000)	50658	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	7.489	7.489	(1.003)	850992	10.0000	10.2	
	12 1,2-Dichlorobenzene	146	7.681	7.681	(1.028)	801957	10.0000	10.2	
	13 2-Methylphenol	108	7.822	7.821	(1.047)	647226	10.0000	10.4	
	14 2,2'-Oxybis(1-chloropropane)	45	7.832	7.842	(1.049)	971800	10.0000	10.7	
	15 Acetophenone	105	7.983	7.983	(0.877)	1091812	10.0000	10.4	
	16 N-Nitroso-di-n-propylamine	70	8.003	8.003	(1.071)	549762	10.0000	10.5	
	17 3&4-Methylphenol	108	8.023	8.023	(1.074)	690048	10.0000	10.8	
	18 Hexachloroethane	117	8.113	8.113	(1.086)	322913	10.0000	10.9	
	19 Nitrobenzene	77	8.194	8.194	(0.900)	780587	10.0000	9.35	
	20 Isophorone	82	8.506	8.516	(0.935)	1447688	10.0000	10.3	
	21 2-Nitrophenol	139	8.607	8.617	(0.946)	385759	10.0000	10.6	

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8640.D
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								AMOUNTS		
			QUANT SIG					CAL-AMT	ON-COL	
	Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/ml)	(ug/ml)	REVIEW CODE
	22	2,4-Dimethylphenol	107	8.697	8.707	(0.956)	737844	10.0000	10.9	
	23	bis(2-Chloroethoxy)methane	93	8.808	8.808	(0.968)	882264	10.0000	10.3	
	24	2,4-Dichlorophenol	162	8.939	8.939	(0.982)	567748	10.0000	10.4	
	25	1,2,4-Trichlorobenzene	180	9.040	9.039	(0.993)	588058	10.0000	10.3	
*	26	Naphthalene-D8	136	9.100	9.100	(1.000)	173039	0.80000	(a)	
	27	Naphthalene	128	9.130	9.130	(1.003)	1995454	10.0000	10.3	
	28	4-Chloroaniline	127	9.221	9.221	(1.013)	729257	10.0000	9.80	
	29	Hexachlorobutadiene	225	9.331	9.331	(1.025)	322961	10.0000	10.3	
	30	Caprolactam	113	9.669	9.689	(1.063)	225693	10.0000	12.9	
	31	4-Chloro-3-Methylphenol	107	9.886	9.895	(1.086)	604898	10.0000	10.2	
$	32	2-Methylnaphthalene-D10	152	10.004	10.004	(1.099)	1010940	10.0000	10.3	
	33	2-Methylnaphthalene	142	10.053	10.053	(1.105)	1263459	10.0000	10.1	
	34	1-Methylnaphthalene	142	10.181	10.181	(1.119)	1230831	10.0000	10.5	
	35	1,2,4,5-Tetrachlorobenzene	216	10.279	10.289	(0.899)	555144	10.0000	10.0	
	36	Hexachlorocyclopentadiene	237	10.289	10.289	(0.900)	308386	10.0000	9.88	
$	37	2,4-Dibromophenol	252	10.417	10.427	(0.911)	295128	10.0000	10.7	
	38	2,4,6-Trichlorophenol	196	10.447	10.447	(0.914)	368410	10.0000	10.7	
	39	2,4,5-Trichlorophenol	196	10.496	10.496	(0.918)	375045	10.0000	9.62	
	40	1,1'-Biphenyl	154	10.683	10.683	(0.934)	1552064	10.0000	9.91	
	41	2-Chloronaphthalene	164	10.693	10.693	(0.935)	398401	10.0000	10.1	
	42	2-Nitroaniline	65	10.840	10.840	(0.948)	386480	10.0000	10.8	
	43	Dimethyl Phthalate	163	11.117	11.117	(0.972)	1427940	10.0000	10.5	
	44	2,6-Dinitrotoluene	165	11.171	11.182	(0.977)	322953	10.0000	10.8	
	45	Acenaphthylene	152	11.236	11.236	(0.983)	1841173	10.0000	10.3	
	46	3-Nitroaniline	138	11.400	11.400	(0.997)	230800	10.0000	10.8	
*	47	Acenaphthene-D10	164	11.433	11.433	(1.000)	75180	0.80000	(a)	
	48	Acenaphthene	153	11.476	11.476	(1.004)	1187900	10.0000	10.3	
	49	2,4-Dinitrophenol	184	11.542	11.541	(1.010)	119841	10.0000	10.2	
	50	4-Nitrophenol	109	11.661	11.661	(1.020)	136051	10.0000	9.86	
	51	2,4-Dinitrotoluene	165	11.716	11.716	(1.025)	416878	10.0000	10.4	
	52	Dibenzofuran	168	11.716	11.716	(1.025)	1641811	10.0000	10.1	
	53	2,3,4,6-Tetrachlorophenol	232	11.901	11.901	(1.041)	310215	10.0000	11.0	
	54	Diethylphthalate	149	12.065	12.065	(1.055)	1537584	10.0000	10.5	
$	55	Fluorene-D10	174	12.130	12.130	(1.061)	907554	10.0000	10.1(A)	
	56	Fluorene	166	12.174	12.173	(1.065)	1233318	10.0000	10.2	
	57	4-Chlorophenyl-phenylether	204	12.184	12.195	(1.066)	666372	10.0000	10.2	
	58	4-Nitroaniline	138	12.217	12.217	(1.069)	150690	10.0000	9.64(Q)	
	59	4,6-Dinitro-2-Methylphenol	198	12.261	12.261	(0.914)	187890	10.0000	10.4	
	60	N-Nitrosodiphenylamine	169	12.348	12.348	(0.920)	1043516	10.0000	10.2	
	61	4-Bromophenyl-phenylether	248	12.834	12.844	(0.956)	332959	10.0000	10.3	
	62	Hexachlorobenzene	284	12.919	12.930	(0.963)	259818	10.0000	9.88	
	63	Atrazine	200	13.090	13.100	(0.975)	242988	10.0000	11.0	
	64	Pentachlorophenol	266	13.186	13.197	(0.983)	146192	10.0000	10.2	
*	65	Phenanthrene-D10	188	13.421	13.421	(1.000)	119872	0.80000	(a)	
	66	Phenanthrene	178	13.442	13.453	(1.002)	1614279	10.0000	10.3	
	67	Anthracene	178	13.517	13.517	(1.007)	1605490	10.0000	10.0	
	68	Carbazole	167	13.741	13.752	(1.024)	1218153	10.0000	10.4	
	69	Di-n-butylphthalate	149	14.264	14.264	(1.063)	2393108	10.0000	10.4	
	70	Fluoranthene	202	15.041	15.050	(1.121)	1559732	10.0000	10.7	
$	71	Pyrene-D10	212	15.322	15.322	(0.890)	1000179	10.0000	9.08	
	72	Pyrene	202	15.341	15.351	(0.891)	1562057	10.0000	8.68	
	73	Butylbenzylphthalate	149	16.336	16.336	(0.949)	992554	10.0000	9.35	
	74	3,3'-Dichlorobenzidine	252	17.199	17.199	(0.999)	174159	10.0000	10.9	
	75	Benzo(a)anthracene	228	17.199	17.208	(0.999)	926043	10.0000	10.7	

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8640.D
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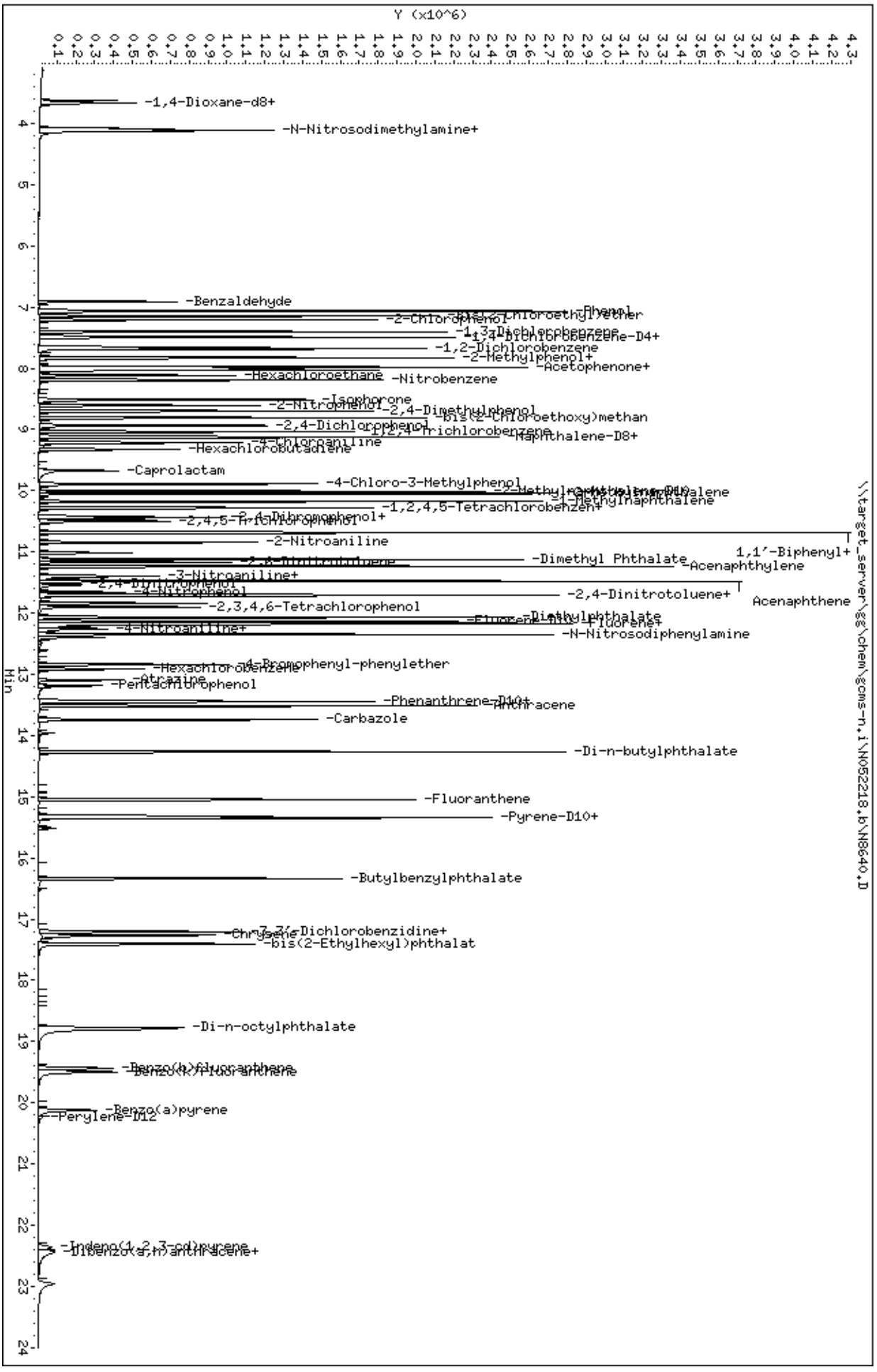
			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76	Chrysene-D12	240	17.218	17.218	(1.000)	56291	0.80000	(a)	
	77	Chrysene	228	17.265	17.264	(1.003)	949823	10.0000	9.28	
	78	bis(2-Ethylhexyl)phthalate	149	17.405	17.405	(1.011)	1342096	10.0000	9.60	
	79	Di-n-octylphthalate	149	18.779	18.790	(1.091)	1917400	10.0000	10.5	
	80	Benzo(b)fluoranthene	252	19.426	19.426	(0.960)	559084	10.0000	11.1	
	81	Benzo(k)fluoranthene	252	19.494	19.494	(0.964)	730718	10.0000	9.11(H)	
	82	Benzo(a)pyrene	252	20.119	20.119	(0.994)	510497	10.0000	10.5	
*	83	Perylene-D12	264	20.233	20.233	(1.000)	32305	0.80000	(a)	
	84	Indeno(1,2,3-cd)pyrene	276	22.356	22.356	(1.298)	386389	10.0000	10.6	
	85	Dibenzo(a,h)anthracene	278	22.436	22.424	(1.109)	263920	10.0000	10.0	
	86	Benzo(g,h,i)perylene	276	22.958	22.958	(1.135)	385774	10.0000	10.9	
M	87	Total PAHs	100				3292796	180.000	(a)	
M	88	Total Low PAHs	100				10741073	70.0000	(a)	
M	89	Total High PAHs	100				5772072	60.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.
Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.


Data File: \\target_server\gg\chem\gcms-n,i\N052218,b\N8640,D
Date : 22-MAY-2018 16:23
Client ID:
Sample Info: WG228848-6
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N052218,b\N8640,D
Y (x10^6)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine+
-Benzaldehyde
-2-Chlorophenol
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-Hexachloroethane
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-2,4-Dichlorophenol
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-1,2,4,5-Tetrachlorobenzen+
-2,4,5-Trichlorophenol
-2-Nitroaniline
-Dimethyl Phthalate
-Acenaphthylene
1,1'-Biphenyl+
Acenaphthene
-3-Nitroaniline+
-4-Nitrophenol
-2,4-Dinitrotoluene+
-2,3,4,6-Tetrachlorophenol
-4-Nitroaniline+
-N-Nitrosodiphenylamine
-Pentachlorophenol
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(a)pyrene
-Perylene-D12

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8641.D
Report Date: 23-May-2018 14:43

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052218.b\N8641.D
Lab Smp Id: WG228848-7
Inj Date : 22-MAY-2018 16:54 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228848-7
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N052218.b\NSPSIM95.m
Meth Date : 23-May-2018 08:21 cgomez Quant Type: ISTD
Cal Date : 22-MAY-2018 16:54 Cal File: N8641.D
Als bottle: 7 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.632	3.632	(0.486)	447956	15.0000	14.7	
	2 1,4-Dioxane	88	3.674	3.674	(0.492)	469491	15.0000	14.4	
	3 N-Nitrosodimethylamine	74	4.094	4.094	(0.548)	693437	15.0000	15.4(A)	
	4 Pyridine	79	4.115	4.115	(0.551)	1177169	15.0000	16.0(A)	
	5 Benzaldehyde	77	6.916	6.916	(0.926)	307396	15.0000	13.5	
	6 Phenol	94	7.067	7.067	(0.946)	1376274	15.0000	15.2(A)	
	7 Bis(2-Chloroethyl)ether	93	7.147	7.147	(0.957)	1102059	15.0000	14.7	
	8 2-Chlorophenol	128	7.218	7.218	(0.966)	1148311	15.0000	15.0	
	9 1,3-Dichlorobenzene	146	7.399	7.399	(0.991)	1221284	15.0000	14.7	
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.469	(1.000)	51691	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	7.489	7.489	(1.003)	1259280	15.0000	14.9	
	12 1,2-Dichlorobenzene	146	7.681	7.681	(1.028)	1173772	15.0000	14.7	
	13 2-Methylphenol	108	7.821	7.821	(1.047)	958617	15.0000	15.2(A)	
	14 2,2'-Oxybis(1-chloropropane)	45	7.842	7.842	(1.050)	1401377	15.0000	15.2(A)	
	15 Acetophenone	105	7.983	7.983	(0.877)	1602374	15.0000	14.8	
	16 N-Nitroso-di-n-propylamine	70	8.003	8.003	(1.071)	787087	15.0000	14.7	
	17 3&4-Methylphenol	108	8.023	8.023	(1.074)	1030119	15.0000	15.8(A)	
	18 Hexachloroethane	117	8.113	8.113	(1.086)	478621	15.0000	15.8(A)	
	19 Nitrobenzene	77	8.194	8.194	(0.900)	1159097	15.0000	13.4	
	20 Isophorone	82	8.516	8.516	(0.936)	2159029	15.0000	14.8	
	21 2-Nitrophenol	139	8.617	8.617	(0.947)	587411	15.0000	15.7(A)	

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							AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/ml)	(ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.707	8.707	(0.957)	1110005	15.0000	15.8(A)	
	23 bis(2-Chloroethoxy)methane	93	8.808	8.808	(0.968)	1301886	15.0000	14.8	
	24 2,4-Dichlorophenol	162	8.939	8.939	(0.982)	849517	15.0000	15.1(A)	
	25 1,2,4-Trichlorobenzene	180	9.039	9.039	(0.993)	867969	15.0000	14.8	
*	26 Naphthalene-D8	136	9.100	9.100	(1.000)	178616	0.80000	(a)	
	27 Naphthalene	128	9.130	9.130	(1.003)	2893720	15.0000	14.5	
	28 4-Chloroaniline	127	9.221	9.221	(1.013)	1091589	15.0000	14.2	
	29 Hexachlorobutadiene	225	9.331	9.331	(1.025)	479184	15.0000	14.8	
	30 Caprolactam	113	9.689	9.689	(1.065)	283339	15.0000	15.6(A)	
	31 4-Chloro-3-Methylphenol	107	9.895	9.895	(1.087)	920108	15.0000	15.0	
$	32 2-Methylnaphthalene-D10	152	10.004	10.004	(1.099)	1443095	15.0000	14.3	
	33 2-Methylnaphthalene	142	10.053	10.053	(1.105)	1873683	15.0000	14.4	
	34 1-Methylnaphthalene	142	10.181	10.181	(1.119)	1807246	15.0000	15.0	
	35 1,2,4,5-Tetrachlorobenzene	216	10.289	10.289	(1.000)	835746	15.0000	14.9	
	36 Hexachlorocyclopentadiene	237	10.289	10.289	(1.000)	480967	15.0000	15.1(A)	
$	37 2,4-Dibromophenol	252	10.427	10.427	(1.000)	435670	15.0000	15.7	
	38 2,4,6-Trichlorophenol	196	10.447	10.447	(1.000)	541035	15.0000	15.5(A)	
	39 2,4,5-Trichlorophenol	196	10.496	10.496	(1.000)	573164	15.0000	14.5	
	40 1,1'-Biphenyl	154	10.683	10.683	(1.000)	2263234	15.0000	14.3	
	41 2-Chloronaphthalene	164	10.693	10.693	(1.000)	584929	15.0000	14.7	
	42 2-Nitroaniline	65	10.840	10.840	(1.000)	573152	15.0000	15.8(A)	
	43 Dimethyl Phthalate	163	11.117	11.117	(1.000)	1966095	15.0000	14.3	
	44 2,6-Dinitrotoluene	165	11.182	11.182	(1.000)	491636	15.0000	16.2(A)	
	45 Acenaphthylene	152	11.236	11.236	(1.000)	2616980	15.0000	14.5	
	46 3-Nitroaniline	138	11.400	11.400	(1.000)	329482	15.0000	15.2(A)	
*	47 Acenaphthene-D10	164	11.433	11.433	(1.000)	76030	0.80000	(aM)	M6
	48 Acenaphthene	153	11.476	11.476	(1.000)	1687522	15.0000	14.4	
	49 2,4-Dinitrophenol	184	11.541	11.541	(1.000)	222325	15.0000	14.9	
	50 4-Nitrophenol	109	11.661	11.661	(1.000)	233440	15.0000	15.0(A)	
	51 2,4-Dinitrotoluene	165	11.716	11.716	(1.000)	605077	15.0000	14.8	
	52 Dibenzofuran	168	11.716	11.716	(1.000)	2411118	15.0000	14.7	
	53 2,3,4,6-Tetrachlorophenol	232	11.901	11.901	(1.000)	464702	15.0000	16.3(A)	
	54 Diethylphthalate	149	12.065	12.065	(1.000)	2158165	15.0000	14.6	
$	55 Fluorene-D10	174	12.130	12.130	(1.000)	1333305	15.0000	14.6(A)	
	56 Fluorene	166	12.173	12.173	(1.000)	1815694	15.0000	14.9	
	57 4-Chlorophenyl-phenylether	204	12.195	12.195	(1.000)	991302	15.0000	15.1(A)	
	58 4-Nitroaniline	138	12.217	12.217	(1.000)	212919	15.0000	13.5(Q)	
	59 4,6-Dinitro-2-Methylphenol	198	12.261	12.261	(0.914)	305564	15.0000	14.9	
	60 N-Nitrosodiphenylamine	169	12.348	12.348	(0.920)	1521224	15.0000	14.3	
	61 4-Bromophenyl-phenylether	248	12.844	12.844	(0.957)	501534	15.0000	14.9	
	62 Hexachlorobenzene	284	12.930	12.930	(0.963)	405518	15.0000	14.8	
	63 Atrazine	200	13.100	13.100	(0.976)	375451	15.0000	16.3(A)	
	64 Pentachlorophenol	266	13.197	13.197	(0.983)	247951	15.0000	14.9	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	125086	0.80000	(a)	
	66 Phenanthrene	178	13.453	13.453	(1.002)	2415783	15.0000	14.7	
	67 Anthracene	178	13.517	13.517	(1.007)	2354639	15.0000	14.0	
	68 Carbazole	167	13.752	13.752	(1.025)	1797221	15.0000	14.7	
	69 Di-n-butylphthalate	149	14.264	14.264	(1.063)	3504597	15.0000	14.6	
	70 Fluoranthene	202	15.050	15.050	(1.121)	2317503	15.0000	15.2(A)	
$	71 Pyrene-D10	212	15.322	15.322	(0.890)	1432175	15.0000	13.2(A)	
	72 Pyrene	202	15.351	15.351	(0.892)	2344718	15.0000	13.2	
	73 Butylbenzylphthalate	149	16.336	16.336	(0.949)	1416131	15.0000	13.5	
	74 3,3'-Dichlorobenzidine	252	17.199	17.199	(0.999)	223691	15.0000	14.6	
	75 Benzo(a)anthracene	228	17.208	17.208	(0.999)	1340193	15.0000	15.6(A)	

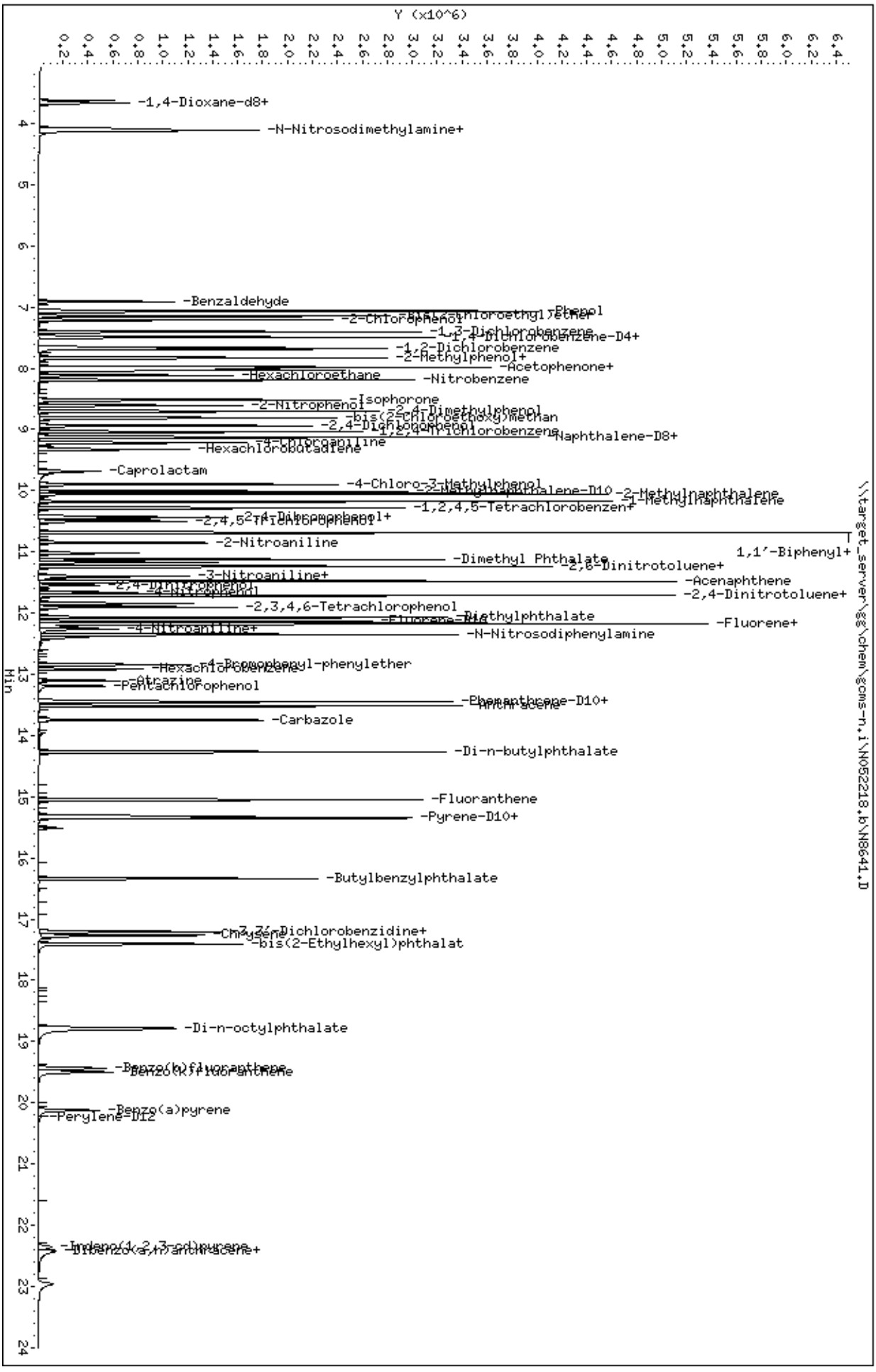
8:27 am, May 24, 2018

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8641.D
Report Date: 23-May-2018 14:43

							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76 Chrysene-D12	240	17.218	17.218	(1.000)	55584	0.80000	(a)	
	77 Chrysene	228	17.264	17.264	(1.003)	1344818	15.0000	13.3	
	78 bis(2-Ethylhexyl)phthalate	149	17.405	17.405	(1.011)	1869707	15.0000	13.5	
	79 Di-n-octylphthalate	149	18.790	18.790	(1.091)	2643138	15.0000	14.6	
	80 Benzo(b)fluoranthene	252	19.426	19.426	(0.960)	777322	15.0000	17.0(A)	
	81 Benzo(k)fluoranthene	252	19.494	19.494	(0.964)	951695	15.0000	13.1(H)	
	82 Benzo(a)pyrene	252	20.119	20.119	(0.994)	687960	15.0000	15.6(A)	
*	83 Perylene-D12	264	20.233	20.233	(1.000)	29308	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	22.356	22.356	(1.298)	528114	15.0000	14.7	
	85 Dibenzo(a,h)anthracene	278	22.424	22.424	(1.108)	364914	15.0000	15.2(A)	
	86 Benzo(g,h,i)perylene	276	22.958	22.958	(1.135)	512904	15.0000	15.9(A)	
M	87 Total PAHs	100				4577281	270.000	(a)	
M	88 Total Low PAHs	100				15658021	105.000	(a)	
M	89 Total High PAHs	100				8400106	90.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.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Date : 22-MAY-2018 16:54
Client ID:
Sample Info: WG228848-7
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N052218,b\N8641,D
Y (x10^6)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine+
-Benzaldehyde
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-Hexachloroethane
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dichlorophenol
-Naphthalene-D8+
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene-D10
-2-Methylnaphthalene
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4,5-Trichlorophenol
-2-Nitroaniline
1,1'-Biphenyl+
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-Acenaphthene
-2,4-Dinitrotoluene+
-2,3,4,6-Tetrachlorophenol
-Fluorene+
-4-Nitroaniline+
-N-Nitrosodiphenylamine
-Hexachlorobenzene
-Pentachlorophenol
-Phenanthrene-D10+
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenz(a,h)anthracene+

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8642.D
Report Date: 23-May-2018 08:18

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052218.b\N8642.D
Lab Smp Id: WG228848-8
Inj Date : 22-MAY-2018 17:25 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228848-8
Misc Info : WG228848,WG228848,WG227848-4
Comment :
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Meth Date : 23-May-2018 08:04 gcms-n.i Quant Type: ISTD
Cal Date : 22-MAY-2018 16:54 Cal File: N8641.D
Als bottle: 8 QC Sample: INDCHECK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
2	1,4-Dioxane	88	3.674	3.674	(0.492)	152393	5.04641	5.05	
3	N-Nitrosodimethylamine	74	4.094	4.094	(0.548)	220756	5.29427	5.29	
4	Pyridine	79	4.125	4.115	(0.552)	396303	5.81343	5.81	
5	Benzaldehyde	77	6.916	6.916	(0.926)	27114	1.28941	1.29(R)	
6	Phenol	94	7.067	7.067	(0.946)	468871	5.59280	5.59	
7	Bis(2-Chloroethyl)ether	93	7.147	7.147	(0.957)	369931	5.32092	5.32	
8	2-Chlorophenol	128	7.218	7.218	(0.966)	371401	5.23688	5.24	
9	1,3-Dichlorobenzene	146	7.399	7.399	(0.991)	407552	5.28272	5.28	
* 10	1,4-Dichlorobenzene-D4	152	7.469	7.469	(1.000)	47883	0.80000	(aQ)	
11	1,4-Dichlorobenzene	146	7.489	7.489	(1.003)	414144	5.27980	5.28	
12	1,2-Dichlorobenzene	146	7.681	7.681	(1.028)	384092	5.18460	5.18	
13	2-Methylphenol	108	7.822	7.821	(1.047)	317932	5.42427	5.42	
14	2,2'-Oxybis(1-chloropropane)	45	7.832	7.842	(1.049)	341423	3.99092	3.99(R)	
15	Acetophenone	105	7.983	7.983	(0.877)	501400	5.10575	5.10	
16	N-Nitroso-di-n-propylamine	70	8.003	8.003	(1.071)	250382	5.06592	5.06	
17	3&4-Methylphenol	108	8.023	8.023	(1.074)	332049	5.50773	5.51	
18	Hexachloroethane	117	8.113	8.113	(1.086)	153655	5.48048	5.48	
19	Nitrobenzene	77	8.194	8.194	(0.900)	381834	4.89979	4.90	
20	Isophorone	82	8.506	8.516	(0.935)	669596	5.13998	5.14	
21	2-Nitrophenol	139	8.617	8.617	(0.947)	184702	5.45991	5.46	

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8642.D
Report Date: 23-May-2018 08:18

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.697	8.707	(0.956)	339353	5.35771	5.36	
	23 bis(2-Chloroethoxy)methane	93	8.808	8.808	(0.968)	437404	5.48859	5.49	
	24 2,4-Dichlorophenol	162	8.939	8.939	(0.982)	277131	5.43502	5.44	
	25 1,2,4-Trichlorobenzene	180	9.040	9.039	(0.993)	287058	5.40222	5.40	
*	26 Naphthalene-D8	136	9.100	9.100	(1.000)	161582	0.80000	(a)	
	27 Naphthalene	128	9.130	9.130	(1.003)	991842	5.48850	5.49	
	28 4-Chloroaniline	127	9.221	9.221	(1.013)	392175	5.64356	5.64	
	29 Hexachlorobutadiene	225	9.332	9.331	(1.025)	158582	5.40047	5.40	
	30 Caprolactam	113	9.659	9.689	(1.061)	97627	5.96397	5.96	
	31 4-Chloro-3-Methylphenol	107	9.886	9.895	(1.086)	288942	5.19982	5.20	
	33 2-Methylnaphthalene	142	10.043	10.053	(1.104)	627828	5.35480	5.35	
	34 1-Methylnaphthalene	142	10.181	10.181	(1.119)	585230	5.36713	5.37	
	35 1,2,4,5-Tetrachlorobenzene	216	10.279	10.289	(0.899)	263572	5.14322	5.14	
	36 Hexachlorocyclopentadiene	237	10.289	10.289	(0.900)	99931	3.58479	3.58(R)	
	38 2,4,6-Trichlorophenol	196	10.447	10.447	(0.914)	173046	5.42206	5.42	
	39 2,4,5-Trichlorophenol	196	10.496	10.496	(0.918)	177755	4.92711	4.93	
	40 1,1'-Biphenyl	154	10.683	10.683	(0.934)	715256	4.93534	4.94	
	41 2-Chloronaphthalene	164	10.693	10.693	(0.935)	195599	5.37876	5.38	
	42 2-Nitroaniline	65	10.840	10.840	(0.948)	180845	5.44826	5.45	
	43 Dimethyl Phthalate	163	11.117	11.117	(0.972)	692988	5.50804	5.51	
	44 2,6-Dinitrotoluene	165	11.171	11.182	(0.977)	155537	5.59819	5.60	
	45 Acenaphthylene	152	11.237	11.236	(0.983)	831189	5.02557	5.02	
	46 3-Nitroaniline	138	11.400	11.400	(0.997)	97794	4.93497	4.93	
*	47 Acenaphthene-D10	164	11.433	11.433	(1.000)	69557	0.80000	(a)	
	48 Acenaphthene	153	11.476	11.476	(1.004)	589909	5.52504	5.52	
	49 2,4-Dinitrophenol	184	11.542	11.541	(1.010)	37531	4.48755	4.49	
	50 4-Nitrophenol	109	11.661	11.661	(1.020)	67266	5.67535	5.68(Q)	
	51 2,4-Dinitrotoluene	165	11.716	11.716	(1.025)	190829	5.16037	5.16	
	52 Dibenzofuran	168	11.705	11.716	(1.024)	797503	5.30615	5.31	
	53 2,3,4,6-Tetrachlorophenol	232	11.901	11.901	(1.041)	127335	4.88152	4.88	
	54 Diethylphthalate	149	12.065	12.065	(1.055)	764870	5.66658	5.67	
	56 Fluorene	166	12.174	12.173	(1.065)	616585	5.53839	5.54	
	57 4-Chlorophenyl-phenylether	204	12.185	12.195	(1.066)	319339	5.30580	5.30	
	58 4-Nitroaniline	138	12.217	12.217	(1.069)	69158	4.78452	4.78(Q)	
	59 4,6-Dinitro-2-Methylphenol	198	12.261	12.261	(0.914)	76837	5.38429	5.38	
	60 N-Nitrosodiphenylamine	169	12.348	12.348	(0.920)	418850	4.64780	4.65	
	61 4-Bromophenyl-phenylether	248	12.834	12.844	(0.956)	164429	5.75399	5.75	
	62 Hexachlorobenzene	284	12.919	12.930	(0.963)	127465	5.47940	5.48	
	63 Atrazine	200	13.090	13.100	(0.975)	104219	5.32482	5.32	
	64 Pentachlorophenol	266	13.197	13.197	(0.983)	60587	5.44954	5.45	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	106042	0.80000	(a)	
	66 Phenanthrene	178	13.442	13.453	(1.002)	786767	5.66492	5.66	
	67 Anthracene	178	13.517	13.517	(1.007)	734174	5.17095	5.17	
	68 Carbazole	167	13.741	13.752	(1.024)	555253	5.34484	5.34	
	69 Di-n-butylphthalate	149	14.264	14.264	(1.063)	1210387	5.93097	5.93	
	70 Fluoranthene	202	15.041	15.050	(1.121)	761788	5.89372	5.89	
	72 Pyrene	202	15.341	15.351	(0.891)	765926	5.10804	5.11	
	73 Butylbenzylphthalate	149	16.336	16.336	(0.949)	470151	5.31475	5.31	
	74 3,3'-Dichlorobenzidine	252	17.208	17.199	(0.999)	41436	2.92301	2.92(R)	
	75 Benzo(a)anthracene	228	17.199	17.208	(0.999)	405521	5.61033	5.61	
*	76 Chrysene-D12	240	17.218	17.218	(1.000)	46924	0.80000	(a)	
	77 Chrysene	228	17.265	17.264	(1.003)	427616	5.01163	5.01	
	78 bis(2-Ethylhexyl)phthalate	149	17.405	17.405	(1.011)	622350	5.33768	5.34	
	79 Di-n-octylphthalate	149	18.790	18.790	(1.091)	844952	5.53975	5.54	

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8642.D
Report Date: 23-May-2018 08:18

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
	80 Benzo(b)fluoranthene	252	19.438	19.426	(0.960)	224447	5.59106	5.59	
	81 Benzo(k)fluoranthene	252	19.495	19.494	(0.963)	335564	5.25739	5.26(H)	
	82 Benzo(a)pyrene	252	20.131	20.119	(0.994)	203167	5.23622	5.24	
*	83 Perylene-D12	264	20.244	20.233	(1.000)	25719	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	22.368	22.356	(1.299)	148130	4.91824	4.92	
	85 Dibenzo(a,h)anthracene	278	22.459	22.424	(1.109)	96570	4.71222	4.71	
	86 Benzo(g,h,i)perylene	276	22.970	22.958	(1.135)	144786	5.11998	5.12	
M	87 Total PAHs	100				1438157	26.2538	26.2	
M	88 Total Low PAHs	100				5178294	37.7682	37.8	
M	89 Total High PAHs	100				2660588	31.5721	31.6	

QC Flag Legend

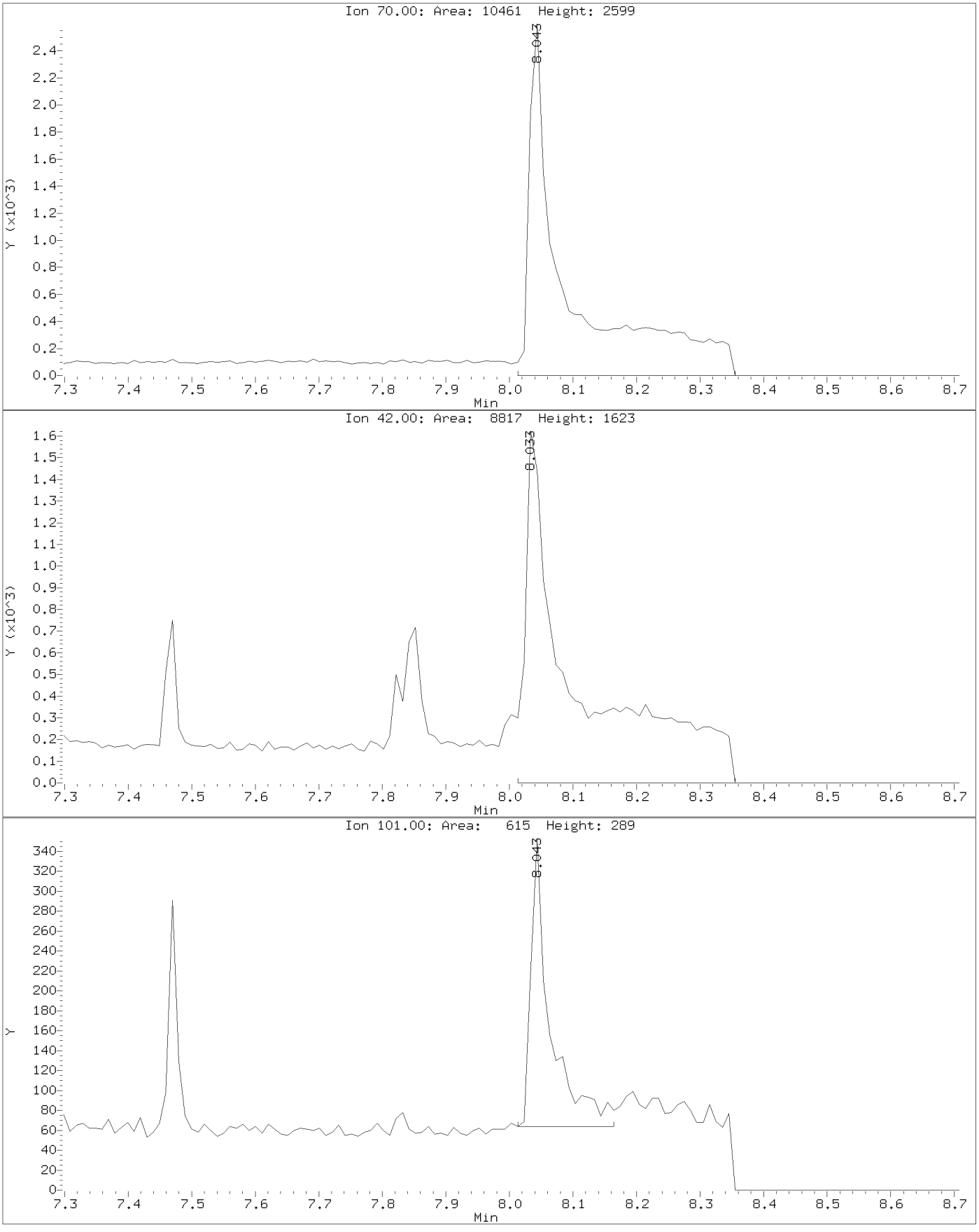
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
H - Operator selected an alternate compound hit.

Data File: \\target_server\gg\chem\gcms-n,i\N052218,b\N8642,D
Date : 22-MAY-2018 17:25
Client ID:
Sample Info: WG228848-8
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N052218,b\N8642,D
Y (x10^7)
Min
-1,4-Dioxane
-N-Nitrosodimethylamine+
-Benzaldehyde
-2-Chlorophenol
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-Naphthalene-d8+
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4,6-Trichlorophenol
-1,1'-Biphenyl+
-2-Nitroaniline
-Dimethyl Phthalate
-Acenaphthylene
-3-Nitroaniline
-Acenaphthene
-2,4-Dinitrophenol
-4-Nitrophenol
-2,4-Dinitrotoluene+
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-Fluorene
-4-Nitroaniline
-N-Nitrosodiphenylamine
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenz(a,h)anthracene
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8637.D
Injection Date: 22-MAY-2018 14:49
Instrument: gcms-n.i
Client Sample ID:

Compound: N-Nitroso-di-n-propylamine
CAS Number: 621-64-7

BEFORE MANUAL INTEGRATION



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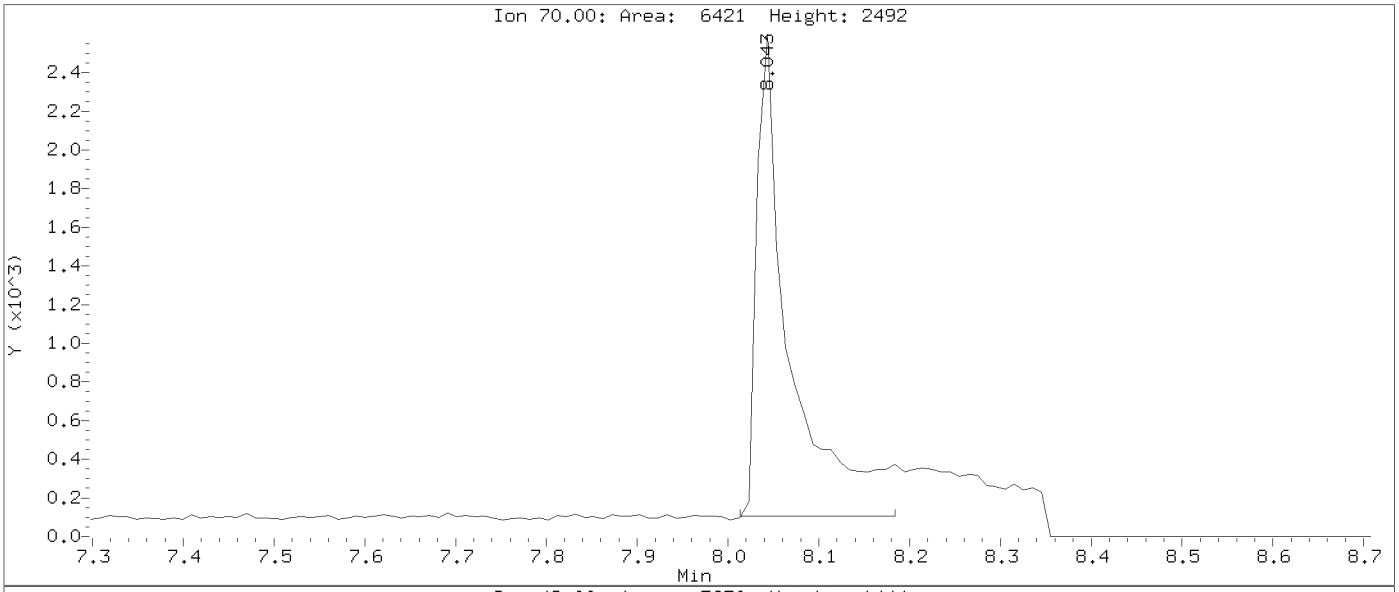
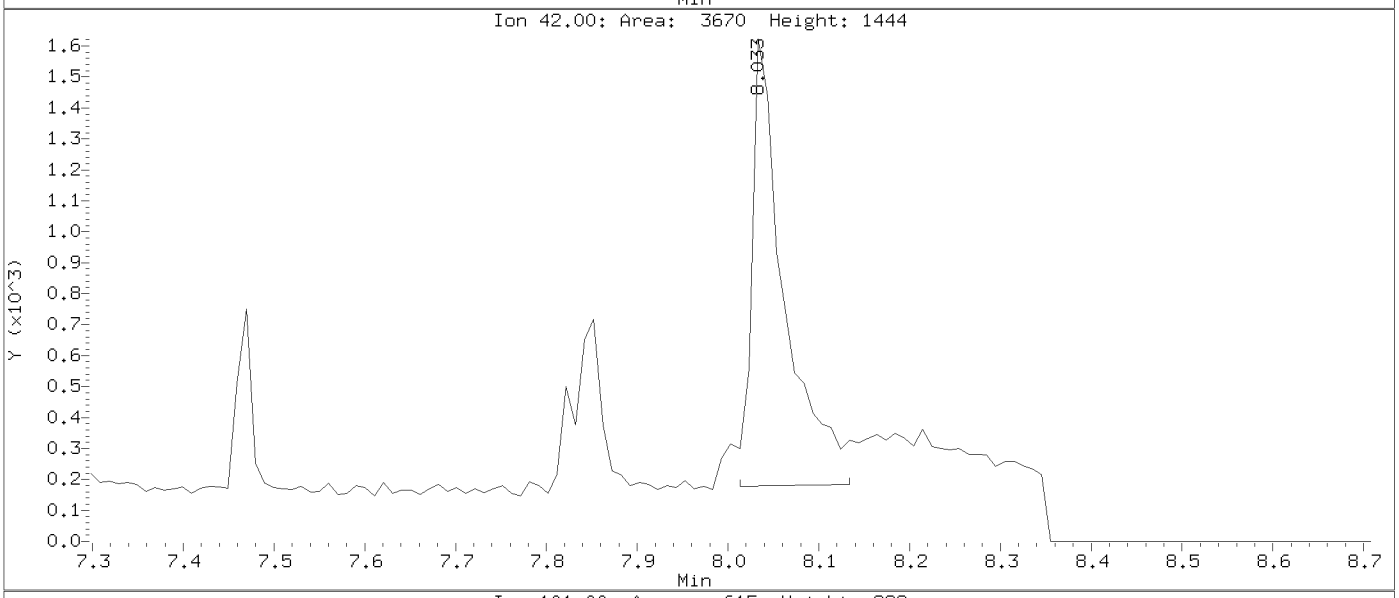
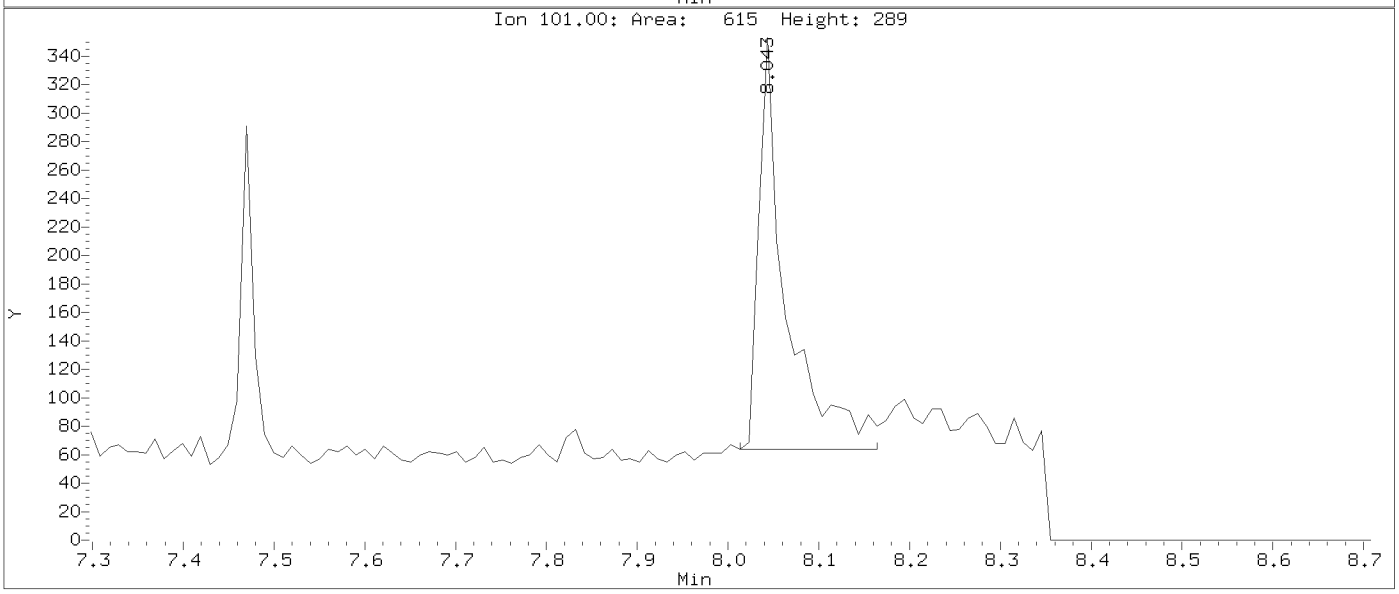
Instrument: gcms-n.i
Client Sample ID:

Compound: N-Nitroso-di-n-propylamine
CAS Number: 621-64-7

AFTER MANUAL INTEGRATION







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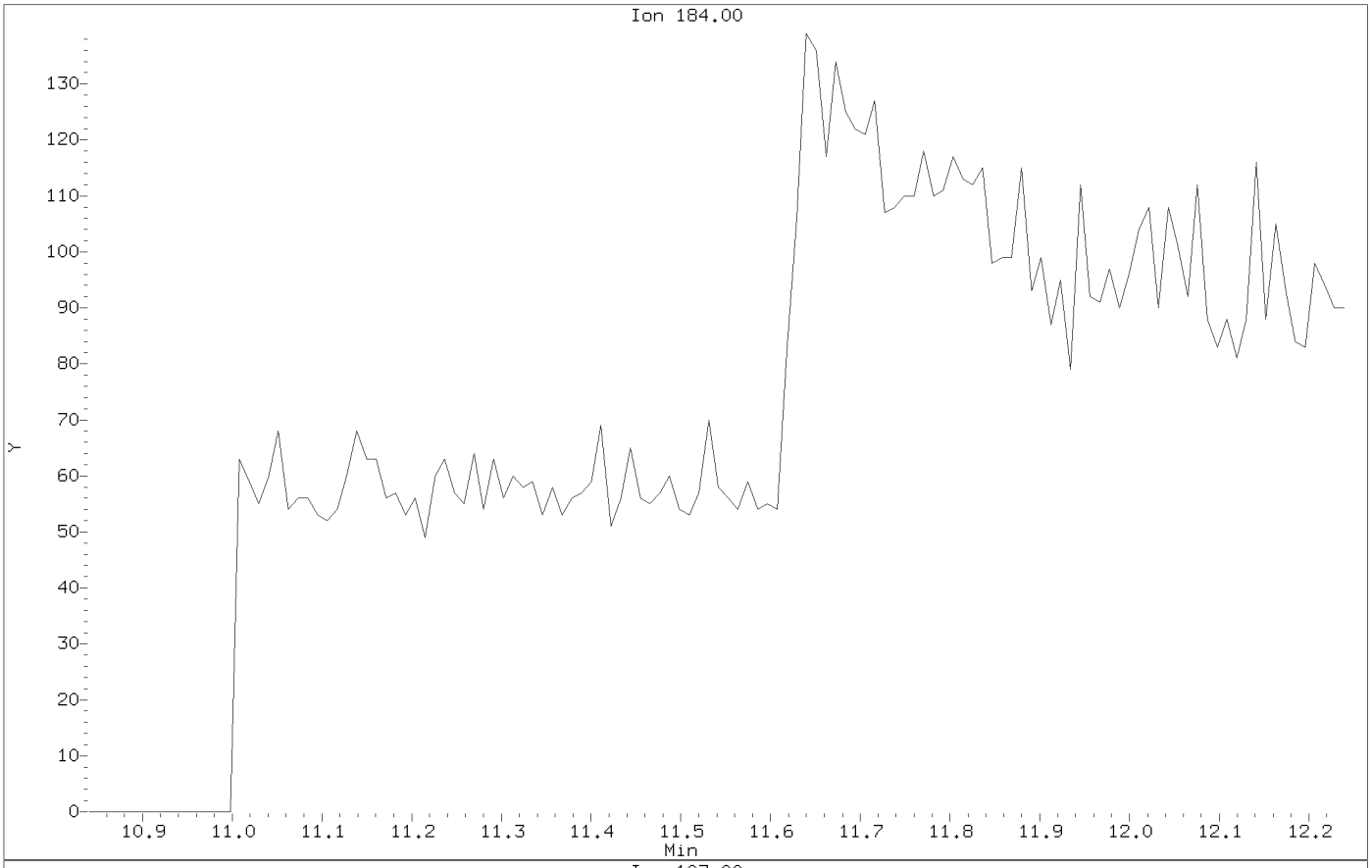
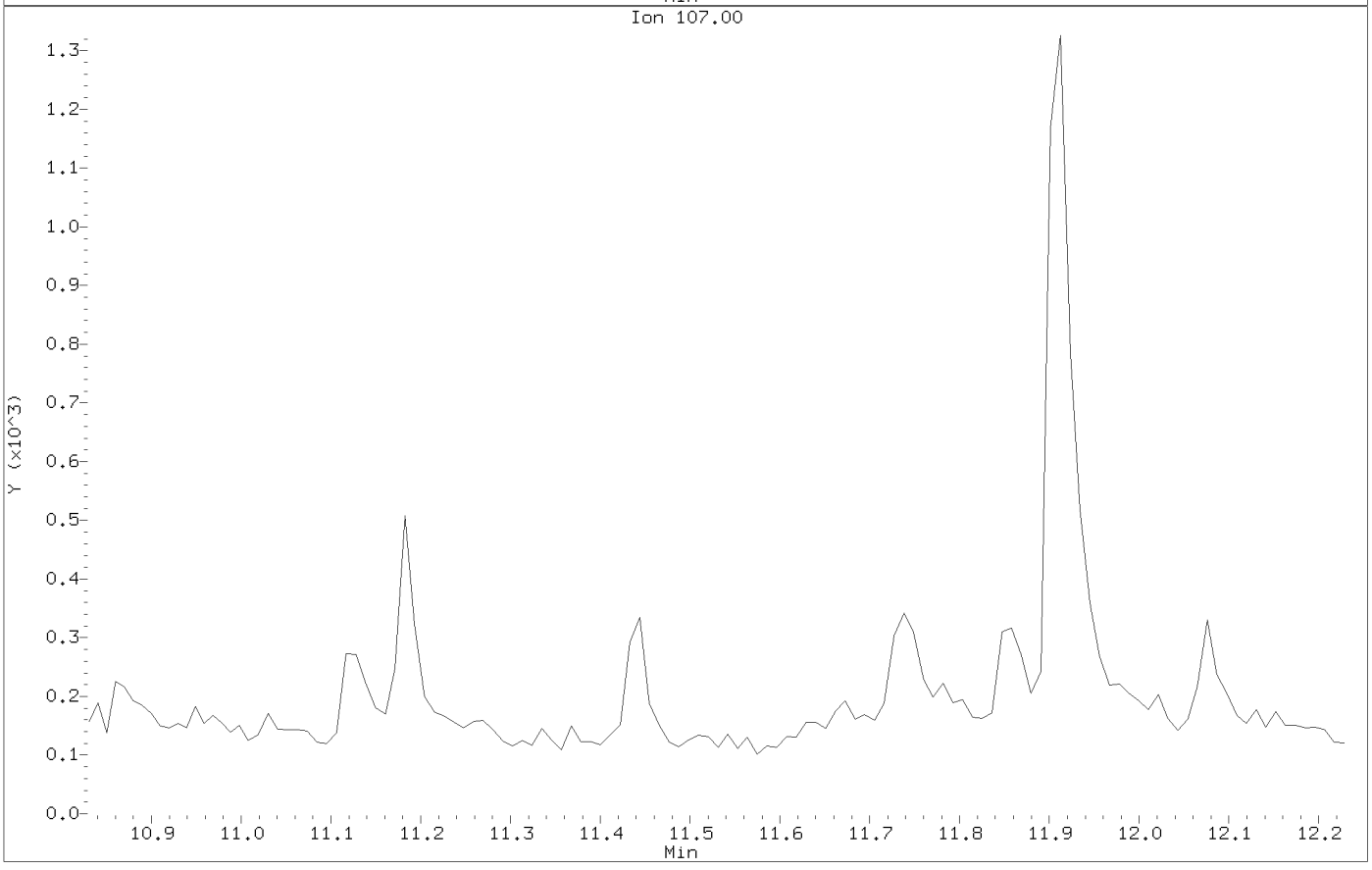
Injection Date: 22-MAY-2018 14:49
Instrument: gcms-n.i
Client Sample ID:

Compound: 2,4-Dinitrophenol
CAS Number: 51-28-5





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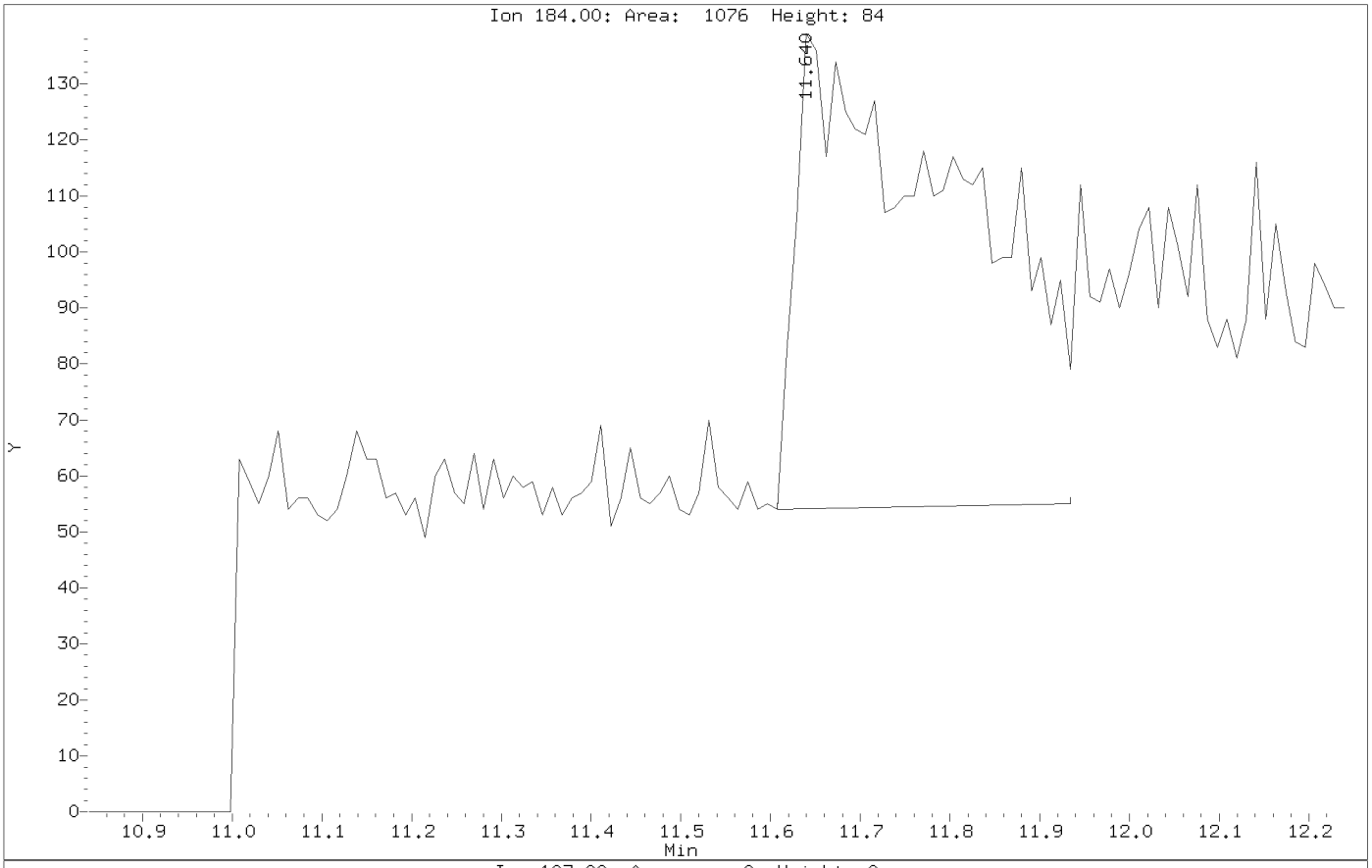
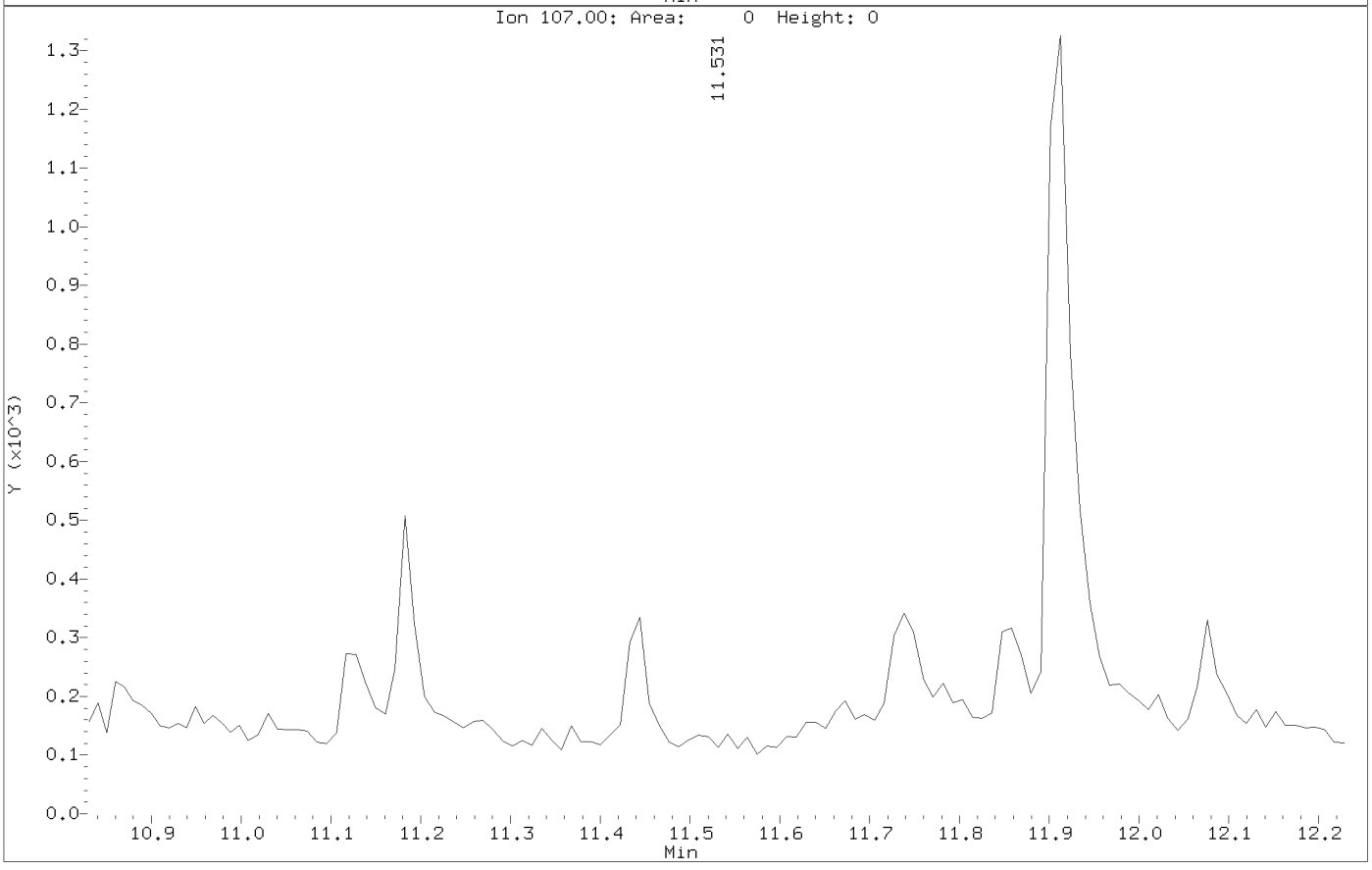
Injection Date: 22-MAY-2018 14:49
Instrument: gcms-n.i
Client Sample ID:

Compound: 2,4-Dinitrophenol
CAS Number: 51-28-5

AFTER MANUAL INTEGRATION





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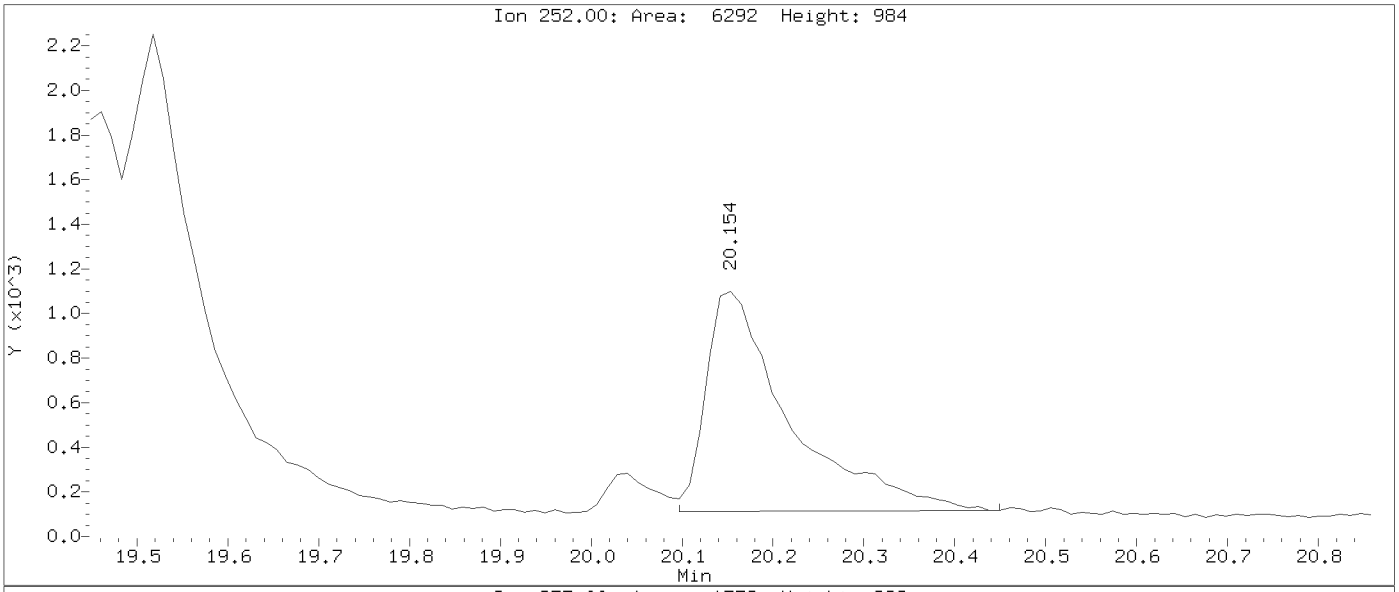
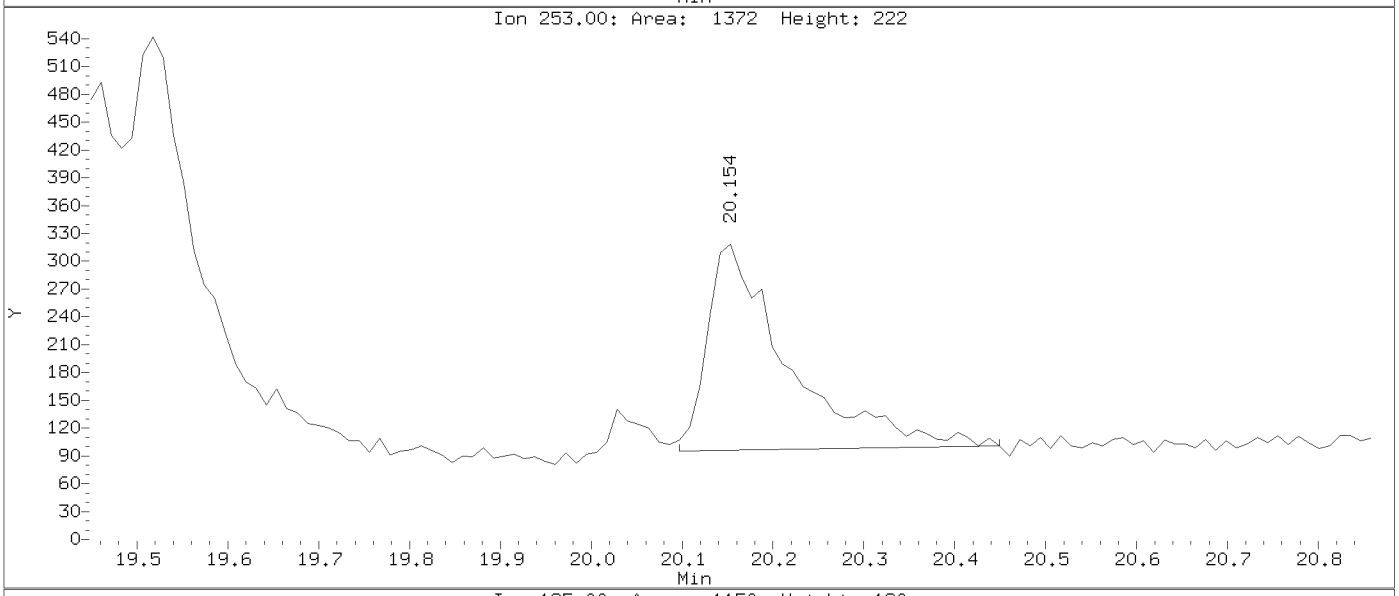
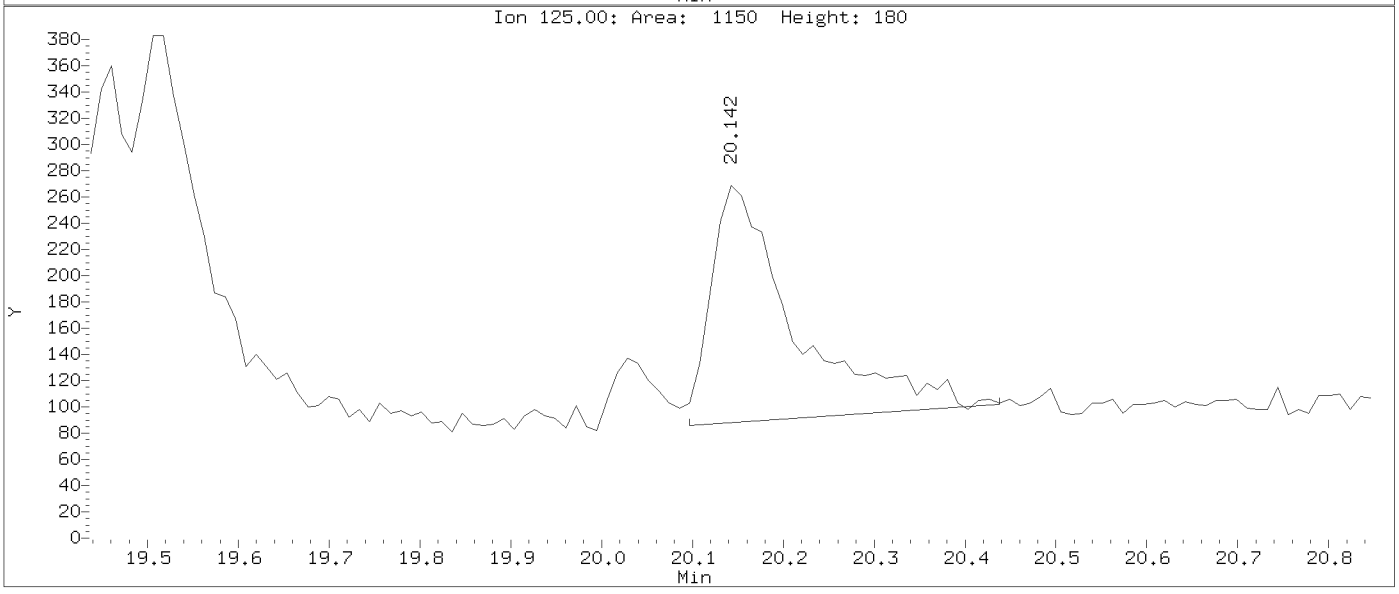
Injection Date: 22-MAY-2018 14:49
Instrument: gcms-n.i
Client Sample ID:

Compound: Benzo(k)fluoranthene
CAS Number: 207-08-9

BEFORE MANUAL INTEGRATION







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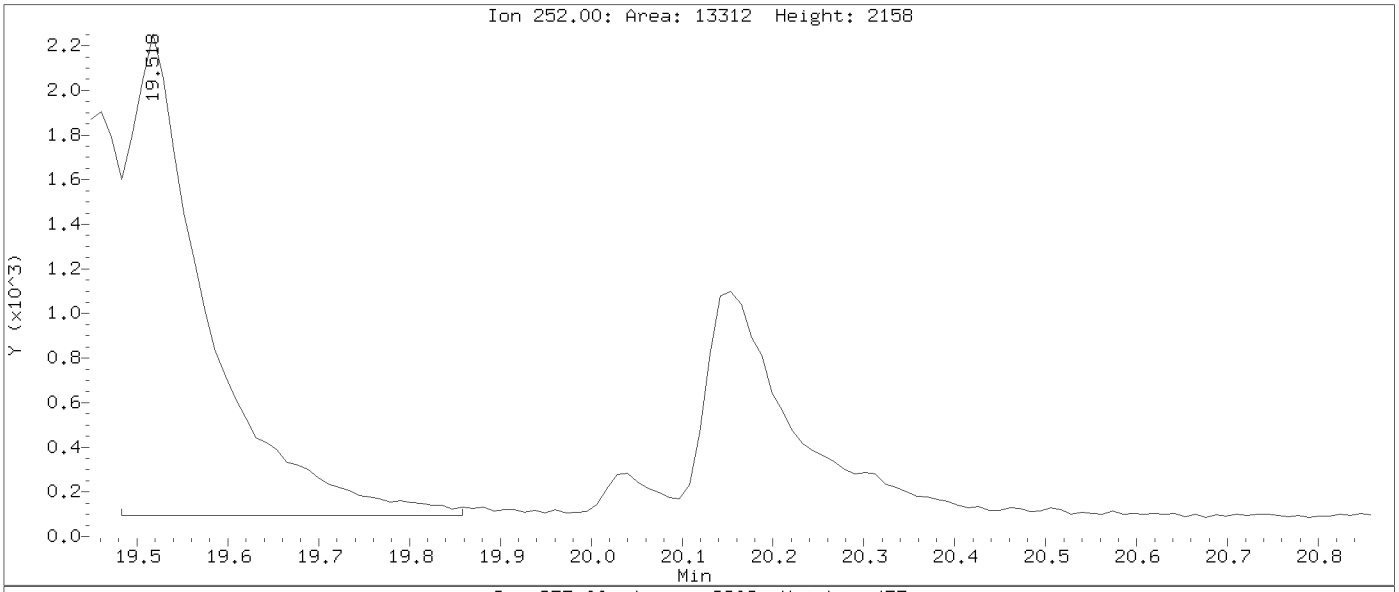
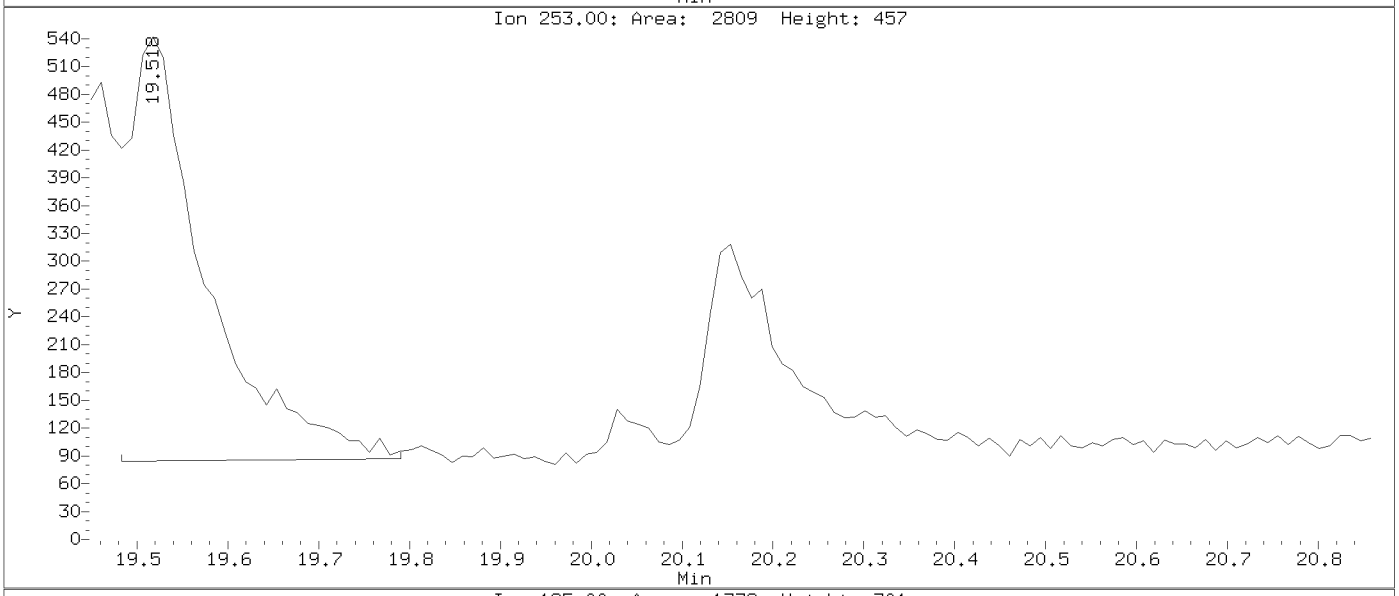
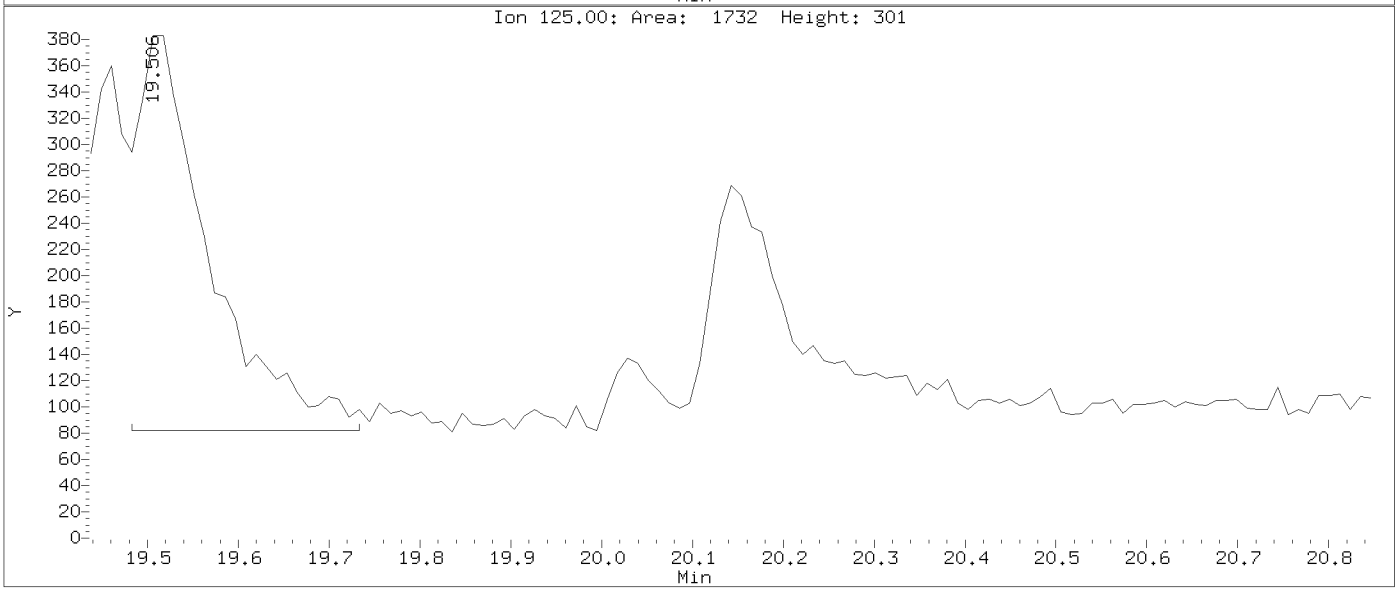
Injection Date: 22-MAY-2018 14:49
Instrument: gcms-n.i
Client Sample ID:

Compound: Benzo(k)fluoranthene
CAS Number: 207-08-9

AFTER MANUAL INTEGRATION



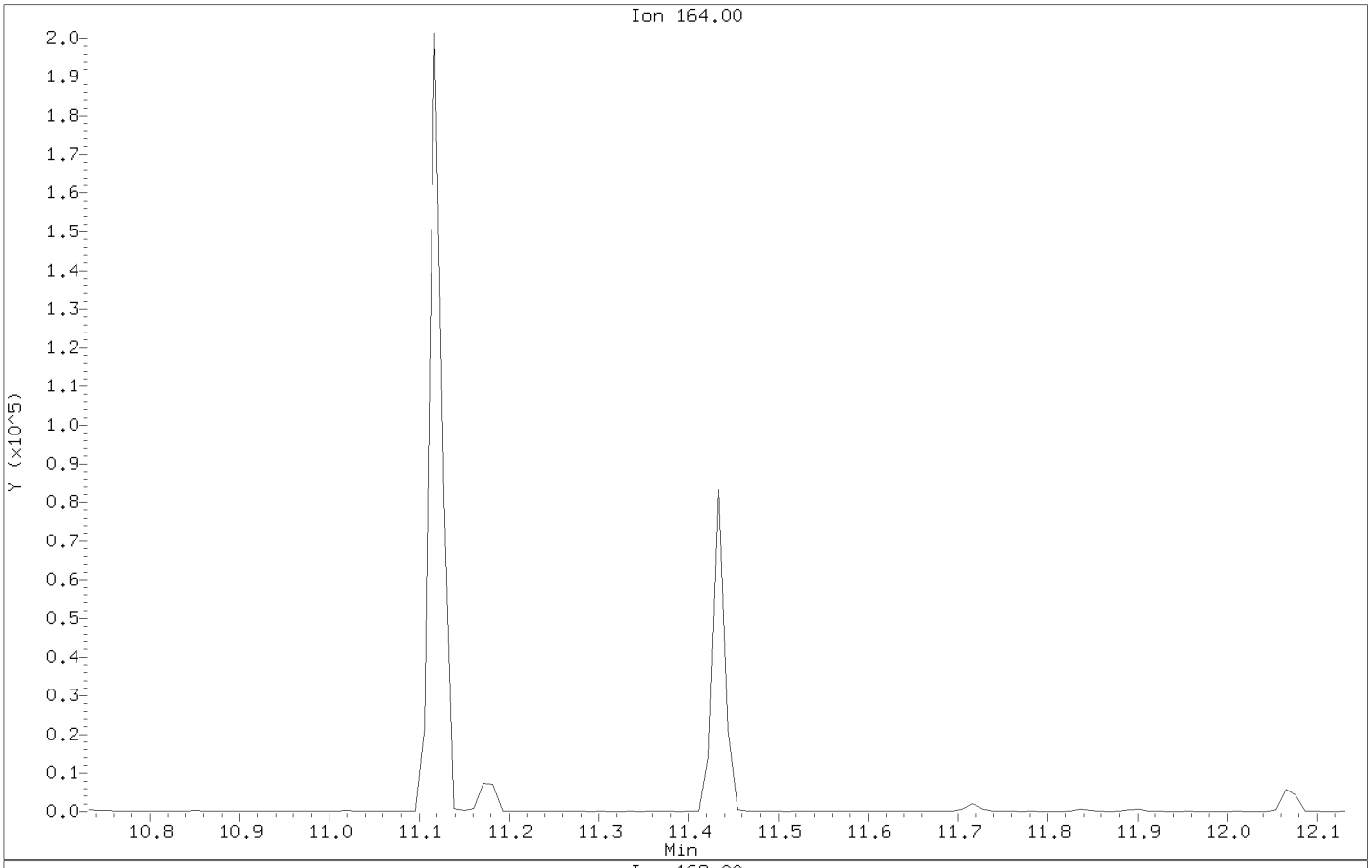


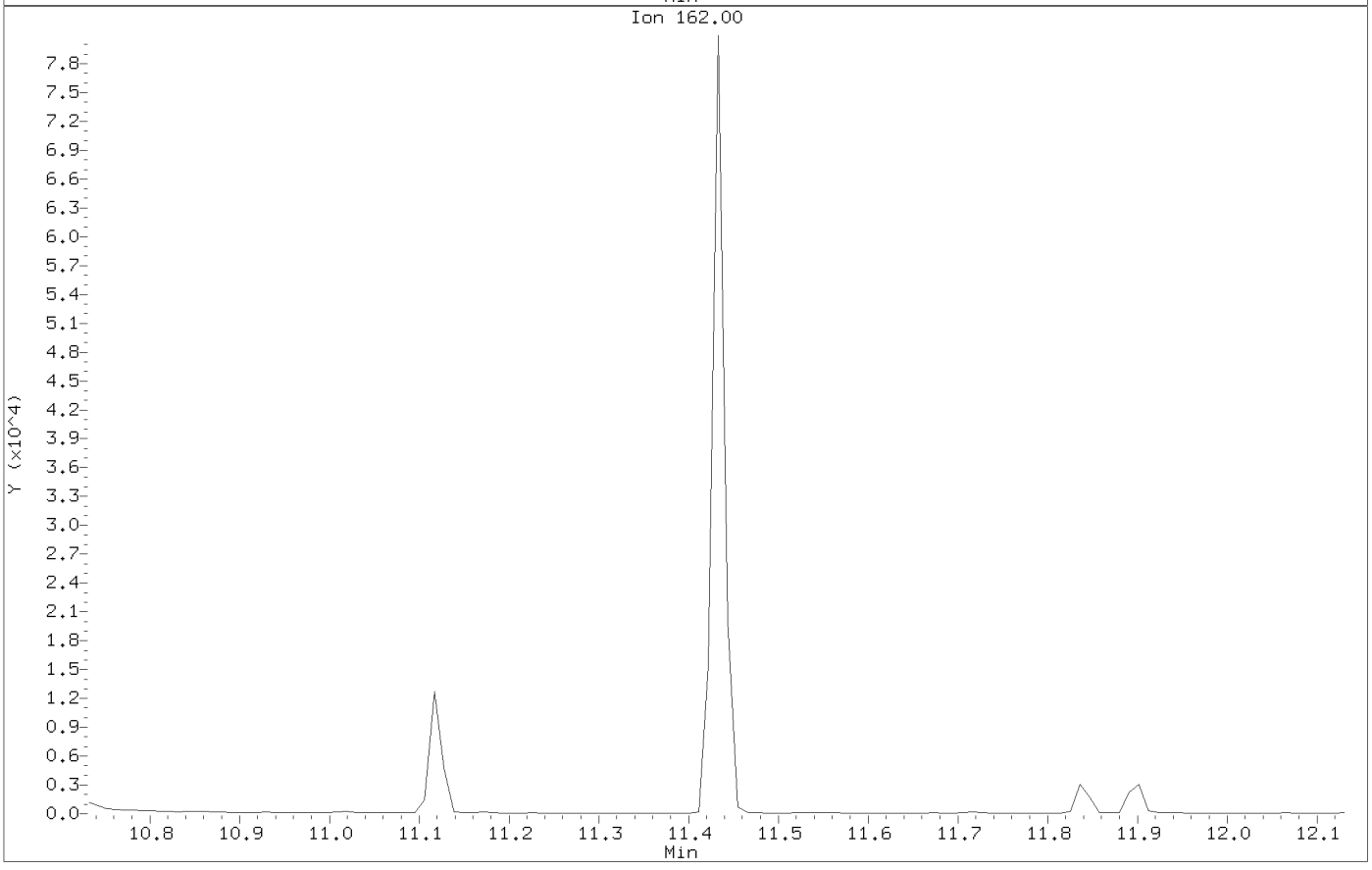


BEFORE MANUAL INTEGRATION

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8641.D
Injection Date: 22-MAY-2018 16:54
Instrument: gcms-n.i
Client Sample ID:

Compound: Acenaphthene-D10
CAS Number: 15067-26-2

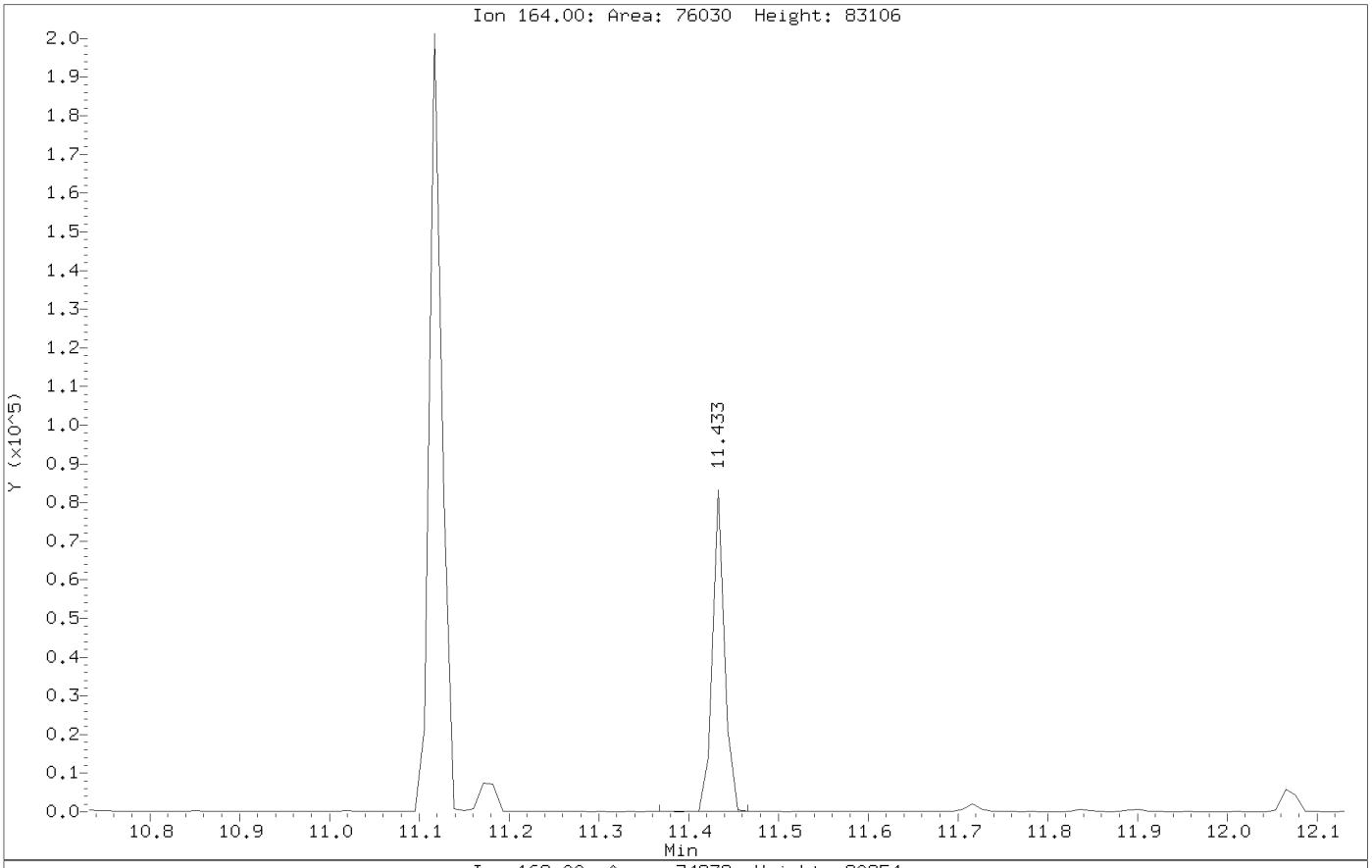


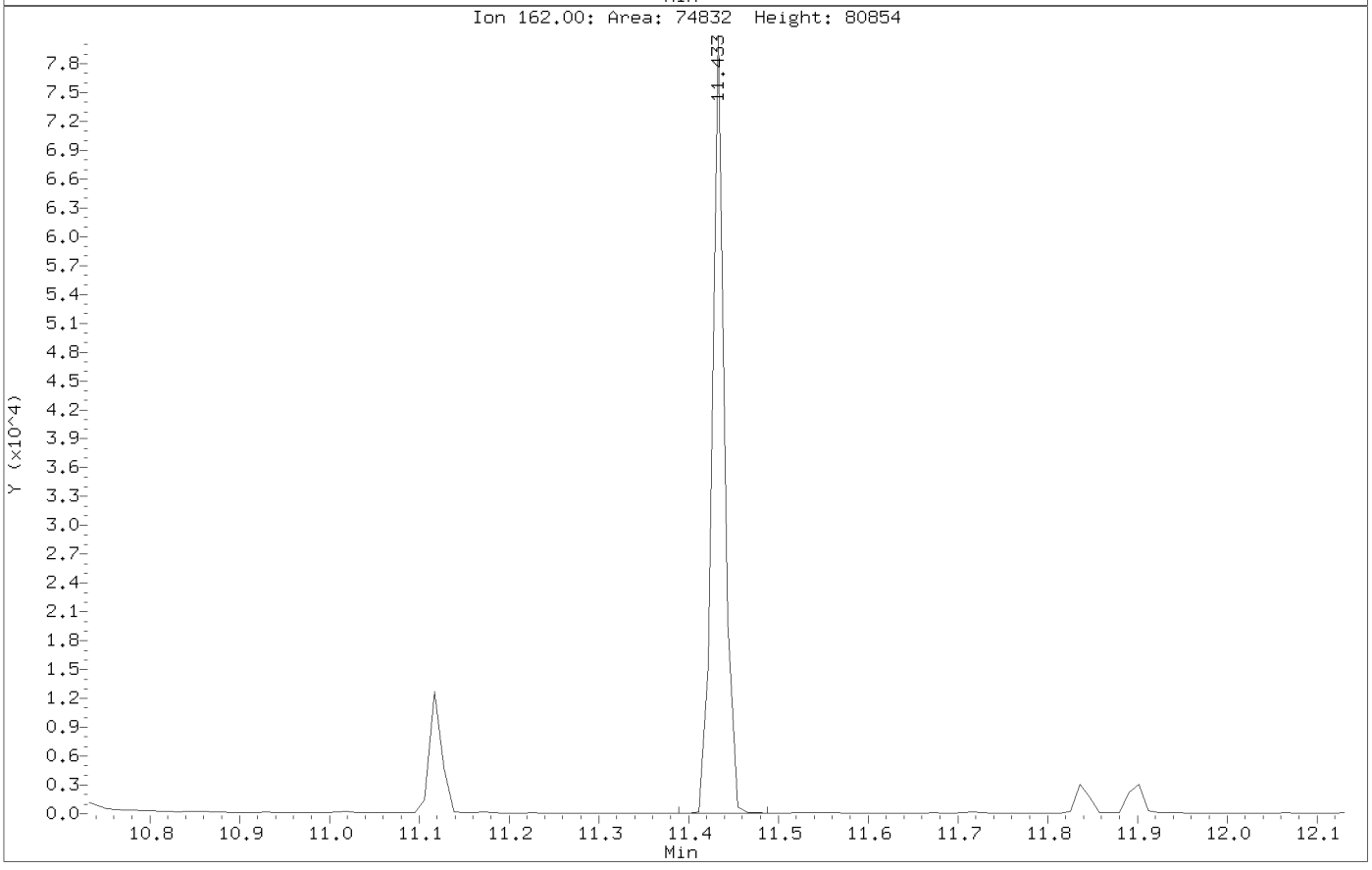


Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8641.D
Injection Date: 22-MAY-2018 16:54
Instrument: gcms-n.i
Client Sample ID:

Compound: Acenaphthene-D10
CAS Number: 15067-26-2

AFTER MANUAL INTEGRATION





Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL3902
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-N
Lab File IDs : N8661.D N8662.D N8660.D N8663.D N8664.D N8665.D
Column ID:
Calibration Date(s): 23-MAY-18 09:22, 23-MAY-18 12:01

	0.200000(Level 1	0.500000(Level 2	2.0000 Level 3	7.0000 Level 4	10.0000 Level 5	15.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Naphthalene	0.75785	0.92145	0.92351	0.91780	0.88917	0.88117	AVG		0.88182		7.17676	15.00000	O
2-Methylnaphthalene	0.52621	0.62471	0.56698	0.57952	0.57055	0.55596	AVG		0.57066		5.65424	15.00000	O
Acenaphthylene	1.72299	1.82603	1.90312	1.90366	1.87638	1.92709	AVG		1.85988		4.05651	15.00000	O
Acenaphthene	1.15347	1.22692	1.23329	1.20634	1.19295	1.18608	AVG		1.19984		2.43893	15.00000	O
Fluorene	1.18557	1.24333	1.24451	1.27568	1.29219	1.26876	AVG		1.25167		2.98933	15.00000	O
Phenanthrene	0.97379	1.00238	1.07555	1.08883	1.04874	1.06922	AVG		1.04309		4.35571	15.00000	O
Anthracene	1.09409	1.03680	1.02761	1.08816	1.03292	1.02716	AVG		1.05112		2.97259	15.00000	O
Fluoranthene	0.85631	0.88906	0.95788	1.07404	0.98209	1.01184	AVG		0.96187		8.31056	15.00000	O
Pyrene	2.82984	2.63265	2.59447	2.16108	2.16953	2.08729	AVG		2.41248		12.89342	15.00000	O
Benzo(a)anthracene	0.94254	1.01870	1.15342	1.28135	1.23358	1.28569	AVG		1.15255		12.44712	15.00000	O
Chrysene	15107	40185	131701	767415	831416	1186510	LNR	-0.12115	1.33293		0.99981	0.99000	O
Benzo(b)fluoranthene	2757	9313	48036	417885	428001	754824	QUA	0.20673	0.79870	-0.00384	0.99602	0.99000	O
Benzo(k)fluoranthene	2.57611	2.11253	2.07025	1.84119	1.85863	1.72016	AVG		2.02981		15.06736	15.00000	W(
Benzo(a)pyrene	1.45894	1.14262	1.14170	1.24055	1.23419	1.26944	AVG		1.24791		9.31801	15.00000	O
Indeno(1,2,3-cd)pyrene	2353	6863	36422	244115	311656	506100	QUA	0.14628	2.39705	-0.06194	0.99876	0.99000	O
Dibenzo(a,h)anthracene	1384	4708	24261	159082	191643	338498	QUA	0.08538	2.03417	-0.03978	0.99993	0.99000	O
Benzo(g,h,i)perylene	0.75338	0.73534	0.86724	0.89879	0.96860	0.97316	AVG		0.86609		11.86986	15.00000	O
2-Methylnaphthalene-D10	0.41530	0.48718	0.45602	0.46143	0.44859	0.43648	AVG		0.45083		5.37333	15.00000	
Fluorene-D10	0.90546	0.93737	0.93054	0.94255	0.92852	0.93329	AVG		0.92962		1.38279	15.00000	
Pyrene-D10	1.75693	1.56379	1.60297	1.34591	1.35671	1.28231	AVG		1.48477		12.45383	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8666.D
Report Date: 23-May-2018 14:35

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: 021497
Sample Matrix: LIQUID Fraction: SV
Lab Smp Id: WG228910-8
Level: LOW Operator: JCG
Data Type: MS DATA SampleType: INDCHECK
SpikeList File: SIM_IND_CHK5.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-n.i\N052318.b\NSPSIM96.m
Misc Info: WG228910,WG228910,WG228910-4

SPIKE	COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
2	1,4-Dioxane	5.00	4.83	96.69	80-120
3	N-Nitrosodimethyla	5.00	5.06	101.30	80-120
4	Pyridine	5.00	5.42	108.34	80-120
5	Benzaldehyde	5.00	1.08	21.64*	80-120
7	Bis(2-Chloroethyl)	5.00	5.14	102.92	80-120
6	Phenol	5.00	5.46	109.29	80-120
8	2-Chlorophenol	5.00	5.10	101.96	80-120
9	1,3-Dichlorobenzen	5.00	5.08	101.63	80-120
11	1,4-Dichlorobenzen	5.00	5.14	102.73	80-120
12	1,2-Dichlorobenzen	5.00	5.07	101.40	80-120
14	2,2'-Oxybis(1-chlo	5.00	3.65	73.02*	80-120
13	2-Methylphenol	5.00	5.21	104.16	80-120
15	Acetophenone	5.00	4.95	99.07	80-120
16	N-Nitroso-di-n-pro	5.00	4.70	93.96	80-120
18	Hexachloroethane	5.00	4.90	97.97	80-120
17	3&4-Methylphenol	5.00	5.21	104.23	80-120
19	Nitrobenzene	5.00	4.74	94.85	80-120
20	Isophorone	5.00	4.95	99.00	80-120
21	2-Nitrophenol	5.00	5.36	107.11	80-120
22	2,4-Dimethylphenol	5.00	4.92	98.35	80-120
23	bis(2-Chloroethoxy	5.00	5.29	105.78	80-120
24	2,4-Dichlorophenol	5.00	5.10	102.00	80-120
25	1,2,4-Trichloroben	5.00	5.27	105.41	80-120
27	Naphthalene	5.00	5.32	106.43	80-120
28	4-Chloroaniline	5.00	5.83	116.53	80-120
29	Hexachlorobutadien	5.00	5.58	111.70	80-120
30	Caprolactam	5.00	3.66	73.16*	80-120
33	2-Methylnaphthalen	5.00	5.07	101.41	80-120
31	4-Chloro-3-Methylp	5.00	4.94	98.75	80-120
34	1-Methylnaphthalen	5.00	5.16	103.22	80-120
35	1,2,4,5-Tetrachlor	5.00	5.16	103.18	80-120
36	Hexachlorocyclopen	5.00	3.62	72.34*	80-120
38	2,4,6-Trichlorophe	5.00	5.49	109.75	80-120
39	2,4,5-Trichlorophe	5.00	5.03	100.55	80-120
41	2-Chloronaphthalen	5.00	5.46	109.20	80-120
40	1,1'-Biphenyl	5.00	5.09	101.82	80-120
42	2-Nitroaniline	5.00	5.54	110.71	80-120
43	Dimethyl Phthalate	5.00	5.43	108.59	80-120
45	Acenaphthylene	5.00	5.08	101.64	80-120
44	2,6-Dinitrotoluene	5.00	5.55	111.04	80-120

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8666.D
Report Date: 23-May-2018 14:35

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
48 Acenaphthene	5.00	5.68	113.67	80-120
46 3-Nitroaniline	5.00	5.64	112.81	80-120
49 2,4-Dinitrophenol	5.00	4.16	83.29	80-120
52 Dibenzofuran	5.00	5.42	108.37	80-120
51 2,4-Dinitrotoluene	5.00	5.01	100.12	80-120
53 2,3,4,6-Tetrachlor	5.00	4.60	92.07	80-120
50 4-Nitrophenol	5.00	4.94	98.89	80-120
54 Diethylphthalate	5.00	5.50	110.01	80-120
56 Fluorene	5.00	5.45	109.02	80-120
57 4-Chlorophenyl-phe	5.00	5.50	109.92	80-120
59 4,6-Dinitro-2-Meth	5.00	5.04	100.92	80-120
58 4-Nitroaniline	5.00	5.39	107.84	80-120
60 N-Nitrosodiphenyla	5.00	4.52	90.32	80-120
61 4-Bromophenyl-phen	5.00	5.73	114.54	80-120
62 Hexachlorobenzene	5.00	5.22	104.32	80-120
63 Atrazine	5.00	5.08	101.68	80-120
64 Pentachlorophenol	5.00	4.77	95.33	80-120
66 Phenanthrene	5.00	5.46	109.23	80-120
67 Anthracene	5.00	5.07	101.32	80-120
68 Carbazole	5.00	5.32	106.46	80-120
69 Di-n-butylphthalat	5.00	5.49	109.80	80-120
70 Fluoranthene	5.00	5.26	105.17	80-120
72 Pyrene	5.00	5.30	106.12	80-120
73 Butylbenzylphthala	5.00	5.09	101.72	80-120
75 Benzo(a)anthracene	5.00	5.33	106.60	80-120
77 Chrysene	5.00	5.20	103.97	80-120
74 3,3'-Dichlorobenzi	5.00	3.32	66.43*	80-120
78 bis(2-Ethylhexyl)p	5.00	5.20	103.94	80-120
79 Di-n-octylphthalat	5.00	5.12	102.41	80-120
80 Benzo(b)fluoranthe	5.00	4.98	99.70	80-120
81 Benzo(k)fluoranthe	5.00	5.00	99.90	80-120
82 Benzo(a)pyrene	5.00	4.96	99.20	80-120
84 Indeno(1,2,3-cd)py	5.00	5.85	117.05	80-120
85 Dibenzo(a,h)anthra	5.00	5.50	109.93	80-120
86 Benzo(g,h,i)peryle	5.00	5.72	114.36	80-120

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 1,4-Dioxane-d8	2.00	0.000	*	30-150
$ 32 2-Methylnaphthale	2.00	0.000	*	43-92
$ 37 2,4-Dibromophenol	4.00	0.000	*	10-130
$ 55 Fluorene-D10	2.00	0.000	*	29-101
$ 71 Pyrene-D10	2.00	0.000	*	53-166

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8660.D
Report Date: 24-May-2018 07:52

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052318.b\N8660.D
Lab Smp Id: WG228910-4
Inj Date : 23-MAY-2018 09:22 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228910-4
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N052318.b\NSPSIM96.m
Meth Date : 23-May-2018 12:42 gcms-n.i Quant Type: ISTD
Cal Date : 22-MAY-2018 16:54 Cal File: N8641.D
Als bottle: 2 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.653	3.632	(0.489)	58780	2.00000	1.97	
	2 1,4-Dioxane	88	3.695	3.674	(0.495)	62365	2.00000	1.96	
	3 N-Nitrosodimethylamine	74	4.115	4.094	(0.551)	85446	2.00000	1.94	
	4 Pyridine	79	4.146	4.115	(0.555)	141239	2.00000	1.87	
	5 Benzaldehyde	77	6.916	6.916	(0.926)	39025	2.00000	1.84	
	6 Phenol	94	7.067	7.067	(0.946)	383799	4.50000	4.54	
	7 Bis(2-Chloroethyl)ether	93	7.157	7.147	(0.958)	139181	2.00000	1.98	
	8 2-Chlorophenol	128	7.218	7.218	(0.966)	326005	4.50000	4.54	
	9 1,3-Dichlorobenzene	146	7.399	7.399	(0.991)	157505	2.00000	1.98	
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.469	(1.000)	49533	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	7.489	7.489	(1.003)	158604	2.00000	1.98	
	12 1,2-Dichlorobenzene	146	7.691	7.681	(1.030)	151852	2.00000	2.01	
	13 2-Methylphenol	108	7.822	7.822	(1.047)	276336	4.50000	4.66	
	14 2,2'-Oxybis(1-chloropropane)	45	7.842	7.842	(1.050)	184071	2.00000	1.96(Q)	
	15 Acetophenone	105	7.983	7.983	(0.877)	195962	2.00000	2.06	
	16 N-Nitroso-di-n-propylamine	70	8.003	8.003	(1.071)	95369	2.00000	1.90	
	17 3&4-Methylphenol	108	8.023	8.023	(1.074)	285317	4.50000	4.63	
	18 Hexachloroethane	117	8.113	8.113	(1.086)	61367	2.00000	1.97	
	19 Nitrobenzene	77	8.194	8.194	(0.900)	139743	2.00000	1.83	
	20 Isophorone	82	8.516	8.516	(0.936)	244011	2.00000	1.96	
	21 2-Nitrophenol	139	8.617	8.617	(0.947)	150798	4.50000	4.78	

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8660.D
Report Date: 24-May-2018 07:52

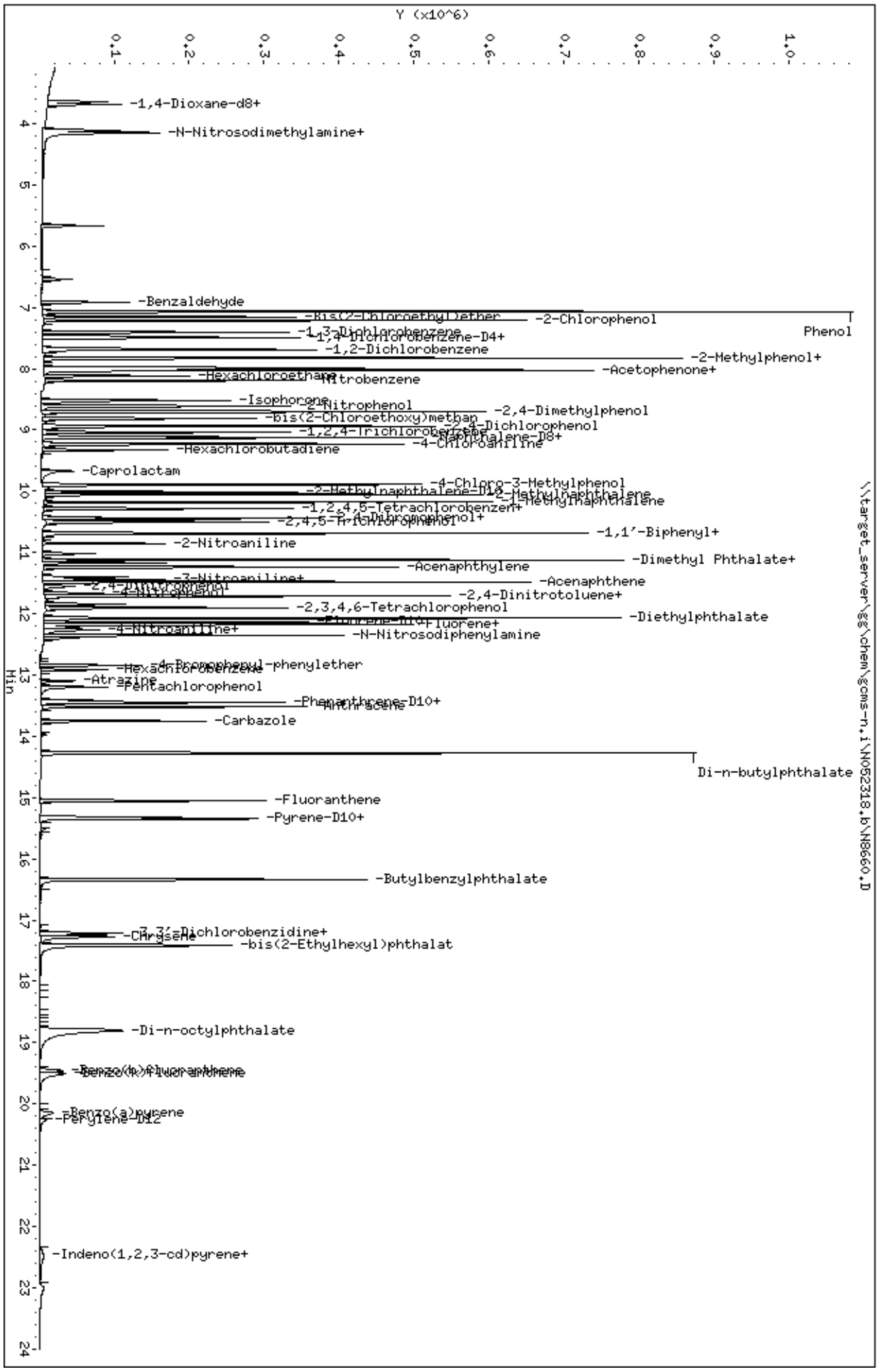
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.697	8.707	(0.956)	293358	4.50000	4.64	
	23 bis(2-Chloroethoxy)methane	93	8.818	8.808	(0.969)	155476	2.00000	2.04	
	24 2,4-Dichlorophenol	162	8.939	8.939	(0.982)	239289	4.50000	4.69	
	25 1,2,4-Trichlorobenzene	180	9.040	9.040	(0.993)	107895	2.00000	2.08	
*	26 Naphthalene-D8	136	9.100	9.100	(1.000)	159597	0.80000	(a)	
	27 Naphthalene	128	9.130	9.130	(1.003)	368475	2.00000	2.09	
	28 4-Chloroaniline	127	9.231	9.221	(1.014)	134789	2.00000	2.04	
	29 Hexachlorobutadiene	225	9.332	9.332	(1.025)	58545	2.00000	2.15	
	30 Caprolactam	113	9.669	9.679	(1.063)	34813	2.00000	1.36	
	31 4-Chloro-3-Methylphenol	107	9.886	9.895	(1.086)	246885	4.50000	4.58	
$	32 2-Methylnaphthalene-D10	152	10.014	10.004	(1.100)	181949	2.00000	2.02	
	33 2-Methylnaphthalene	142	10.053	10.053	(1.105)	226222	2.00000	1.99	
	34 1-Methylnaphthalene	142	10.181	10.181	(1.119)	213677	2.00000	2.05	
	35 1,2,4,5-Tetrachlorobenzene	216	10.289	10.289	(0.900)	97117	2.00000	2.02	
	36 Hexachlorocyclopentadiene	237	10.289	10.289	(0.900)	46937	2.00000	1.88	
$	37 2,4-Dibromophenol	252	10.427	10.427	(0.912)	48218	2.00000	1.99(Q)	
	38 2,4,6-Trichlorophenol	196	10.447	10.447	(0.914)	142461	4.50000	4.83	
	39 2,4,5-Trichlorophenol	196	10.496	10.496	(0.918)	151626	4.50000	4.48	
	40 1,1'-Biphenyl	154	10.683	10.683	(0.934)	277772	2.00000	2.05	
	41 2-Chloronaphthalene	164	10.693	10.693	(0.935)	67434	2.00000	2.01	
	42 2-Nitroaniline	65	10.850	10.840	(0.949)	62444	2.00000	2.02	
	43 Dimethyl Phthalate	163	11.117	11.117	(0.972)	534183	4.50000	4.53	
	44 2,6-Dinitrotoluene	165	11.171	11.171	(0.977)	51792	2.00000	2.01	
	45 Acenaphthylene	152	11.237	11.237	(0.983)	318044	2.00000	2.05	
	46 3-Nitroaniline	138	11.400	11.400	(0.997)	36990	2.00000	1.91	
*	47 Acenaphthene-D10	164	11.433	11.433	(1.000)	66847	0.80000	(a)	
	48 Acenaphthene	153	11.476	11.476	(1.004)	206105	2.00000	2.06	
	49 2,4-Dinitrophenol	184	11.553	11.542	(1.010)	31598	4.50000	3.94	
	50 4-Nitrophenol	109	11.672	11.661	(1.021)	53000	4.50000	4.48(Q)	
	51 2,4-Dinitrotoluene	165	11.716	11.716	(1.025)	63299	2.00000	1.86	
	52 Dibenzofuran	168	11.716	11.716	(1.025)	278907	2.00000	2.01	
	53 2,3,4,6-Tetrachlorophenol	232	11.901	11.901	(1.041)	113446	4.50000	4.43	
	54 Diethylphthalate	149	12.065	12.065	(1.055)	557345	4.50000	4.43	
$	55 Fluorene-D10	174	12.130	12.130	(1.061)	155509	2.00000	2.00	
	56 Fluorene	166	12.174	12.174	(1.065)	207979	2.00000	1.99	
	57 4-Chlorophenyl-phenylether	204	12.195	12.195	(1.067)	108272	2.00000	1.97	
	58 4-Nitroaniline	138	12.228	12.217	(1.070)	27918	2.00000	1.93(Q)	
	59 4,6-Dinitro-2-Methylphenol	198	12.272	12.261	(0.914)	54384	4.50000	4.22	
	60 N-Nitrosodiphenylamine	169	12.348	12.348	(0.920)	173885	2.00000	2.10	
	61 4-Bromophenyl-phenylether	248	12.844	12.844	(0.957)	53496	2.00000	2.07	
	62 Hexachlorobenzene	284	12.919	12.930	(0.963)	43303	2.00000	1.99	
	63 Atrazine	200	13.101	13.101	(0.976)	36156	2.00000	2.07	
	64 Pentachlorophenol	266	13.197	13.197	(0.983)	46860	4.50000	4.45	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	97537	0.80000	(a)	
	66 Phenanthrene	178	13.453	13.453	(1.002)	262265	2.00000	2.06	
	67 Anthracene	178	13.517	13.517	(1.007)	250574	2.00000	1.96	
	68 Carbazole	167	13.752	13.752	(1.025)	201673	2.00000	2.03	
	69 Di-n-butylphthalate	149	14.275	14.264	(1.064)	836203	4.50000	4.64	
	70 Fluoranthene	202	15.050	15.050	(1.121)	233571	2.00000	1.99	
$	71 Pyrene-D10	212	15.323	15.323	(0.889)	149477	2.00000	2.16	
	72 Pyrene	202	15.341	15.351	(0.891)	241934	2.00000	2.15	
	73 Butylbenzylphthalate	149	16.336	16.336	(0.948)	306590	4.50000	4.87	
	74 3,3'-Dichlorobenzidine	252	17.218	17.208	(0.999)	21531	2.00000	1.87	
	75 Benzo(a)anthracene	228	17.208	17.208	(0.999)	107556	2.00000	2.00	

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8660.D
Report Date: 24-May-2018 07:52

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76	Chrysene-D12	240	17.227	17.227	(1.000)	37300	0.80000	(a)	
	77	Chrysene	228	17.274	17.274	(1.003)	131701	2.00000	2.02	
	78	bis(2-Ethylhexyl)phthalate	149	17.415	17.415	(1.011)	407380	4.50000	4.99	
	79	Di-n-octylphthalate	149	18.802	18.790	(1.091)	517896	4.50000	5.02	
	80	Benzo(b)fluoranthene	252	19.449	19.438	(0.960)	48036	2.00000	1.67	
	81	Benzo(k)fluoranthene	252	19.506	19.495	(0.963)	104651	2.00000	2.04(H)	
	82	Benzo(a)pyrene	252	20.142	20.119	(0.994)	57713	2.00000	1.83	
*	83	Perylene-D12	264	20.255	20.233	(1.000)	20220	0.80000	(a)	
	84	Indeno(1,2,3-cd)pyrene	276	22.402	22.356	(1.300)	36422	2.00000	1.94	
	85	Dibenzo(a,h)anthracene	278	22.504	22.436	(1.111)	24261	2.00000	1.98	
	86	Benzo(g,h,i)perylene	276	23.004	22.958	(1.136)	43839	2.00000	2.00	
M	87	Total PAHs	100				446625	36.0000	(a)	
M	88	Total Low PAHs	100				1839664	14.0000	(a)	
M	89	Total High PAHs	100				796736	12.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.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Date : 23-MAY-2018 09:22
Client ID:
Sample Info: WG228910-4
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n.i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n.i\N052318.b\N8660.D
Y (x10^6)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine+
-Benzaldehyde
-Bis(2-Chloroethyl)ether
-2-Chlorophenol
Phenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-Hexachloroethane
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene-D10
-2-Methylnaphthalene
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4,6-Tribromophenol+
-2,4,5-Trichlorophenol
-1,1'-Biphenyl+
-2-Nitroaniline
-Dimethyl Phthalate+
-Acenaphthylene
-3-Nitroaniline+
-Acenaphthene
-2,4-Dinitrophenol
-4-Nitrophenol
-2,4-Dinitrotoluene+
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-Fluorene+
-4-Nitroaniline+
-N-Nitrosodiphenylamine
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8661.D
Report Date: 24-May-2018 07:52

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052318.b\N8661.D
Lab Smp Id: WG228910-2
Inj Date : 23-MAY-2018 09:55 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228910-2
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N052318.b\NSPSIM96.m
Meth Date : 23-May-2018 12:42 gcms-n.i Quant Type: ISTD
Cal Date : 23-MAY-2018 09:55 Cal File: N8661.D
Als bottle: 3 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.653	3.632	(0.488)	5661	0.20000	0.192(a)	
	2 1,4-Dioxane	88	3.695	3.674	(0.494)	6773	0.20000	0.215(a)	
	3 N-Nitrosodimethylamine	74	4.136	4.094	(0.553)	7816	0.20000	0.179(a)	
	4 Pyridine	79	4.220	4.115	(0.564)	9611	0.20000	0.240	
	5 Benzaldehyde	77	6.926	6.916	(0.926)	4823	0.20000	0.228	
	6 Phenol	94	7.077	7.067	(0.946)	70807	1.00000	0.843(a)	
	7 Bis(2-Chloroethyl)ether	93	7.167	7.147	(0.958)	13099	0.20000	0.187(a)	
	8 2-Chlorophenol	128	7.218	7.218	(0.965)	63898	1.00000	0.896(a)	
	9 1,3-Dichlorobenzene	146	7.409	7.399	(0.991)	14807	0.20000	0.188(a)	
*	10 1,4-Dichlorobenzene-D4	152	7.479	7.469	(1.000)	49195	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	7.499	7.489	(1.003)	14950	0.20000	0.188(a)	
	12 1,2-Dichlorobenzene	146	7.691	7.681	(1.028)	13416	0.20000	0.179(a)	
	13 2-Methylphenol	108	7.832	7.822	(1.047)	49957	1.00000	0.848(a)	
	14 2,2'-Oxybis(1-chloropropane)	45	7.852	7.842	(1.050)	11090	0.20000	0.118(aQ)	
	15 Acetophenone	105	8.003	7.983	(0.878)	16112	0.20000	0.171(a)	
	16 N-Nitroso-di-n-propylamine	70	8.043	8.003	(1.075)	4994	0.20000	0.168(a)	
	17 3&4-Methylphenol	108	8.033	8.023	(1.074)	48978	1.00000	0.800(a)	
	18 Hexachloroethane	117	8.113	8.113	(1.085)	3583	0.20000	0.160(a)	
	19 Nitrobenzene	77	8.214	8.194	(0.902)	17975	0.20000	0.237	
	20 Isophorone	82	8.556	8.516	(0.939)	9888	0.20000	0.149(a)	
	21 2-Nitrophenol	139	8.627	8.617	(0.947)	22257	1.00000	0.710(a)	

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8661.D
Report Date: 24-May-2018 07:52

							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.717	8.707	(0.957)	54477	1.00000	0.869	
	23 bis(2-Chloroethoxy)methane	93	8.838	8.808	(0.970)	13171	0.20000	0.174(a)	
	24 2,4-Dichlorophenol	162	8.959	8.939	(0.983)	43369	1.00000	0.856	
	25 1,2,4-Trichlorobenzene	180	9.050	9.040	(0.993)	8834	0.20000	0.171(a)	
*	26 Naphthalene-D8	136	9.110	9.100	(1.000)	158469	0.80000	(a)	
	27 Naphthalene	128	9.130	9.130	(1.002)	30024	0.20000	0.172(a)	
	28 4-Chloroaniline	127	9.241	9.221	(1.014)	11214	0.20000	0.171(a)	
	29 Hexachlorobutadiene	225	9.331	9.332	(1.024)	3788	0.20000	0.140(a)	
	30 Caprolactam	113	9.777	9.679	(1.073)	948	0.20000	0.348(Q)	
	31 4-Chloro-3-Methylphenol	107	9.905	9.895	(1.087)	47352	1.00000	0.885(a)	
$	32 2-Methylnaphthalene-D10	152	10.023	10.004	(1.100)	16453	0.20000	0.184(a)	
	33 2-Methylnaphthalene	142	10.063	10.053	(1.105)	20847	0.20000	0.184(a)	
	34 1-Methylnaphthalene	142	10.191	10.181	(1.119)	18143	0.20000	0.175(a)	
	35 1,2,4,5-Tetrachlorobenzene	216	10.299	10.289	(0.900)	8682	0.20000	0.187(a)	
	36 Hexachlorocyclopentadiene	237	10.299	10.289	(0.900)	2509	0.20000	0.353	
$	37 2,4-Dibromophenol	252	10.456	10.427	(0.914)	4309	0.20000	0.184(aQ)	
	38 2,4,6-Trichlorophenol	196	10.466	10.447	(0.915)	20947	1.00000	0.736(a)	
	39 2,4,5-Trichlorophenol	196	10.525	10.496	(0.920)	33978	1.00000	1.04	
	40 1,1'-Biphenyl	154	10.702	10.683	(0.935)	25679	0.20000	0.196(a)	
	41 2-Chloronaphthalene	164	10.712	10.693	(0.936)	6100	0.20000	0.188(a)	
	42 2-Nitroaniline	65	10.870	10.840	(0.950)	4760	0.20000	0.159(a)	
	43 Dimethyl Phthalate	163	11.127	11.117	(0.972)	111339	1.00000	0.978(a)	
	44 2,6-Dinitrotoluene	165	11.193	11.171	(0.978)	4080	0.20000	0.164(a)	
	45 Acenaphthylene	152	11.247	11.237	(0.983)	27803	0.20000	0.185(a)	
	46 3-Nitroaniline	138	11.433	11.400	(0.999)	3175	0.20000	0.170(a)	
*	47 Acenaphthene-D10	164	11.443	11.433	(1.000)	64546	0.80000	(a)	
	48 Acenaphthene	153	11.487	11.476	(1.004)	18613	0.20000	0.192(a)	
	49 2,4-Dinitrophenol	184	11.825	11.542	(1.033)	309	1.00000	0.972(aQM)	M6
	50 4-Nitrophenol	109	11.738	11.661	(1.026)	6134	1.00000	0.772(aQ)	
	51 2,4-Dinitrotoluene	165	11.749	11.716	(1.027)	4071	0.20000	0.182(aQ)	
	52 Dibenzofuran	168	11.727	11.716	(1.025)	25904	0.20000	0.194(aQ)	
	53 2,3,4,6-Tetrachlorophenol	232	11.923	11.901	(1.042)	16368	1.00000	0.823(a)	
	54 Diethylphthalate	149	12.075	12.065	(1.055)	116339	1.00000	0.959(a)	
$	55 Fluorene-D10	174	12.141	12.130	(1.061)	14611	0.20000	0.195(a)	
	56 Fluorene	166	12.184	12.174	(1.065)	19131	0.20000	0.189(a)	
	57 4-Chlorophenyl-phenylether	204	12.206	12.195	(1.067)	10190	0.20000	0.192(a)	
	58 4-Nitroaniline	138	12.272	12.217	(1.072)	2757	0.20000	0.197(aQ)	
	59 4,6-Dinitro-2-Methylphenol	198	12.315	12.261	(0.917)	5031	1.00000	0.870(a)	
	60 N-Nitrosodiphenylamine	169	12.370	12.348	(0.921)	16827	0.20000	0.203	
	61 4-Bromophenyl-phenylether	248	12.855	12.844	(0.957)	4992	0.20000	0.193(a)	
	62 Hexachlorobenzene	284	12.930	12.930	(0.963)	4551	0.20000	0.209	
	63 Atrazine	200	13.122	13.101	(0.977)	2644	0.20000	0.151(a)	
	64 Pentachlorophenol	266	13.239	13.197	(0.986)	1750	1.00000	0.774(a)	
*	65 Phenanthrene-D10	188	13.431	13.421	(1.000)	97619	0.80000	(a)	
	66 Phenanthrene	178	13.463	13.453	(1.002)	23765	0.20000	0.187(a)	
	67 Anthracene	178	13.538	13.517	(1.008)	26701	0.20000	0.208	
	68 Carbazole	167	13.773	13.752	(1.025)	17972	0.20000	0.181(a)	
	69 Di-n-butylphthalate	149	14.286	14.264	(1.064)	160791	1.00000	0.892(a)	
	70 Fluoranthene	202	15.069	15.050	(1.122)	20898	0.20000	0.178(a)	
$	71 Pyrene-D10	212	15.341	15.323	(0.890)	13477	0.20000	0.237(a)	
	72 Pyrene	202	15.360	15.351	(0.891)	21707	0.20000	0.235	
	73 Butylbenzylphthalate	149	16.354	16.336	(0.948)	54736	1.00000	1.06	
	74 3,3'-Dichlorobenzidine	252	17.255	17.208	(1.001)	859	0.20000	0.250(Q)	
	75 Benzo(a)anthracene	228	17.236	17.208	(0.999)	7230	0.20000	0.164(a)	

8:28 am, May 24, 2018

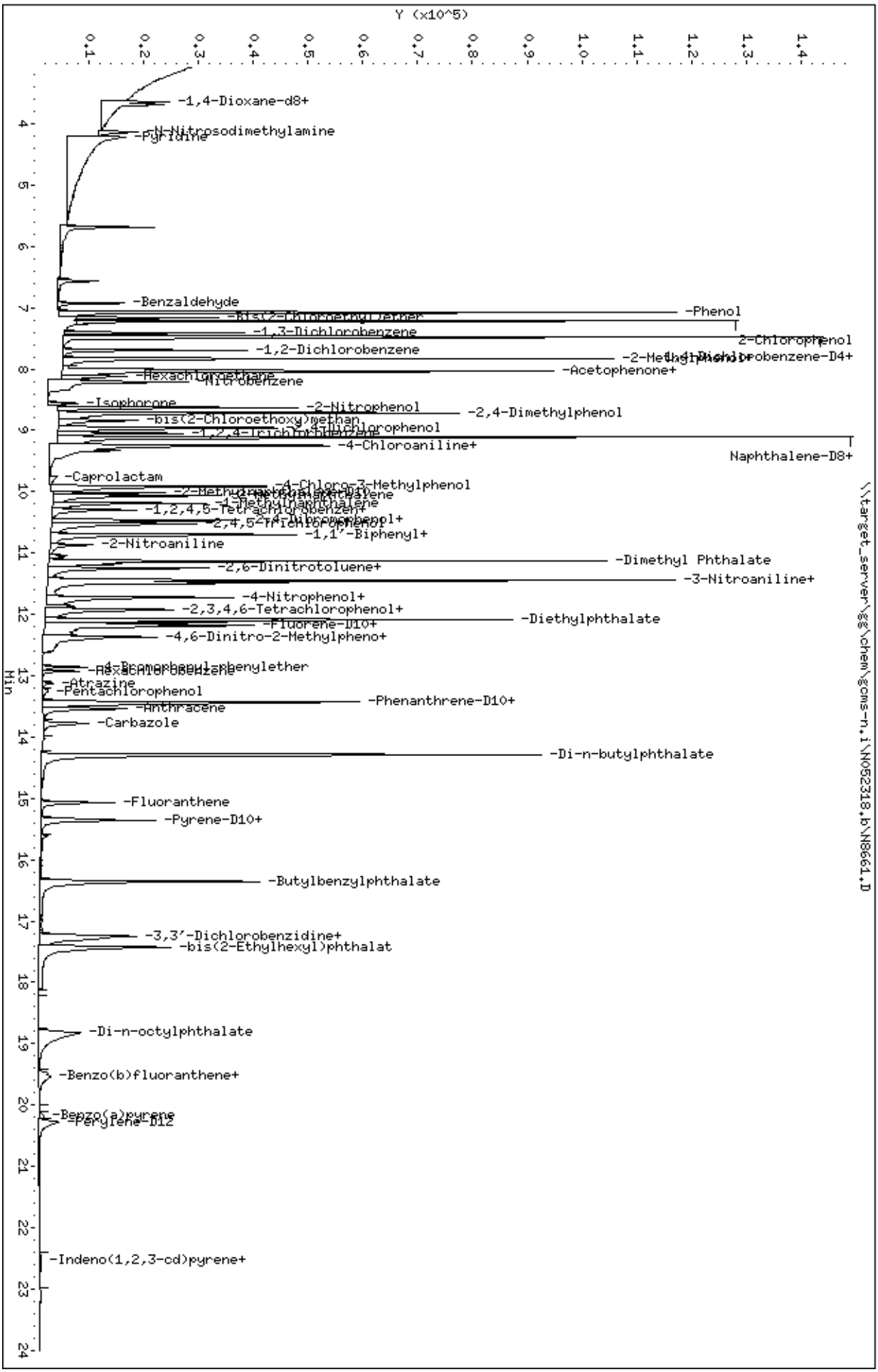
Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8661.D
Report Date: 24-May-2018 07:52

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76 Chrysene-D12	240	17.246	17.227	(1.000)	30683	0.80000	(a)	
	77 Chrysene	228	17.293	17.274	(1.003)	15107	0.20000	0.198(a)	
	78 bis(2-Ethylhexyl)phthalate	149	17.424	17.415	(1.010)	63738	1.00000	0.948(a)	
	79 Di-n-octylphthalate	149	18.813	18.790	(1.091)	64587	1.00000	0.761(a)	
	80 Benzo(b)fluoranthene	252	19.472	19.438	(0.960)	2757	0.20000	0.276	
	81 Benzo(k)fluoranthene	252	19.540	19.495	(0.964)	10289	0.20000	0.254(M)	M6
	82 Benzo(a)pyrene	252	20.176	20.119	(0.995)	5827	0.20000	0.234	
*	83 Perylene-D12	264	20.278	20.233	(1.000)	15976	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	22.481	22.356	(1.304)	2353	0.20000	0.264(M)	M6
	85 Dibenzo(a,h)anthracene	278	22.538	22.436	(1.111)	1384	0.20000	0.209(M)	M6
	86 Benzo(g,h,i)perylene	276	23.094	22.958	(1.139)	3009	0.20000	0.174(aM)	M6
M	87 Total PAHs	100				36551	3.60000	(a)	
M	88 Total Low PAHs	100				166884	1.40000	(a)	
M	89 Total High PAHs	100				72153	1.20000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

8:28 am, May 24, 2018



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Date : 23-MAY-2018 09:55
Client ID:
Sample Info: WG228910-2
Volume Injected (uL): 1.0
Column phase: ZB5-MS

Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8662.D
Report Date: 24-May-2018 07:53

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Data file : \\target_server\gg\chem\gcms-n.i\N052318.b\N8662.D
Lab Smp Id: WG228910-3
Inj Date : 23-MAY-2018 10:26 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228910-3
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N052318.b\NSPSIM96.m
Meth Date : 23-May-2018 12:42 gcms-n.i Quant Type: ISTD
Cal Date : 23-MAY-2018 10:26 Cal File: N8662.D
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.663	3.632	(0.490)	15035	0.50000	0.489(a)	
	2 1,4-Dioxane	88	3.705	3.674	(0.496)	16444	0.50000	0.501(a)	
	3 N-Nitrosodimethylamine	74	4.125	4.094	(0.552)	22315	0.50000	0.492	
	4 Pyridine	79	4.178	4.115	(0.559)	32147	0.50000	0.506	
	5 Benzaldehyde	77	6.926	6.916	(0.927)	12923	0.50000	0.588	
	6 Phenol	94	7.067	7.067	(0.946)	165540	2.00000	1.90	
	7 Bis(2-Chloroethyl)ether	93	7.157	7.147	(0.958)	35979	0.50000	0.494	
	8 2-Chlorophenol	128	7.218	7.218	(0.966)	146528	2.00000	1.98	
	9 1,3-Dichlorobenzene	146	7.409	7.399	(0.992)	41417	0.50000	0.505	
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.469	(1.000)	51177	0.80000	(a)	
	11 1,4-Dichlorobenzene	146	7.489	7.489	(1.003)	41192	0.50000	0.498	
	12 1,2-Dichlorobenzene	146	7.691	7.681	(1.030)	39366	0.50000	0.505	
	13 2-Methylphenol	108	7.822	7.822	(1.047)	114818	2.00000	1.87	
	14 2,2'-Oxybis(1-chloropropane)	45	7.842	7.842	(1.050)	45561	0.50000	0.468(Q)	
	15 Acetophenone	105	7.993	7.983	(0.878)	47599	0.50000	0.526	
	16 N-Nitroso-di-n-propylamine	70	8.023	8.003	(1.074)	16871	0.50000	0.385	
	17 3&4-Methylphenol	108	8.023	8.023	(1.074)	119142	2.00000	1.87	
	18 Hexachloroethane	117	8.113	8.113	(1.086)	14694	0.50000	0.493	
	19 Nitrobenzene	77	8.204	8.194	(0.902)	41780	0.50000	0.574(Q)	
	20 Isophorone	82	8.526	8.516	(0.937)	46164	0.50000	0.446	
	21 2-Nitrophenol	139	8.617	8.617	(0.947)	59868	2.00000	1.99	

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							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.707	8.707	(0.957)	120348	2.00000	2.00	
	23 bis(2-Chloroethoxy)methane	93	8.818	8.808	(0.969)	38581	0.50000	0.532	
	24 2,4-Dichlorophenol	162	8.949	8.939	(0.983)	103675	2.00000	2.13	
	25 1,2,4-Trichlorobenzene	180	9.040	9.040	(0.993)	25898	0.50000	0.524	
*	26 Naphthalene-D8	136	9.100	9.100	(1.000)	151983	0.80000	(a)	
	27 Naphthalene	128	9.130	9.130	(1.003)	87528	0.50000	0.522	
	28 4-Chloroaniline	127	9.231	9.221	(1.014)	34931	0.50000	0.555(a)	
	29 Hexachlorobutadiene	225	9.332	9.332	(1.025)	13546	0.50000	0.523	
	30 Caprolactam	113	9.708	9.679	(1.067)	6283	0.50000	0.496(Q)	
	31 4-Chloro-3-Methylphenol	107	9.895	9.895	(1.087)	109311	2.00000	2.13	
$	32 2-Methylnaphthalene-D10	152	10.014	10.004	(1.100)	46277	0.50000	0.540(a)	
	33 2-Methylnaphthalene	142	10.053	10.053	(1.105)	59341	0.50000	0.547	
	34 1-Methylnaphthalene	142	10.181	10.181	(1.119)	47082	0.50000	0.474	
	35 1,2,4,5-Tetrachlorobenzene	216	10.289	10.289	(0.900)	25244	0.50000	0.513	
	36 Hexachlorocyclopentadiene	237	10.289	10.289	(0.900)	6976	0.50000	0.498	
$	37 2,4-Dibromophenol	252	10.437	10.427	(0.913)	11150	0.50000	0.449(a)	
	38 2,4,6-Trichlorophenol	196	10.456	10.447	(0.915)	59902	2.00000	1.98	
	39 2,4,5-Trichlorophenol	196	10.506	10.496	(0.919)	71085	2.00000	2.05	
	40 1,1'-Biphenyl	154	10.683	10.683	(0.934)	71105	0.50000	0.512	
	41 2-Chloronaphthalene	164	10.703	10.693	(0.936)	17642	0.50000	0.513	
	42 2-Nitroaniline	65	10.860	10.840	(0.950)	14508	0.50000	0.458	
	43 Dimethyl Phthalate	163	11.117	11.117	(0.972)	244882	2.00000	2.03	
	44 2,6-Dinitrotoluene	165	11.182	11.171	(0.978)	12358	0.50000	0.469	
	45 Acenaphthylene	152	11.247	11.237	(0.984)	78136	0.50000	0.491	
	46 3-Nitroaniline	138	11.411	11.400	(0.998)	8755	0.50000	0.442	
*	47 Acenaphthene-D10	164	11.433	11.433	(1.000)	68464	0.80000	(a)	
	48 Acenaphthene	153	11.476	11.476	(1.004)	52500	0.50000	0.511	
	49 2,4-Dinitrophenol	184	11.585	11.542	(1.013)	4142	2.00000	1.34(Q)	
	50 4-Nitrophenol	109	11.694	11.661	(1.023)	19057	2.00000	1.74	
	51 2,4-Dinitrotoluene	165	11.727	11.716	(1.026)	14308	0.50000	0.460	
	52 Dibenzofuran	168	11.716	11.716	(1.025)	73101	0.50000	0.515	
	53 2,3,4,6-Tetrachlorophenol	232	11.912	11.901	(1.042)	46986	2.00000	1.90	
	54 Diethylphthalate	149	12.076	12.065	(1.056)	260405	2.00000	2.02	
$	55 Fluorene-D10	174	12.141	12.130	(1.062)	40110	0.50000	0.504(a)	
	56 Fluorene	166	12.174	12.174	(1.065)	53202	0.50000	0.497	
	57 4-Chlorophenyl-phenylether	204	12.195	12.195	(1.067)	28102	0.50000	0.498	
	58 4-Nitroaniline	138	12.239	12.217	(1.071)	7745	0.50000	0.522	
	59 4,6-Dinitro-2-Methylphenol	198	12.283	12.261	(0.915)	17520	2.00000	1.63(Q)	
	60 N-Nitrosodiphenylamine	169	12.359	12.348	(0.921)	43598	0.50000	0.479	
	61 4-Bromophenyl-phenylether	248	12.844	12.844	(0.957)	13236	0.50000	0.466	
	62 Hexachlorobenzene	284	12.919	12.930	(0.963)	11555	0.50000	0.485	
	63 Atrazine	200	13.101	13.101	(0.976)	8381	0.50000	0.438	
	64 Pentachlorophenol	266	13.207	13.197	(0.984)	11533	2.00000	1.50	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	107022	0.80000	(a)	
	66 Phenanthrene	178	13.453	13.453	(1.002)	67048	0.50000	0.480	
	67 Anthracene	178	13.528	13.517	(1.008)	69350	0.50000	0.493	
	68 Carbazole	167	13.762	13.752	(1.025)	50320	0.50000	0.461	
	69 Di-n-butylphthalate	149	14.275	14.264	(1.064)	388026	2.00000	1.96	
	70 Fluoranthene	202	15.060	15.050	(1.122)	59468	0.50000	0.462	
$	71 Pyrene-D10	212	15.332	15.323	(0.890)	38437	0.50000	0.527(a)	
	72 Pyrene	202	15.351	15.351	(0.891)	64709	0.50000	0.546	
	73 Butylbenzylphthalate	149	16.345	16.336	(0.948)	138101	2.00000	2.08	
	74 3,3'-Dichlorobenzidine	252	17.236	17.208	(1.000)	3698	0.50000	0.445(Q)	
	75 Benzo(a)anthracene	228	17.218	17.208	(0.999)	25039	0.50000	0.442	

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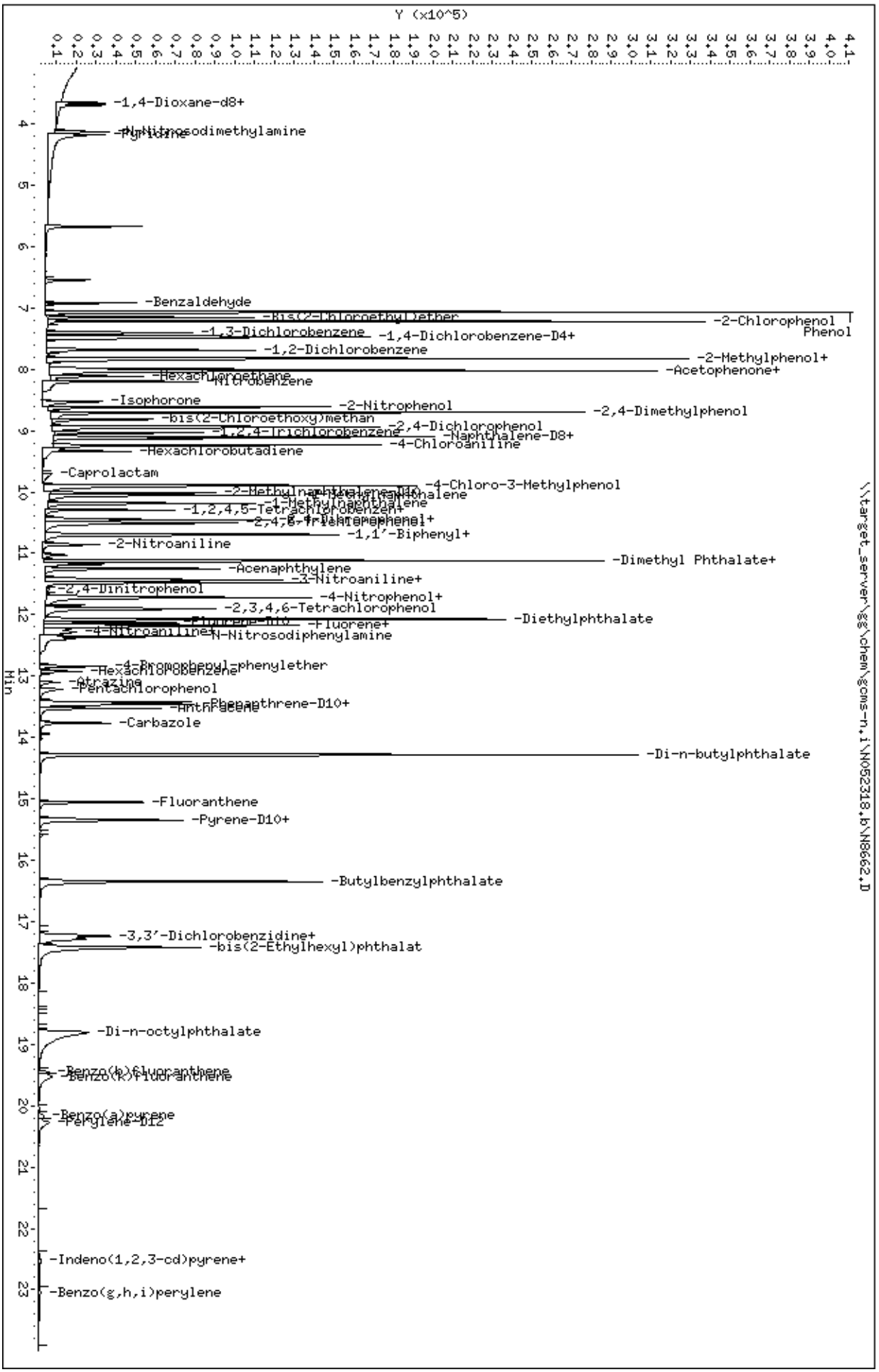
Report Date: 24-May-2018 07:53

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76 Chrysene-D12	240	17.236	17.227	(1.000)	39327	0.80000	(a)	
	77 Chrysene	228	17.283	17.274	(1.003)	40185	0.50000	0.516	
	78 bis(2-Ethylhexyl)phthalate	149	17.424	17.415	(1.011)	175652	2.00000	2.04	
	79 Di-n-octylphthalate	149	18.813	18.790	(1.091)	198421	2.00000	1.82	
	80 Benzo(b)fluoranthene	252	19.460	19.438	(0.960)	9313	0.50000	0.445	
	81 Benzo(k)fluoranthene	252	19.529	19.495	(0.963)	27999	0.50000	0.520(H)	
	82 Benzo(a)pyrene	252	20.165	20.119	(0.994)	15144	0.50000	0.458	
*	83 Perylene-D12	264	20.278	20.233	(1.000)	21206	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	22.447	22.356	(1.302)	6863	0.50000	0.450	
	85 Dibenzo(a,h)anthracene	278	22.538	22.436	(1.111)	4708	0.50000	0.428	
	86 Benzo(g,h,i)perylene	276	23.049	22.958	(1.137)	9746	0.50000	0.424	
M	87 Total PAHs	100				101003	9.00000	(a)	
M	88 Total Low PAHs	100				467105	3.50000	(a)	
M	89 Total High PAHs	100				209253	3.00000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.


Data File: \\target_server\gg\chem\gcms-n,i\N052318,b\N8662,D
Date : 23-MAY-2018 10:26
Client ID:
Sample Info: WG228910-3
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N052318,b\N8662,D
Y (x10^5)
Min
-1,4-Dioxane-d8+
-Pyridine
-Benzaldehyde
-Bis(2-Chloroethyl)ether
-2-Chlorophenol
Phenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-Hexachloroethane
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene-D10
-2-Methylnaphthalene
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4,6-Trichlorophenol+
-1,1'-Biphenyl+
-2-Nitroaniline
-Dimethyl Phthalate+
-Acenaphthylene
-3-Nitroaniline+
-2,4-Dinitrophenol
-4-Nitrophenol+
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-Fluorene-D10
-Fluorene+
-4-Nitroaniline+
-N-Nitrosodiphenylamine
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8663.D
Report Date: 24-May-2018 07:53

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052318.b\N8663.D
Lab Smp Id: WG228910-5
Inj Date : 23-MAY-2018 10:58 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228910-5
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N052318.b\NSPSIM96.m
Meth Date : 23-May-2018 12:42 gcms-n.i Quant Type: ISTD
Cal Date : 23-MAY-2018 10:58 Cal File: N8663.D
Als bottle: 5 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.642	3.632	(0.488)	216797	7.00000	7.10	
	2 1,4-Dioxane	88	3.684	3.674	(0.493)	221595	7.00000	6.80	
	3 N-Nitrosodimethylamine	74	4.104	4.094	(0.549)	330818	7.00000	7.34	
	4 Pyridine	79	4.125	4.115	(0.552)	578915	7.00000	7.11	
	5 Benzaldehyde	77	6.916	6.916	(0.926)	177293	7.00000	8.12	
	6 Phenol	94	7.067	7.067	(0.946)	657133	7.00000	7.57(Q)	
	7 Bis(2-Chloroethyl)ether	93	7.157	7.147	(0.958)	527040	7.00000	7.29	
	8 2-Chlorophenol	128	7.218	7.218	(0.966)	534968	7.00000	7.26	
	9 1,3-Dichlorobenzene	146	7.399	7.399	(0.991)	586662	7.00000	7.20	
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.469	(1.000)	50839	0.80000	(a)	
	11 1,4-Dichlorobenzene	146	7.489	7.489	(1.003)	597773	7.00000	7.28	
	12 1,2-Dichlorobenzene	146	7.691	7.681	(1.030)	564789	7.00000	7.29	
	13 2-Methylphenol	108	7.821	7.822	(1.047)	462244	7.00000	7.59	
	14 2,2'-Oxybis(1-chloropropane)	45	7.842	7.842	(1.050)	703499	7.00000	7.30(Q)	
	15 Acetophenone	105	7.983	7.983	(0.877)	764035	7.00000	7.24	
	16 N-Nitroso-di-n-propylamine	70	8.003	8.003	(1.071)	384786	7.00000	7.28	
	17 3&4-Methylphenol	108	8.023	8.023	(1.074)	483770	7.00000	7.64	
	18 Hexachloroethane	117	8.113	8.113	(1.086)	231000	7.00000	7.10	
	19 Nitrobenzene	77	8.194	8.194	(0.900)	558245	7.00000	6.57(Q)	
	20 Isophorone	82	8.516	8.516	(0.936)	1025656	7.00000	7.20	
	21 2-Nitrophenol	139	8.617	8.617	(0.947)	263440	7.00000	7.51	

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8663.D
Report Date: 24-May-2018 07:53

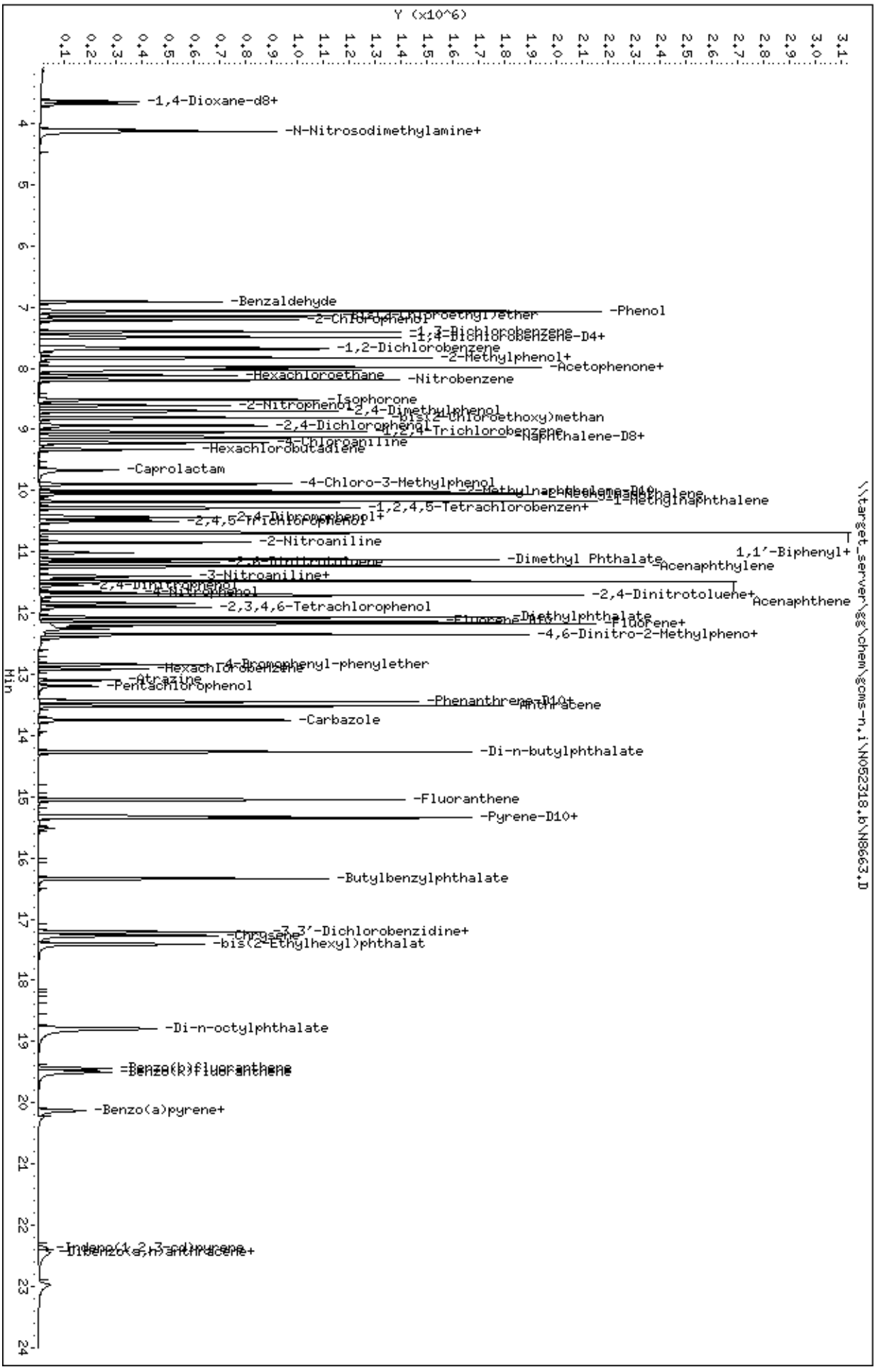
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.697	8.707	(0.956)	510743	7.00000	7.27	
	23 bis(2-Chloroethoxy)methane	93	8.808	8.808	(0.968)	611903	7.00000	7.22	
	24 2,4-Dichlorophenol	162	8.939	8.939	(0.982)	409725	7.00000	7.22	
	25 1,2,4-Trichlorobenzene	180	9.039	9.040	(0.993)	420078	7.00000	7.28	
*	26 Naphthalene-D8	136	9.100	9.100	(1.000)	177452	0.80000	(a)	
	27 Naphthalene	128	9.130	9.130	(1.003)	1425069	7.00000	7.28	
	28 4-Chloroaniline	127	9.221	9.221	(1.013)	558586	7.00000	7.60	
	29 Hexachlorobutadiene	225	9.331	9.332	(1.025)	226835	7.00000	7.50	
	30 Caprolactam	113	9.659	9.679	(1.061)	160988	7.00000	6.84	
	31 4-Chloro-3-Methylphenol	107	9.886	9.895	(1.086)	427076	7.00000	7.13	
$	32 2-Methylnaphthalene-D10	152	10.004	10.004	(1.099)	716471	7.00000	7.16	
	33 2-Methylnaphthalene	142	10.053	10.053	(1.105)	899821	7.00000	7.11	
	34 1-Methylnaphthalene	142	10.181	10.181	(1.119)	875621	7.00000	7.55	
	35 1,2,4,5-Tetrachlorobenzene	216	10.289	10.289	(0.900)	395117	7.00000	6.91	
	36 Hexachlorocyclopentadiene	237	10.289	10.289	(0.900)	220149	7.00000	6.62	
$	37 2,4-Dibromophenol	252	10.417	10.427	(0.911)	210393	7.00000	7.29(Q)	
	38 2,4,6-Trichlorophenol	196	10.447	10.447	(0.914)	255591	7.00000	7.28	
	39 2,4,5-Trichlorophenol	196	10.496	10.496	(0.918)	268967	7.00000	6.68	
	40 1,1'-Biphenyl	154	10.683	10.683	(0.934)	1114245	7.00000	6.90	
	41 2-Chloronaphthalene	164	10.693	10.693	(0.935)	277432	7.00000	6.94	
	42 2-Nitroaniline	65	10.840	10.840	(0.948)	281840	7.00000	7.65	
	43 Dimethyl Phthalate	163	11.117	11.117	(0.972)	997381	7.00000	7.11	
	44 2,6-Dinitrotoluene	165	11.171	11.171	(0.977)	228283	7.00000	7.45	
	45 Acenaphthylene	152	11.236	11.237	(0.983)	1326267	7.00000	7.16	
	46 3-Nitroaniline	138	11.400	11.400	(0.997)	194265	7.00000	8.44	
*	47 Acenaphthene-D10	164	11.433	11.433	(1.000)	79622	0.80000	(a)	
	48 Acenaphthene	153	11.476	11.476	(1.004)	840447	7.00000	7.04	
	49 2,4-Dinitrophenol	184	11.541	11.542	(1.010)	81727	7.00000	7.16	
	50 4-Nitrophenol	109	11.661	11.661	(1.020)	104272	7.00000	7.22(QH)	
	51 2,4-Dinitrotoluene	165	11.716	11.716	(1.025)	299315	7.00000	7.22(Q)	
	52 Dibenzofuran	168	11.716	11.716	(1.025)	1165271	7.00000	7.06(Q)	
	53 2,3,4,6-Tetrachlorophenol	232	11.901	11.901	(1.041)	228445	7.00000	7.36	
	54 Diethylphthalate	149	12.065	12.065	(1.055)	1080101	7.00000	7.22	
$	55 Fluorene-D10	174	12.130	12.130	(1.061)	656666	7.00000	7.10	
	56 Fluorene	166	12.173	12.174	(1.065)	888756	7.00000	7.13	
	57 4-Chlorophenyl-phenylether	204	12.195	12.195	(1.067)	460406	7.00000	7.02	
	58 4-Nitroaniline	138	12.217	12.217	(1.069)	137581	7.00000	7.98(Q)	
	59 4,6-Dinitro-2-Methylphenol	198	12.261	12.261	(0.914)	132073	7.00000	7.27	
	60 N-Nitrosodiphenylamine	169	12.348	12.348	(0.920)	752566	7.00000	7.00	
	61 4-Bromophenyl-phenylether	248	12.844	12.844	(0.957)	236575	7.00000	7.05	
	62 Hexachlorobenzene	284	12.919	12.930	(0.963)	195675	7.00000	6.95	
	63 Atrazine	200	13.090	13.101	(0.975)	173834	7.00000	7.69	
	64 Pentachlorophenol	266	13.197	13.197	(0.983)	107608	7.00000	7.24	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	126430	0.80000	(a)	
	66 Phenanthrene	178	13.453	13.453	(1.002)	1204534	7.00000	7.31	
	67 Anthracene	178	13.517	13.517	(1.007)	1203788	7.00000	7.25	
	68 Carbazole	167	13.752	13.752	(1.025)	1001924	7.00000	7.77	
	69 Di-n-butylphthalate	149	14.264	14.264	(1.063)	1723545	7.00000	7.38	
	70 Fluoranthene	202	15.050	15.050	(1.121)	1188173	7.00000	7.82	
$	71 Pyrene-D10	212	15.322	15.323	(0.889)	759422	7.00000	6.34	
	72 Pyrene	202	15.341	15.351	(0.891)	1219376	7.00000	6.27	
	73 Butylbenzylphthalate	149	16.336	16.336	(0.948)	719483	7.00000	6.61	
	74 3,3'-Dichlorobenzidine	252	17.208	17.208	(0.999)	151126	7.00000	7.06	
	75 Benzo(a)anthracene	228	17.208	17.208	(0.999)	722995	7.00000	7.78	

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8663.D
Report Date: 24-May-2018 07:53

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76	Chrysene-D12	240	17.227	17.227	(1.000)	64485	0.80000	(a)	
	77	Chrysene	228	17.274	17.274	(1.003)	767415	7.00000	7.04	
	78	bis(2-Ethylhexyl)phthalate	149	17.405	17.415	(1.010)	952842	7.00000	6.75	
	79	Di-n-octylphthalate	149	18.790	18.790	(1.091)	1296468	7.00000	7.27	
	80	Benzo(b)fluoranthene	252	19.438	19.438	(0.960)	417885	7.00000	7.62	
	81	Benzo(k)fluoranthene	252	19.494	19.495	(0.963)	542197	7.00000	6.35(H)	
	82	Benzo(a)pyrene	252	20.130	20.119	(0.994)	365320	7.00000	6.96	
*	83	Perylene-D12	264	20.244	20.233	(1.000)	33655	0.80000	(a)	
	84	Indeno(1,2,3-cd)pyrene	276	22.368	22.356	(1.298)	244115	7.00000	6.67	
	85	Dibenzo(a,h)anthracene	278	22.447	22.436	(1.109)	159082	7.00000	7.05	
	86	Benzo(g,h,i)perylene	276	22.970	22.958	(1.135)	264678	7.00000	7.26	
M	87	Total PAHs	100				2344496	126.000	(a)	
M	88	Total Low PAHs	100				7788682	49.0000	(a)	
M	89	Total High PAHs	100				4422361	42.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.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Date : 23-MAY-2018 10:58
Client ID:
Sample Info: WG228910-5
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N052318,b\N8663,D
Y (x10^6)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine+
-Benzaldehyde
-Phenol
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-Hexachloroethane
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene-D10
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4,5-Trichlorophenol
-2-Nitroaniline
1,1'-Biphenyl+
-Dimethyl Phthalate
-Acenaphthylene
-3-Nitroaniline+
-2,4-Dinitrophenol
-2,4-Dinitrotoluene+
Acenaphthene
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-Fluorene+
-4,6-Dinitro-2-Methylpheno+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene+
-Indeno(1,2,3-cd)pyrene
-Dibenzo(a,h)anthracene+

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8664.D
Report Date: 24-May-2018 07:53

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052318.b\N8664.D
Lab Smp Id: WG228910-6
Inj Date : 23-MAY-2018 11:29 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228910-6
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N052318.b\NSPSIM96.m
Meth Date : 23-May-2018 12:42 gcms-n.i Quant Type: ISTD
Cal Date : 23-MAY-2018 11:29 Cal File: N8664.D
Als bottle: 6 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$ 1	1,4-Dioxane-d8	96	3.642	3.632	(0.488)	278257	10.0000	10.1	
2	1,4-Dioxane	88	3.684	3.674	(0.493)	284580	10.0000	9.65	
3	N-Nitrosodimethylamine	74	4.104	4.094	(0.549)	421298	10.0000	10.3	
4	Pyridine	79	4.125	4.115	(0.552)	717380	10.0000	9.70	
5	Benzaldehyde	77	6.916	6.916	(0.926)	194727	10.0000	9.86	
6	Phenol	94	7.067	7.067	(0.946)	825420	10.0000	10.5	
7	Bis(2-Chloroethyl)ether	93	7.147	7.147	(0.957)	666323	10.0000	10.2	
8	2-Chlorophenol	128	7.218	7.218	(0.966)	678066	10.0000	10.2	
9	1,3-Dichlorobenzene	146	7.399	7.399	(0.991)	736702	10.0000	9.99	
* 10	1,4-Dichlorobenzene-D4	152	7.469	7.469	(1.000)	45987	0.80000	(a)	
11	1,4-Dichlorobenzene	146	7.489	7.489	(1.003)	745709	10.0000	10.0	
12	1,2-Dichlorobenzene	146	7.691	7.681	(1.030)	706309	10.0000	10.1	
13	2-Methylphenol	108	7.821	7.822	(1.047)	569770	10.0000	10.3	
14	2,2'-Oxybis(1-chloropropane)	45	7.842	7.842	(1.050)	872041	10.0000	10.0	
15	Acetophenone	105	7.983	7.983	(0.877)	965404	10.0000	10.1	
16	N-Nitroso-di-n-propylamine	70	8.003	8.003	(1.071)	481456	10.0000	10.0	
17	3&4-Methylphenol	108	8.023	8.023	(1.074)	604557	10.0000	10.6	
18	Hexachloroethane	117	8.113	8.113	(1.086)	292445	10.0000	9.92	
19	Nitrobenzene	77	8.194	8.194	(0.900)	697586	10.0000	9.10	
20	Isophorone	82	8.516	8.516	(0.936)	1275540	10.0000	9.90	
21	2-Nitrophenol	139	8.617	8.617	(0.947)	334510	10.0000	10.6	

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8664.D
Report Date: 24-May-2018 07:53

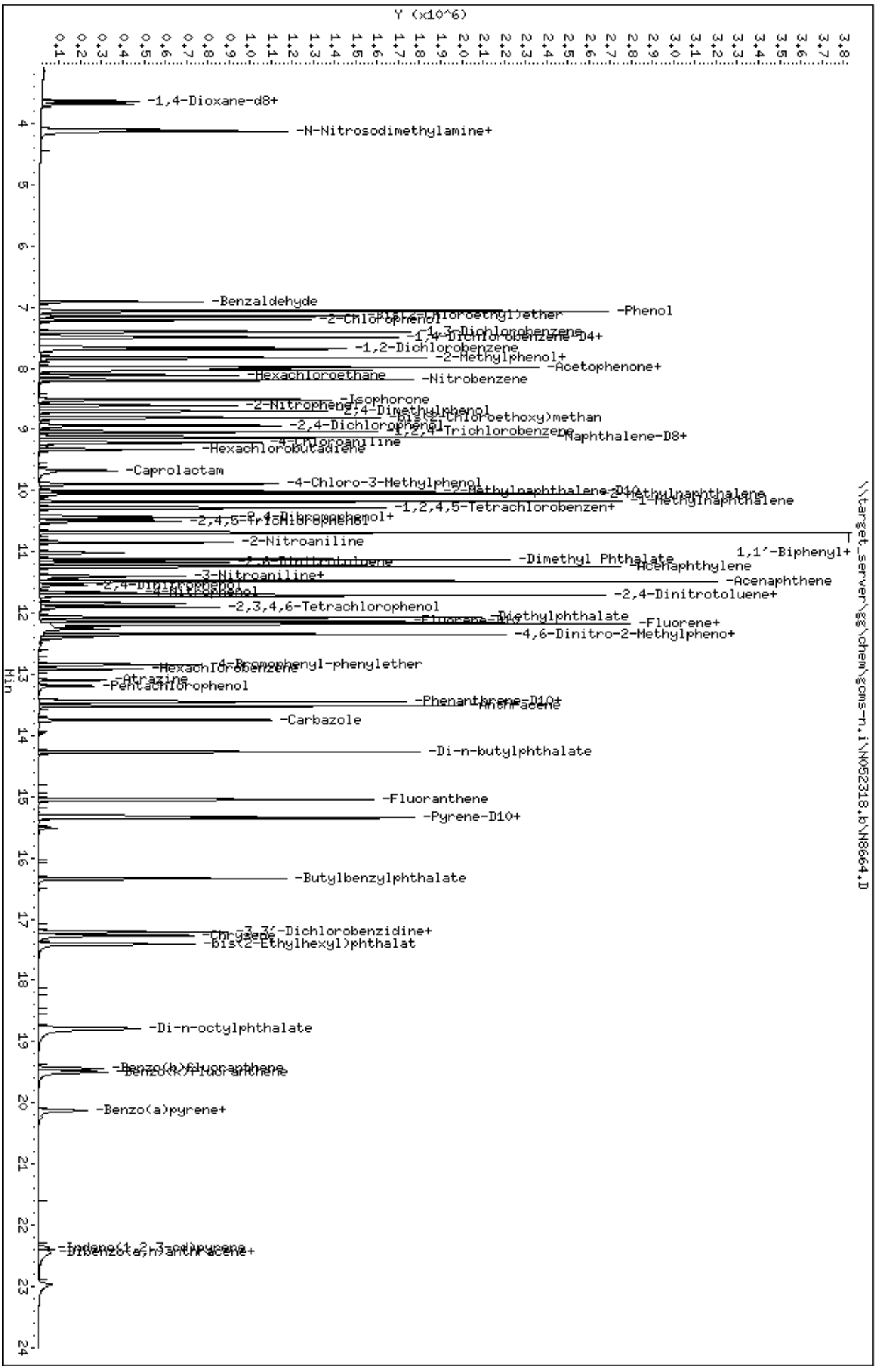
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.697	8.707	(0.956)	640485	10.0000	10.1	
	23 bis(2-Chloroethoxy)methane	93	8.808	8.808	(0.968)	768253	10.0000	10.0	
	24 2,4-Dichlorophenol	162	8.939	8.939	(0.982)	516167	10.0000	10.1	
	25 1,2,4-Trichlorobenzene	180	9.039	9.040	(0.993)	522485	10.0000	10.0	
*	26 Naphthalene-D8	136	9.100	9.100	(1.000)	160031	0.80000	(a)	
	27 Naphthalene	128	9.130	9.130	(1.003)	1778680	10.0000	10.1	
	28 4-Chloroaniline	127	9.221	9.221	(1.013)	668957	10.0000	10.1	
	29 Hexachlorobutadiene	225	9.331	9.332	(1.025)	285789	10.0000	10.5	
	30 Caprolactam	113	9.669	9.679	(1.063)	199907	10.0000	10.8	
	31 4-Chloro-3-Methylphenol	107	9.886	9.895	(1.086)	539812	10.0000	9.99	
$	32 2-Methylnaphthalene-D10	152	10.004	10.004	(1.099)	897362	10.0000	9.95	
	33 2-Methylnaphthalene	142	10.053	10.053	(1.105)	1141330	10.0000	10.0	
	34 1-Methylnaphthalene	142	10.181	10.181	(1.119)	1094464	10.0000	10.5	
	35 1,2,4,5-Tetrachlorobenzene	216	10.289	10.289	(0.900)	491137	10.0000	9.99	
	36 Hexachlorocyclopentadiene	237	10.289	10.289	(0.900)	283125	10.0000	9.77	
$	37 2,4-Dibromophenol	252	10.427	10.427	(0.912)	260967	10.0000	10.5	
	38 2,4,6-Trichlorophenol	196	10.447	10.447	(0.914)	321130	10.0000	10.6	
	39 2,4,5-Trichlorophenol	196	10.496	10.496	(0.918)	337392	10.0000	9.74	
	40 1,1'-Biphenyl	154	10.683	10.683	(0.934)	1374616	10.0000	9.90	
	41 2-Chloronaphthalene	164	10.693	10.693	(0.935)	345954	10.0000	10.0	
	42 2-Nitroaniline	65	10.840	10.840	(0.948)	342467	10.0000	10.8	
	43 Dimethyl Phthalate	163	11.117	11.117	(0.972)	1208768	10.0000	10.0	
	44 2,6-Dinitrotoluene	165	11.171	11.171	(0.977)	280540	10.0000	10.6	
	45 Acenaphthylene	152	11.236	11.237	(0.983)	1606017	10.0000	10.1	
	46 3-Nitroaniline	138	11.400	11.400	(0.997)	223370	10.0000	11.3	
*	47 Acenaphthene-D10	164	11.433	11.433	(1.000)	68473	0.80000	(a)	
	48 Acenaphthene	153	11.476	11.476	(1.004)	1021059	10.0000	9.94	
	49 2,4-Dinitrophenol	184	11.542	11.542	(1.010)	110927	10.0000	10.2	
	50 4-Nitrophenol	109	11.661	11.661	(1.020)	128767	10.0000	10.2(H)	
	51 2,4-Dinitrotoluene	165	11.716	11.716	(1.025)	357779	10.0000	10.0	
	52 Dibenzofuran	168	11.716	11.716	(1.025)	1403130	10.0000	9.89	
	53 2,3,4,6-Tetrachlorophenol	232	11.901	11.901	(1.041)	262895	10.0000	9.79	
	54 Diethylphthalate	149	12.065	12.065	(1.055)	1294804	10.0000	10.0	
$	55 Fluorene-D10	174	12.130	12.130	(1.061)	794733	10.0000	9.99	
	56 Fluorene	166	12.173	12.174	(1.065)	1106000	10.0000	10.3	
	57 4-Chlorophenyl-phenylether	204	12.195	12.195	(1.067)	572033	10.0000	10.1	
	58 4-Nitroaniline	138	12.217	12.217	(1.069)	160928	10.0000	10.8	
	59 4,6-Dinitro-2-Methylphenol	198	12.261	12.261	(0.914)	162162	10.0000	10.0	
	60 N-Nitrosodiphenylamine	169	12.348	12.348	(0.920)	899156	10.0000	9.89	
	61 4-Bromophenyl-phenylether	248	12.844	12.844	(0.957)	285714	10.0000	10.1	
	62 Hexachlorobenzene	284	12.919	12.930	(0.963)	231529	10.0000	9.71	
	63 Atrazine	200	13.100	13.101	(0.976)	205701	10.0000	10.8	
	64 Pentachlorophenol	266	13.197	13.197	(0.983)	130797	10.0000	9.90	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	107001	0.80000	(a)	
	66 Phenanthrene	178	13.453	13.453	(1.002)	1402705	10.0000	10.0	
	67 Anthracene	178	13.517	13.517	(1.007)	1381545	10.0000	9.83	
	68 Carbazole	167	13.752	13.752	(1.025)	1137327	10.0000	10.4	
	69 Di-n-butylphthalate	149	14.264	14.264	(1.063)	1982029	10.0000	10.0	
	70 Fluoranthene	202	15.041	15.050	(1.121)	1313552	10.0000	10.2	
$	71 Pyrene-D10	212	15.322	15.323	(0.889)	827916	10.0000	9.14	
	72 Pyrene	202	15.341	15.351	(0.891)	1323930	10.0000	8.99	
	73 Butylbenzylphthalate	149	16.336	16.336	(0.948)	756764	10.0000	9.18	
	74 3,3'-Dichlorobenzidine	252	17.208	17.208	(0.999)	159453	10.0000	9.78	
	75 Benzo(a)anthracene	228	17.208	17.208	(0.999)	752778	10.0000	10.7	

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8664.D
Report Date: 24-May-2018 07:53

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76	Chrysene-D12	240	17.227	17.227	(1.000)	48819	0.80000	(a)	
	77	Chrysene	228	17.274	17.274	(1.003)	831416	10.0000	10.1	
	78	bis(2-Ethylhexyl)phthalate	149	17.405	17.415	(1.010)	998476	10.0000	9.34	
	79	Di-n-octylphthalate	149	18.790	18.790	(1.091)	1355590	10.0000	10.0	
	80	Benzo(b)fluoranthene	252	19.438	19.438	(0.960)	428001	10.0000	9.47	
	81	Benzo(k)fluoranthene	252	19.494	19.495	(0.963)	631075	10.0000	9.16(H)	
	82	Benzo(a)pyrene	252	20.119	20.119	(0.994)	419053	10.0000	9.89	
*	83	Perylene-D12	264	20.244	20.233	(1.000)	27163	0.80000	(a)	
	84	Indeno(1,2,3-cd)pyrene	276	22.368	22.356	(1.298)	311656	10.0000	10.3	
	85	Dibenzo(a,h)anthracene	278	22.447	22.436	(1.109)	191643	10.0000	9.96	
	86	Benzo(g,h,i)perylene	276	22.970	22.958	(1.135)	328877	10.0000	11.2	
M	87	Total PAHs	100				2794073	180.000	(a)	
M	88	Total Low PAHs	100				9437336	70.0000	(a)	
M	89	Total High PAHs	100				4832372	60.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
H - Operator selected an alternate compound hit.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Date : 23-MAY-2018 11:29
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Volume Injected (uL): 1.0
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Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N052318,b\N8664,D
Y (x10^6)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine+
-Benzaldehyde
-Phenol
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-Hexachloroethane
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene-D10+
-2-Methylnaphthalene
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4,5-Trichlorophenol
-2-Nitroaniline
1,1'-Biphenyl+
-Dimethyl Phthalate
-Acenaphthylene
-3-Nitroaniline+
-Acenaphthene
-2,4-Dinitrophenol
-4-Nitrophenol
-2,4-Dinitrotoluene+
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-Fluorene+
-4,6-Dinitro-2-Methylpheno+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene+
-Indeno(1,2,3-cd)pyrene
-Dibenz(a,h)anthracene+

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8665.D
Report Date: 24-May-2018 07:53

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052318.b\N8665.D
Lab Smp Id: WG228910-7
Inj Date : 23-MAY-2018 12:01 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228910-7
Misc Info :
Comment :
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Meth Date : 23-May-2018 12:42 gcms-n.i Quant Type: ISTD
Cal Date : 23-MAY-2018 12:01 Cal File: N8665.D
Als bottle: 7 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.632	3.632	(0.486)	407300	15.0000	15.8(A)	
	2 1,4-Dioxane	88	3.674	3.674	(0.492)	413376	15.0000	15.1(A)	
	3 N-Nitrosodimethylamine	74	4.094	4.094	(0.548)	607792	15.0000	16.0(A)	
	4 Pyridine	79	4.115	4.115	(0.551)	1048313	15.0000	15.2(A)	
	5 Benzaldehyde	77	6.916	6.916	(0.926)	169787	15.0000	9.24	
	6 Phenol	94	7.067	7.067	(0.946)	1167316	15.0000	16.0(A)	
	7 Bis(2-Chloroethyl)ether	93	7.147	7.147	(0.957)	936094	15.0000	15.4(A)	
	8 2-Chlorophenol	128	7.218	7.218	(0.966)	978919	15.0000	15.8(A)	
	9 1,3-Dichlorobenzene	146	7.399	7.399	(0.991)	1063057	15.0000	15.5(A)	
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.469	(1.000)	42789	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	7.489	7.489	(1.003)	1068308	15.0000	15.4(A)	
	12 1,2-Dichlorobenzene	146	7.681	7.681	(1.028)	1015433	15.0000	15.6(A)	
	13 2-Methylphenol	108	7.822	7.822	(1.047)	815876	15.0000	15.9(A)	
	14 2,2'-Oxybis(1-chloropropane)	45	7.842	7.842	(1.050)	1206334	15.0000	14.9	
	15 Acetophenone	105	7.983	7.983	(0.877)	1353116	15.0000	15.2(A)	
	16 N-Nitroso-di-n-propylamine	70	8.003	8.003	(1.071)	663914	15.0000	14.8	
	17 3&4-Methylphenol	108	8.023	8.023	(1.074)	869956	15.0000	16.3(A)	
	18 Hexachloroethane	117	8.113	8.113	(1.086)	412517	15.0000	15.0(A)	
	19 Nitrobenzene	77	8.194	8.194	(0.900)	974183	15.0000	13.6	
	20 Isophorone	82	8.516	8.516	(0.936)	1812687	15.0000	15.0	
	21 2-Nitrophenol	139	8.617	8.617	(0.947)	489368	15.0000	16.5(A)	

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8665.D
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			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22	2,4-Dimethylphenol	107	8.707	8.707	(0.957)	932769	15.0000	15.7(A)	
	23	bis(2-Chloroethoxy)methane	93	8.808	8.808	(0.968)	1081760	15.0000	15.1(A)	
	24	2,4-Dichlorophenol	162	8.939	8.939	(0.982)	715101	15.0000	14.9	
	25	1,2,4-Trichlorobenzene	180	9.040	9.040	(0.993)	741786	15.0000	15.2(A)	
*	26	Naphthalene-D8	136	9.100	9.100	(1.000)	149936	0.80000	(a)	
	27	Naphthalene	128	9.130	9.130	(1.003)	2477226	15.0000	15.0	
	28	4-Chloroaniline	127	9.221	9.221	(1.013)	857393	15.0000	13.8	
	29	Hexachlorobutadiene	225	9.332	9.332	(1.025)	404489	15.0000	15.8(A)	
	30	Caprolactam	113	9.679	9.679	(1.064)	228339	15.0000	14.5	
	31	4-Chloro-3-Methylphenol	107	9.895	9.895	(1.087)	768379	15.0000	15.2(A)	
$	32	2-Methylnaphthalene-D10	152	10.004	10.004	(1.099)	1227071	15.0000	14.5	
	33	2-Methylnaphthalene	142	10.053	10.053	(1.105)	1562964	15.0000	14.6	
	34	1-Methylnaphthalene	142	10.181	10.181	(1.119)	1510282	15.0000	15.4(A)	
	35	1,2,4,5-Tetrachlorobenzene	216	10.289	10.289	(1.000)	694691	15.0000	15.6(A)	
	36	Hexachlorocyclopentadiene	237	10.289	10.289	(1.000)	406735	15.0000	15.3(A)	
$	37	2,4-Dibromophenol	252	10.427	10.427	(1.000)	369878	15.0000	16.4(Q)	
	38	2,4,6-Trichlorophenol	196	10.447	10.447	(1.000)	450439	15.0000	16.4(A)	
	39	2,4,5-Trichlorophenol	196	10.496	10.496	(1.000)	476445	15.0000	15.2(A)	
	40	1,1'-Biphenyl	154	10.683	10.683	(1.000)	1874059	15.0000	14.9	
	41	2-Chloronaphthalene	164	10.693	10.693	(1.000)	482652	15.0000	15.5(A)	
	42	2-Nitroaniline	65	10.840	10.840	(1.000)	476527	15.0000	16.6(A)	
	43	Dimethyl Phthalate	163	11.117	11.117	(1.000)	1613979	15.0000	14.7	
	44	2,6-Dinitrotoluene	165	11.171	11.171	(1.000)	397309	15.0000	16.6(A)	
	45	Acenaphthylene	152	11.237	11.237	(1.000)	2244001	15.0000	15.5(A)	
	46	3-Nitroaniline	138	11.400	11.400	(1.000)	262767	15.0000	14.6	
*	47	Acenaphthene-D10	164	11.433	11.433	(1.000)	62104	0.80000	(aM)	M6
	48	Acenaphthene	153	11.476	11.476	(1.000)	1381129	15.0000	14.8	
	49	2,4-Dinitrophenol	184	11.542	11.542	(1.000)	168339	15.0000	14.9	
	50	4-Nitrophenol	109	11.661	11.661	(1.000)	169329	15.0000	14.8	
	51	2,4-Dinitrotoluene	165	11.716	11.716	(1.000)	484470	15.0000	14.9	
	52	Dibenzofuran	168	11.716	11.716	(1.000)	1926817	15.0000	15.0	
	53	2,3,4,6-Tetrachlorophenol	232	11.901	11.901	(1.000)	367777	15.0000	15.0	
	54	Diethylphthalate	149	12.065	12.065	(1.000)	1764647	15.0000	15.1(A)	
$	55	Fluorene-D10	174	12.130	12.130	(1.000)	1086764	15.0000	15.0(A)	
	56	Fluorene	166	12.174	12.174	(1.000)	1477412	15.0000	15.2(A)	
	57	4-Chlorophenyl-phenylether	204	12.195	12.195	(1.000)	799556	15.0000	15.6(A)	
	58	4-Nitroaniline	138	12.217	12.217	(1.000)	156912	15.0000	11.7	
	59	4,6-Dinitro-2-Methylphenol	198	12.261	12.261	(0.914)	233361	15.0000	15.0	
	60	N-Nitrosodiphenylamine	169	12.348	12.348	(0.920)	1209915	15.0000	14.8	
	61	4-Bromophenyl-phenylether	248	12.844	12.844	(0.957)	402456	15.0000	15.8(A)	
	62	Hexachlorobenzene	284	12.930	12.930	(0.963)	328142	15.0000	15.4(A)	
	63	Atrazine	200	13.101	13.101	(0.976)	297621	15.0000	17.4(A)	
	64	Pentachlorophenol	266	13.197	13.197	(0.983)	191566	15.0000	15.0	
*	65	Phenanthrene-D10	188	13.421	13.421	(1.000)	95899	0.80000	(a)	
	66	Phenanthrene	178	13.453	13.453	(1.002)	1922574	15.0000	15.4(A)	
	67	Anthracene	178	13.517	13.517	(1.007)	1846949	15.0000	14.6	
	68	Carbazole	167	13.752	13.752	(1.025)	1476709	15.0000	15.1(A)	
	69	Di-n-butylphthalate	149	14.264	14.264	(1.063)	2752183	15.0000	15.5(A)	
	70	Fluoranthene	202	15.050	15.050	(1.121)	1819403	15.0000	15.8(A)	
$	71	Pyrene-D10	212	15.323	15.323	(0.889)	1142489	15.0000	13.0(A)	
	72	Pyrene	202	15.351	15.351	(0.891)	1859693	15.0000	13.0	
	73	Butylbenzylphthalate	149	16.336	16.336	(0.948)	1154583	15.0000	14.4	
	74	3,3'-Dichlorobenzidine	252	17.208	17.208	(0.999)	241654	15.0000	15.1(A)	
	75	Benzo(a)anthracene	228	17.208	17.208	(0.999)	1145500	15.0000	16.7(A)	



8:28 am, May 24, 2018

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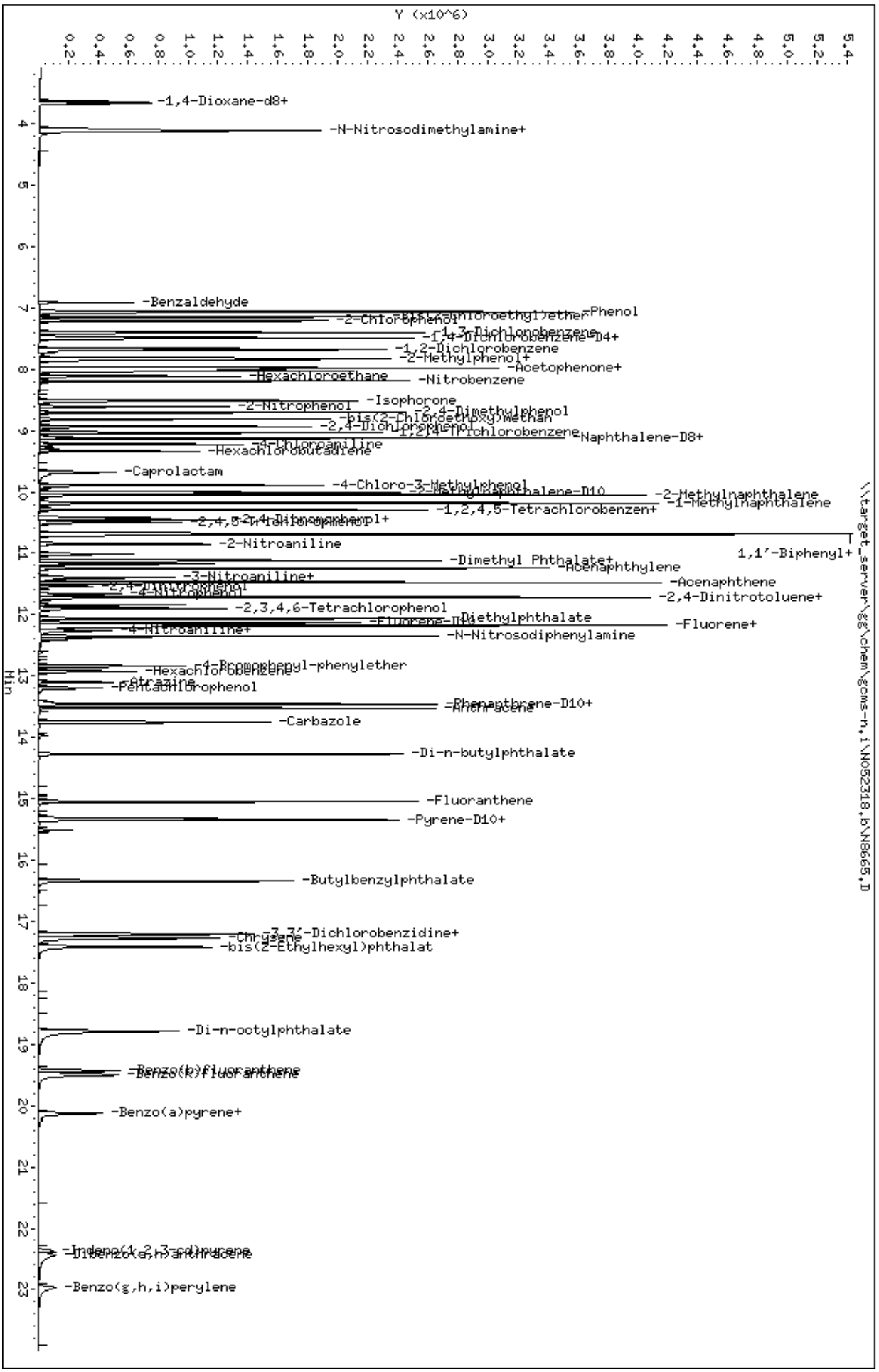
		QUANT SIG					AMOUNTS		
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76 Chrysene-D12	240	17.227	17.227	(1.000)	47518	0.80000	(a)	
	77 Chrysene	228	17.274	17.274	(1.003)	1186510	15.0000	14.9	
	78 bis(2-Ethylhexyl)phthalate	149	17.415	17.415	(1.011)	1601008	15.0000	15.4(A)	
	79 Di-n-octylphthalate	149	18.790	18.790	(1.091)	2307270	15.0000	17.6(A)	
	80 Benzo(b)fluoranthene	252	19.438	19.438	(0.961)	754824	15.0000	15.0(A)	
	81 Benzo(k)fluoranthene	252	19.495	19.495	(0.964)	910631	15.0000	12.7(H)	
	82 Benzo(a)pyrene	252	20.119	20.119	(0.994)	672027	15.0000	15.2(A)	
*	83 Perylene-D12	264	20.233	20.233	(1.000)	28234	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	22.356	22.356	(1.298)	506100	15.0000	14.9	
	85 Dibenzo(a,h)anthracene	278	22.436	22.436	(1.109)	338498	15.0000	15.0(A)	
	86 Benzo(g,h,i)perylene	276	22.958	22.958	(1.135)	515177	15.0000	16.8(A)	
M	87 Total PAHs	100				4197014	270.000	(a)	
M	88 Total Low PAHs	100				12912255	105.000	(a)	
M	89 Total High PAHs	100				7021631	90.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.


Data File: \\target_server\gg\chem\gcms-n,i\N052318,b\N8665,D
Date : 23-MAY-2018 12:01
Client ID:
Sample Info: WG228910-7
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N052318,b\N8665,D
Y (x10^6)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine+
-Benzaldehyde
-Phenol
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-Hexachloroethane
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4,6-Trichlorophenol+
-2-Nitroaniline
1,1'-Biphenyl+
-Dimethyl Phthalate+
-Acenaphthylene
-3-Nitroaniline+
-Acenaphthene
-2,4-Dinitrophenol
-2,4-Dinitrotoluene+
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-Fluorene+
-4-Nitroaniline+
-N-Nitrosodiphenylamine
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Chrysene
-3,3'-Dichlorobenzidine+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene+
-Indeno(1,2,3-cd)pyrene
-Dibenzo(a,h)anthracene
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8666.D
Report Date: 23-May-2018 14:35

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052318.b\N8666.D
Lab Smp Id: WG228910-8
Inj Date : 23-MAY-2018 12:32 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228910-8
Misc Info : WG228910,WG228910,WG228910-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N052318.b\NSPSIM96.m
Meth Date : 23-May-2018 12:42 gcms-n.i Quant Type: ISTD
Cal Date : 23-MAY-2018 12:01 Cal File: N8665.D
Als bottle: 8 QC Sample: INDCHECK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: KATHADIN-50E985

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
2	1,4-Dioxane	88	3.684	3.674	(0.493)	138828	4.83436	4.83	
3	N-Nitrosodimethylamine	74	4.104	4.094	(0.549)	201251	5.06494	5.06	
4	Pyridine	79	4.125	4.115	(0.552)	386599	5.41713	5.42	
5	Benzaldehyde	77	6.916	6.916	(0.926)	20803	1.08188	1.08(R)	
6	Phenol	94	7.067	7.067	(0.946)	417736	5.46440	5.46	
7	Bis(2-Chloroethyl)ether	93	7.147	7.147	(0.957)	327758	5.14578	5.14	
8	2-Chlorophenol	128	7.218	7.218	(0.966)	331011	5.09811	5.10	
9	1,3-Dichlorobenzene	146	7.399	7.399	(0.991)	364989	5.08135	5.08	
* 10	1,4-Dichlorobenzene-D4	152	7.469	7.469	(1.000)	44799	0.80000	(aQ)	
11	1,4-Dichlorobenzene	146	7.489	7.489	(1.003)	371846	5.13633	5.14	
12	1,2-Dichlorobenzene	146	7.680	7.681	(1.028)	345997	5.07011	5.07	
13	2-Methylphenol	108	7.821	7.822	(1.047)	279438	5.20809	5.21	
14	2,2'-Oxybis(1-chloropropane)	45	7.842	7.842	(1.050)	310300	3.65106	3.65(R)	
15	Acetophenone	105	7.982	7.983	(0.877)	433805	4.95334	4.95	
16	N-Nitroso-di-n-propylamine	70	8.003	8.003	(1.071)	217638	4.69808	4.70	
17	3&4-Methylphenol	108	8.023	8.023	(1.074)	290634	5.21150	5.21	
18	Hexachloroethane	117	8.113	8.113	(1.086)	140011	4.89829	4.90	
19	Nitrobenzene	77	8.194	8.194	(0.900)	334384	4.74225	4.74	
20	Isophorone	82	8.506	8.516	(0.935)	582588	4.95021	4.95	
21	2-Nitrophenol	139	8.617	8.617	(0.947)	155891	5.35570	5.36	

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	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.697	8.707	(0.956)	286532	4.91750	4.92	
	23 bis(2-Chloroethoxy)methane	93	8.808	8.808	(0.968)	371726	5.28876	5.29	
	24 2,4-Dichlorophenol	162	8.939	8.939	(0.982)	240080	5.09978	5.10	
	25 1,2,4-Trichlorobenzene	180	9.039	9.040	(0.993)	252489	5.27059	5.27	
*	26 Naphthalene-D8	136	9.100	9.100	(1.000)	147246	0.80000	(a)	
	27 Naphthalene	128	9.130	9.130	(1.003)	863712	5.32149	5.32	
	28 4-Chloroaniline	127	9.221	9.221	(1.013)	355269	5.82627	5.83	
	29 Hexachlorobutadiene	225	9.331	9.332	(1.025)	140115	5.58523	5.58	
	30 Caprolactam	113	9.659	9.679	(1.061)	82315	3.65781	3.66(R)	
	31 4-Chloro-3-Methylphenol	107	9.885	9.895	(1.086)	245370	4.93755	4.94	
	33 2-Methylnaphthalene	142	10.053	10.053	(1.105)	532564	5.07042	5.07	
	34 1-Methylnaphthalene	142	10.181	10.181	(1.119)	496717	5.16098	5.16	
	35 1,2,4,5-Tetrachlorobenzene	216	10.289	10.289	(0.900)	219733	5.15894	5.16	
	36 Hexachlorocyclopentadiene	237	10.289	10.289	(0.900)	86533	3.61725	3.62(R)	
	38 2,4,6-Trichlorophenol	196	10.446	10.447	(0.914)	143578	5.48728	5.49	
	39 2,4,5-Trichlorophenol	196	10.496	10.496	(0.918)	150920	5.02763	5.03	
	40 1,1'-Biphenyl	154	10.683	10.683	(0.934)	612158	5.09113	5.09	
	41 2-Chloronaphthalene	164	10.693	10.693	(0.935)	162663	5.46013	5.46	
	42 2-Nitroaniline	65	10.840	10.840	(0.948)	151966	5.53538	5.54	
	43 Dimethyl Phthalate	163	11.116	11.117	(0.972)	567695	5.42930	5.43	
	44 2,6-Dinitrotoluene	165	11.171	11.171	(0.977)	126807	5.55210	5.55	
	45 Acenaphthylene	152	11.236	11.237	(0.983)	700816	5.08195	5.08	
	46 3-Nitroaniline	138	11.400	11.400	(0.997)	96758	5.64034	5.64	
*	47 Acenaphthene-D10	164	11.432	11.433	(1.000)	59317	0.80000	(a)	
	48 Acenaphthene	153	11.476	11.476	(1.004)	505612	5.68335	5.68	
	49 2,4-Dinitrophenol	184	11.552	11.542	(1.010)	30186	4.16451	4.16	
	50 4-Nitrophenol	109	11.661	11.661	(1.020)	52223	4.94447	4.94(Q)	
	51 2,4-Dinitrotoluene	165	11.716	11.716	(1.025)	154089	5.00603	5.01	
	52 Dibenzofuran	168	11.716	11.716	(1.025)	666175	5.41828	5.42	
	53 2,3,4,6-Tetrachlorophenol	232	11.901	11.901	(1.041)	104725	4.60366	4.60	
	54 Diethylphthalate	149	12.064	12.065	(1.055)	613420	5.50066	5.50	
	56 Fluorene	166	12.173	12.174	(1.065)	505880	5.45089	5.45	
	57 4-Chlorophenyl-phenylether	204	12.195	12.195	(1.067)	268416	5.49619	5.50	
	58 4-Nitroaniline	138	12.217	12.217	(1.069)	69245	5.39223	5.39(Q)	
	59 4,6-Dinitro-2-Methylphenol	198	12.261	12.261	(0.914)	60041	5.04593	5.04	
	60 N-Nitrosodiphenylamine	169	12.348	12.348	(0.920)	335833	4.51612	4.52	
	61 4-Bromophenyl-phenylether	248	12.844	12.844	(0.957)	132893	5.72690	5.73	
	62 Hexachlorobenzene	284	12.919	12.930	(0.963)	101657	5.21583	5.22	
	63 Atrazine	200	13.090	13.101	(0.975)	79542	5.08404	5.08	
	64 Pentachlorophenol	266	13.196	13.197	(0.983)	45606	4.76655	4.77	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	87490	0.80000	(a)	
	66 Phenanthrene	178	13.453	13.453	(1.002)	623030	5.46161	5.46	
	67 Anthracene	178	13.517	13.517	(1.007)	582361	5.06606	5.07	
	68 Carbazole	167	13.752	13.752	(1.025)	474728	5.32290	5.32	
	69 Di-n-butylphthalate	149	14.275	14.264	(1.064)	886857	5.49006	5.49	
	70 Fluoranthene	202	15.050	15.050	(1.121)	553165	5.25860	5.26	
	72 Pyrene	202	15.350	15.351	(0.891)	566026	5.30584	5.30	
	73 Butylbenzylphthalate	149	16.336	16.336	(0.948)	303786	5.08619	5.09	
	74 3,3'-Dichlorobenzidine	252	17.217	17.208	(0.999)	37920	3.32172	3.32(R)	
	75 Benzo(a)anthracene	228	17.208	17.208	(0.999)	271642	5.32991	5.33	
*	76 Chrysene-D12	240	17.227	17.227	(1.000)	35376	0.80000	(a)	
	77 Chrysene	228	17.274	17.274	(1.003)	312117	5.19841	5.20	
	78 bis(2-Ethylhexyl)phthalate	149	17.415	17.415	(1.011)	402613	5.19683	5.20	
	79 Di-n-octylphthalate	149	18.790	18.790	(1.091)	501128	5.12043	5.12	

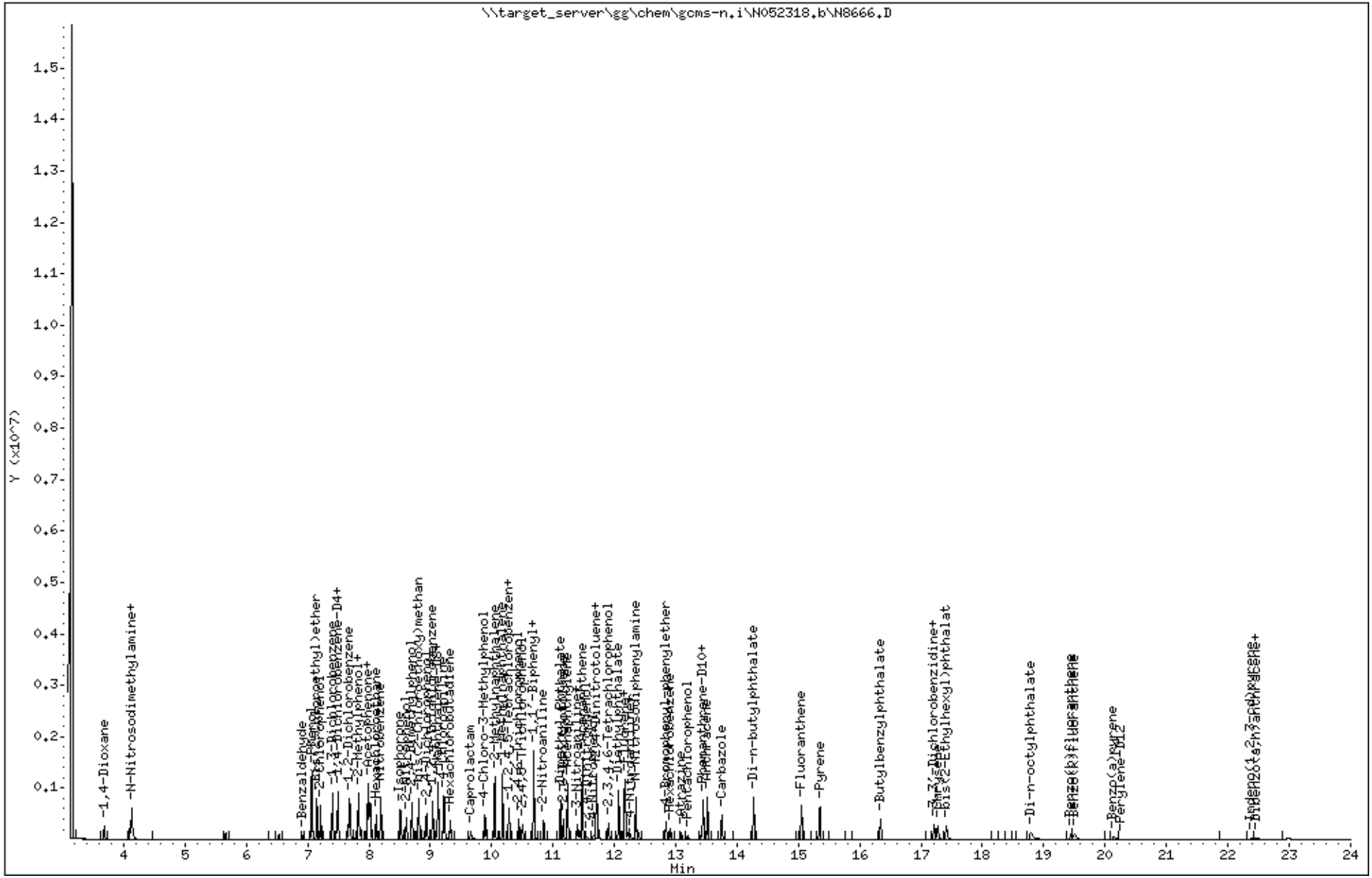
Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8666.D
Report Date: 23-May-2018 14:35

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
	80 Benzo(b)fluoranthene	252	19.438	19.438	(0.960)	157193	4.98487	4.98	
	81 Benzo(k)fluoranthene	252	19.506	19.495	(0.963)	254176	4.99512	5.00(H)	
	82 Benzo(a)pyrene	252	20.142	20.119	(0.994)	155168	4.96006	4.96	
*	83 Perylene-D12	264	20.255	20.233	(1.000)	20055	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	22.379	22.356	(1.299)	115564	5.85269	5.85	
	85 Dibenzo(a,h)anthracene	278	22.470	22.436	(1.109)	71945	5.49665	5.50	
	86 Benzo(g,h,i)perylene	276	22.981	22.958	(1.135)	124143	5.71780	5.72	
M	87 Total PAHs	100				1147793	26.7115	26.7	
M	88 Total Low PAHs	100				4313975	37.1358	37.1	
M	89 Total High PAHs	100				1930063	31.5495	31.5	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
H - Operator selected an alternate compound hit.

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8666.D
Date : 23-MAY-2018 12:32
Client ID:
Instrument: gcms-n.i
Sample Info: WG228910-8
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25

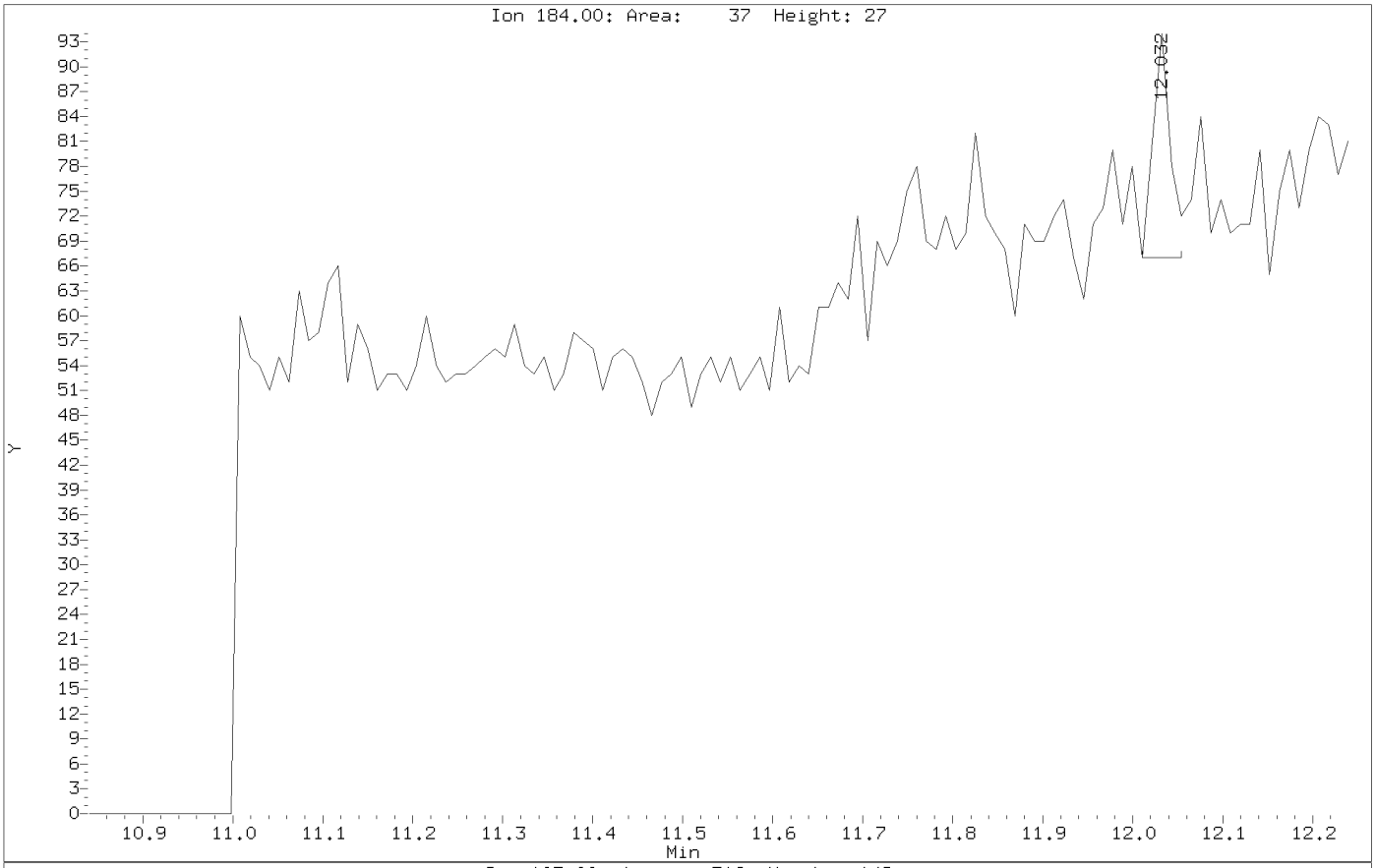


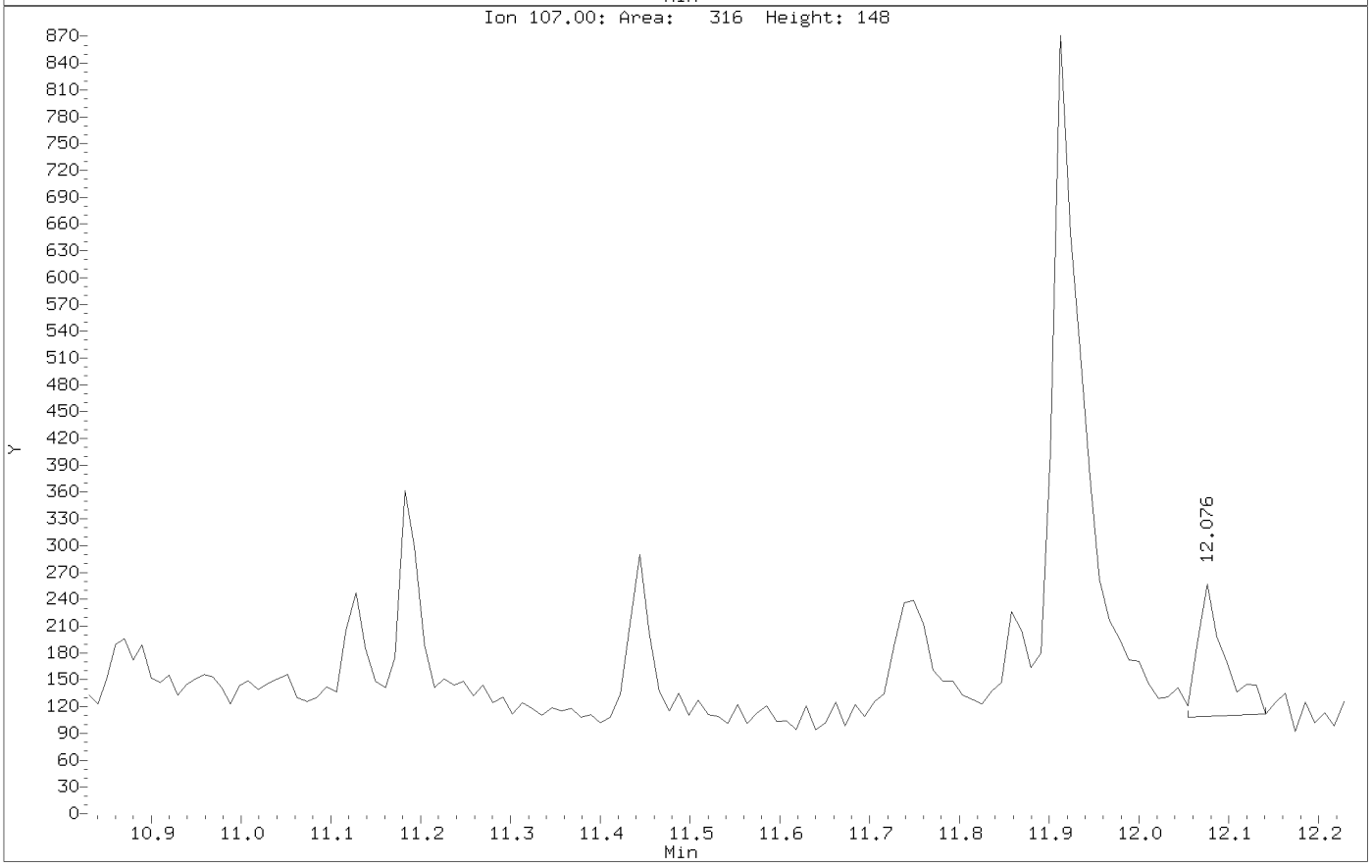
Katahdin Analytical Services 2000113

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8661.D
Injection Date: 23-MAY-2018 09:55
Instrument: gcms-n.i
Client Sample ID:

Compound: 2,4-Dinitrophenol
CAS Number: 51-28-5

BEFORE MANUAL INTEGRATION





AFTER MANUAL INTEGRATION

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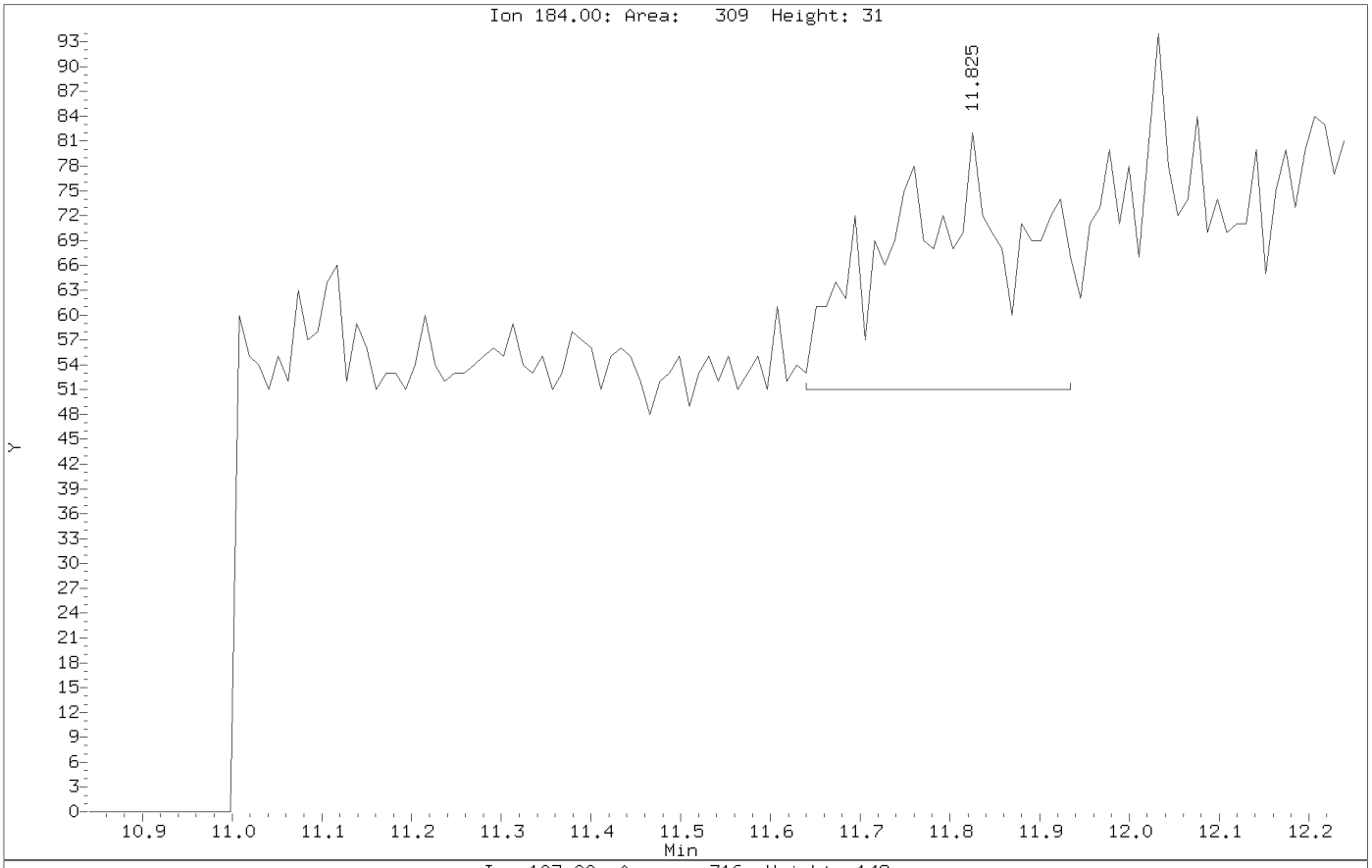
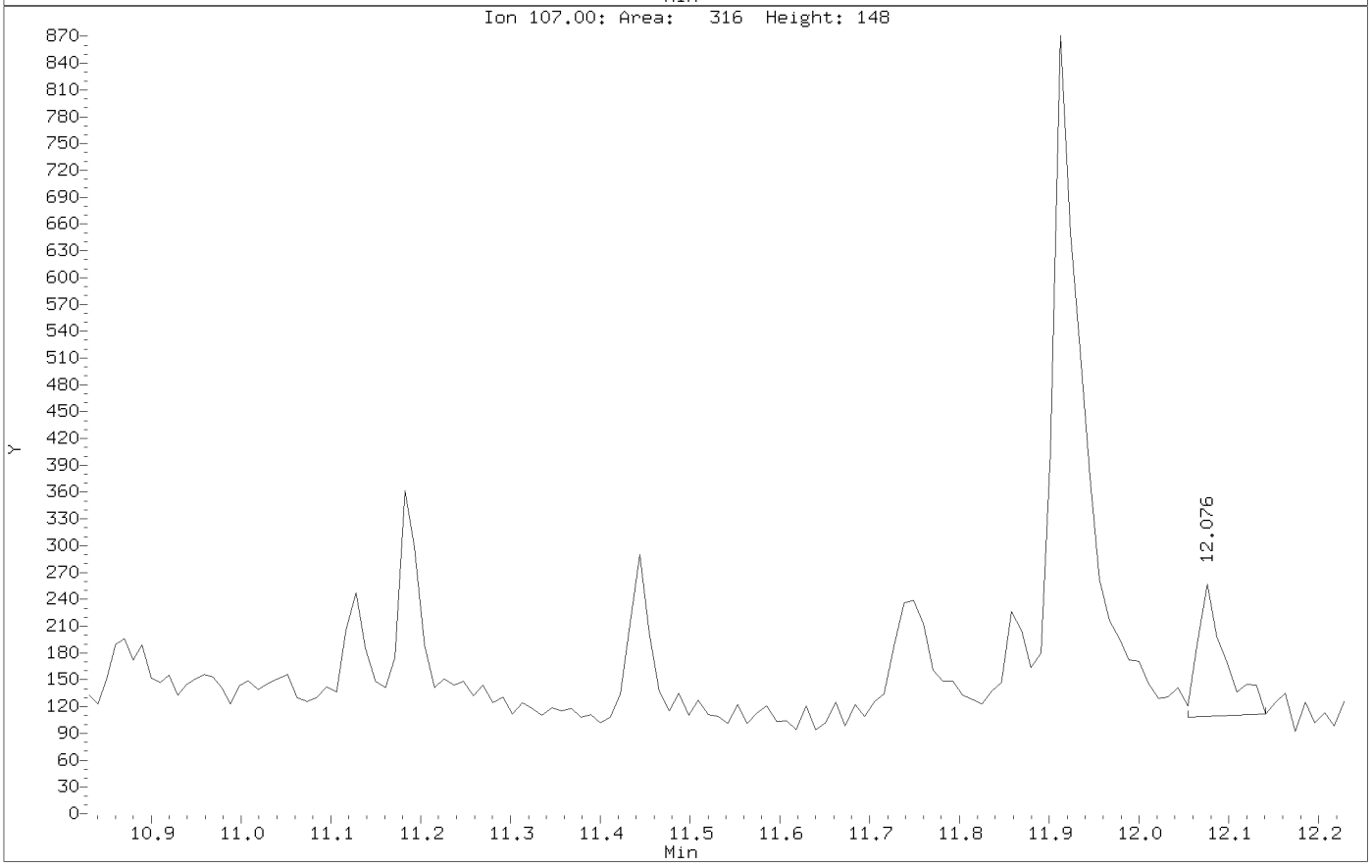
Injection Date: 23-MAY-2018 09:55
Instrument: gcms-n.i
Client Sample ID:

Compound: 2,4-Dinitrophenol
CAS Number: 51-28-5

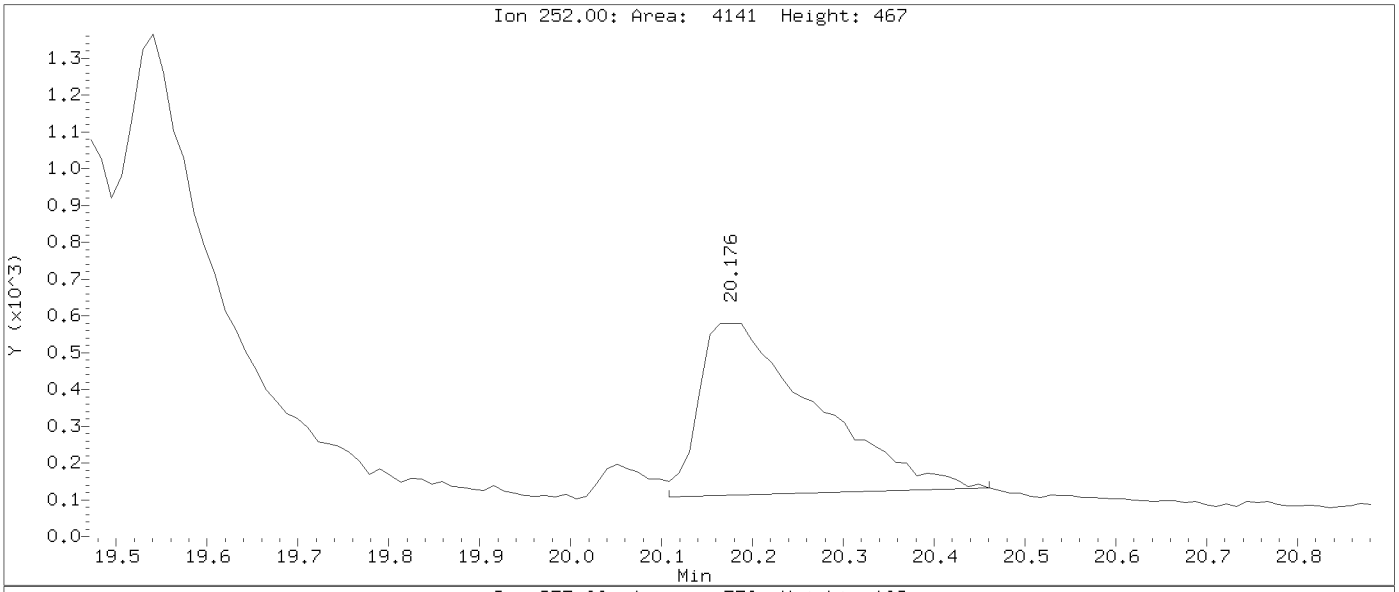


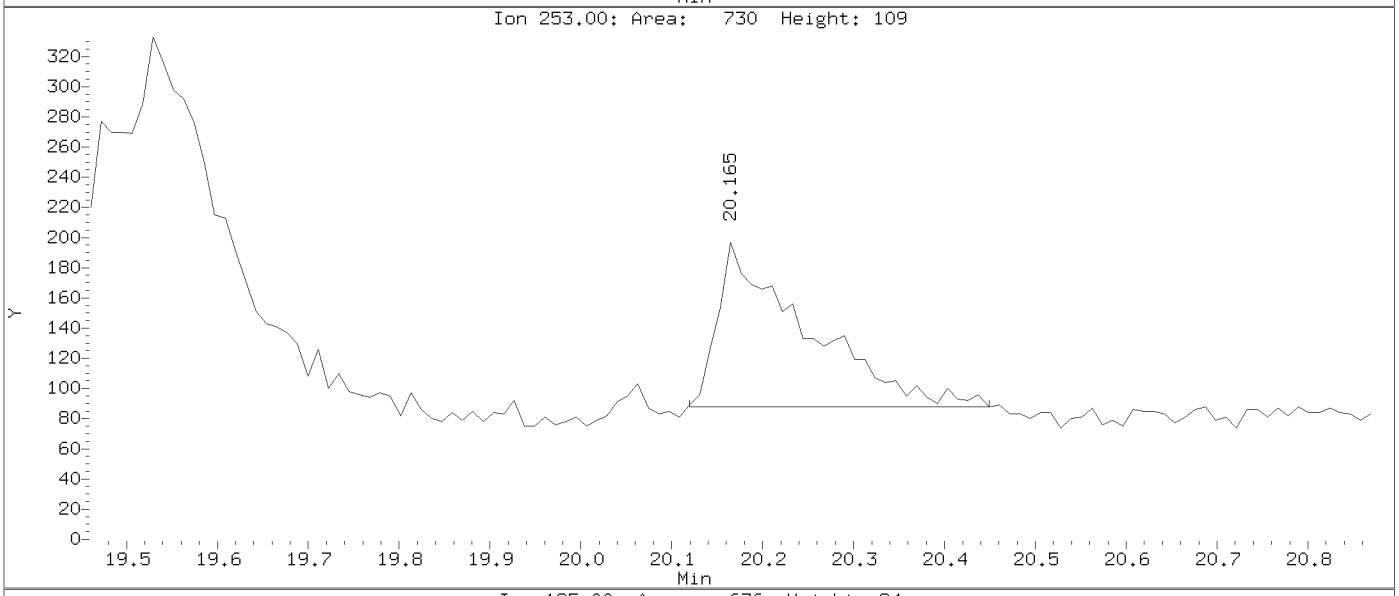


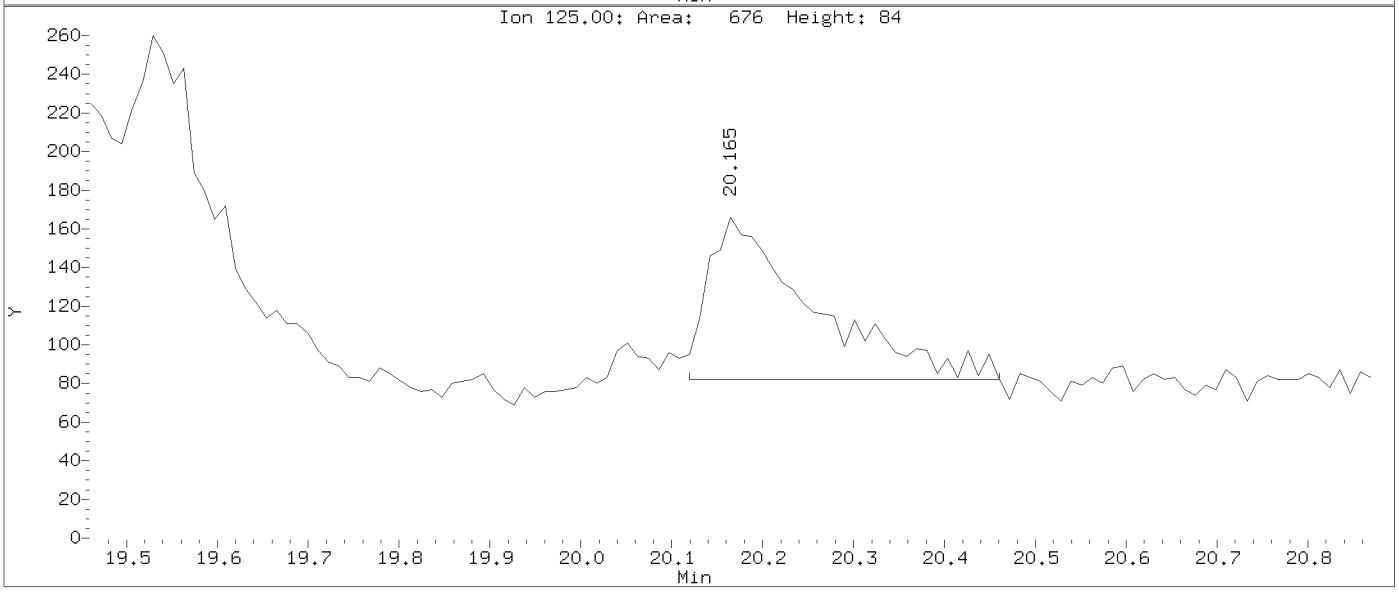
BEFORE MANUAL INTEGRATION

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8661.D
Injection Date: 23-MAY-2018 09:55
Instrument: gcms-n.i
Client Sample ID:

Compound: Benzo(k)fluoranthene
CAS Number: 207-08-9



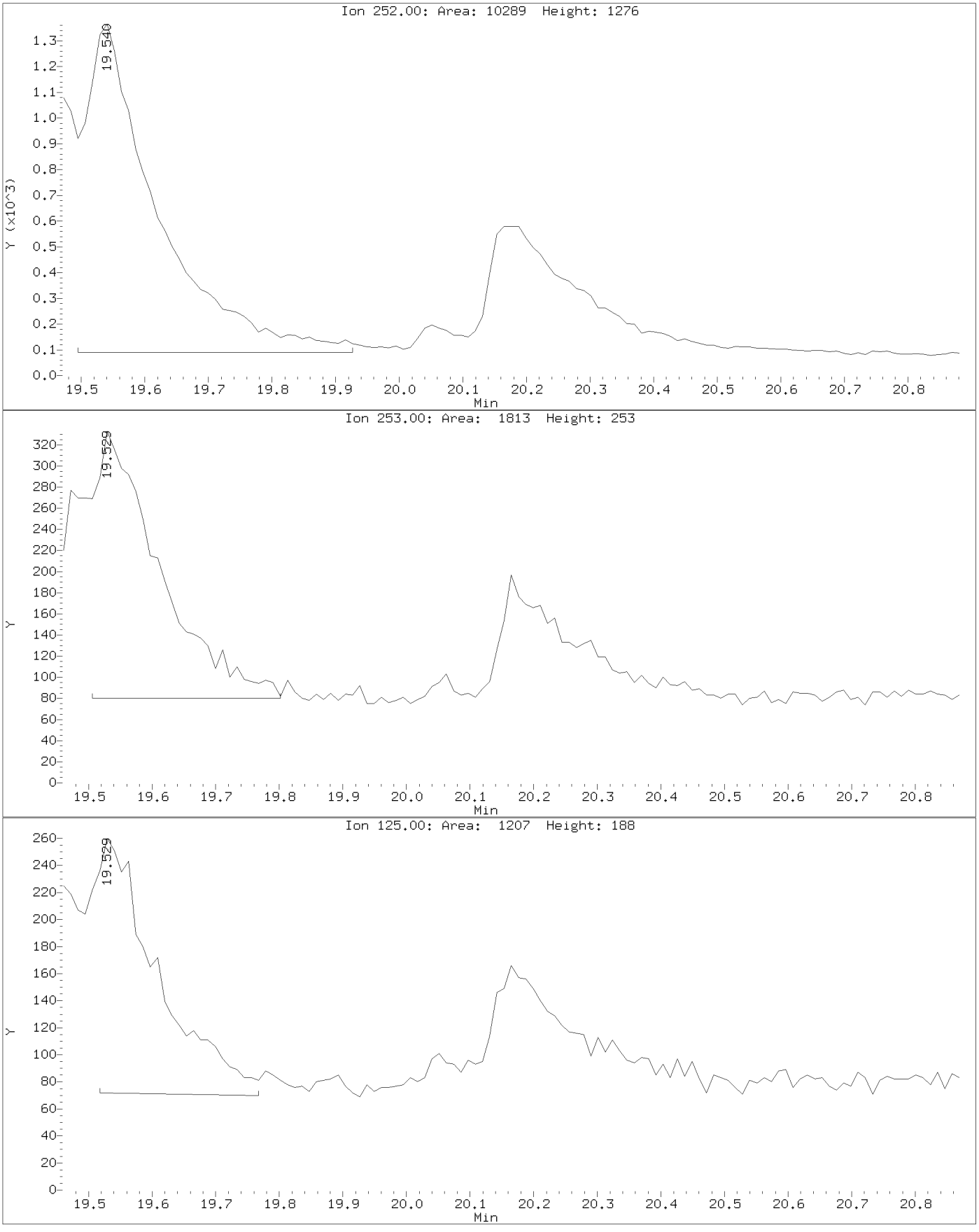




Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8661.D
Injection Date: 23-MAY-2018 09:55
Instrument: gcms-n.i
Client Sample ID:

Compound: Benzo(k)fluoranthene
CAS Number: 207-08-9

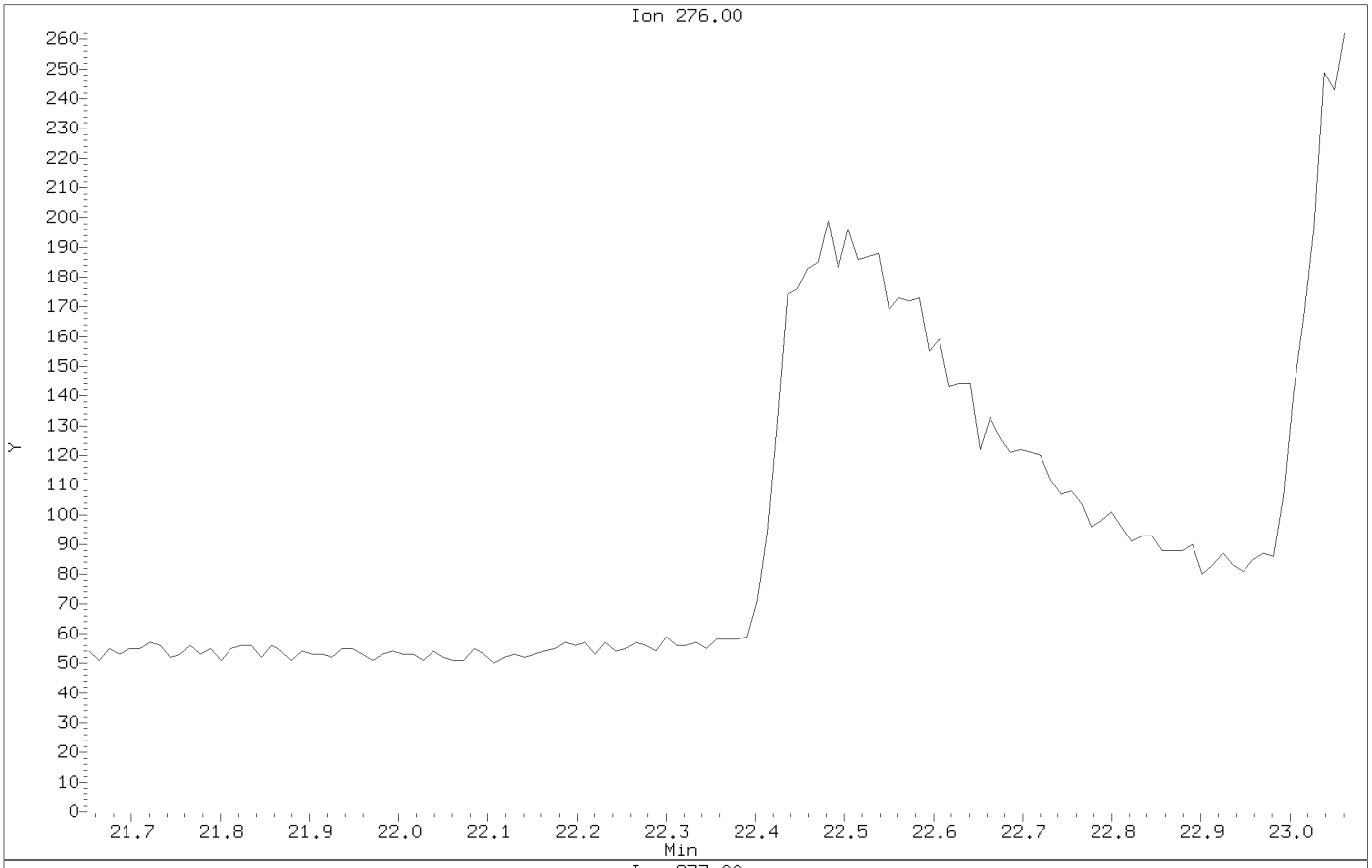
AFTER MANUAL INTEGRATION

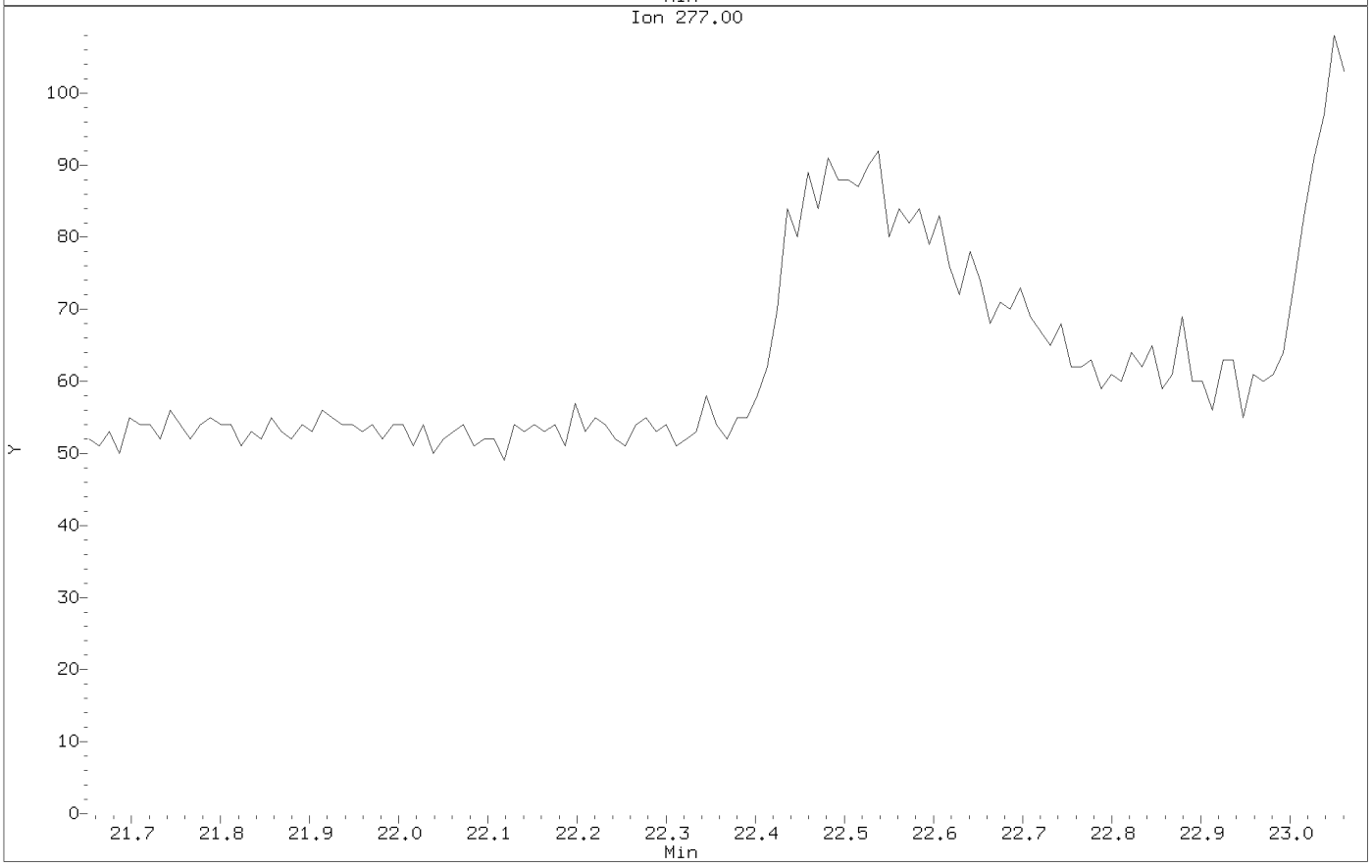


Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8661.D
Injection Date: 23-MAY-2018 09:55
Instrument: gcms-n.i
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

BEFORE MANUAL INTEGRATION





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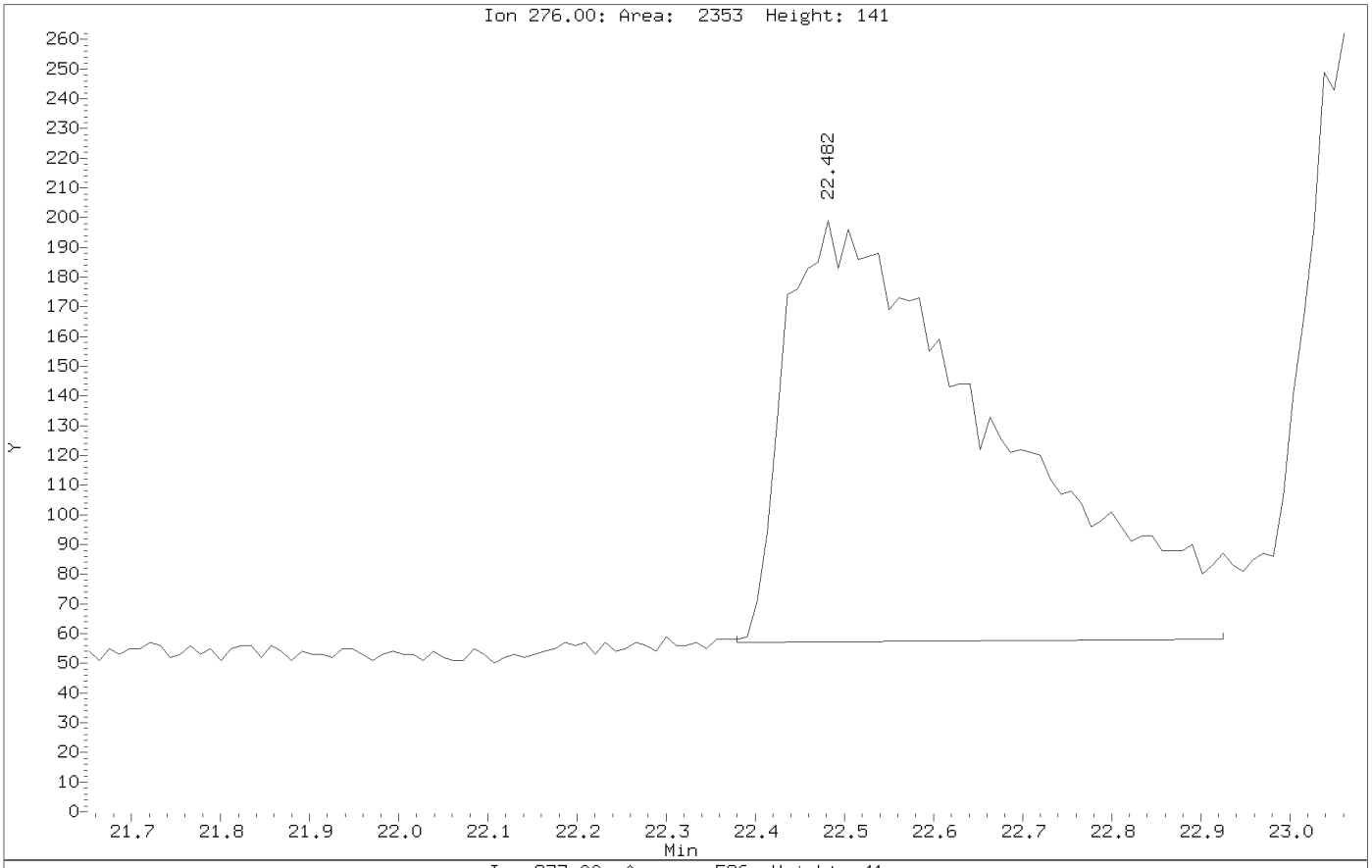
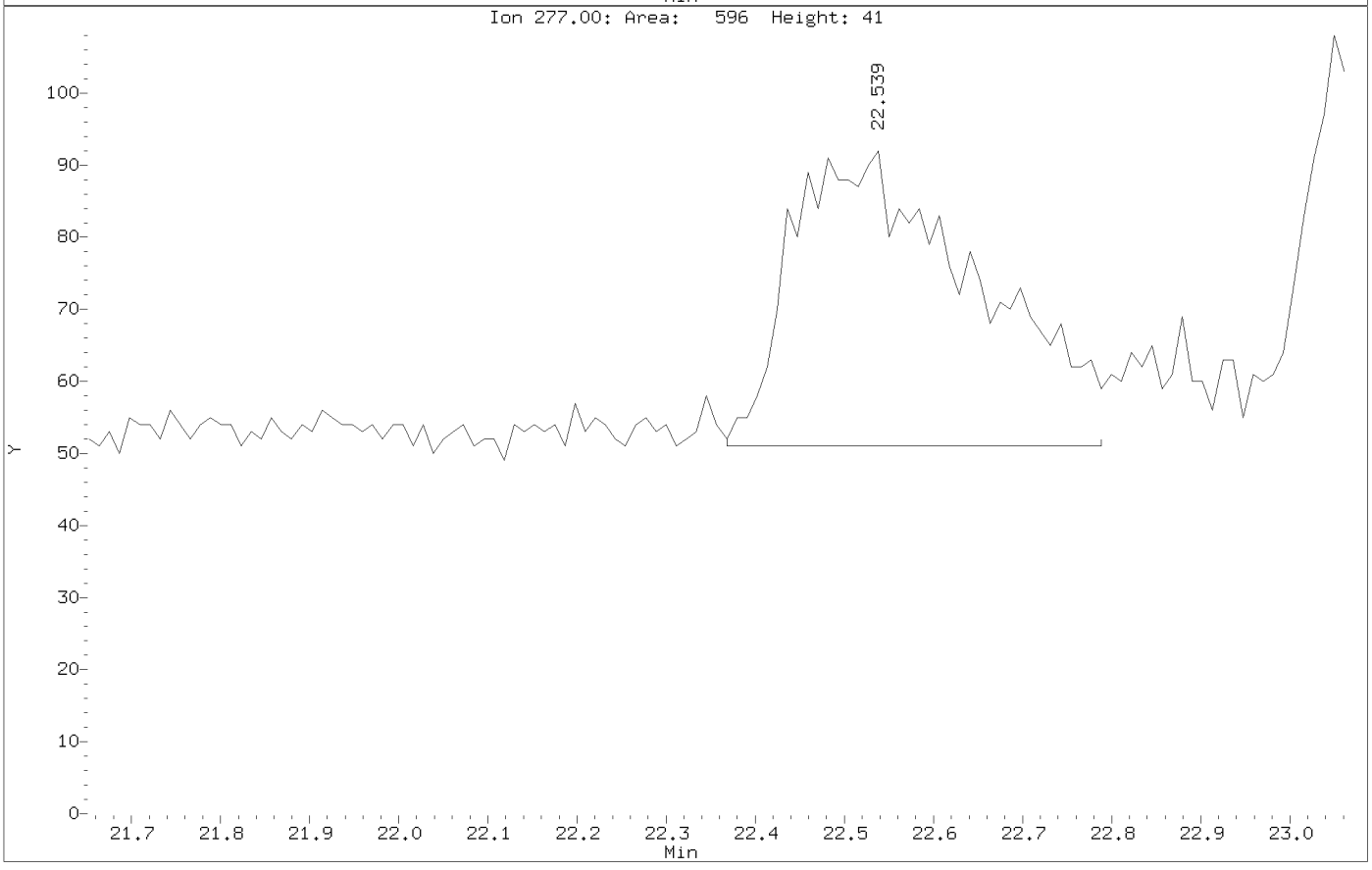
Injection Date: 23-MAY-2018 09:55
Instrument: gcms-n.i
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

AFTER MANUAL INTEGRATION

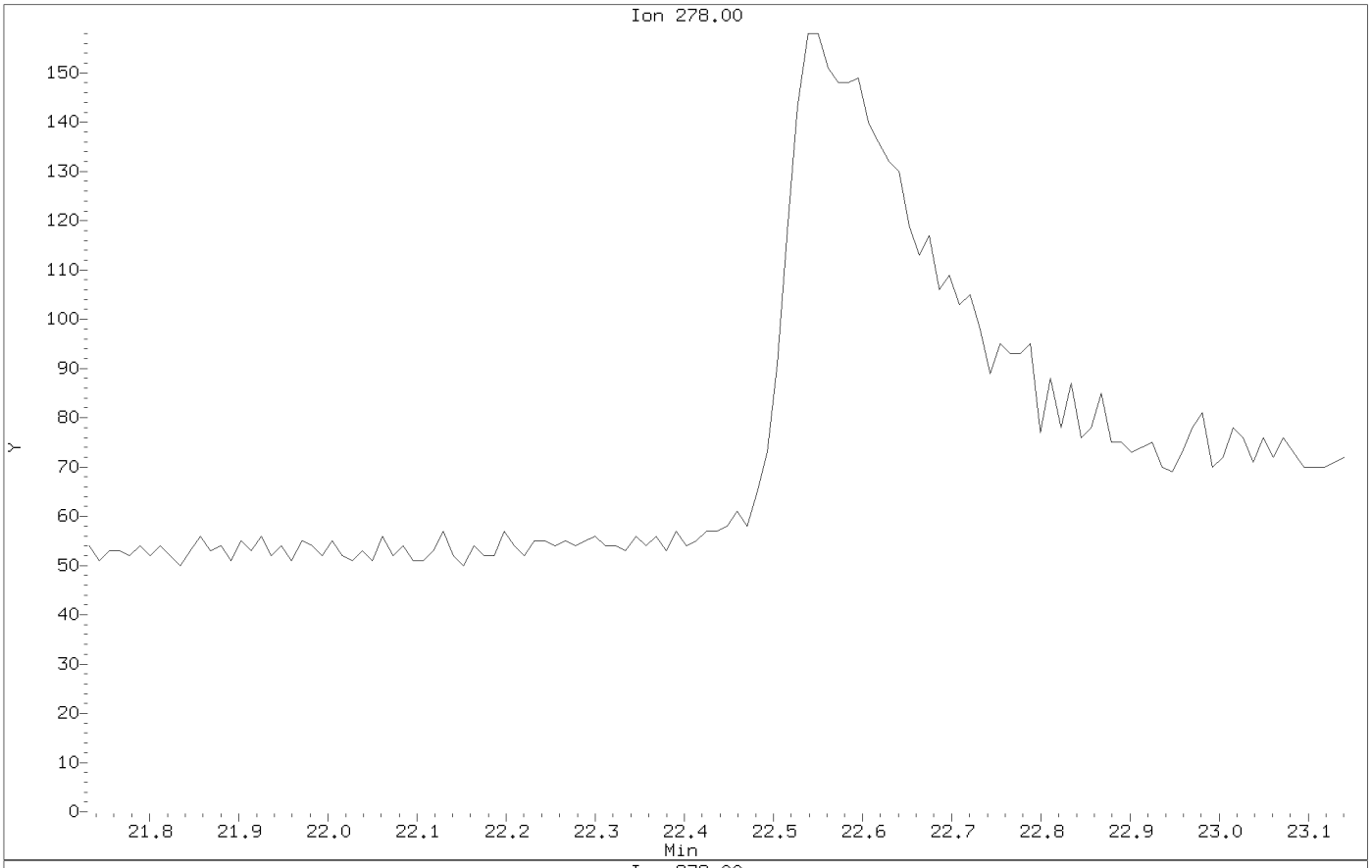


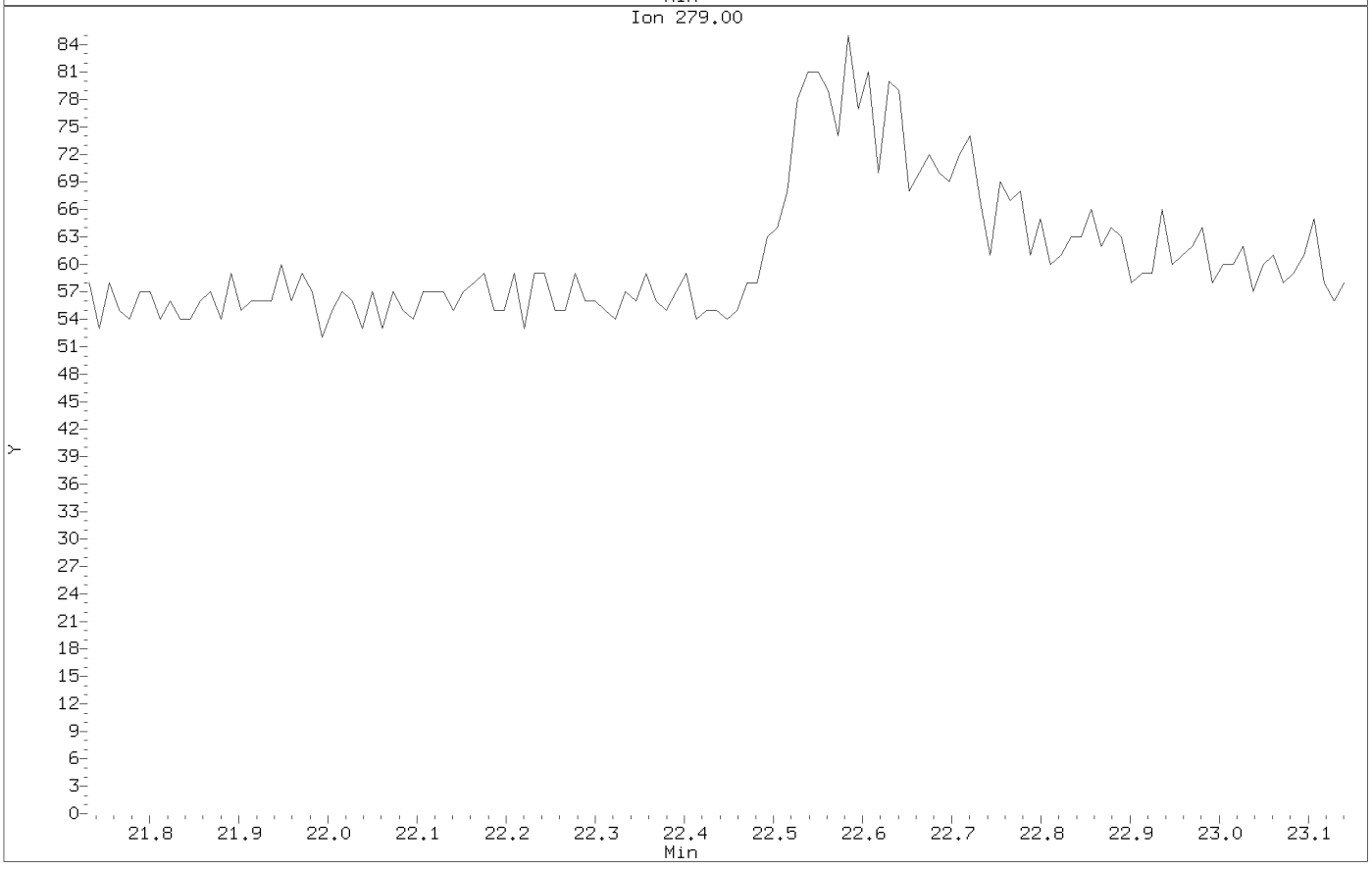


Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8661.D
Injection Date: 23-MAY-2018 09:55
Instrument: gcms-n.i
Client Sample ID:

Compound: Dibenzo(a,h)anthracene
CAS Number: 53-70-3

BEFORE MANUAL INTEGRATION





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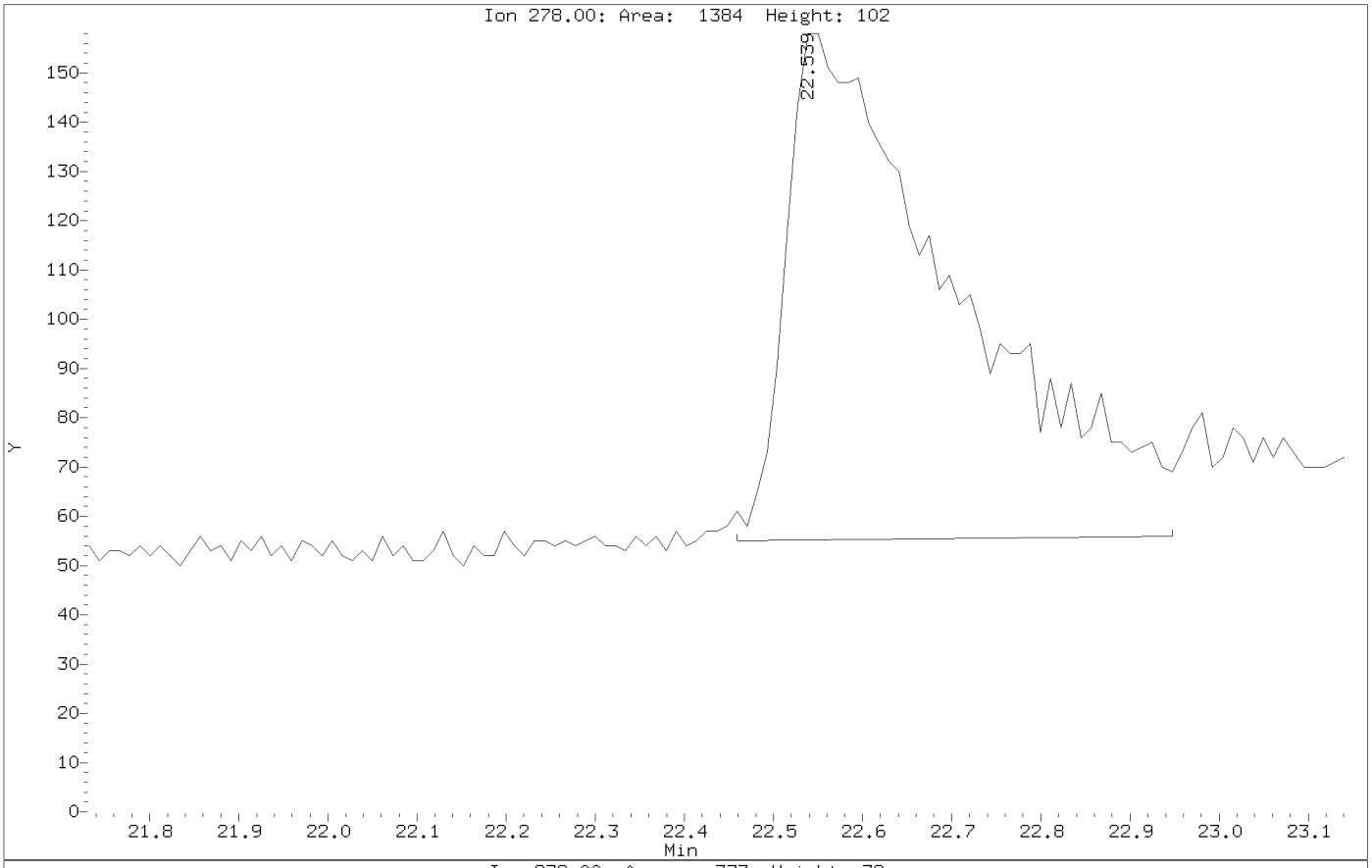
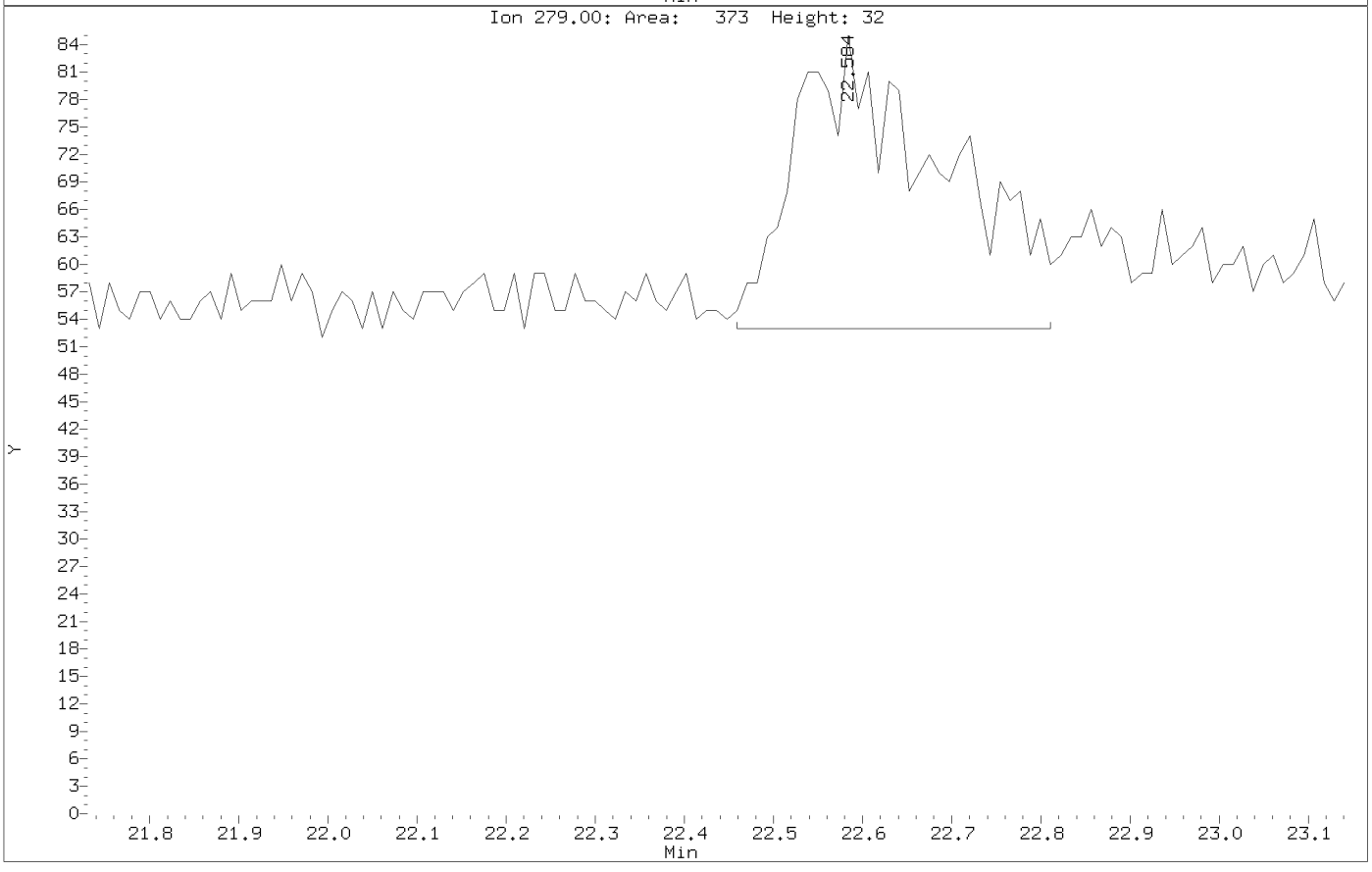
Injection Date: 23-MAY-2018 09:55
Instrument: gcms-n.i
Client Sample ID:

Compound: Dibenzo(a,h)anthracene
CAS Number: 53-70-3

AFTER MANUAL INTEGRATION

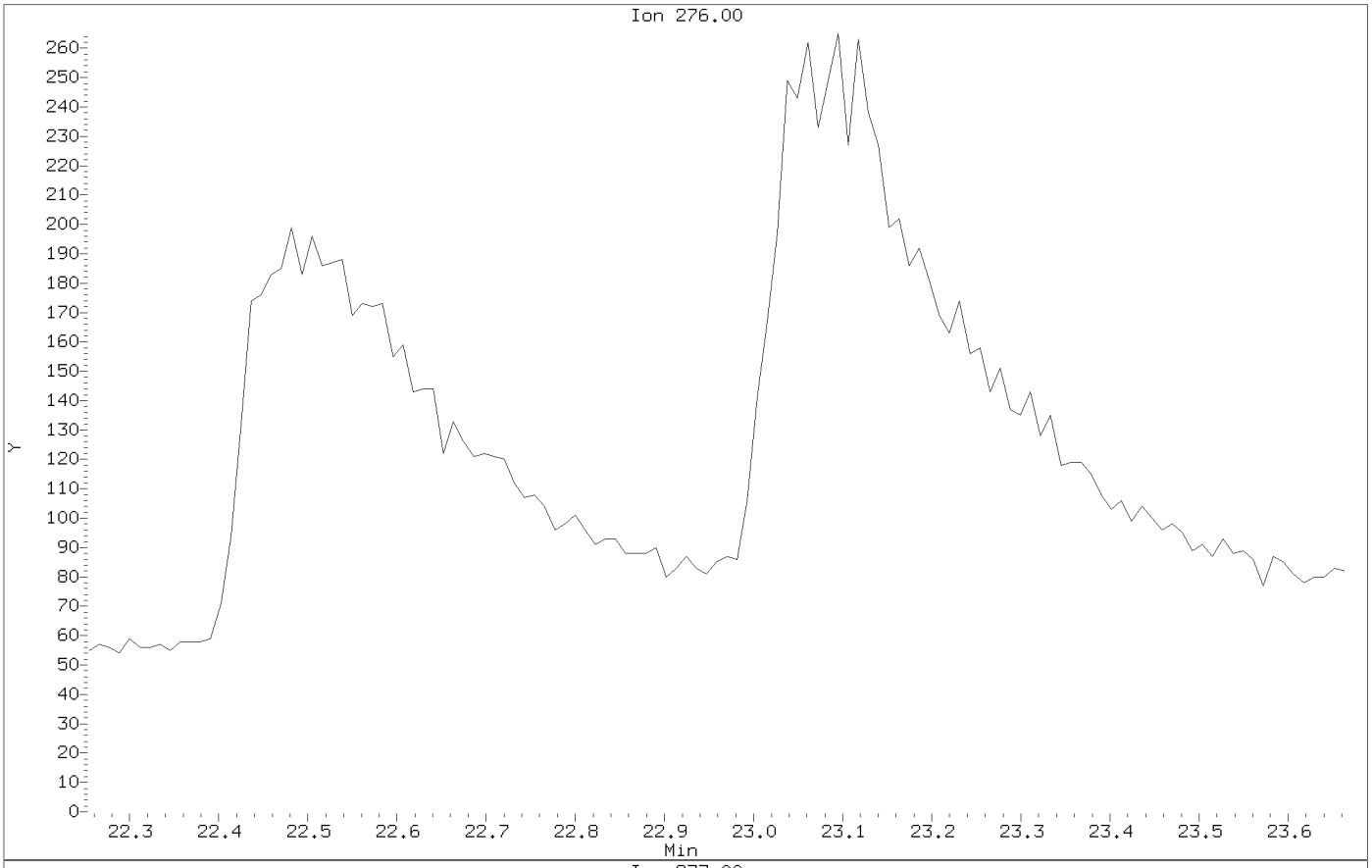


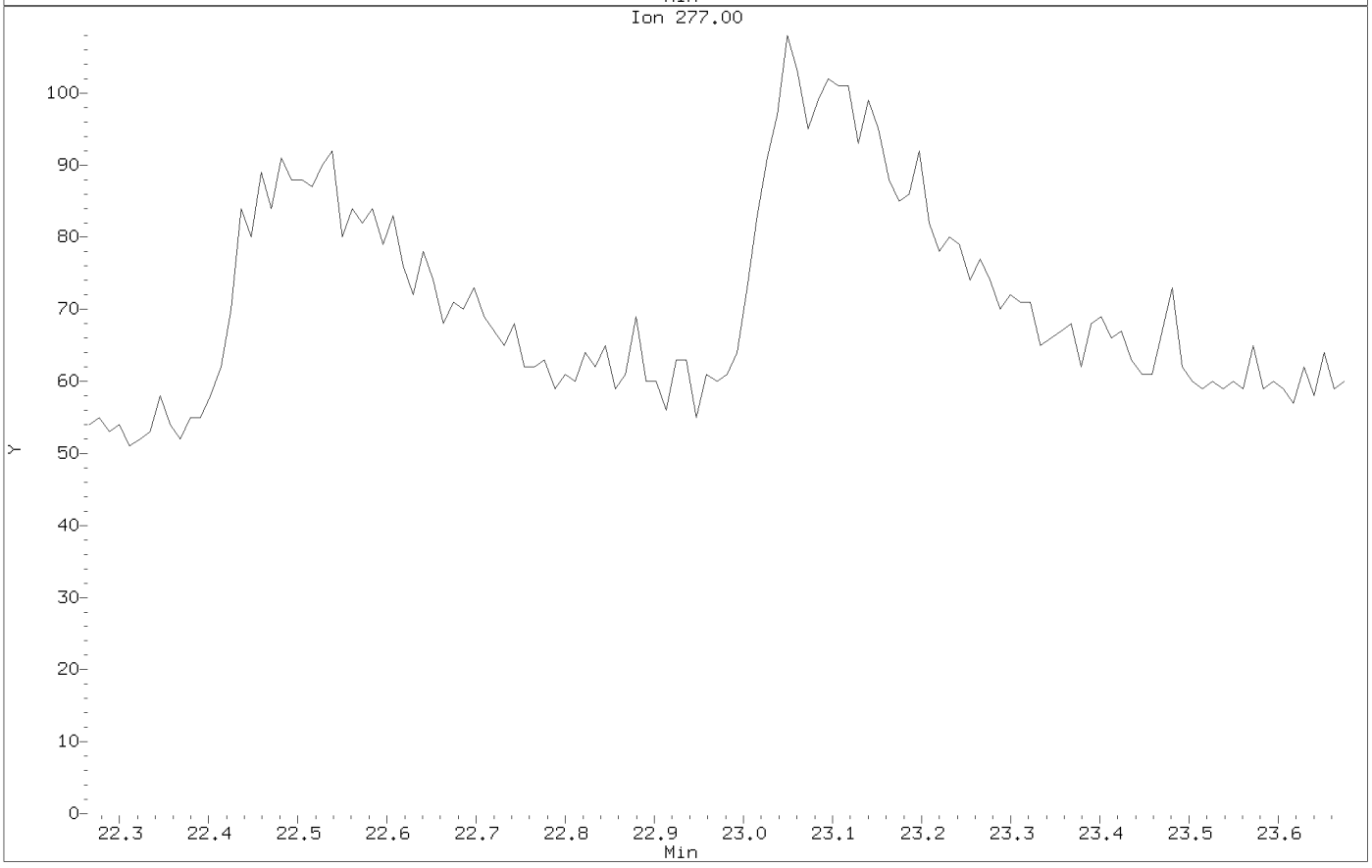


Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8661.D
Injection Date: 23-MAY-2018 09:55
Instrument: gcms-n.i
Client Sample ID:

Compound: Benzo(g,h,i)perylene
CAS Number: 191-24-2

BEFORE MANUAL INTEGRATION

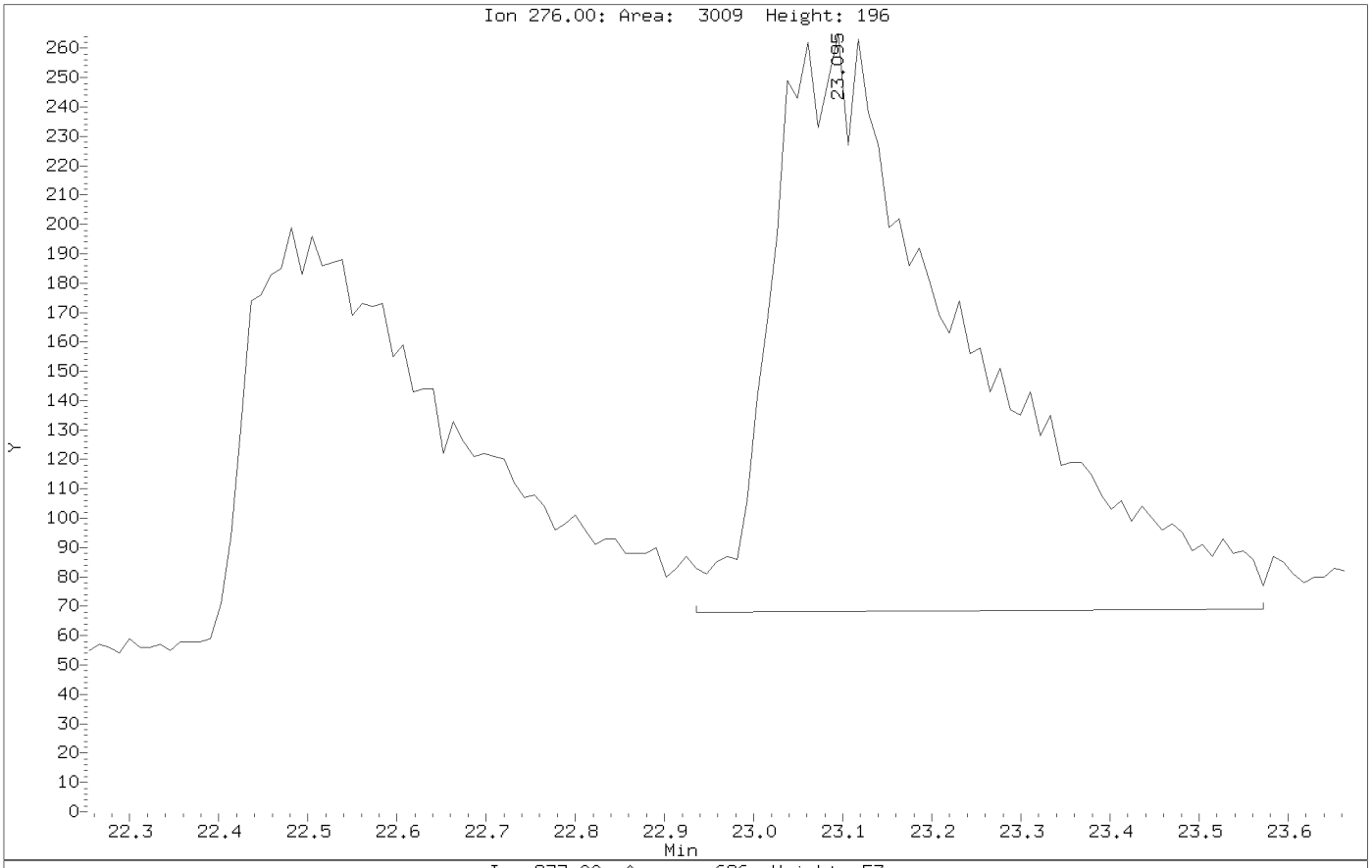


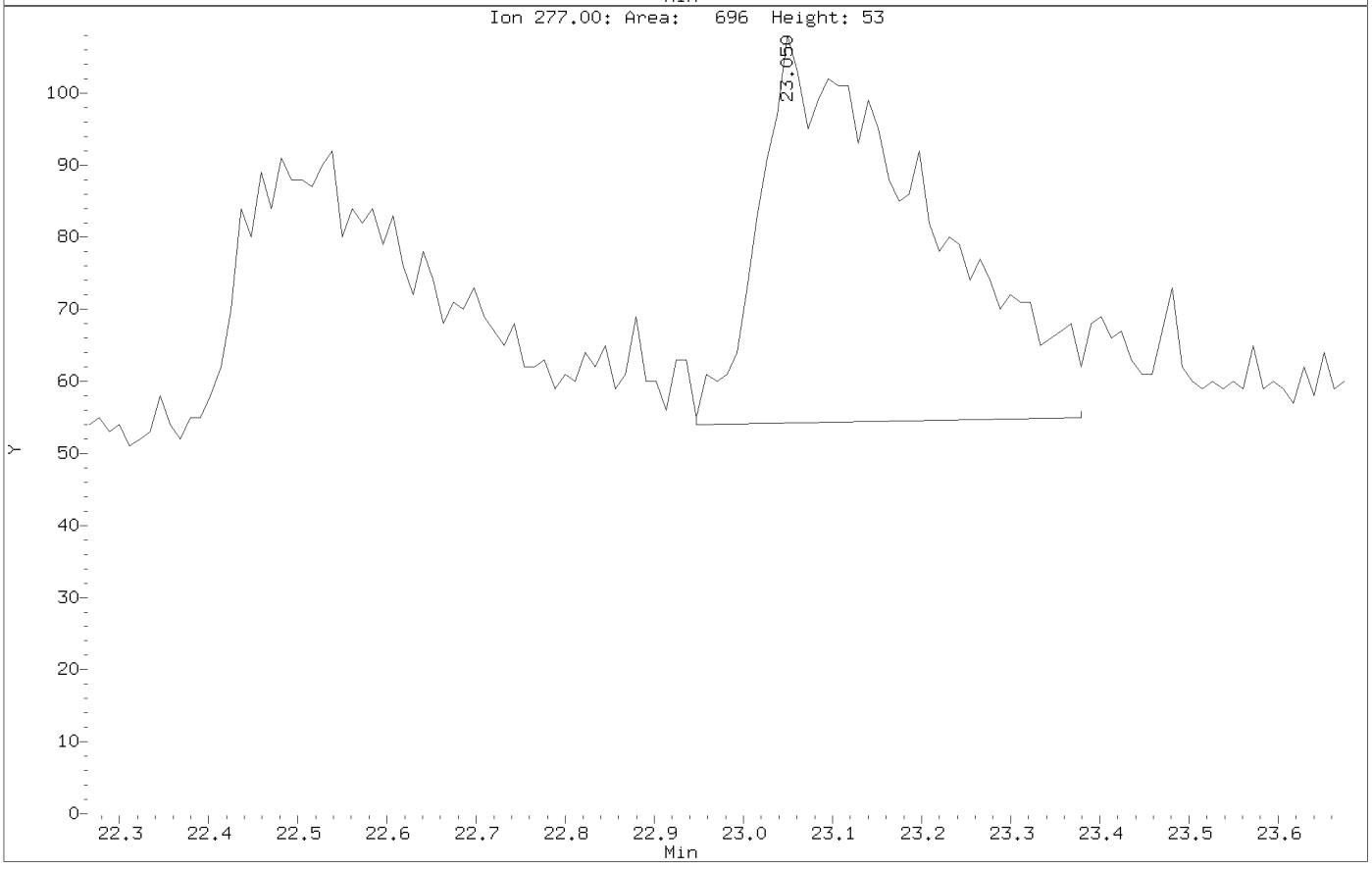


Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\N8661.D
Injection Date: 23-MAY-2018 09:55
Instrument: gcms-n.i
Client Sample ID:

Compound: Benzo(g,h,i)perylene
CAS Number: 191-24-2

AFTER MANUAL INTEGRATION





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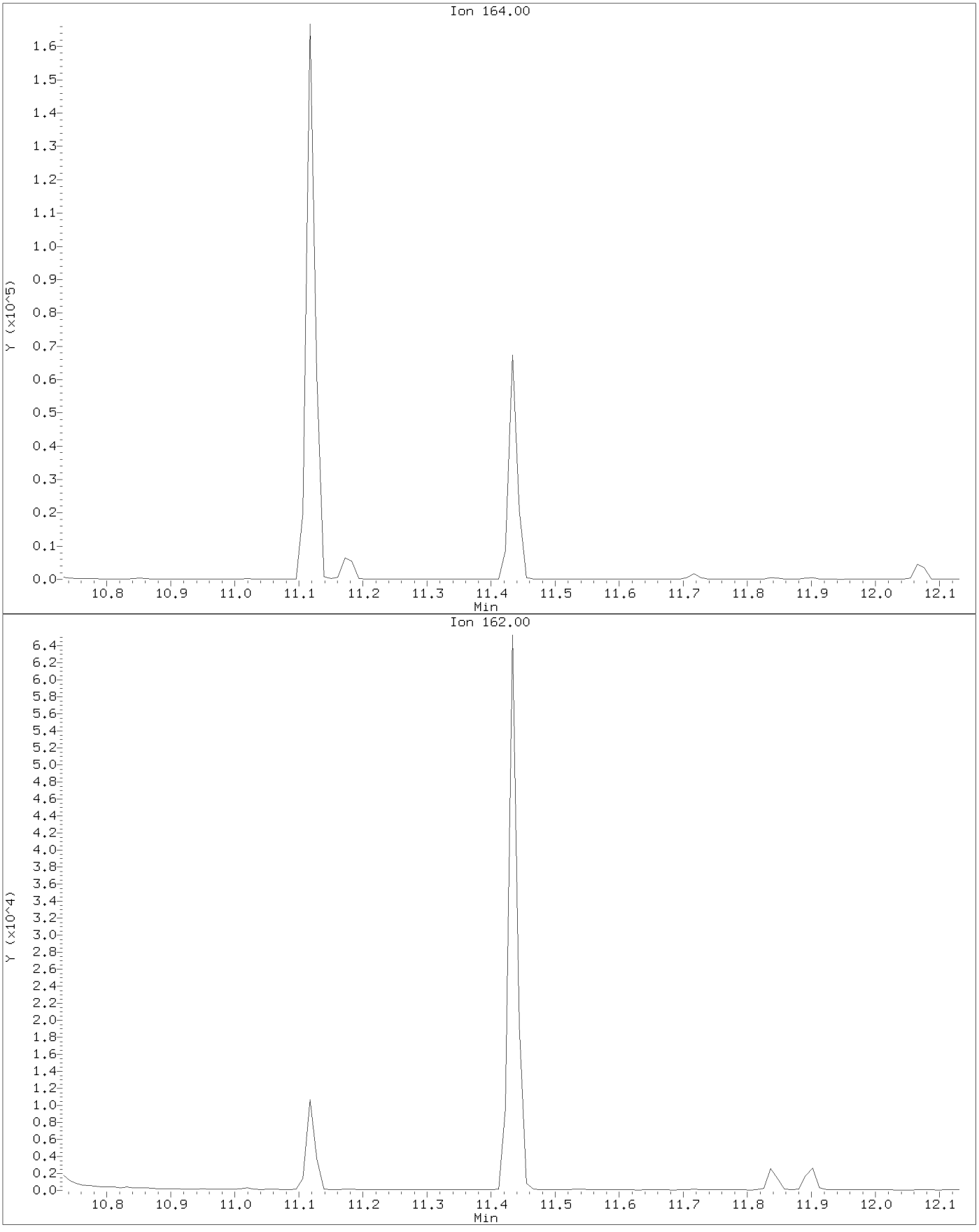
Injection Date: 23-MAY-2018 12:01
Instrument: gcms-n.i
Client Sample ID:

Compound: Acenaphthene-D10
CAS Number: 15067-26-2

BEFORE MANUAL INTEGRATION



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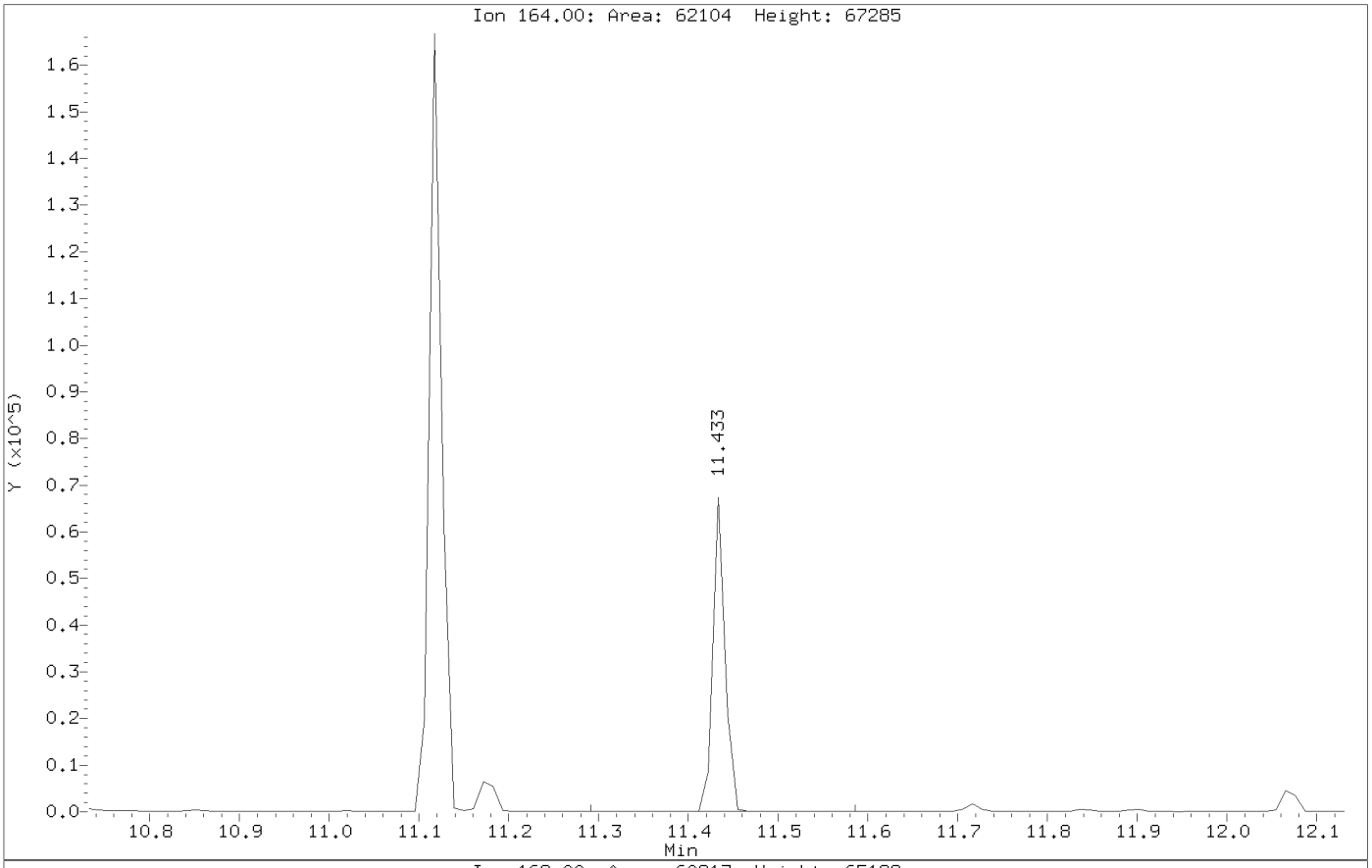
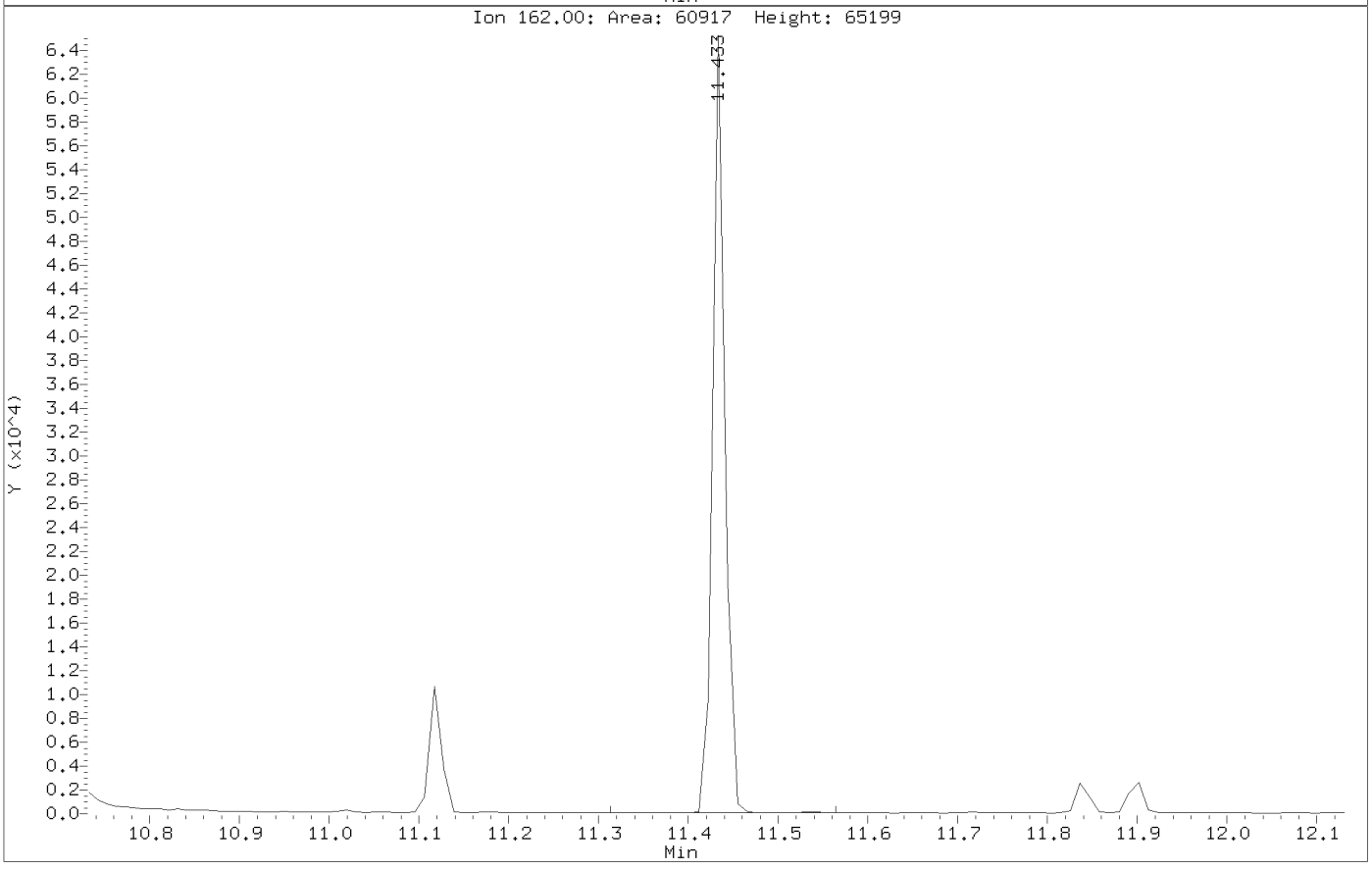
Injection Date: 23-MAY-2018 12:01
Instrument: gcms-n.i
Client Sample ID:

Compound: Acenaphthene-D10
CAS Number: 15067-26-2

AFTER MANUAL INTEGRATION





Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228848-9
Analytical Date: 05/23/18 01:24
Lab File ID : N8657.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 05/22/18 14:18 05/22/18 16:54
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
27 Naphthalene	0.89472	0.93935	0.93935	0.010	4.98831	20.00000	Averaged
33 2-Methylnaphthalene	0.58049	0.58803	0.58803	0.010	1.29960	20.00000	Averaged
45 Acenaphthylene	1.90223	1.98900	1.98900	0.010	4.56144	20.00000	Averaged
48 Acenaphthene	1.22800	1.28579	1.28579	0.010	4.70618	20.01000	Averaged
56 Fluorene	1.28044	1.29522	1.29522	0.010	1.15430	20.00000	Averaged
66 Phenanthrene	1.04777	1.09766	1.09766	0.010	4.76156	20.00000	Averaged
67 Anthracene	1.07113	1.06681	1.06681	0.010	-0.40310	20.00000	Averaged
70 Fluoranthene	0.97512	0.96035	0.96035	0.010	-1.51441	20.01000	Averaged
72 Pyrene	2.55639	2.73580	2.73580	0.010	7.01815	20.00000	Averaged
75 Benzo(a)anthracene	1.23231	1.23852	1.23852	0.010	0.50412	20.00000	Averaged
77 Chrysene	1.45469	1.40852	1.40852	0.010	-3.17415	20.00000	Averaged
80 Benzo(b)fluoranthene	1.24869	1.13611	1.13611	0.010	-9.01608	20.00000	Averaged
81 Benzo(k)fluoranthene	1.98537	2.00000	2.00000	0.010	0.73702	20.00000	Averaged
82 Benzo(a)pyrene	1.20690	1.15312	1.15312	0.010	-4.45614	20.01000	Averaged
84 Indeno(1,2,3-cd)pyrene	2.00000	1.86029	0.46711	0.010	-6.98545	20.00000	Linear
85 Dibenzo(a,h)anthracene	2.00000	1.86548	0.55823	0.010	-6.72618	20.00000	Linear
86 Benzo(g,h,i)perylene	0.87962	0.97509	0.97509	0.010	10.85406	20.00000	Averaged
32 2-Methylnaphthalene-D10	0.45177	0.47565	0.47565	0.010	5.28649	20.00000	Averaged
55 Fluorene-D10	0.95801	0.96935	0.96935	0.010	1.18351	20.00000	Averaged
71 Pyrene-D10	1.56528	1.69826	1.69826	0.010	8.49571	20.00000	Averaged

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8657.D
Report Date: 24-May-2018 08:08

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052218.b\N8657.D
Lab Smp Id: WG228848-9 Client Smp ID: ontinuing Calibrati
Inj Date : 23-MAY-2018 01:24 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228848-9,SL3902
Misc Info : WG228848,WG228848,WG228848-4,SL3902-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N052218.b\NSPSIM95.m
Meth Date : 23-May-2018 08:21 cgomez Quant Type: ISTD
Cal Date : 22-MAY-2018 16:54 Cal File: N8641.D
Als bottle: 23 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

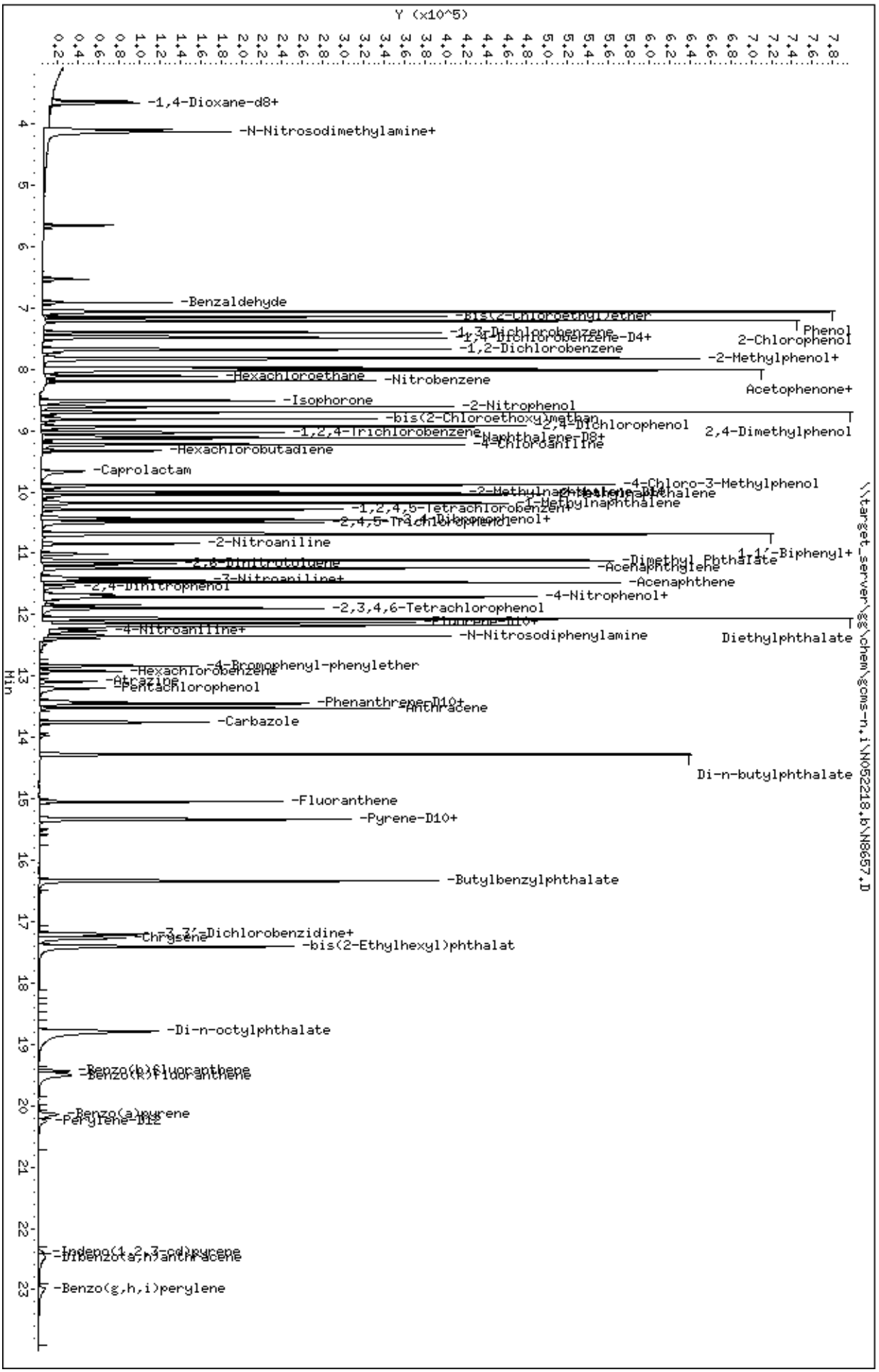
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.469	(1.000)	46587	0.80000	(a)	
*	26 Naphthalene-D8	136	9.100	9.100	(1.000)	151160	0.80000	(a)	
	27 Naphthalene	128	9.120	9.130	(1.002)	354980	2.00000	2.10	
$	32 2-Methylnaphthalene-D10	152	10.004	10.004	(1.099)	179750	2.00000	2.10	
	33 2-Methylnaphthalene	142	10.043	10.053	(1.104)	222218	2.00000	2.02	
	45 Acenaphthylene	152	11.237	11.236	(0.983)	309991	2.00000	2.09	
*	47 Acenaphthene-D10	164	11.433	11.433	(1.000)	62341	0.80000	(a)	
	48 Acenaphthene	153	11.476	11.476	(1.004)	200394	2.00000	2.09	
$	55 Fluorene-D10	174	12.130	12.130	(1.061)	151076	2.00000	2.02	
	56 Fluorene	166	12.163	12.173	(1.064)	201863	2.00000	2.02	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	91066	0.80000	(a)	
	66 Phenanthrene	178	13.442	13.453	(1.002)	249898	2.00000	2.10	
	67 Anthracene	178	13.517	13.517	(1.007)	242875	2.00000	1.99	
	70 Fluoranthene	202	15.050	15.050	(1.121)	218638	2.00000	1.97	
$	71 Pyrene-D10	212	15.323	15.322	(0.889)	139703	2.00000	2.17	
	72 Pyrene	202	15.341	15.351	(0.891)	225054	2.00000	2.14	
	75 Benzo(a)anthracene	228	17.208	17.208	(0.999)	101884	2.00000	2.01	
*	76 Chrysene-D12	240	17.227	17.218	(1.000)	32905	0.80000	(a)	
	77 Chrysene	228	17.274	17.264	(1.003)	115868	2.00000	1.94	
	80 Benzo(b)fluoranthene	252	19.438	19.426	(0.960)	52636	2.00000	1.82	

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8657.D
Report Date: 24-May-2018 08:08

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
81	Benzo(k)fluoranthene	252	19.506	19.494	(0.963)	92660	2.00000	2.01(H)	
82	Benzo(a)pyrene	252	20.142	20.119	(0.994)	53424	2.00000	1.91	
* 83	Perylene-D12	264	20.255	20.233	(1.000)	18532	0.80000	(a)	
84	Indeno(1,2,3-cd)pyrene	276	22.390	22.356	(1.300)	38426	2.00000	1.86	
85	Dibenzo(a,h)anthracene	278	22.470	22.424	(1.109)	25863	2.00000	1.86	
86	Benzo(g,h,i)perylene	276	22.981	22.958	(1.135)	45176	2.00000	2.22	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
H - Operator selected an alternate compound hit.


Data File: \\target_server\gg\chem\gcms-n,i\N052218,b\N8657,D
Date : 23-MAY-2018 01:24
Client ID: ontinuing Calibrati
Sample Info: WG228848-9,SL3902
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N052218,b\N8657,D
Y (x10^5)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine+
-Benzaldehyde
-Bis(2-Chloroethyl)ether
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-Hexachloroethane
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-bis(2-Chloroethoxy)methan
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-2-Methylnaphthalene-D10+
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4,5-Trichlorophenol+
-2-Nitroaniline
-2,6-Dinitrotoluene
-3-Nitroaniline+
-2,4-Dinitrophenol
-4-Nitrophenol+
-2,3,4,6-Tetrachlorophenol
-Fluorene-D10+
-4-Nitroaniline+
-N-Nitrosodiphenylamine
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenzo(a,h)anthracene
-Benzo(g,h,i)perylene
Phenol
2-Chlorophenol
-2-Methylphenol+
Acetophenone+
2,4-Dichlorophenol
2,4-Dimethylphenol
-4-Chloro-3-Methylphenol
Dimethyl Phthalate
4,1'-Biphenyl+
-Acenaphthylene
-Acenaphthene
Diethylphthalate

Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228941-2
Analytical Date: 05/23/18 15:37
Lab File ID : N8667.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 05/23/18 09:22 05/23/18 12:01
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
27 Naphthalene	0.88182	0.89157	0.89157	0.010	1.10486	20.00000	Averaged
33 2-Methylnaphthalene	0.57066	0.55230	0.55230	0.010	-3.21703	20.00000	Averaged
45 Acenaphthylene	1.85988	1.93013	1.93013	0.010	3.77725	20.00000	Averaged
48 Acenaphthene	1.19984	1.22426	1.22426	0.010	2.03488	20.01000	Averaged
56 Fluorene	1.25167	1.26281	1.26281	0.010	0.89004	20.00000	Averaged
66 Phenanthrene	1.04309	1.06498	1.06498	0.010	2.09934	20.00000	Averaged
67 Anthracene	1.05112	1.03421	1.03421	0.010	-1.60897	20.00000	Averaged
70 Fluoranthene	0.96187	1.00742	1.00742	0.010	4.73596	20.01000	Averaged
72 Pyrene	2.41248	2.19128	2.19128	0.010	-9.16878	20.00000	Averaged
75 Benzo(a)anthracene	1.15255	1.17899	1.17899	0.010	2.29431	20.00000	Averaged
77 Chrysene	2.00000	1.98458	1.38724	0.010	-0.77112	20.00000	Linear
80 Benzo(b)fluoranthene	2.00000	1.99918	1.16428	0.010	-0.04117	20.00000	Quadratic
81 Benzo(k)fluoranthene	2.02981	1.81663	1.81663	0.010	-10.50267	20.00000	Averaged
82 Benzo(a)pyrene	1.24791	1.17546	1.17546	0.010	-5.80527	20.01000	Averaged
84 Indeno(1,2,3-cd)pyrene	2.00000	2.32415	0.47495	0.010	16.20755	20.00000	Quadratic
85 Dibenzo(a,h)anthracene	2.00000	2.04465	0.49791	0.010	2.23237	20.00000	Quadratic
86 Benzo(g,h,i)perylene	0.86609	0.91096	0.91096	0.010	5.18108	20.00000	Averaged
32 2-Methylnaphthalene-D10	0.45083	0.44153	0.44153	0.010	-2.06299	20.00000	Averaged
55 Fluorene-D10	0.92962	0.94510	0.94510	0.010	1.66492	20.00000	Averaged
71 Pyrene-D10	1.48477	1.32608	1.32608	0.010	-10.68813	20.00000	Averaged

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8667.D
Report Date: 24-May-2018 08:11

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052318B.b\N8667.D
Lab Smp Id: WG228941-2
Inj Date : 23-MAY-2018 15:37 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228941-2,SL3902
Misc Info : WG228941,WG228941,WG228910-4,SL3902-6
Comment :
Method : \\TARGET_SERVER\GG\chem\gcms-n.i\N052318B.b\NSPSIM96.m
Meth Date : 24-May-2018 07:40 cgomez Quant Type: ISTD
Cal Date : 23-MAY-2018 12:01 Cal File: N8665.D
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

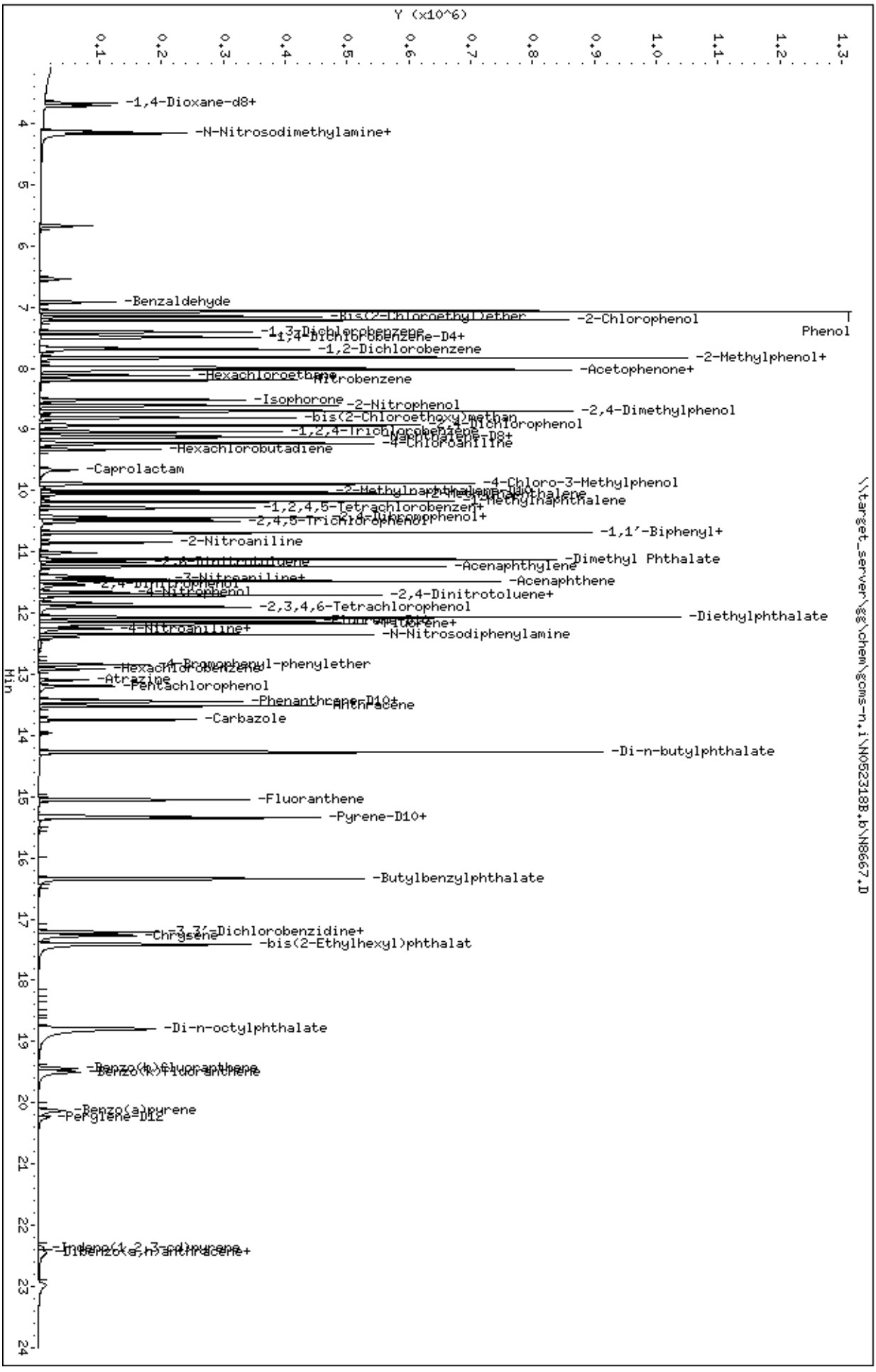
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.479	7.470	(1.000)	58316	0.80000	(a)	
*	26 Naphthalene-D8	136	9.100	9.101	(1.000)	192142	0.80000	(a)	
	27 Naphthalene	128	9.130	9.131	(1.003)	428269	2.00000	2.02	
$	32 2-Methylnaphthalene-D10	152	10.004	10.004	(1.099)	212093	2.00000	1.96	
	33 2-Methylnaphthalene	142	10.053	10.053	(1.105)	265299	2.00000	1.94	
	45 Acenaphthylene	152	11.236	11.237	(0.983)	370947	2.00000	2.08	
*	47 Acenaphthene-D10	164	11.433	11.433	(1.000)	76875	0.80000	(a)	
	48 Acenaphthene	153	11.476	11.477	(1.004)	235287	2.00000	2.04	
$	55 Fluorene-D10	174	12.130	12.131	(1.061)	181636	2.00000	2.03	
	56 Fluorene	166	12.173	12.174	(1.065)	242697	2.00000	2.02	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	118415	0.80000	(a)	
	66 Phenanthrene	178	13.453	13.453	(1.002)	315275	2.00000	2.04	
	67 Anthracene	178	13.517	13.517	(1.007)	306165	2.00000	1.97	
	70 Fluoranthene	202	15.050	15.051	(1.121)	298235	2.00000	2.09	
$	71 Pyrene-D10	212	15.322	15.323	(0.889)	192185	2.00000	1.79	
	72 Pyrene	202	15.341	15.351	(0.891)	317577	2.00000	1.82	
	75 Benzo(a)anthracene	228	17.208	17.209	(0.999)	170868	2.00000	2.04	
*	76 Chrysene-D12	240	17.227	17.228	(1.000)	57971	0.80000	(a)	
	77 Chrysene	228	17.274	17.274	(1.003)	201049	2.00000	1.98	
	80 Benzo(b)fluoranthene	252	19.438	19.438	(0.960)	101068	2.00000	2.00	

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8667.D
Report Date: 24-May-2018 08:11

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
81	Benzo(k)fluoranthene	252	19.494	19.495	(0.963)	157697	2.00000	1.79(H)	
82	Benzo(a)pyrene	252	20.130	20.120	(0.994)	102039	2.00000	1.88	
* 83	Perylene-D12	264	20.244	20.233	(1.000)	34723	0.80000	(a)	
84	Indeno(1,2,3-cd)pyrene	276	22.368	22.357	(1.298)	68834	2.00000	2.32	
85	Dibenzo(a,h)anthracene	278	22.447	22.436	(1.109)	43222	2.00000	2.04	
86	Benzo(g,h,i)perylene	276	22.970	22.959	(1.135)	79078	2.00000	2.10	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
H - Operator selected an alternate compound hit.


Data File: \\target_server\gg\chem\gcms-n,i\N052318B,b\N8667,D
Date : 23-MAY-2018 15:37
Client ID:
Sample Info: WG228941-2,SL3902
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N052318B,b\N8667,D
Y (x10^6)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine+
-Benzaldehyde
-Bis(2-Chloroethyl)ether
-2-Chlorophenol
Phenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-Hexachloroethane
Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene-D10+
-2-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4,6-Trichlorophenol+
-2,4,5-Trichlorophenol
-1,1'-Biphenyl+
-2-Nitroaniline
-2,6-Dinitrotoluene
-Dimethyl Phthalate
-Acenaphthylene
-3-Nitroaniline+
-Acenaphthene
-2,4-Dinitrophenol
-4-Nitrophenol
-2,4-Dinitrotoluene+
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-Fluorene+
-4-Nitroaniline+
-N-Nitrosodiphenylamine
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenzo(a,h)anthracene+

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL3902
Lab ID : WG228941-3
Analytical Date: 05/24/18 02:51
Lab File ID : N8688.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 05/23/18 09:22 05/23/18 12:01
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
27 Naphthalene	0.88182	0.89842	0.89842	0.010	1.88214	20.00000	Averaged	
33 2-Methylnaphthalene	0.57066	0.56337	0.56337	0.010	-1.27642	20.00000	Averaged	
45 Acenaphthylene	1.85988	1.90047	1.90047	0.010	2.18245	20.00000	Averaged	
48 Acenaphthene	1.19984	1.19529	1.19529	0.010	-0.37950	20.01000	Averaged	
56 Fluorene	1.25167	1.25901	1.25901	0.010	0.58630	20.00000	Averaged	
66 Phenanthrene	1.04309	1.06401	1.06401	0.010	2.00635	20.00000	Averaged	
67 Anthracene	1.05112	1.03348	1.03348	0.010	-1.67805	20.00000	Averaged	
70 Fluoranthene	0.96187	1.01447	1.01447	0.010	5.46902	20.01000	Averaged	
72 Pyrene	2.41248	2.21152	2.21152	0.010	-8.32972	20.00000	Averaged	
75 Benzo(a)anthracene	1.15255	1.20152	1.20152	0.010	4.24935	20.00000	Averaged	
77 Chrysene	2.00000	1.87597	1.31486	0.010	-6.20144	20.00000	Linear	
80 Benzo(b)fluoranthene	2.00000	2.02685	1.18210	0.010	1.34257	20.00000	Quadratic	
81 Benzo(k)fluoranthene	2.02981	1.67063	1.67063	0.010	-17.69519	20.00000	Averaged	
82 Benzo(a)pyrene	1.24791	1.18371	1.18371	0.010	-5.14412	20.01000	Averaged	
84 Indeno(1,2,3-cd)pyrene	2.00000	1.52751	0.30003	0.010	-23.62470	20.00000	Quadratic	*
85 Dibenzo(a,h)anthracene	2.00000	2.70666	0.67049	0.010	35.33298	20.00000	Quadratic	*
86 Benzo(g,h,i)perylene	0.86609	1.00683	1.00683	0.010	16.25113	20.00000	Averaged	
32 2-Methylnaphthalene-D10	0.45083	0.46075	0.46075	0.010	2.19931	20.00000	Averaged	
55 Fluorene-D10	0.92962	0.96630	0.96630	0.010	3.94581	20.00000	Averaged	
71 Pyrene-D10	1.48477	1.39973	1.39973	0.010	-5.72762	20.00000	Averaged	

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8688.D
Report Date: 24-May-2018 08:12

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052318B.b\N8688.D
Lab Smp Id: WG228941-3
Inj Date : 24-MAY-2018 02:51 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG228941-3,SL3902
Misc Info : WG228941,WG228941,WG228910-4,SL3902-6
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N052318B.b\NSPSIM96.m
Meth Date : 24-May-2018 07:40 cgomez Quant Type: ISTD
Cal Date : 23-MAY-2018 12:01 Cal File: N8665.D
Als bottle: 23 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.470	(1.000)	59643	0.80000	(a)	
*	26 Naphthalene-D8	136	9.100	9.101	(1.000)	203418	0.80000	(a)	
	27 Naphthalene	128	9.120	9.131	(1.002)	456888	2.00000	2.04	
$	32 2-Methylnaphthalene-D10	152	10.004	10.004	(1.099)	234312	2.00000	2.04	
	33 2-Methylnaphthalene	142	10.043	10.053	(1.104)	286500	2.00000	1.97	
	45 Acenaphthylene	152	11.236	11.237	(0.983)	415894	2.00000	2.04	
*	47 Acenaphthene-D10	164	11.433	11.433	(1.000)	87535	0.80000	(a)	
	48 Acenaphthene	153	11.476	11.477	(1.004)	261574	2.00000	1.99	
$	55 Fluorene-D10	174	12.130	12.131	(1.061)	211463	2.00000	2.08	
	56 Fluorene	166	12.163	12.174	(1.064)	275519	2.00000	2.01	
*	65 Phenanthrene-D10	188	13.410	13.421	(1.000)	139905	0.80000	(a)	
	66 Phenanthrene	178	13.442	13.453	(1.002)	372152	2.00000	2.04	
	67 Anthracene	178	13.517	13.517	(1.008)	361474	2.00000	1.97	
	70 Fluoranthene	202	15.041	15.051	(1.122)	354825	2.00000	2.11	
$	71 Pyrene-D10	212	15.322	15.323	(0.890)	229867	2.00000	1.88	
	72 Pyrene	202	15.341	15.351	(0.891)	363182	2.00000	1.83	
	75 Benzo(a)anthracene	228	17.199	17.209	(0.999)	197317	2.00000	2.08	
*	76 Chrysene-D12	240	17.218	17.228	(1.000)	65689	0.80000	(a)	
	77 Chrysene	228	17.264	17.274	(1.003)	215929	2.00000	1.88	
	80 Benzo(b)fluoranthene	252	19.426	19.438	(0.960)	112430	2.00000	2.03	

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8688.D
Report Date: 24-May-2018 08:12

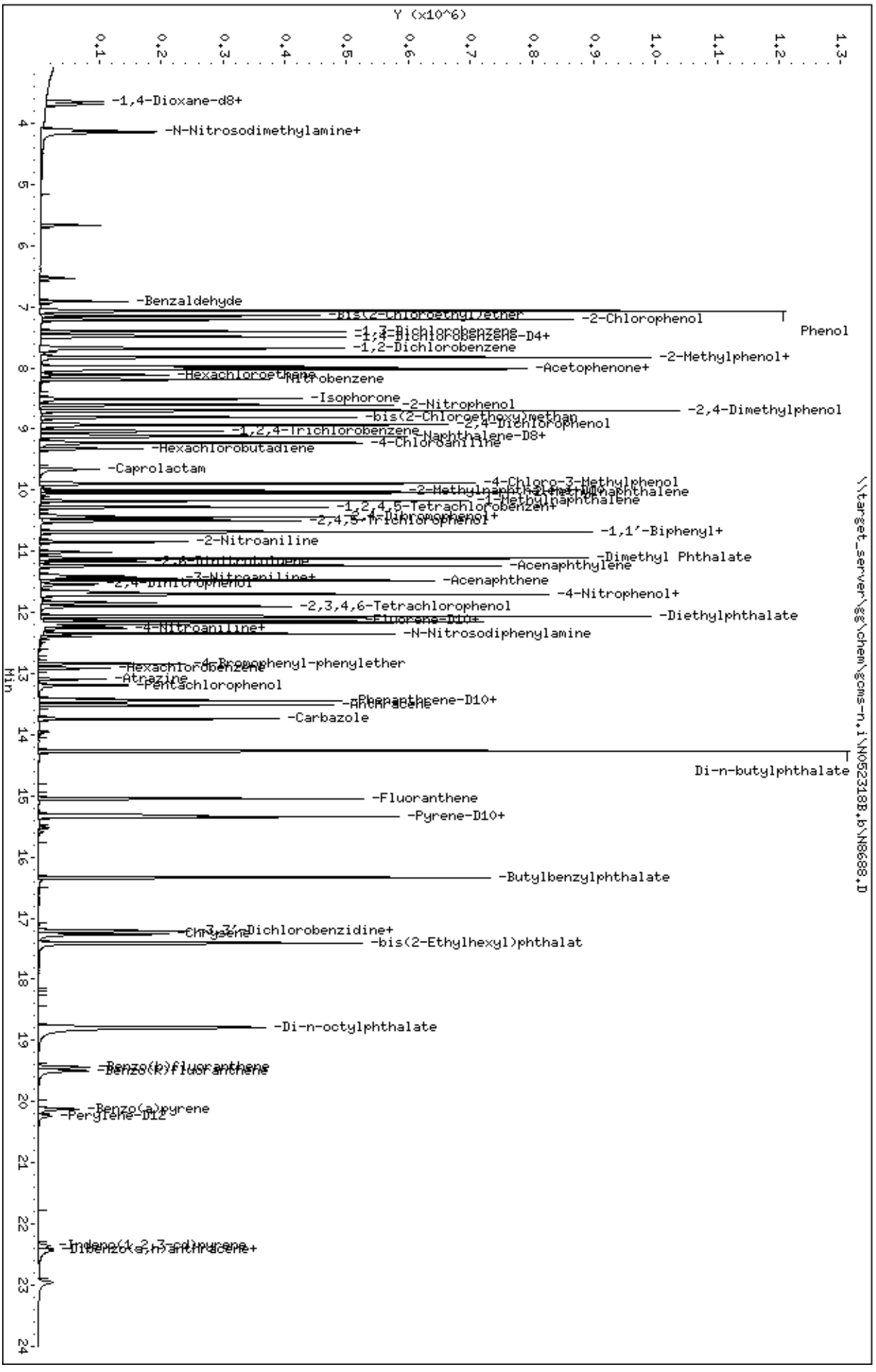
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
81	Benzo(k)fluoranthene	252	19.494	19.495	(0.964)	158894	2.00000	1.65(H)	
82	Benzo(a)pyrene	252	20.119	20.120	(0.994)	112583	2.00000	1.90	
* 83	Perylene-D12	264	20.233	20.233	(1.000)	38044	0.80000	(a)	
84	Indeno(1,2,3-cd)pyrene	276	22.356	22.357	(1.298)	49271	2.00000	1.53(M)	M3
85	Dibenzo(a,h)anthracene	278	22.436	22.436	(1.109)	63770	2.00000	2.71	
86	Benzo(g,h,i)perylene	276	22.958	22.959	(1.135)	95760	2.00000	2.32	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



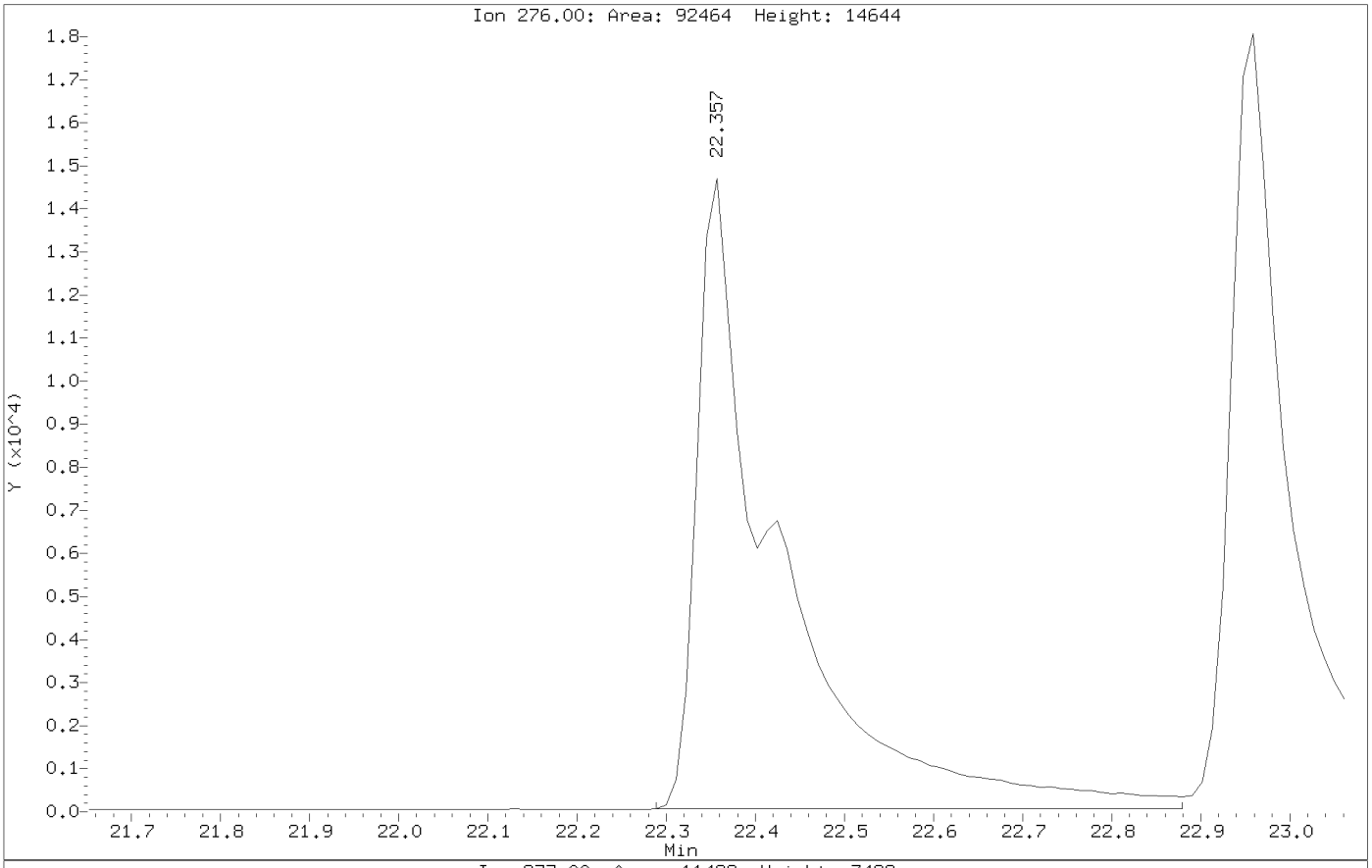
8:28 am, May 24, 2018

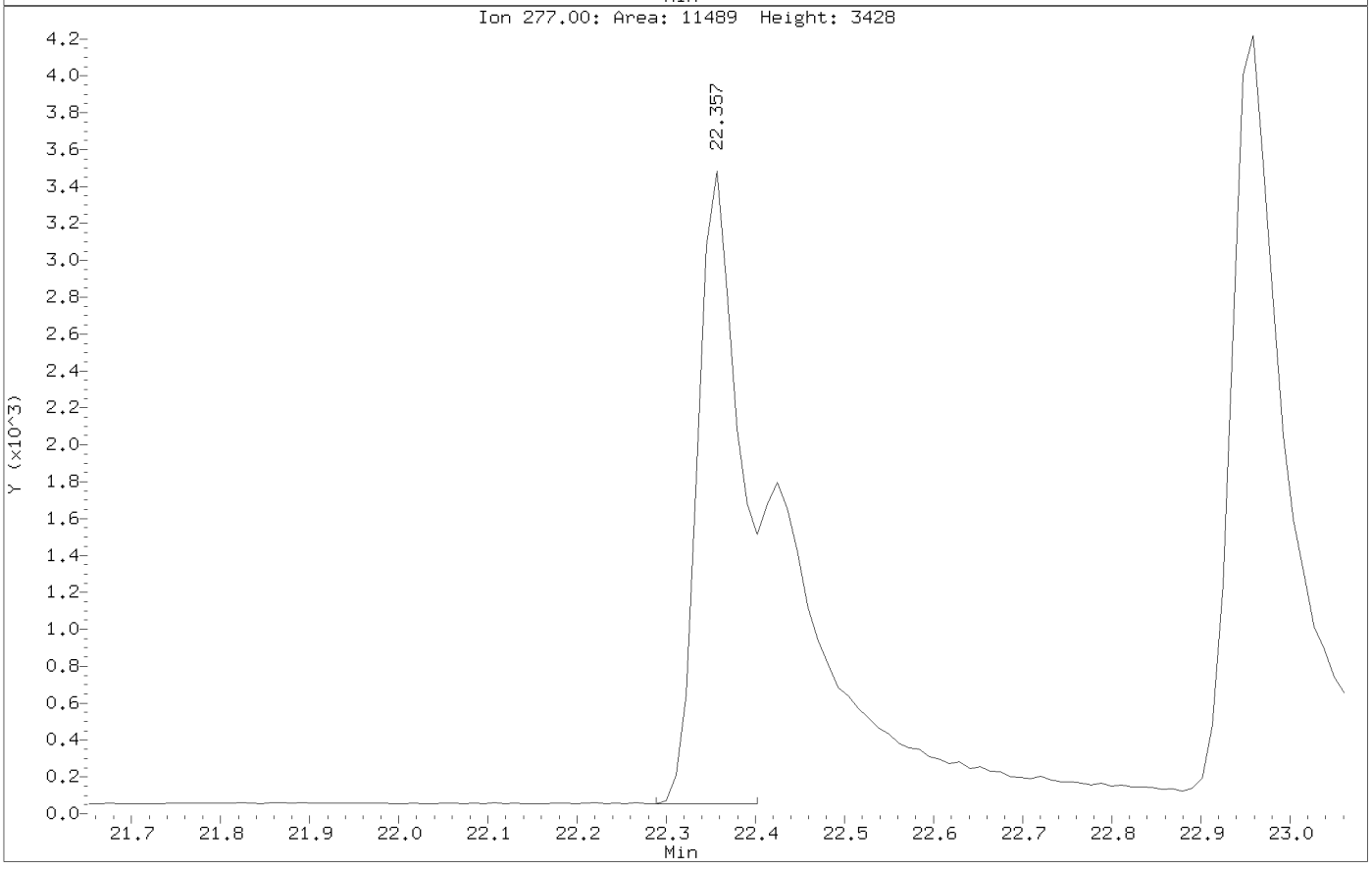

Data File: \\target_server\gg\chem\gcms-n,i\N052318B,b\N8688.D
Date : 24-MAY-2018 02:51
Client ID:
Sample Info: WG228941-3,SL3902
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N052318B,b\N8688.D
Y (x10^6)
Min
-1,4-Dioxane-d8+
-N-Nitrosodimethylamine+
-Benzaldehyde
-Bis(2-Chloroethyl)ether
-2-Chlorophenol
Phenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol+
-Acetophenone+
-Hexachloroethane
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene-D10+
-2-Methylnaphthalene
-1-Methylnaphthalene
-1,2,4,5-Tetrachlorobenzen+
-2,4,6-Trichlorophenol+
-2,4,5-Trichlorophenol
-1,1'-Biphenyl+
-2-Nitroaniline
-Dimethyl Phthalate
-2,6-Dinitrotoluene
-Acenaphthylene
-3-Nitroaniline+
-Acenaphthene
-2,4-Dinitrophenol
-4-Nitrophenol+
-2,3,4,6-Tetrachlorophenol
-Fluorene-D10+
-Diethylphthalate
-4-Nitroaniline+
-N-Nitrosodiphenylamine
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Phenanthrene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Dibenz(a,h)anthracene+

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8688.D
Injection Date: 24-MAY-2018 02:51
Instrument: gcms-n.i
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

BEFORE MANUAL INTEGRATION

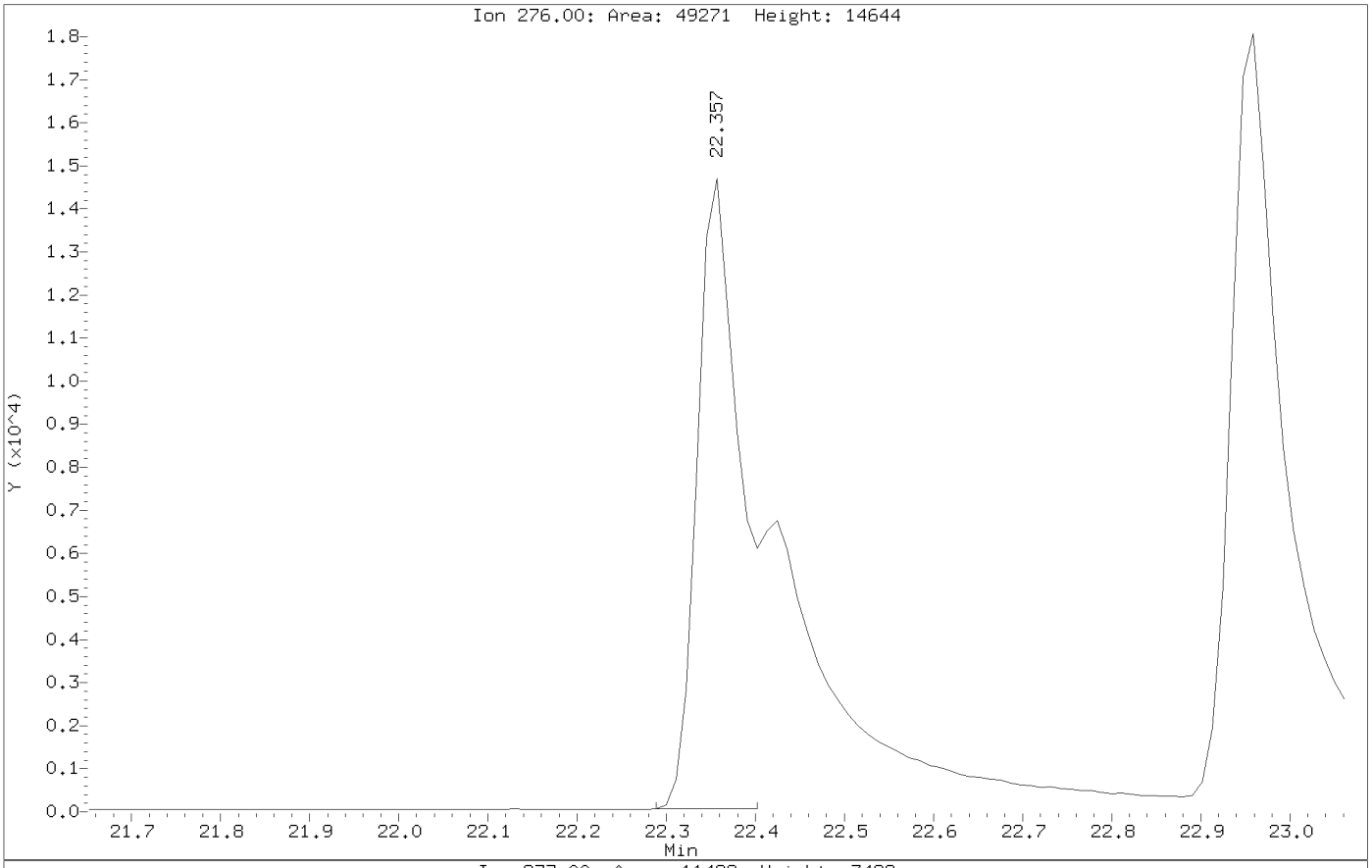


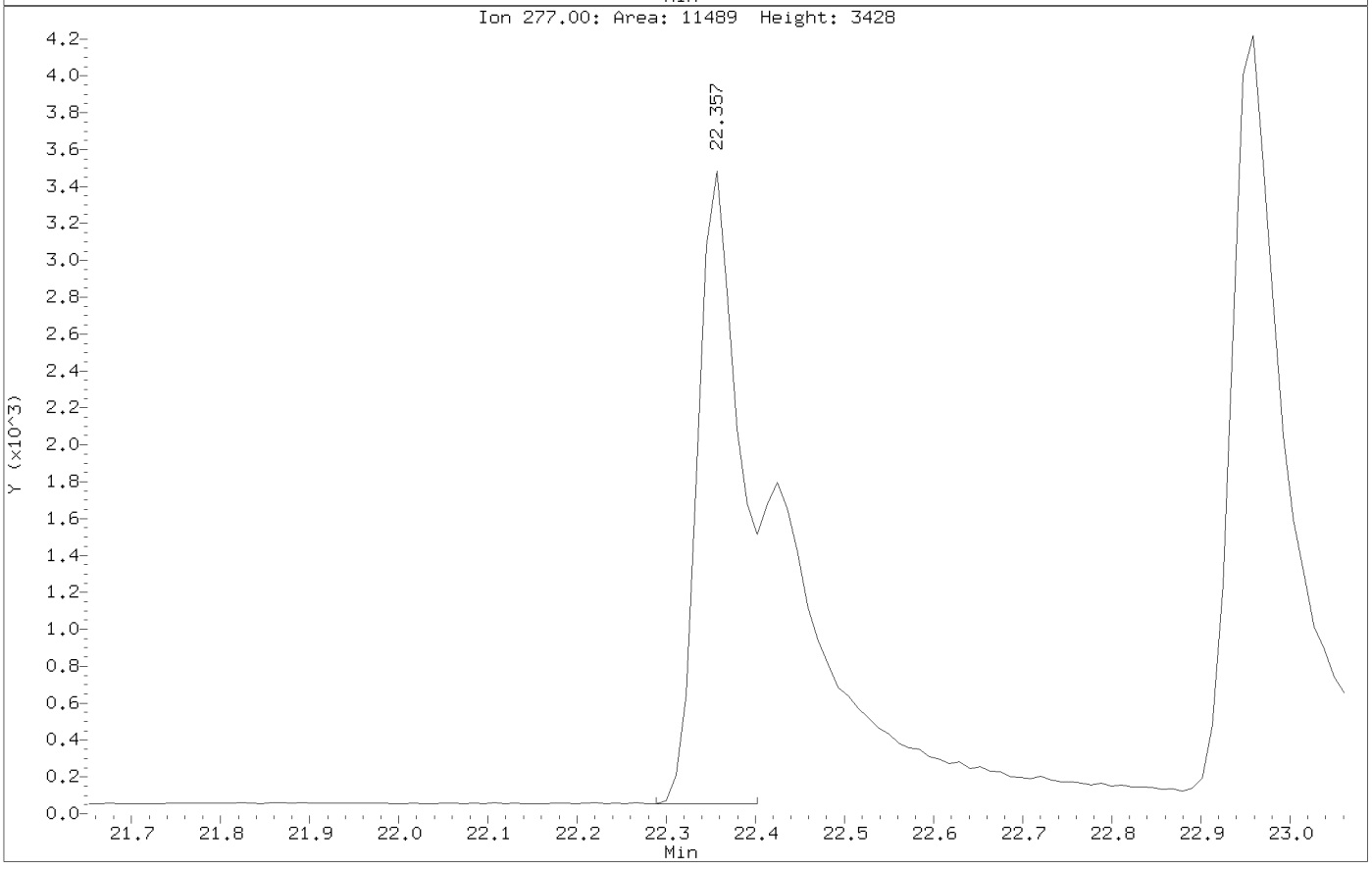


Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8688.D
Injection Date: 24-MAY-2018 02:51
Instrument: gcms-n.i
Client Sample ID:

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

AFTER MANUAL INTEGRATION





Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\ND521.D

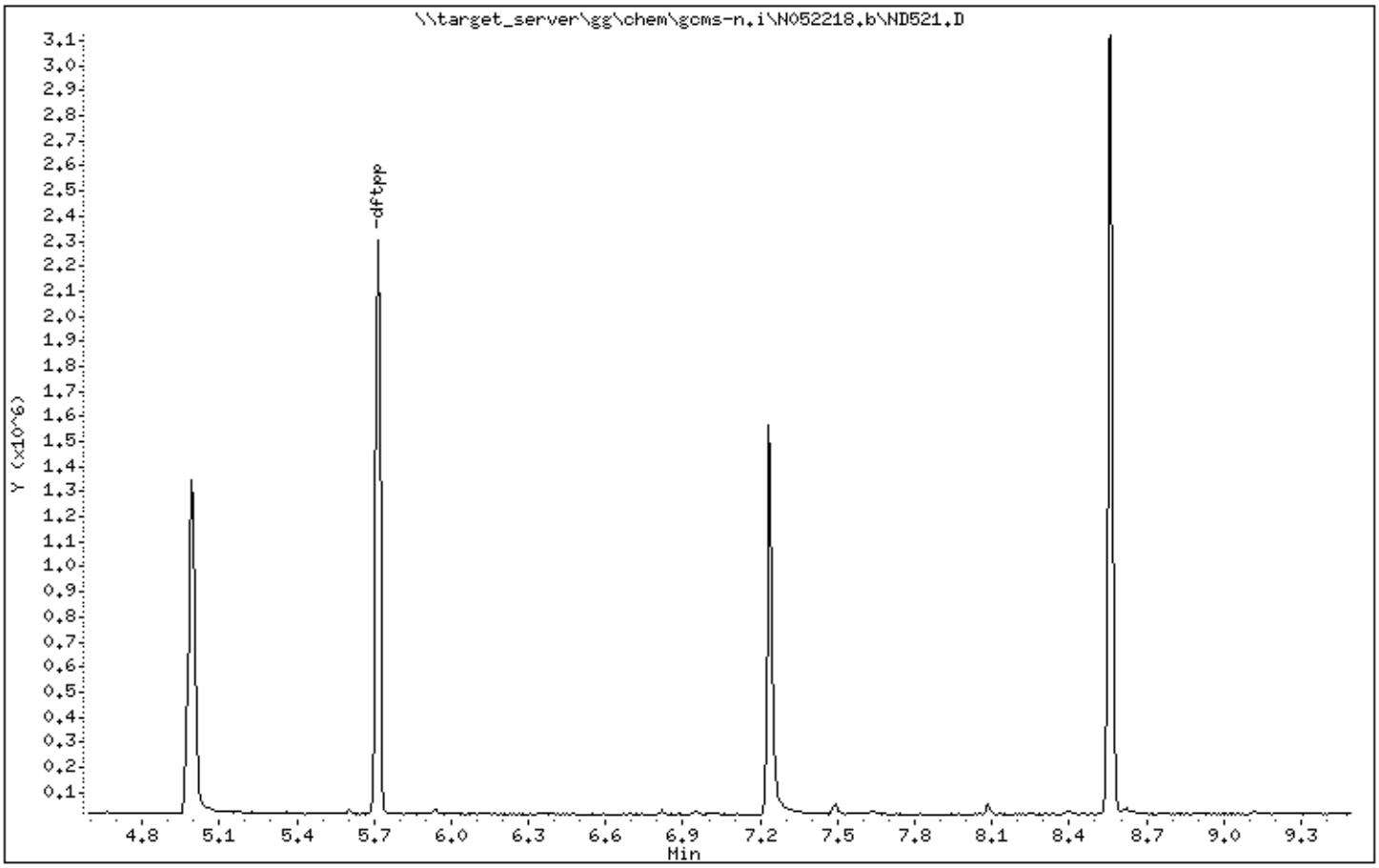
Date : 22-MAY-2018 14:01

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228848-1,SL3902

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25



Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\ND521.D

Date : 22-MAY-2018 14:01

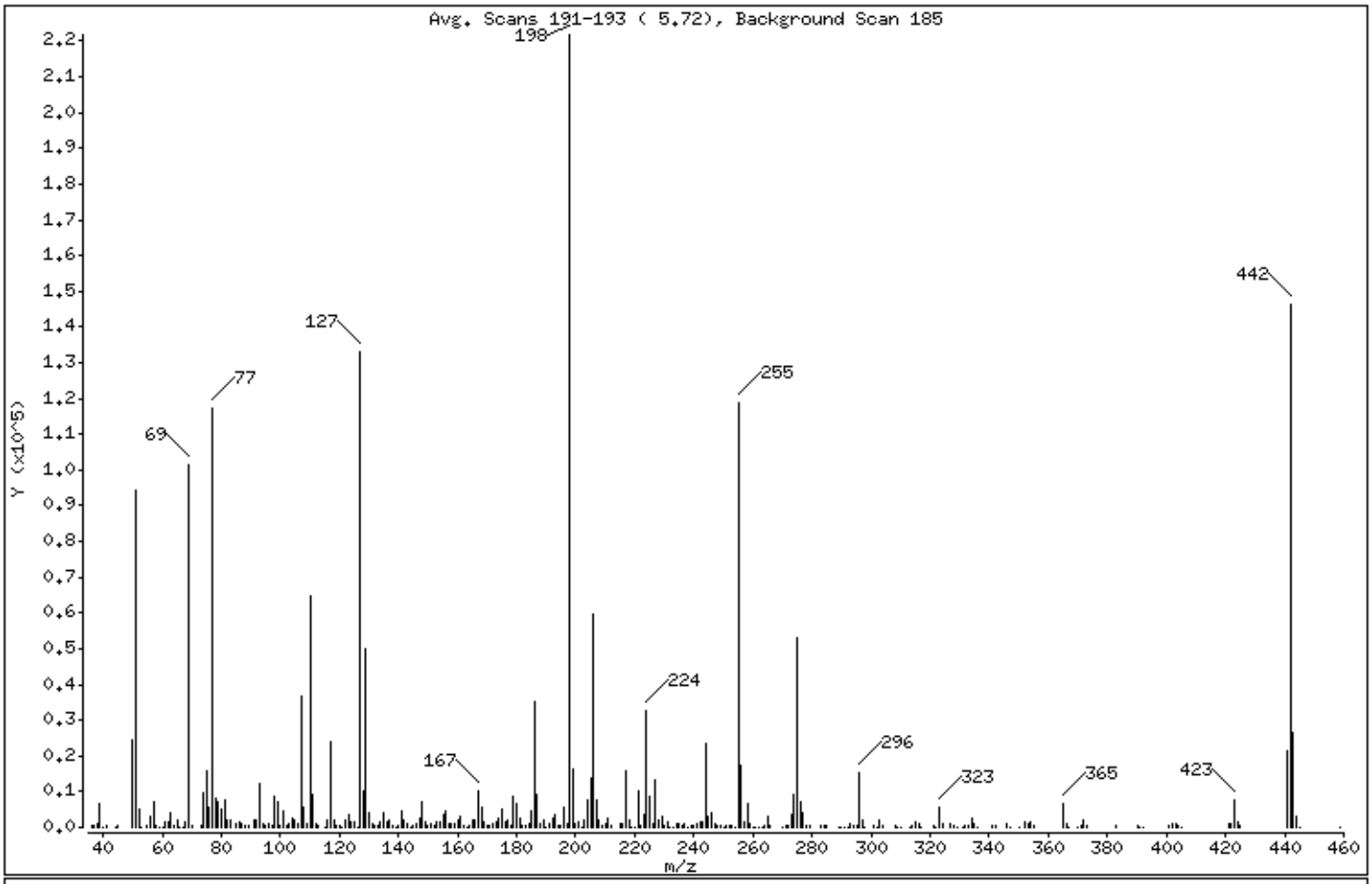
Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228848-1,SL3902

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	42.43
68	Less than 2.00% of mass 69	0.72 (1.58)
69	Less than 100.00% of mass 198	45.72
70	Less than 2.00% of mass 69	0.22 (0.47)
127	40.00 - 60.00% of mass 198	59.94
197	Less than 1.00% of mass 198	0.44
199	5.00 - 9.00% of mass 198	7.25
275	10.00 - 30.00% of mass 198	23.84
365	1.00 - 100.00% of mass 198	2.97
441	0.01 - 100.00% of mass 443	9.76 (81.09)
442	40.00 - 100.00% of mass 198	66.00
443	17.00 - 23.00% of mass 442	12.04 (18.24)

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\ND521.D

Date : 22-MAY-2018 14:01

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228848-1,SL3902

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND521.D
Spectrum: Avg. Scans 191-193 (5.72), Background Scan 185
Location of Maximum: 198.00
Number of points: 301

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	299	124.00	1674	200.00	1234	284.00	401
37.00	557	125.00	1542	201.00	1381	285.00	750
38.00	1206	126.00	104	202.00	123	289.00	136
39.00	6753	127.00	132928	203.00	1832	290.00	157
40.00	171	128.00	10385	204.00	7433	291.00	117
41.00	259	129.00	49720	205.00	13579	292.00	110
44.00	219	130.00	4254	206.00	59824	293.00	862
45.00	271	131.00	834	207.00	7882	294.00	286
50.00	24320	132.00	459	208.00	2175	295.00	264
51.00	94096	133.00	368	209.00	714	296.00	15293
52.00	4999	134.00	1482	210.00	825	297.00	1794
53.00	196	135.00	3951	211.00	2438	298.00	90
55.00	364	136.00	1658	212.00	485	301.00	435
56.00	2834	137.00	2220	215.00	837	302.00	182
57.00	7069	138.00	543	216.00	973	303.00	1968
58.00	387	139.00	221	217.00	15598	304.00	433
59.00	120	140.00	735	218.00	1959	308.00	319
60.00	146	141.00	4704	219.00	162	309.00	128
61.00	1275	142.00	1899	220.00	147	310.00	59
62.00	1558	143.00	1230	221.00	10150	313.00	188
63.00	4193	144.00	170	222.00	763	314.00	682
64.00	553	145.00	468	223.00	3675	315.00	1360
65.00	2170	146.00	1106	224.00	32432	316.00	964
66.00	216	147.00	2681	225.00	8505	317.00	232
67.00	166	148.00	7133	226.00	938	321.00	658
68.00	1601	149.00	1753	227.00	13462	322.00	55
69.00	101392	150.00	516	228.00	1962	323.00	5475
70.00	481	151.00	1220	229.00	3043	324.00	1057
73.00	503	152.00	399	230.00	583	327.00	925
74.00	9543	153.00	1697	231.00	1510	328.00	513
75.00	15754	154.00	1490	232.00	194	329.00	137
76.00	5433	155.00	3362	233.00	167	331.00	54
77.00	117232	156.00	4675	234.00	951	332.00	397
78.00	8154	157.00	891	235.00	1053	333.00	644
79.00	7065	158.00	1095	236.00	632	334.00	2580

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\ND521.D

Date : 22-MAY-2018 14:01

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228848-1,SL3902

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND521.D
Spectrum: Avg. Scans 191-193 (5.72), Background Scan 185
Location of Maximum: 198.00
Number of points: 301

m/z	Y	m/z	Y	m/z	Y	m/z	Y
80.00	5113	159.00	896	237.00	1102	335.00	820
81.00	7574	160.00	1935	238.00	132	336.00	150
82.00	1921	161.00	2920	239.00	711	341.00	715
83.00	1874	162.00	694	240.00	463	342.00	385
85.00	1098	163.00	190	241.00	771	346.00	813
86.00	1624	164.00	447	242.00	1280	347.00	109
87.00	1162	165.00	1868	243.00	1693	350.00	90
88.00	323	166.00	1902	244.00	23672	352.00	1446
89.00	461	167.00	10115	245.00	3152	353.00	1133
91.00	1878	168.00	5485	246.00	4075	354.00	1326
92.00	1989	169.00	1388	247.00	1026	355.00	388
93.00	12247	170.00	411	248.00	256	365.00	6578
94.00	1190	171.00	753	249.00	751	366.00	922
95.00	340	172.00	980	250.00	137	367.00	61
96.00	879	173.00	1678	251.00	299	370.00	209
97.00	286	174.00	2353	252.00	505	371.00	503
98.00	8770	175.00	5095	253.00	624	372.00	1899
99.00	7335	176.00	1415	254.00	212	373.00	755
100.00	671	177.00	2044	255.00	118920	383.00	585
101.00	4826	178.00	708	256.00	17392	390.00	262
102.00	309	179.00	8873	257.00	1627	391.00	231
103.00	1189	180.00	6759	258.00	6624	392.00	215
104.00	2615	181.00	2794	259.00	1073	401.00	280
105.00	2192	182.00	535	260.00	157	402.00	879
106.00	993	183.00	407	261.00	165	403.00	1105
107.00	36608	184.00	784	262.00	76	404.00	509
108.00	5686	185.00	4395	263.00	56	405.00	144
109.00	1100	186.00	35008	264.00	296	421.00	1191
110.00	64856	187.00	9039	265.00	3108	422.00	917
111.00	9374	188.00	789	266.00	438	423.00	7765
112.00	1242	189.00	2281	270.00	245	424.00	1417
113.00	564	190.00	252	271.00	312	425.00	302
115.00	218	191.00	1145	272.00	267	441.00	21648
116.00	2042	192.00	2780	273.00	3791	442.00	146368
117.00	23856	193.00	3407	274.00	9018	443.00	26696

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\ND521.D

Date : 22-MAY-2018 14:01

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228848-1,SL3902

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND521.D
Spectrum: Avg. Scans 191-193 (5.72), Background Scan 185
Location of Maximum: 198.00
Number of points: 301

m/z	Y	m/z	Y	m/z	Y	m/z	Y
118.00	1835	194.00	626	275.00	52864	444.00	2879
119.00	444	195.00	329	276.00	7359	445.00	80
120.00	580	196.00	5376	277.00	4220	459.00	50
121.00	85	197.00	973	278.00	541		
122.00	2294	198.00	221760	279.00	299		
123.00	3417	199.00	16085	283.00	492		

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\ND522.D

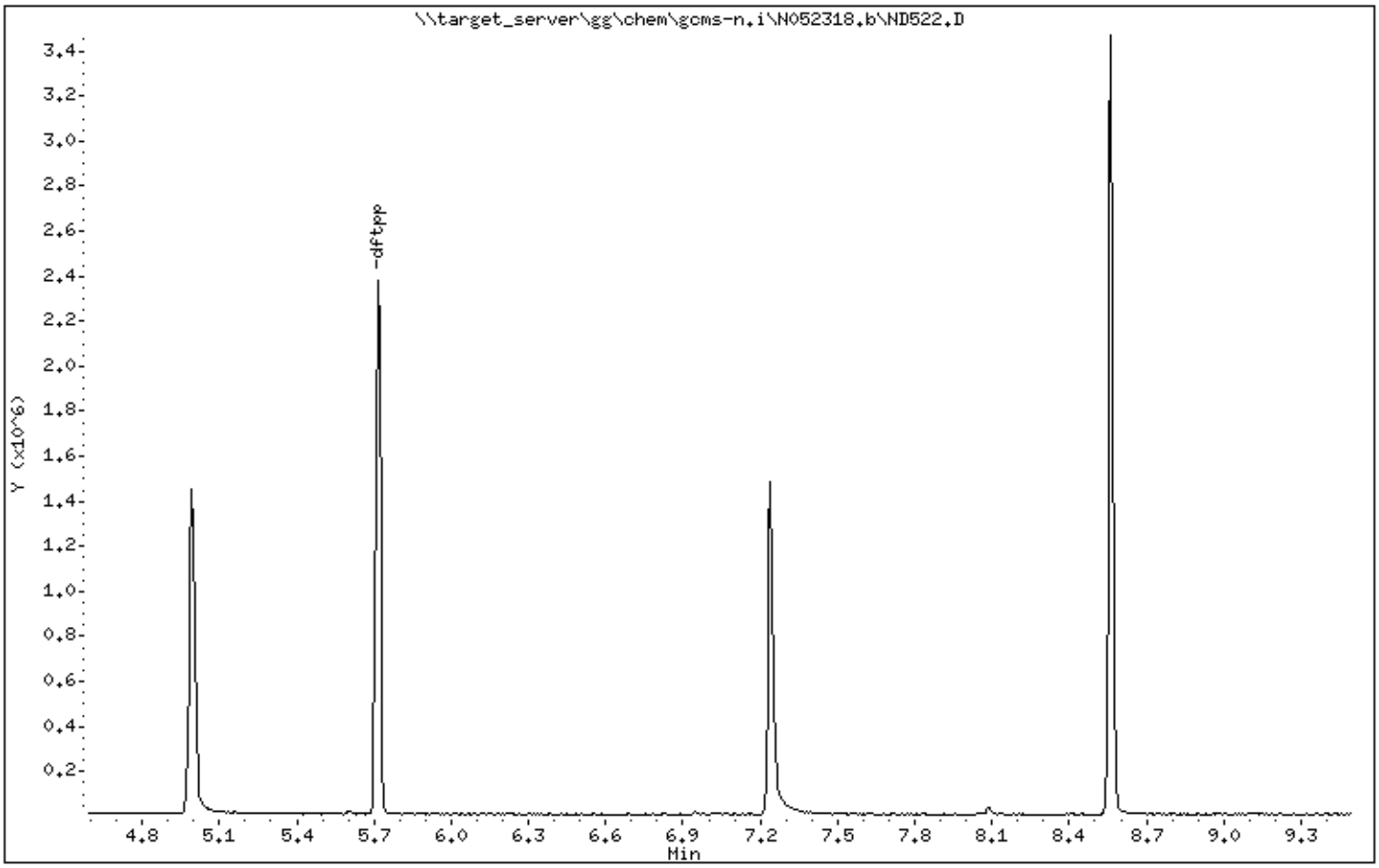
Date : 23-MAY-2018 09:06

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228910-1,SL3902

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25



Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\ND522.D

Date : 23-MAY-2018 09:06

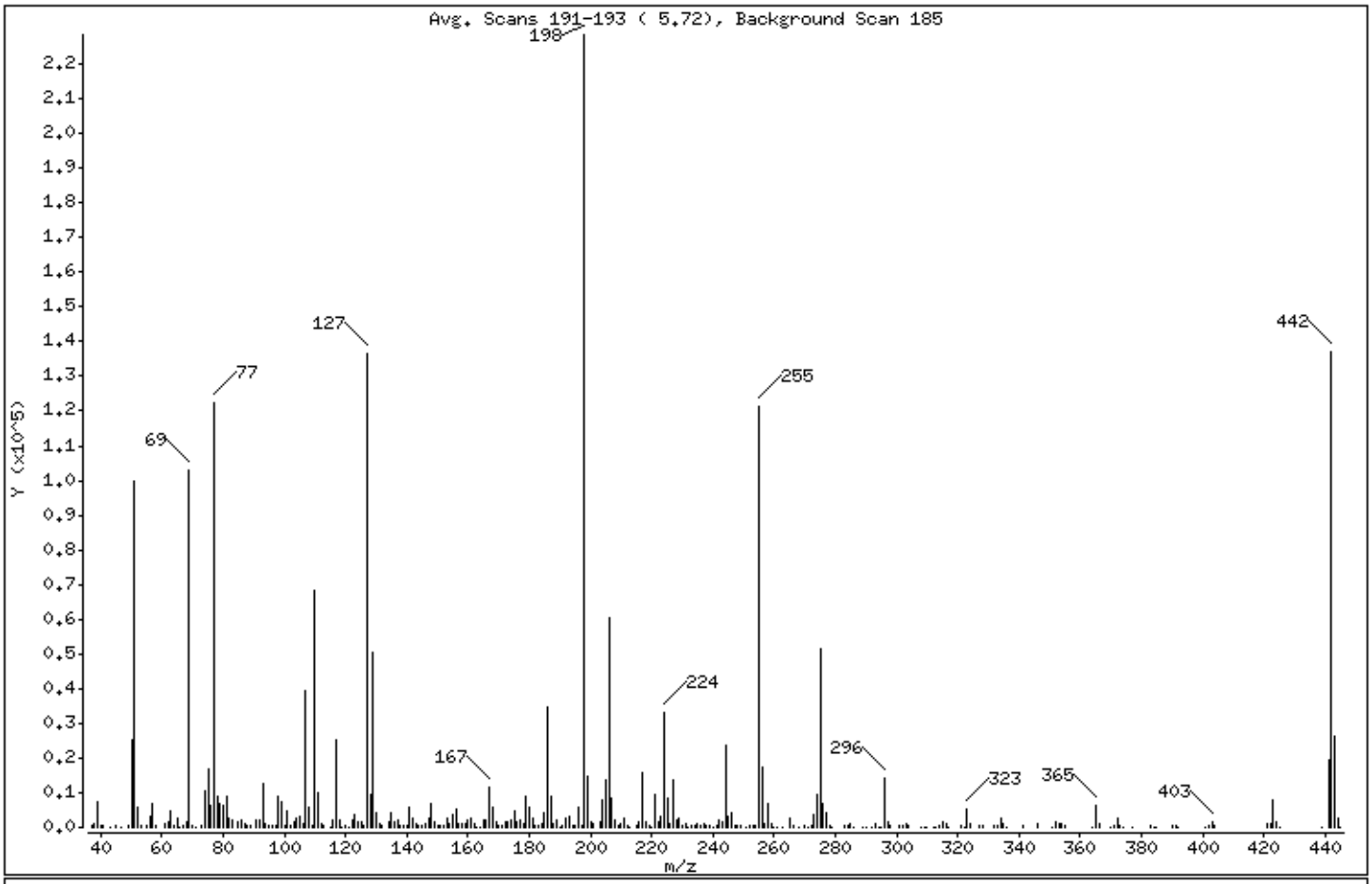
Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228910-1,SL3902

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	43.76
68	Less than 2.00% of mass 69	0.63 (1.40)
69	Less than 100.00% of mass 198	45.16
70	Less than 2.00% of mass 69	0.27 (0.60)
127	40.00 - 60.00% of mass 198	59.88
197	Less than 1.00% of mass 198	0.17
199	5.00 - 9.00% of mass 198	6.55
275	10.00 - 30.00% of mass 198	22.43
365	1.00 - 100.00% of mass 198	2.84
441	0.01 - 100.00% of mass 443	8.57 (74.11)
442	40.00 - 100.00% of mass 198	60.02
443	17.00 - 23.00% of mass 442	11.56 (19.27)

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\ND522.D

Date : 23-MAY-2018 09:06

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228910-1,SL3902

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND522.D
Spectrum: Avg. Scans 191-193 (5.72), Background Scan 185
Location of Maximum: 198.00
Number of points: 298

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	415	123.00	3746	199.00	14950	284.00	266
38.00	860	124.00	1631	200.00	1456	285.00	904
39.00	7152	125.00	1781	201.00	1165	286.00	215
40.00	415	126.00	492	203.00	1758	289.00	196
41.00	311	127.00	136768	204.00	7826	290.00	165
43.00	136	128.00	9583	205.00	13737	292.00	203
45.00	264	129.00	50184	206.00	60144	293.00	1159
47.00	204	130.00	4447	207.00	8390	294.00	166
49.00	401	131.00	902	208.00	1880	295.00	207
50.00	24944	132.00	590	209.00	603	296.00	14020
51.00	99944	134.00	1510	210.00	1061	297.00	1709
52.00	5698	135.00	4400	211.00	2489	298.00	293
53.00	269	136.00	1552	212.00	304	301.00	309
55.00	503	137.00	2332	213.00	167	302.00	301
56.00	3021	138.00	577	215.00	412	303.00	1205
57.00	7050	139.00	346	216.00	1508	304.00	462
58.00	265	140.00	625	217.00	15612	308.00	187
61.00	1273	141.00	6029	218.00	1782	309.00	205
62.00	1424	142.00	2529	219.00	296	310.00	162
63.00	4525	143.00	1106	220.00	216	312.00	55
64.00	554	144.00	437	221.00	9633	313.00	69
65.00	2413	145.00	296	222.00	1443	314.00	780
66.00	184	146.00	1139	223.00	3408	315.00	1326
67.00	266	147.00	2807	224.00	32880	316.00	1129
68.00	1442	148.00	6749	225.00	8216	317.00	195
69.00	103160	149.00	1358	226.00	1172	321.00	491
70.00	616	150.00	493	227.00	13491	322.00	110
71.00	125	151.00	750	228.00	1964	323.00	5187
73.00	725	152.00	388	229.00	2759	324.00	1037
74.00	10255	153.00	2567	230.00	367	327.00	641
75.00	16744	154.00	1274	231.00	1104	328.00	439
76.00	6222	155.00	3586	232.00	227	332.00	474
77.00	122584	156.00	5104	233.00	282	333.00	384
78.00	8695	157.00	1163	234.00	522	334.00	2422
79.00	6840	158.00	1214	235.00	1079	335.00	918

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\ND522.D

Date : 23-MAY-2018 09:06

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228910-1,SL3902

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND522.D
Spectrum: Avg. Scans 191-193 (5.72), Background Scan 185
Location of Maximum: 198.00
Number of points: 298

m/z	Y	m/z	Y	m/z	Y	m/z	Y
80.00	6378	159.00	1013	236.00	650	336.00	100
81.00	9079	160.00	2232	237.00	1053	341.00	569
82.00	2445	161.00	2614	238.00	282	346.00	1136
83.00	2273	162.00	1020	239.00	463	351.00	64
85.00	1648	163.00	242	240.00	191	352.00	1320
86.00	1843	164.00	240	241.00	718	353.00	1263
87.00	1112	165.00	2080	242.00	1860	354.00	1196
88.00	675	166.00	1902	243.00	1761	355.00	339
89.00	277	167.00	11807	244.00	23528	364.00	65
91.00	1853	168.00	5761	245.00	3157	365.00	6490
92.00	1934	169.00	1422	246.00	4411	366.00	804
93.00	12749	170.00	410	247.00	747	370.00	120
94.00	829	171.00	520	248.00	349	371.00	429
95.00	304	172.00	1413	249.00	708	372.00	2400
96.00	597	173.00	1600	251.00	255	373.00	526
97.00	274	174.00	2217	252.00	417	374.00	69
98.00	9071	175.00	4599	253.00	541	377.00	63
99.00	7538	176.00	1524	254.00	395	383.00	354
100.00	611	177.00	1893	255.00	121352	384.00	128
101.00	4949	178.00	1081	256.00	17448	385.00	57
102.00	265	179.00	9102	257.00	1156	390.00	283
103.00	1693	180.00	5935	258.00	6969	391.00	298
104.00	2520	181.00	2616	259.00	1141	392.00	170
105.00	3120	182.00	408	260.00	184	401.00	121
106.00	1246	183.00	337	261.00	119	402.00	729
107.00	39400	184.00	815	263.00	113	403.00	1660
108.00	5859	185.00	4298	265.00	2501	404.00	313
109.00	654	186.00	34656	266.00	645	421.00	1192
110.00	68456	187.00	8741	268.00	117	422.00	1139
111.00	9969	188.00	923	270.00	283	423.00	7764
112.00	1213	189.00	2015	271.00	196	424.00	1764
113.00	668	190.00	249	272.00	400	425.00	135
115.00	66	191.00	535	273.00	3476	439.00	159
116.00	2053	192.00	2590	274.00	9558	441.00	19576
117.00	25008	193.00	3055	275.00	51232	442.00	137088

Data File: \\target_server\gg\chem\gcms-n.i\N052318.b\ND522.D

Date : 23-MAY-2018 09:06

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228910-1,SL3902

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND522.D
Spectrum: Avg. Scans 191-193 (5.72), Background Scan 185
Location of Maximum: 198.00
Number of points: 298

m/z	Y	m/z	Y	m/z	Y	m/z	Y
118.00	2016	194.00	543	276.00	6645	443.00	26416
119.00	184	195.00	432	277.00	4313	444.00	2750
120.00	391	196.00	5684	278.00	619	445.00	58
121.00	124	197.00	391	279.00	168		
122.00	2330	198.00	228416	283.00	491		

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\ND523.D

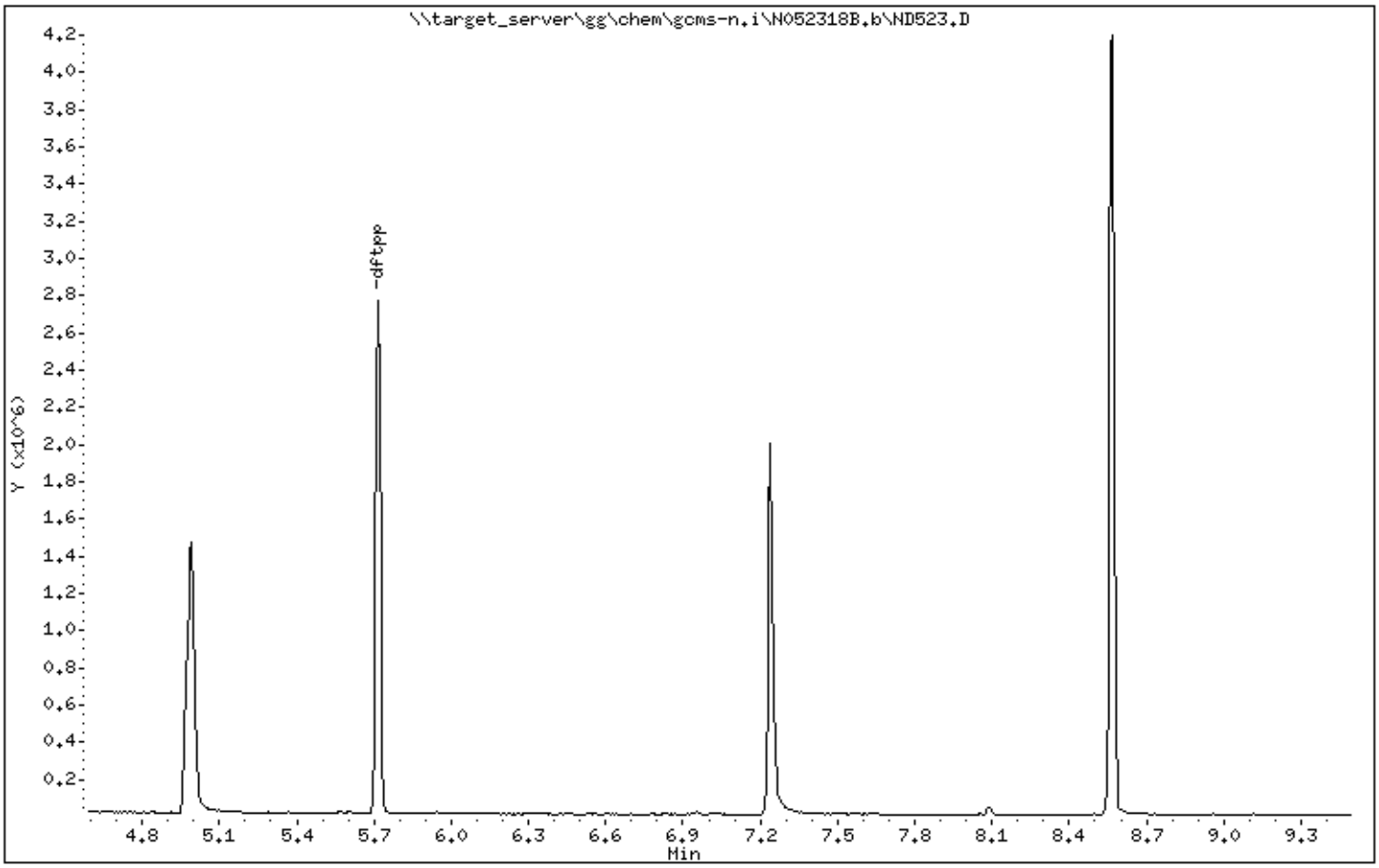
Date : 23-MAY-2018 15:21

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228941-1,SL3902

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25



Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\ND523.D

Date : 23-MAY-2018 15:21

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228941-1,SL3902

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

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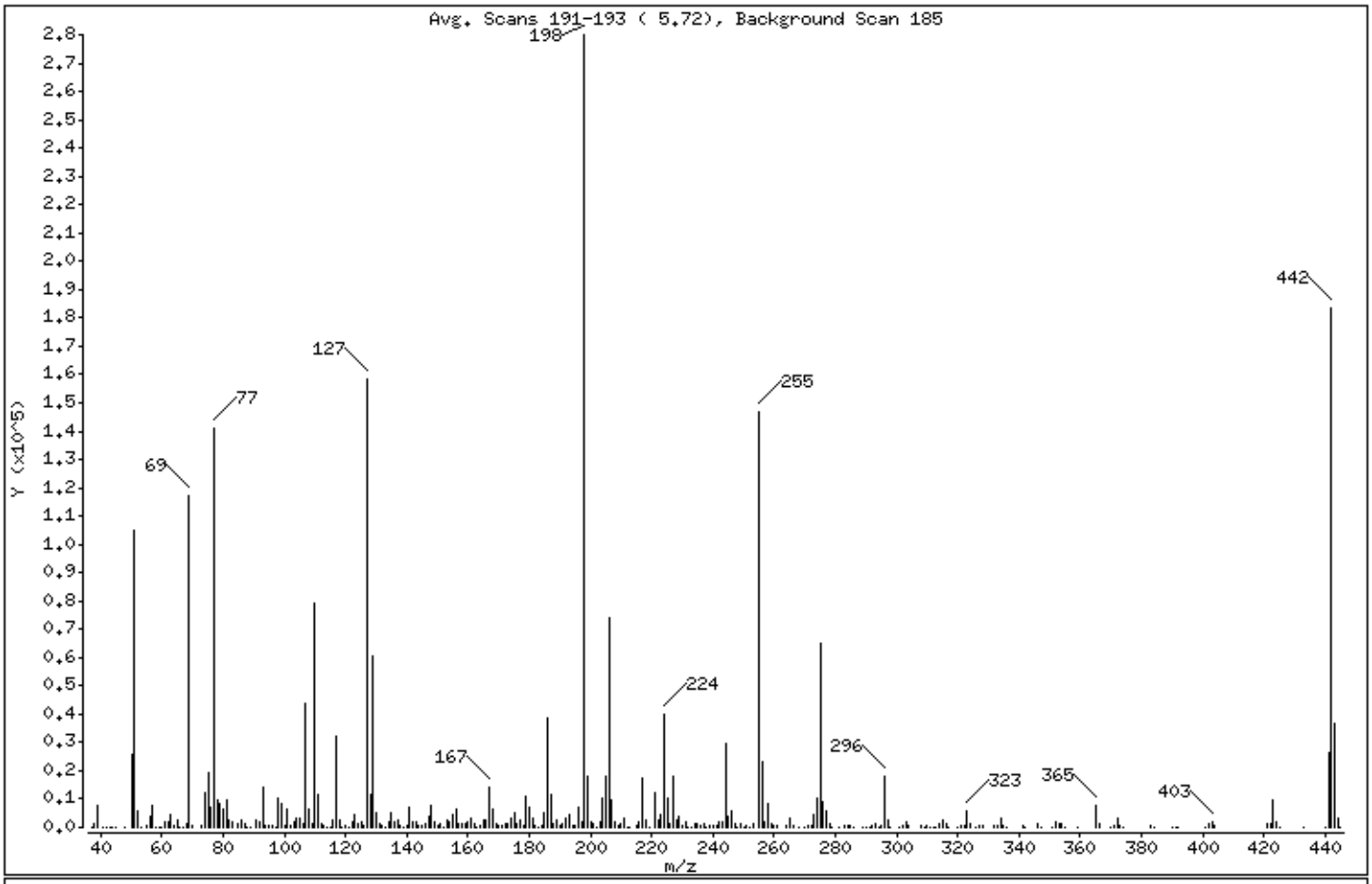

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	37.55
68	Less than 2.00% of mass 69	0.41 (0.98)
69	Less than 100.00% of mass 198	41.91
70	Less than 2.00% of mass 69	0.26 (0.63)
127	40.00 - 60.00% of mass 198	56.57
197	Less than 1.00% of mass 198	0.59
199	5.00 - 9.00% of mass 198	6.55
275	10.00 - 30.00% of mass 198	23.19
365	1.00 - 100.00% of mass 198	2.65
441	0.01 - 100.00% of mass 443	9.49 (72.59)
442	40.00 - 100.00% of mass 198	65.58
443	17.00 - 23.00% of mass 442	13.07 (19.93)

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\ND523.D

Date : 23-MAY-2018 15:21

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228941-1,SL3902

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND523.D
Spectrum: Avg. Scans 191-193 (5.72), Background Scan 185
Location of Maximum: 198.00
Number of points: 307

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	210	123.00	4302	200.00	1958	286.00	102
38.00	1072	124.00	1462	201.00	1178	289.00	248
39.00	7531	125.00	1915	202.00	289	290.00	243
41.00	116	126.00	471	203.00	1858	291.00	58
42.00	207	127.00	158400	204.00	10175	292.00	431
43.00	111	128.00	11608	205.00	18112	293.00	1153
44.00	207	129.00	60664	206.00	74152	294.00	184
45.00	303	130.00	5098	207.00	9437	295.00	399
48.00	102	131.00	1109	208.00	2179	296.00	18112
50.00	25744	132.00	498	209.00	799	297.00	2554
51.00	105152	133.00	188	210.00	1140	298.00	221
52.00	5675	134.00	1776	211.00	3304	301.00	258
53.00	144	135.00	4851	212.00	226	302.00	372
55.00	636	136.00	1859	213.00	270	303.00	2191
56.00	3655	137.00	2371	215.00	923	304.00	403
57.00	7949	138.00	696	216.00	1699	308.00	384
58.00	273	139.00	169	217.00	17640	309.00	234
59.00	195	140.00	643	218.00	2629	310.00	359
60.00	138	141.00	7338	219.00	169	311.00	59
61.00	1699	142.00	2251	221.00	12473	312.00	51
62.00	1753	143.00	1793	222.00	2256	313.00	137
63.00	4823	144.00	484	223.00	4539	314.00	1074
64.00	885	145.00	480	224.00	39976	315.00	2339
65.00	2305	146.00	1198	225.00	10536	316.00	1305
66.00	79	147.00	3792	226.00	1090	317.00	139
67.00	181	148.00	7460	227.00	18160	320.00	114
68.00	1151	149.00	1719	228.00	2526	321.00	829
69.00	117344	150.00	634	229.00	3764	322.00	332
70.00	740	151.00	1016	230.00	480	323.00	5753
73.00	815	152.00	216	231.00	1645	324.00	1295
74.00	12270	153.00	2307	232.00	257	326.00	106
75.00	19240	154.00	1689	233.00	283	327.00	906
76.00	6828	155.00	4348	234.00	1319	328.00	841
77.00	140864	156.00	6243	235.00	1213	332.00	367
78.00	9765	157.00	1119	236.00	583	333.00	502

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\ND523.D

Date : 23-MAY-2018 15:21

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228941-1,SL3902

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND523.D
Spectrum: Avg. Scans 191-193 (5.72), Background Scan 185
Location of Maximum: 198.00
Number of points: 307

m/z	Y	m/z	Y	m/z	Y	m/z	Y
79.00	8543	158.00	1426	237.00	1557	334.00	3520
80.00	6462	159.00	1139	238.00	195	335.00	855
81.00	9711	160.00	2079	239.00	794	336.00	187
82.00	2565	161.00	3477	240.00	380	341.00	540
83.00	1800	162.00	1070	241.00	934	342.00	270
85.00	1473	163.00	251	242.00	1719	346.00	1293
86.00	2742	164.00	671	243.00	2247	347.00	234
87.00	1542	165.00	2809	244.00	29816	351.00	240
88.00	166	166.00	2456	245.00	3714	352.00	1735
89.00	212	167.00	13927	246.00	5790	353.00	1286
91.00	2288	168.00	6446	247.00	1219	354.00	1573
92.00	2245	169.00	1284	248.00	261	355.00	243
93.00	14107	170.00	549	249.00	1251	359.00	57
94.00	964	171.00	861	250.00	267	365.00	7428
95.00	509	172.00	1177	251.00	470	366.00	978
96.00	564	173.00	1569	252.00	175	370.00	274
97.00	239	174.00	2918	253.00	989	371.00	425
98.00	10413	175.00	5248	255.00	146816	372.00	3194
99.00	8688	176.00	1584	256.00	22864	373.00	757
100.00	855	177.00	2636	257.00	1742	374.00	59
101.00	6185	178.00	760	258.00	8221	383.00	781
102.00	364	179.00	10919	259.00	1424	384.00	250
103.00	1887	180.00	6928	260.00	378	390.00	169
104.00	3340	181.00	3141	261.00	465	391.00	211
105.00	3223	182.00	676	264.00	415	392.00	215
106.00	1004	183.00	311	265.00	3343	401.00	60
107.00	43616	184.00	759	266.00	591	402.00	1136
108.00	6206	185.00	4993	268.00	88	403.00	1668
109.00	1140	186.00	38856	270.00	228	404.00	677
110.00	79064	187.00	11755	271.00	521	421.00	1081
111.00	11684	188.00	1134	272.00	500	422.00	1196
112.00	1379	189.00	2609	273.00	4645	423.00	9397
113.00	463	190.00	397	274.00	10546	424.00	1916
114.00	200	191.00	1170	275.00	64920	425.00	167
115.00	116	192.00	3332	276.00	8790	433.00	58

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\ND523.D

Date : 23-MAY-2018 15:21

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG228941-1,SL3902

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND523.D
Spectrum: Avg. Scans 191-193 (5.72), Background Scan 185
Location of Maximum: 198.00
Number of points: 307

m/z	Y	m/z	Y	m/z	Y	m/z	Y
116.00	2310	193.00	4194	277.00	5646	440.00	133
117.00	32392	194.00	886	278.00	1057	441.00	26568
118.00	2480	195.00	507	279.00	229	442.00	183616
119.00	169	196.00	6860	281.00	54	443.00	36600
120.00	613	197.00	1656	283.00	943	444.00	3364
121.00	199	198.00	280000	284.00	476	445.00	168
122.00	2184	199.00	18328	285.00	921		

Raw QC Data Section

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG227901-1RA
Client ID: Method Blank Sample
Project:
SDG: SL3902
Lab File ID: N8644.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227901

Analysis Date: 22-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 24-MAY-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.061	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.046	0.10
Chrysene	J	0.060	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene-D10		89.5	%					
Fluorene-D10		88.6	%					
Pyrene-D10		99.1	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
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Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8644.D
Report Date: 24-May-2018 08:07

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052218.b\N8644.D
Lab Smp Id: WG227901-1RA Client Smp ID: WG227901-Blank
Inj Date : 22-MAY-2018 18:28 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG227901-1RA,SL3902
Misc Info : WG228848,WG227901,WG228848-4,SL3902-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N052218.b\NSPSIM95.m
Meth Date : 23-May-2018 08:21 cgomez Quant Type: ISTD
Cal Date : 22-MAY-2018 16:54 Cal File: N8641.D
Als bottle: 10 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

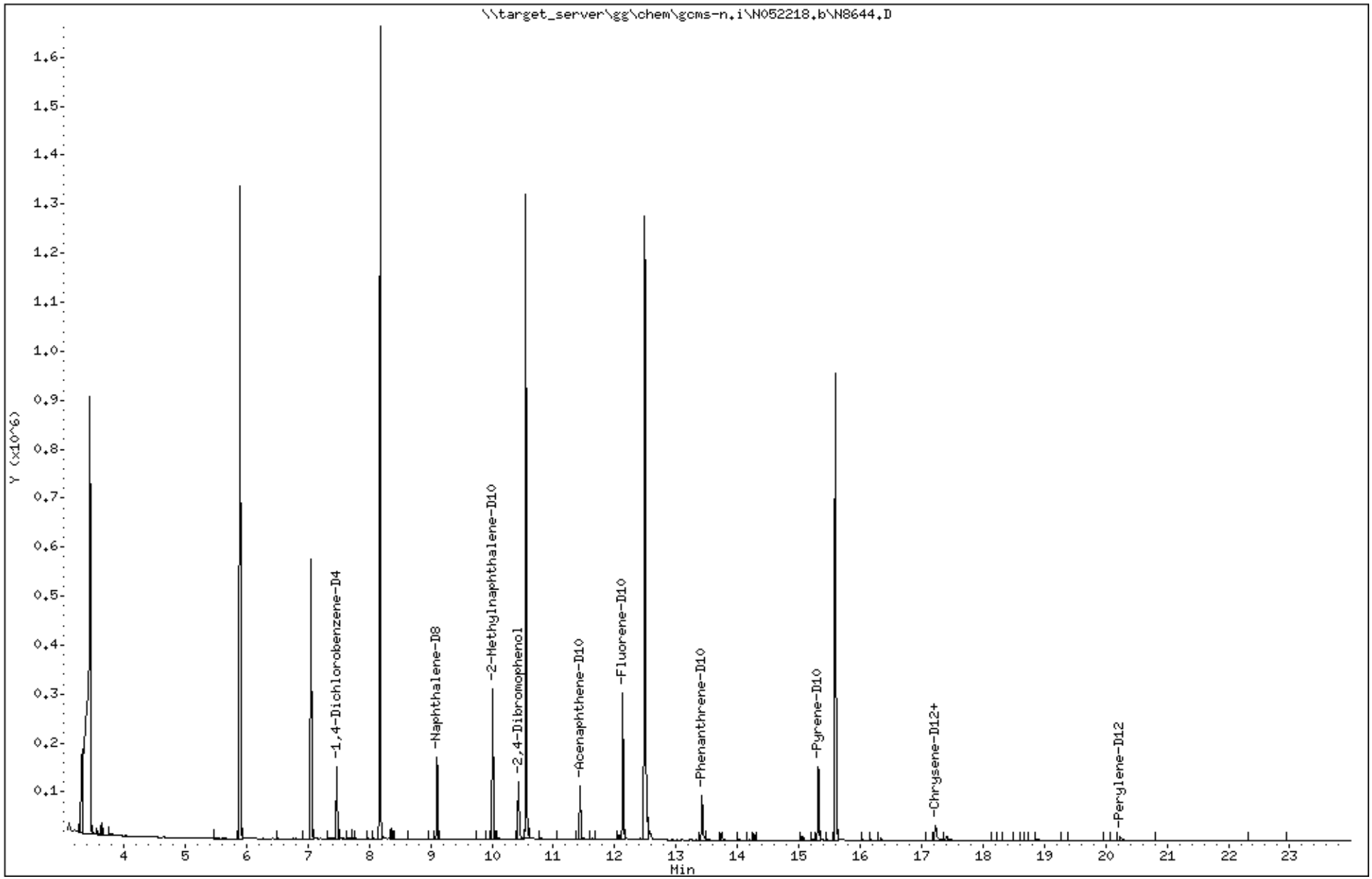
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.479	7.469	(1.000)	46075	0.80000	(aQ)	
*	26 Naphthalene-D8	136	9.100	9.100	(1.000)	150702	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	10.014	10.004	(1.100)	152338	1.79003	1.79	
*	47 Acenaphthene-D10	164	11.444	11.433	(1.000)	61276	0.80000	(a)	
$	55 Fluorene-D10	174	12.130	12.130	(1.060)	130019	1.77188	1.77	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	102718	0.80000	(a)	
$	71 Pyrene-D10	212	15.322	15.322	(0.889)	139176	1.98138	1.98	
*	76 Chrysene-D12	240	17.227	17.218	(1.000)	35900	0.80000	(a)	
	77 Chrysene	228	17.274	17.264	(1.003)	3895	0.05967	0.0597(a)	
*	83 Perylene-D12	264	20.233	20.233	(1.000)	18331	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8644.D
Date : 22-MAY-2018 18:28
Client ID: WG227901-Blank
Instrument: gcms-n.i
Sample Info: WG227901-1RA,SL3902
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000158

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8644.D

Date : 22-MAY-2018 18:28

Client ID: WG227901-Blank

Instrument: gcms-n.i

Sample Info: WG227901-1RA,SL3902

Volume Injected (uL): 1.0

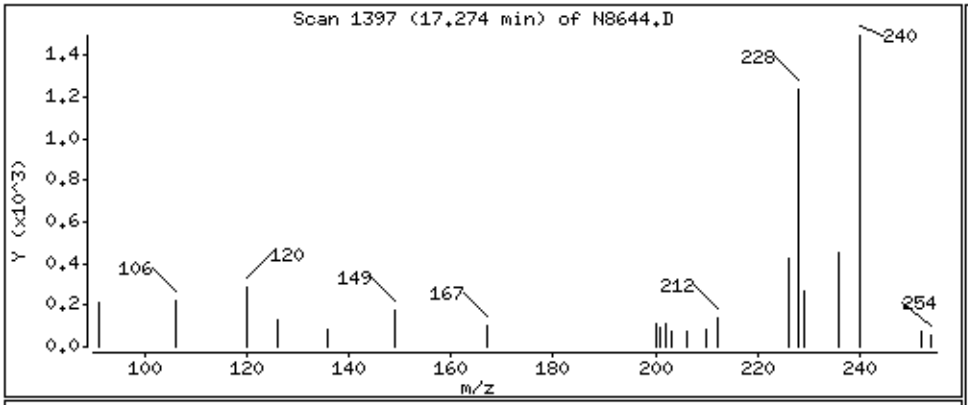
Operator: JCG

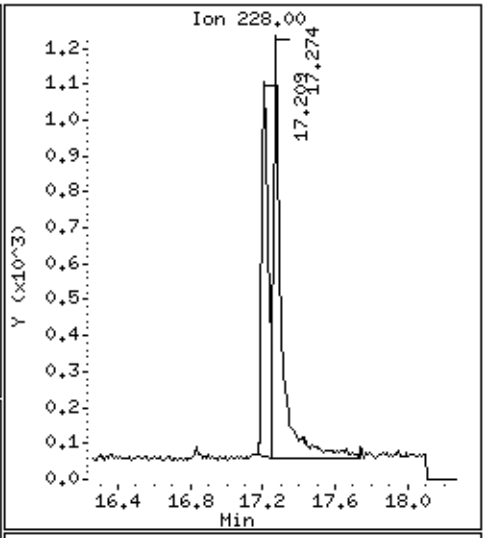
Column phase: ZB5-MS

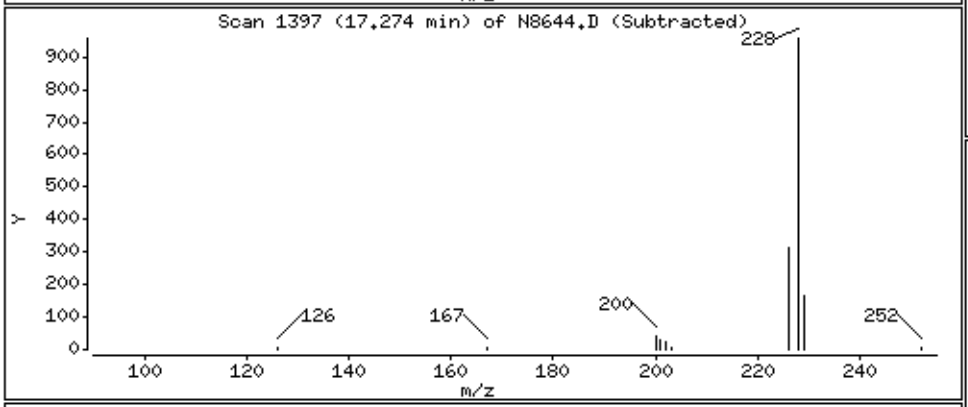
Column diameter: 0.25

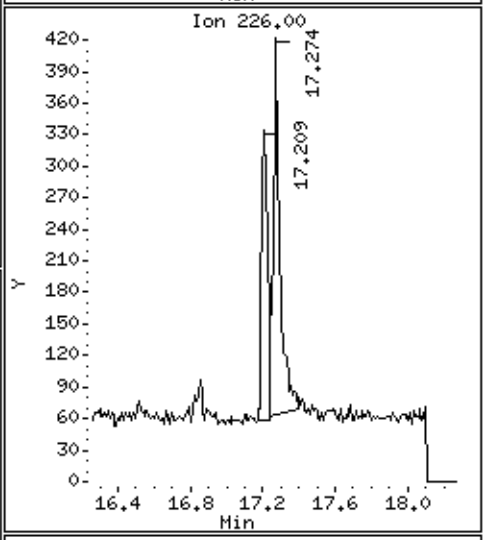
77 Chrysene

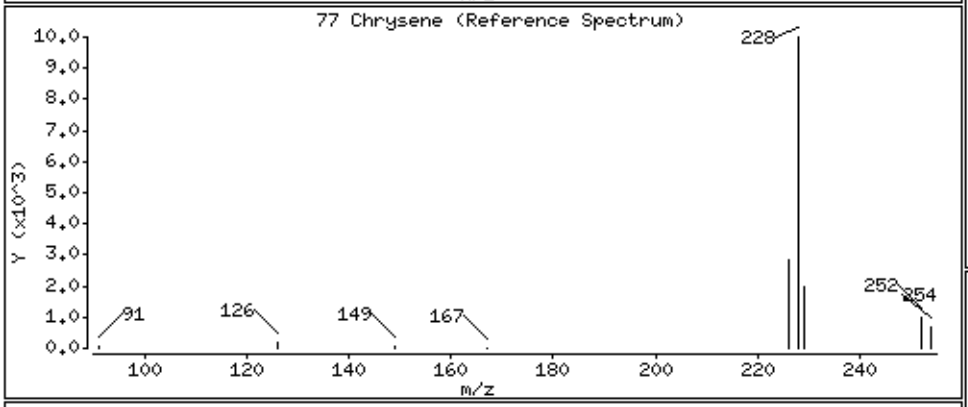
Concentration: 0.0597 ug/L

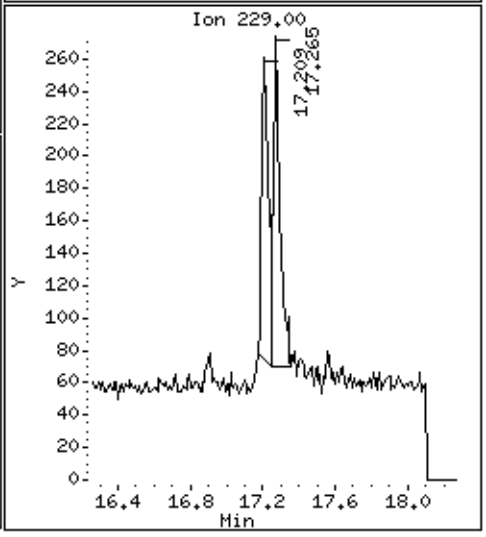


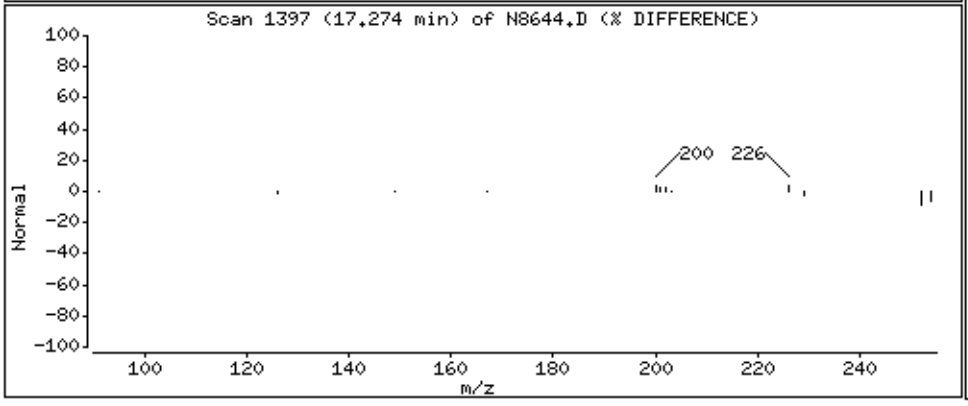












Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG227901-2RA
Client ID: LCS
Project:
SDG: SL3902
LCS File ID: N8645.D

Sample Date:
Received Date:
Extract Date: 09-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227901

Analysis Date: 22-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 24-MAY-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Naphthalene	88.5	2.00	1.77	ug/L	43-120
2-Methylnaphthalene	85.0	2.00	1.70	ug/L	39-120
Acenaphthylene	83.5	2.00	1.67	ug/L	35-121
Acenaphthene	89.0	2.00	1.78	ug/L	48-120
Fluorene	88.0	2.00	1.76	ug/L	50-120
Phenanthrene	93.0	2.00	1.86	ug/L	53-120
Anthracene	86.0	2.00	1.72	ug/L	53-120
Fluoranthene	93.0	2.00	1.86	ug/L	58-120
Pyrene	92.5	2.00	1.85	ug/L	53-121
Benzo(a)anthracene	95.0	2.00	1.90	ug/L	59-120
Chrysene	91.0	2.00	1.82	ug/L	57-120
Benzo(b)Fluoranthene	91.5	2.00	1.83	ug/L	53-126
Benzo(k)fluoranthene	85.0	2.00	1.70	ug/L	54-125
Benzo(a)pyrene	87.0	2.00	1.74	ug/L	53-120
Indeno(1,2,3-cd)pyrene	87.5	2.00	1.75	ug/L	48-130
Dibenzo(a,h)anthracene	79.5	2.00	1.59	ug/L	44-131
Benzo(g,h,i)perylene	93.5	2.00	1.87	ug/L	44-128
2-Methylnaphthalene-D10	88.3				43-120
Fluorene-D10	85.8				29-120
Pyrene-D10	93.0				53-166

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
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Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8645.D
Report Date: 24-May-2018 08:08

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052218.b\N8645.D
Lab Smp Id: WG227901-2RA Client Smp ID: WG227901-LCS
Inj Date : 22-MAY-2018 18:59 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG227901-2RA,SL3902
Misc Info : WG228848,WG227901,WG228848-4,SL3902-2
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N052218.b\NSPSIM95.m
Meth Date : 23-May-2018 08:21 cgomez Quant Type: ISTD
Cal Date : 22-MAY-2018 16:54 Cal File: N8641.D
Als bottle: 11 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.469	(1.000)	47961	0.80000	(aQ)	
*	26 Naphthalene-D8	136	9.100	9.100	(1.000)	161713	0.80000	(a)	
	27 Naphthalene	128	9.130	9.130	(1.003)	319758	1.76799	1.77	
$	32 2-Methylnaphthalene-D10	152	10.004	10.004	(1.099)	161315	1.76645	1.77	
	33 2-Methylnaphthalene	142	10.043	10.053	(1.104)	200035	1.70473	1.70	
	45 Acenaphthylene	152	11.236	11.236	(0.983)	272905	1.67297	1.67	
*	47 Acenaphthene-D10	164	11.433	11.433	(1.000)	68604	0.80000	(a)	
	48 Acenaphthene	153	11.476	11.476	(1.004)	187131	1.77700	1.78	
$	55 Fluorene-D10	174	12.130	12.130	(1.061)	140901	1.71507	1.72	
	56 Fluorene	166	12.163	12.173	(1.064)	192763	1.75552	1.76	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	105234	0.80000	(a)	
	66 Phenanthrene	178	13.442	13.453	(1.002)	256924	1.86412	1.86	
	67 Anthracene	178	13.517	13.517	(1.007)	241643	1.71501	1.72	
	70 Fluoranthene	202	15.041	15.050	(1.121)	238693	1.86087	1.86	
$	71 Pyrene-D10	212	15.313	15.322	(0.889)	144670	1.85988	1.86	
	72 Pyrene	202	15.341	15.351	(0.891)	235399	1.85300	1.85	
	75 Benzo(a)anthracene	228	17.199	17.208	(0.999)	116416	1.90104	1.90	
*	76 Chrysene-D12	240	17.218	17.218	(1.000)	39755	0.80000	(a)	
	77 Chrysene	228	17.265	17.264	(1.003)	131789	1.82309	1.82	
	80 Benzo(b)fluoranthene	252	19.426	19.426	(0.960)	64104	1.83444	1.83	
	81 Benzo(k)fluoranthene	252	19.494	19.494	(0.964)	94754	1.70542	1.70(H)	

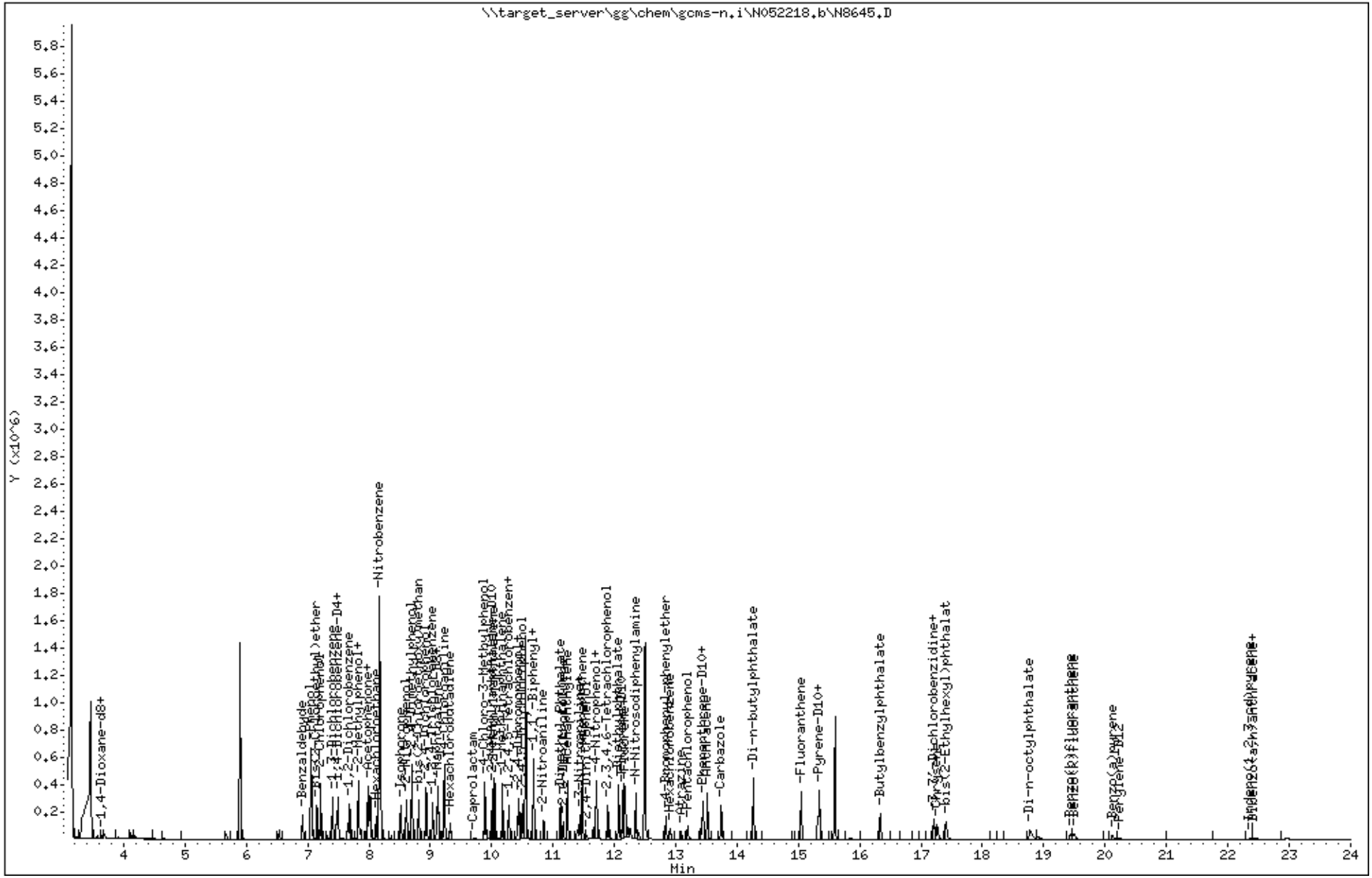
Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8645.D
Report Date: 24-May-2018 08:08

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
82	Benzo(a)pyrene	252	20.119	20.119	(0.994)	58927	1.74469	1.74	
* 83	Perylene-D12	264	20.233	20.233	(1.000)	22388	0.80000	(a)	
84	Indeno(1,2,3-cd)pyrene	276	22.356	22.356	(1.298)	43603	1.75114	1.75	
85	Dibenzo(a,h)anthracene	278	22.436	22.424	(1.109)	26176	1.59231	1.59	
86	Benzo(g,h,i)perylene	276	22.958	22.958	(1.135)	46071	1.87158	1.87	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.

Data File: \\target_server\gg\chem\gcms-n.i\N052218.b\N8645.D
Date : 22-MAY-2018 18:59
Client ID: WG227901-LCS
Instrument: gcms-n.i
Sample Info: WG227901-2RA,SL3902
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000163

Katahdin
ANALYTICAL SERVICES

MS/MSD Recovery Report

MS ID: WG227901-3RA
MSD ID: WG227901-4RA
Sample ID: SL3902-12
Client ID: CHAAP-19C-LGIA-DPT06
Project:
SDG: SL3902
MS File ID: N8679.D

Received Date:
Extract Date: 09-MAY-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG227901
Report Date: 24-MAY-18
MSD File ID: N8680.D

Analysis Date: 23-MAY-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Naphthalene	1.92	1.90	ug/L	U0.10	1.6	1.4	81.1	76.1	7	20	43-120
2-Methylnaphthalene	1.92	1.90	ug/L	U0.10	1.5	1.5	79.6	76.6	5	20	39-120
Acenaphthylene	1.92	1.90	ug/L	U0.10	1.4	1.4	74.9	71.9	5	20	35-121
Acenaphthene	1.92	1.90	ug/L	U0.10	1.5	1.4	79.0	75.6	5	20	48-120
Fluorene	1.92	1.90	ug/L	U0.10	1.5	1.4	79.6	75.6	6	20	50-120
Phenanthrene	1.92	1.90	ug/L	U0.10	1.6	1.5	84.2	76.6	10	20	53-120
Anthracene	1.92	1.90	ug/L	U0.10	1.6	1.4	80.6	73.5	10	20	53-120
Fluoranthene	1.92	1.90	ug/L	U0.10	1.8	1.6	91.5	83.0	11	20	58-120
Pyrene	1.92	1.90	ug/L	U0.10	1.6	1.5	84.2	77.7	9	20	53-121
Benzo(a)anthracene	1.92	1.90	ug/L	U0.10	1.8	1.7	95.2	87.7	9	20	59-120
Chrysene	1.92	1.90	ug/L	U0.10	1.6	1.5	84.8	77.2	10	20	57-120
Benzo(b)Fluoranthene	1.92	1.90	ug/L	J0.19	1.7	1.6	79.4	72.2	9	20	53-126
Benzo(k)fluoranthene	1.92	1.90	ug/L	U0.10	1.4	1.2	71.8	63.5	13	20	54-125
Benzo(a)pyrene	1.92	1.90	ug/L	U0.10	1.3	1.1	66.0	57.8	14	20	53-120
Indeno(1,2,3-cd)pyrene	1.92	1.90	ug/L	UM0.10	0.96	0.86	50.2	44.9*	12	20	48-130
Dibenzo(a,h)anthracene	1.92	1.90	ug/L	U0.10	1.8	1.5	92.0	77.7	18	20	44-131
Benzo(g,h,i)perylene	1.92	1.90	ug/L	U0.10	1.4	1.2	71.8	60.9	17	20	44-128
2-Methylnaphthalene-D10							81.7	77.3			43-120
Fluorene-D10							80.9	76.7			29-120
Pyrene-D10							84.4	78.5			53-166

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8679.D
Report Date: 24-May-2018 08:12

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052318B.b\N8679.D
Lab Smp Id: WG227901-3RA Client Smp ID: HAAP-19C-LGIA-DPT06
Inj Date : 23-MAY-2018 21:59 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG227901-3RA,SL3902
Misc Info : WG228941,WG227901,WG228910-4,SL3902-12
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N052318B.b\NSPSIM96.m
Meth Date : 24-May-2018 07:40 cgomez Quant Type: ISTD
Cal Date : 23-MAY-2018 12:01 Cal File: N8665.D
Als bottle: 14 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.040	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.470	(1.000)	56968	0.80000	(a)	
*	26 Naphthalene-D8	136	9.100	9.101	(1.000)	198983	0.80000	(a)	
	27 Naphthalene	128	9.120	9.131	(1.002)	355524	1.62092	1.56	
$	32 2-Methylnaphthalene-D10	152	10.004	10.004	(1.099)	183224	1.63395	1.57	
	33 2-Methylnaphthalene	142	10.043	10.053	(1.104)	226303	1.59437	1.53	
	45 Acenaphthylene	152	11.236	11.237	(0.983)	311664	1.50065	1.44	
*	47 Acenaphthene-D10	164	11.433	11.433	(1.000)	89333	0.80000	(a)	
	48 Acenaphthene	153	11.476	11.477	(1.004)	211241	1.57664	1.52	
$	55 Fluorene-D10	174	12.130	12.131	(1.061)	168055	1.61891	1.56	
	56 Fluorene	166	12.163	12.174	(1.064)	222692	1.59328	1.53	
*	65 Phenanthrene-D10	188	13.421	13.421	(1.000)	146597	0.80000	(a)	
	66 Phenanthrene	178	13.442	13.453	(1.002)	322905	1.68935	1.62	
	67 Anthracene	178	13.517	13.517	(1.007)	311222	1.61578	1.55	
	70 Fluoranthene	202	15.041	15.051	(1.121)	322417	1.82922	1.76	
$	71 Pyrene-D10	212	15.322	15.323	(0.890)	198304	1.68731	1.62	
	72 Pyrene	202	15.341	15.351	(0.891)	322337	1.68799	1.62	
	75 Benzo(a)anthracene	228	17.199	17.209	(0.999)	173386	1.90054	1.83	
*	76 Chrysene-D12	240	17.218	17.228	(1.000)	63324	0.80000	(a)	
	77 Chrysene	228	17.265	17.274	(1.003)	189603	1.70014	1.63	
	80 Benzo(b)fluoranthene	252	19.426	19.438	(0.960)	90662	1.78854	1.72	

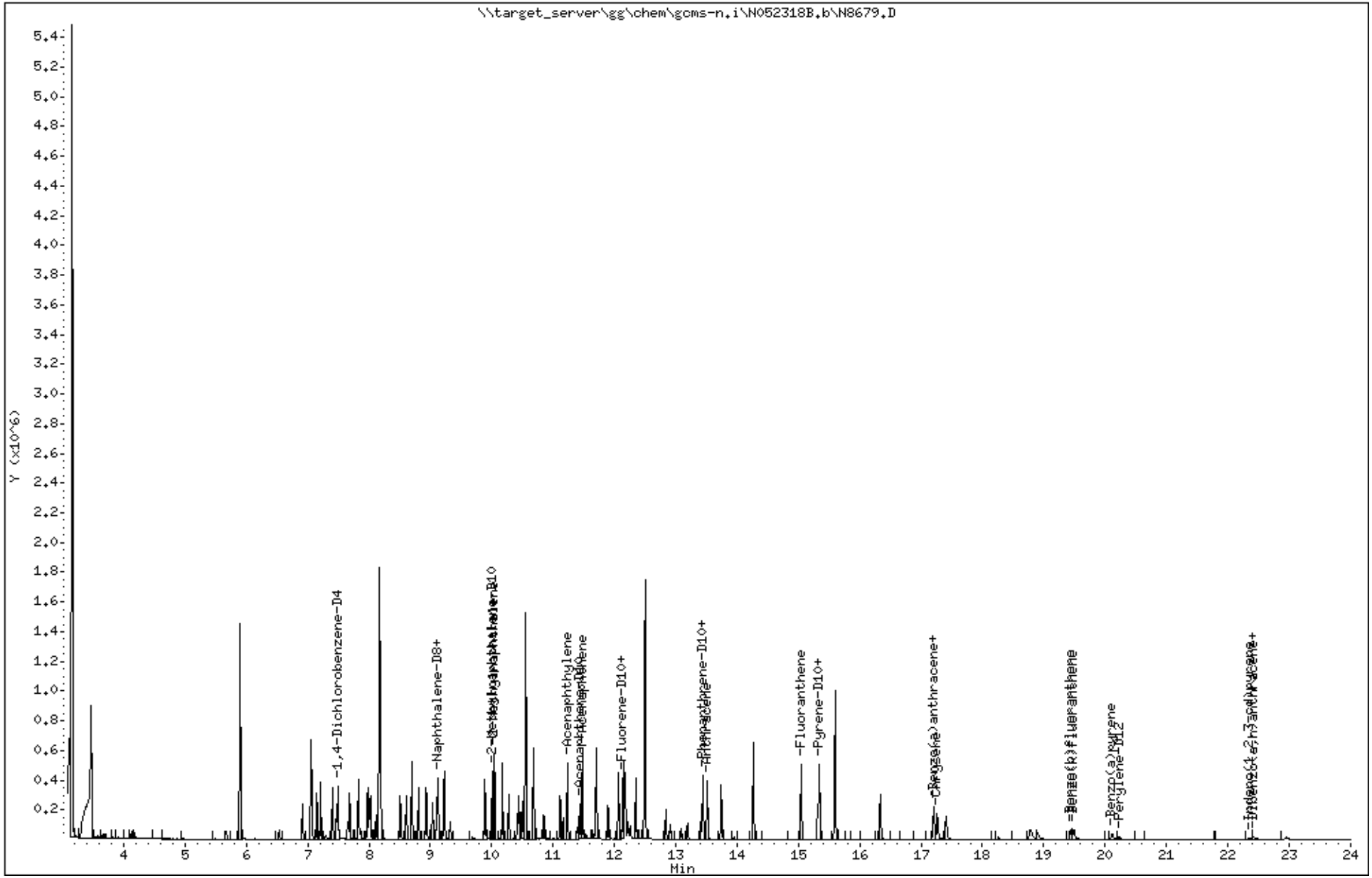
Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8679.D
Report Date: 24-May-2018 08:12

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
81	Benzo(k)fluoranthene	252	19.483	19.495	(0.963)	128186	1.43331	1.38(H)	
82	Benzo(a)pyrene	252	20.108	20.120	(0.994)	72404	1.31685	1.27	
* 83	Perylene-D12	264	20.233	20.233	(1.000)	35248	0.80000	(a)	
84	Indeno(1,2,3-cd)pyrene	276	22.345	22.357	(1.298)	29645	1.00391	0.965	
85	Dibenzo(a,h)anthracene	278	22.424	22.436	(1.108)	39358	1.84571	1.77	
86	Benzo(g,h,i)perylene	276	22.947	22.959	(1.134)	54648	1.43209	1.38	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
H - Operator selected an alternate compound hit.

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8679.D
Date : 23-MAY-2018 21:59
Client ID: HAAP-19C-LGIA-DPT06
Instrument: gcms-n.i
Sample Info: WG227901-3RA,SL3902
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 2000167

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8680.D
Report Date: 24-May-2018 08:12

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N052318B.b\N8680.D
Lab Smp Id: WG227901-4RA Client Smp ID: HAAP-19C-LGIA-DPT06
Inj Date : 23-MAY-2018 22:31 MS Autotune Date: 25-OCT-2017 08:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG227901-4RA,SL3902
Misc Info : WG228941,WG227901,WG228910-4,SL3902-12
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N052318B.b\NSPSIM96.m
Meth Date : 24-May-2018 07:40 cgomez Quant Type: ISTD
Cal Date : 23-MAY-2018 12:01 Cal File: N8665.D
Als bottle: 15 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.050	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	7.469	7.470	(1.000)	60651	0.80000	(a)	
*	26 Naphthalene-D8	136	9.100	9.101	(1.000)	209620	0.80000	(a)	
	27 Naphthalene	128	9.130	9.131	(1.003)	351586	1.52162	1.45	
$	32 2-Methylnaphthalene-D10	152	10.004	10.004	(1.099)	182613	1.54587	1.47	
	33 2-Methylnaphthalene	142	10.043	10.053	(1.104)	228550	1.52850	1.46	
	45 Acenaphthylene	152	11.236	11.237	(0.983)	312597	1.43885	1.37	
*	47 Acenaphthene-D10	164	11.432	11.433	(1.000)	93449	0.80000	(a)	
	48 Acenaphthene	153	11.476	11.477	(1.004)	211664	1.51021	1.44	
$	55 Fluorene-D10	174	12.130	12.131	(1.061)	166507	1.53335	1.46	
	56 Fluorene	166	12.162	12.174	(1.064)	220876	1.51068	1.44	
*	65 Phenanthrene-D10	188	13.410	13.421	(1.000)	156361	0.80000	(a)	
	66 Phenanthrene	178	13.442	13.453	(1.002)	312100	1.53086	1.46	
	67 Anthracene	178	13.517	13.517	(1.008)	303213	1.47590	1.40	
	70 Fluoranthene	202	15.041	15.051	(1.122)	312248	1.66091	1.58	
$	71 Pyrene-D10	212	15.313	15.323	(0.889)	193573	1.56950	1.49	
	72 Pyrene	202	15.341	15.351	(0.891)	311689	1.55537	1.48	
	75 Benzo(a)anthracene	228	17.199	17.209	(0.999)	168185	1.75673	1.67	
*	76 Chrysene-D12	240	17.217	17.228	(1.000)	66453	0.80000	(a)	
	77 Chrysene	228	17.264	17.274	(1.003)	181784	1.54490	1.47	
	80 Benzo(b)fluoranthene	252	19.426	19.438	(0.960)	85151	1.64495	1.57	

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8680.D
Report Date: 24-May-2018 08:12

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
	81 Benzo(k)fluoranthene	252	19.483	19.495	(0.963)	117182	1.27023	1.21(H)	
	82 Benzo(a)pyrene	252	20.108	20.120	(0.994)	65749	1.15927	1.10	
*	83 Perylene-D12	264	20.232	20.233	(1.000)	36359	0.80000	(a)	
	84 Indeno(1,2,3-cd)pyrene	276	22.345	22.357	(1.298)	27333	0.89740	0.855(RM)	M3
	85 Dibenzo(a,h)anthracene	278	22.424	22.436	(1.108)	33734	1.55076	1.48	
	86 Benzo(g,h,i)perylene	276	22.947	22.959	(1.134)	47970	1.21867	1.16	

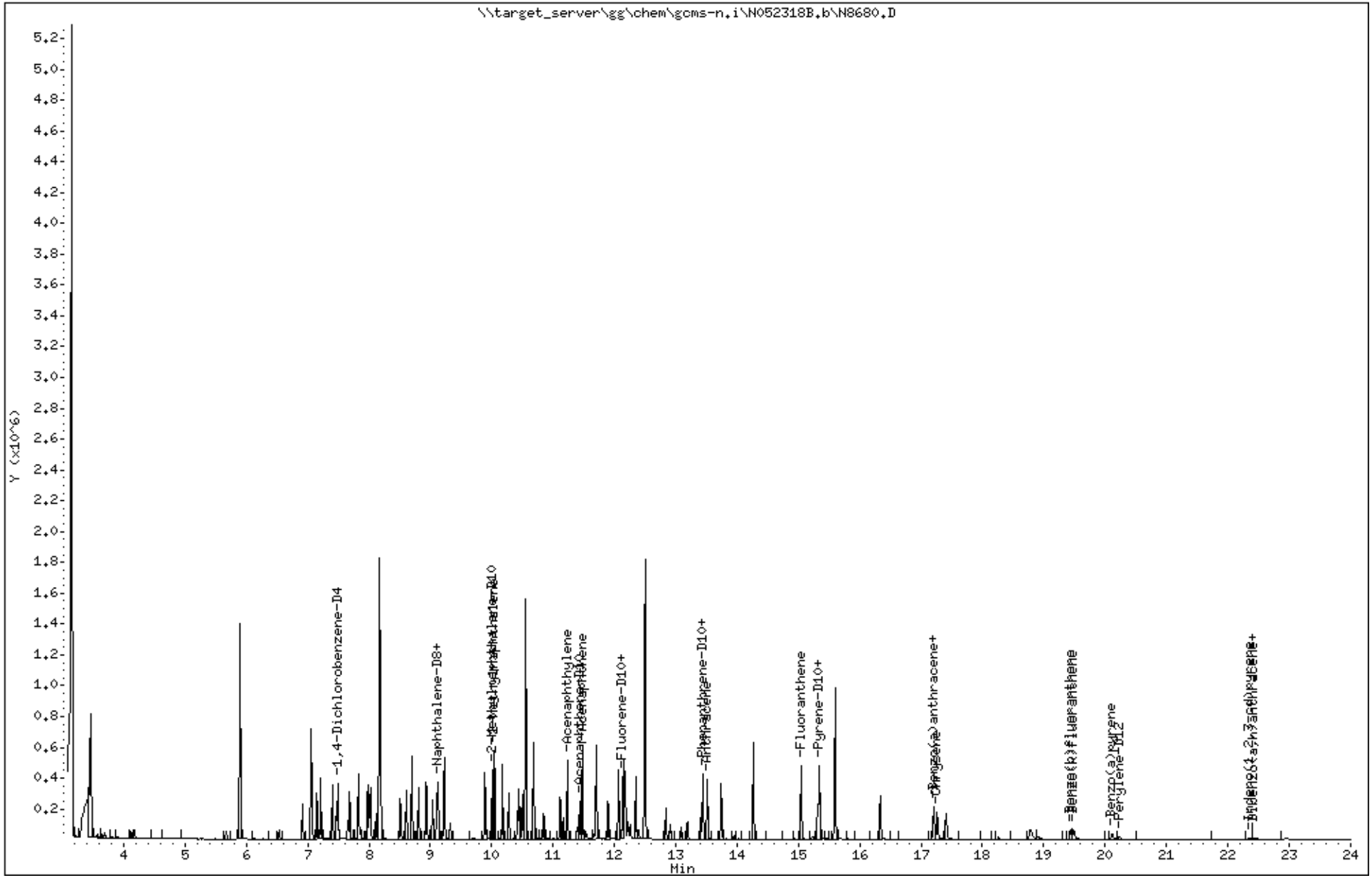
QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



8:48 am, May 24, 2018

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8680.D
Date : 23-MAY-2018 22:31
Client ID: HAAP-19C-LGIA-DPT06
Instrument: gcms-n.i
Sample Info: WG227901-4RA,SL3902
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25

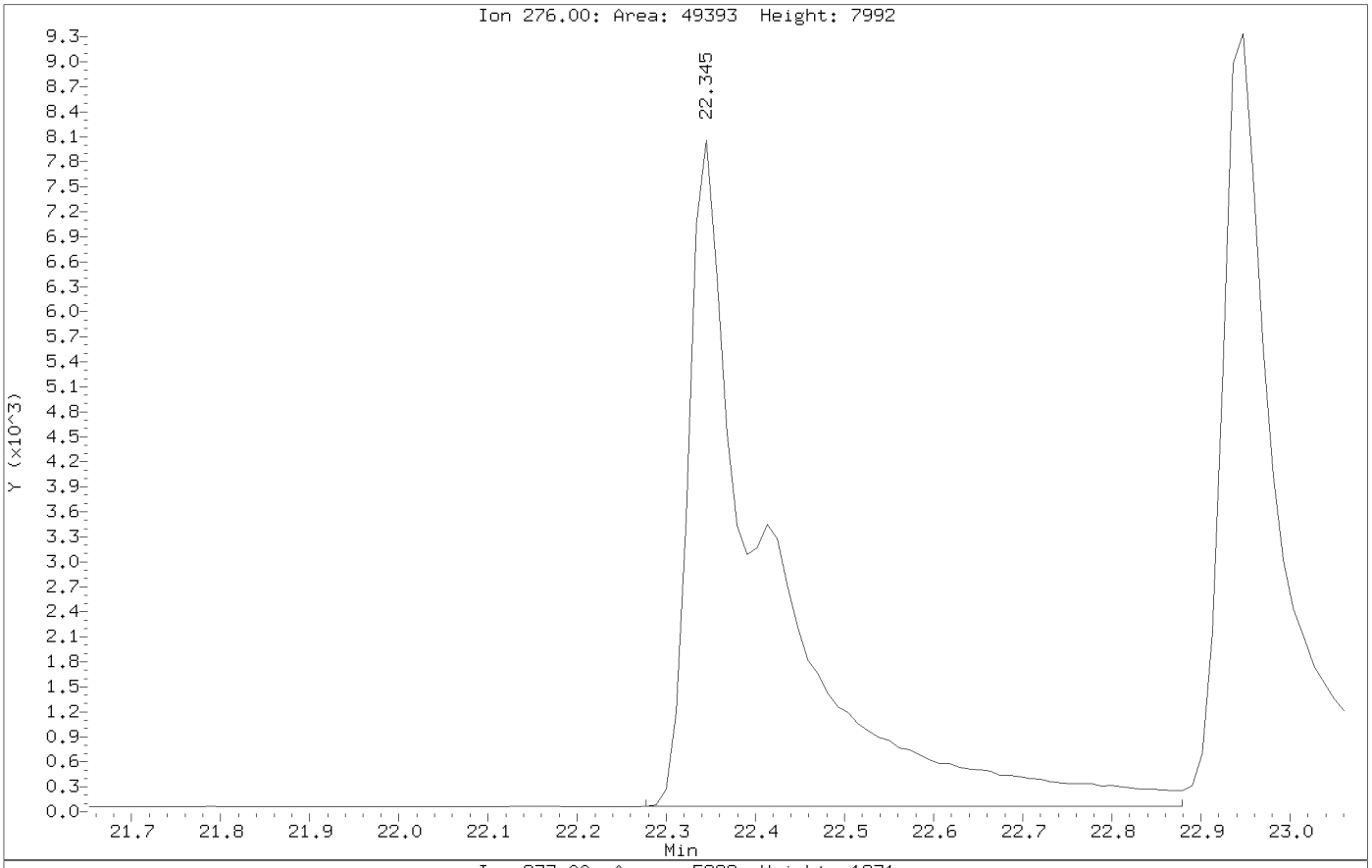


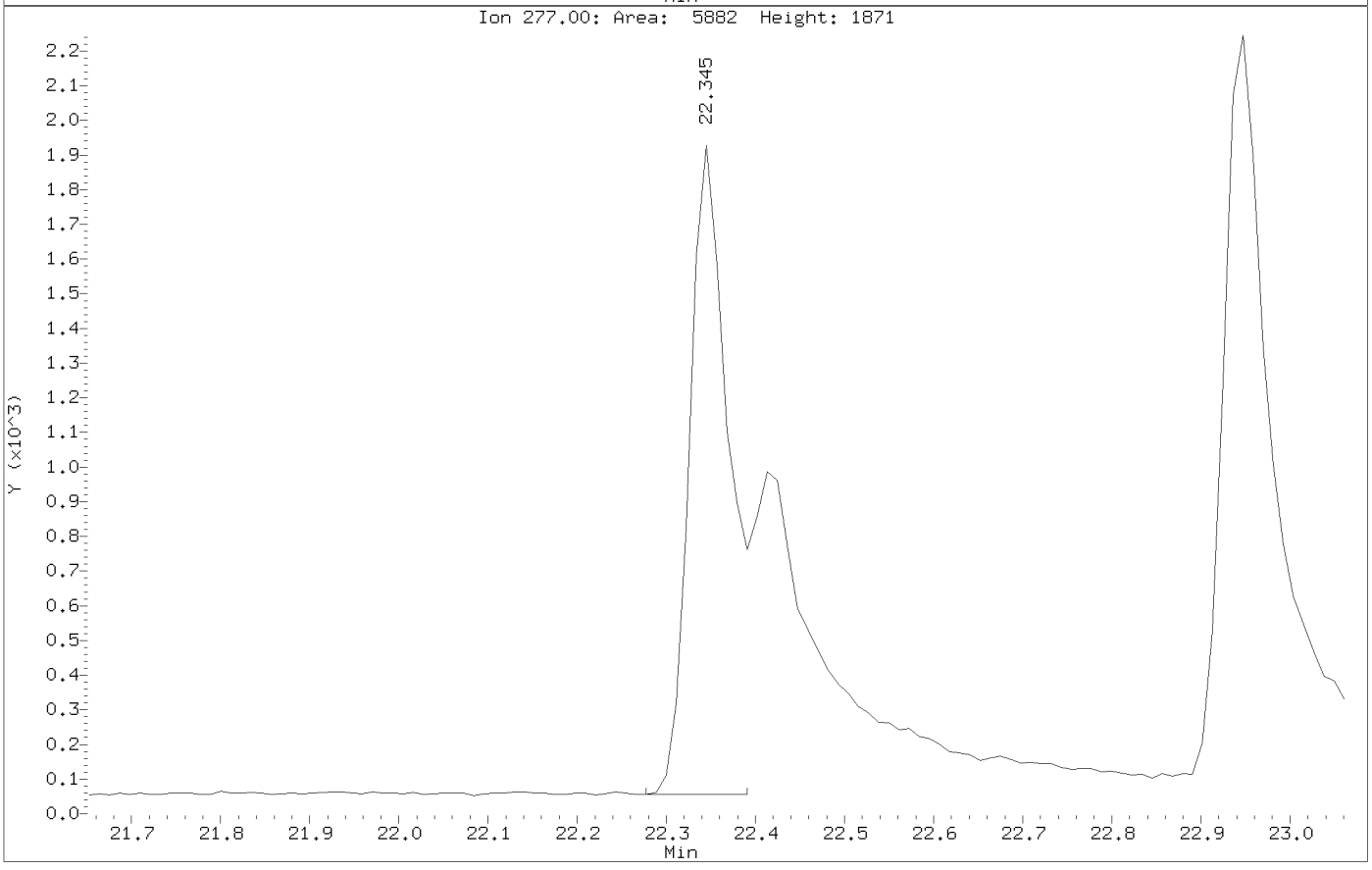
Katahdin Analytical Services 2000170

Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8680.D
Injection Date: 23-MAY-2018 22:31
Instrument: gcms-n.i
Client Sample ID: HAAP-19C-LGIA-DPT06

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

BEFORE MANUAL INTEGRATION

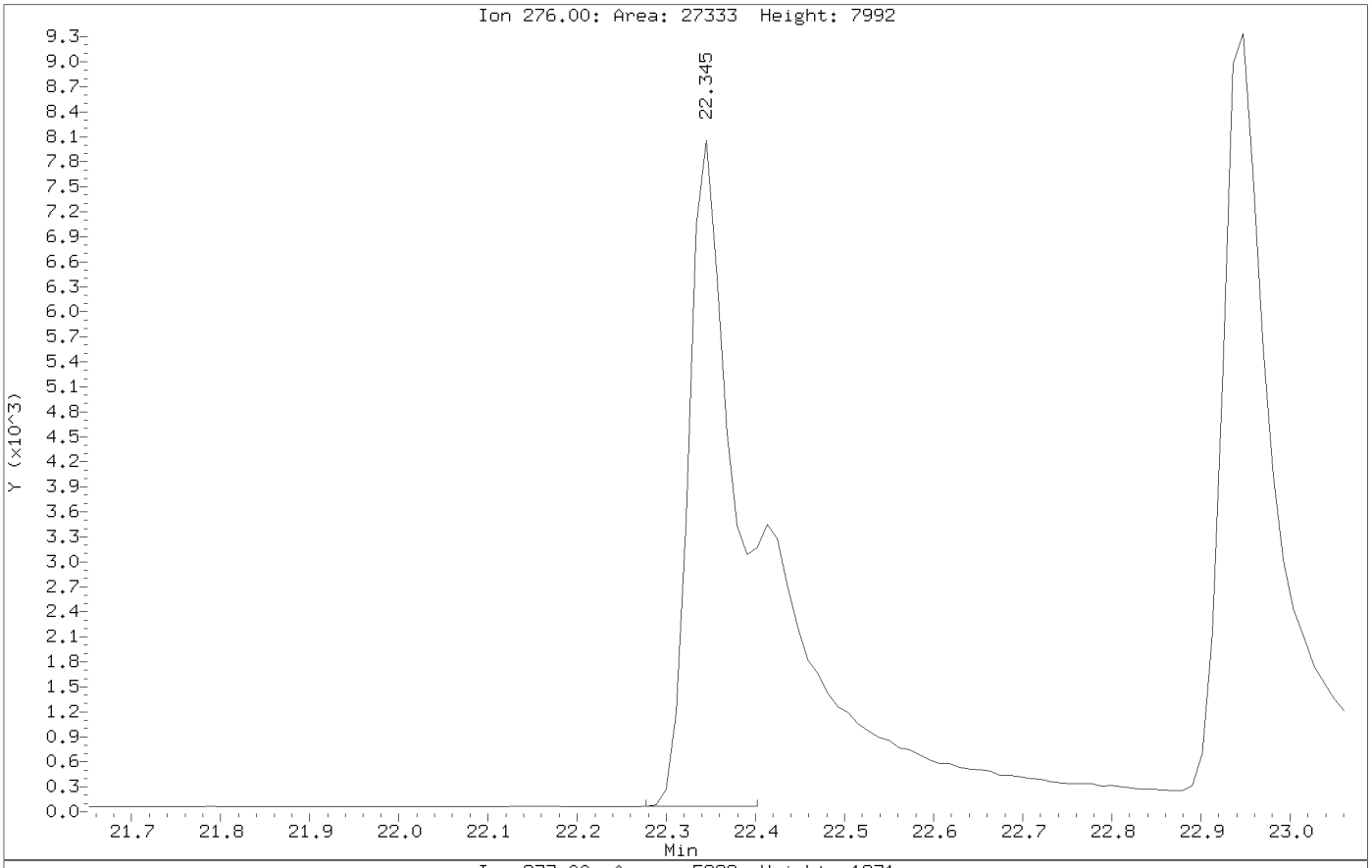


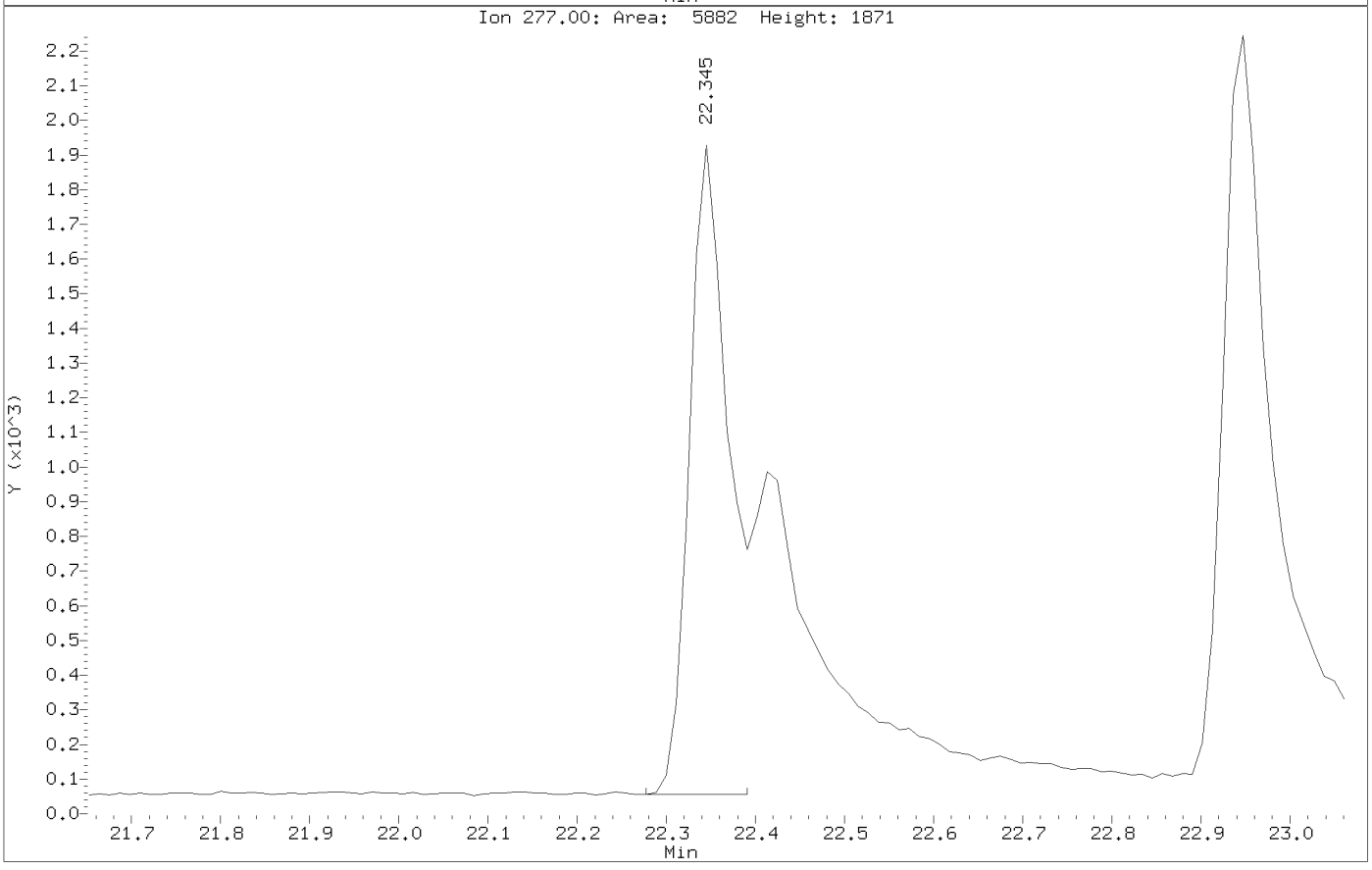


Data File: \\target_server\gg\chem\gcms-n.i\N052318B.b\N8680.D
Injection Date: 23-MAY-2018 22:31
Instrument: gcms-n.i
Client Sample ID: HAAP-19C-LGIA-DPT06

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

AFTER MANUAL INTEGRATION





Logbooks and Supporting Documents

S/M SEP

KATAHDIN ANALYTICAL SERVICES, LLC.
ORGANIC EXTRACTIONS LOG - AQUEOUS SEMI-VOLATILES

Extraction Method: (check one)	SW846 3510 (SEP) ✓	SW846 3520 (CLLE)	SW846 3535 (SPE)
Analytical Method: (check one)	SW846 8270 ✓ KF 5/9	SW846 8270 SIM ✓	EPA 625 (mark meniscus w/ marker to determine IV) —
Surrogate ID: SV2819	Surrogate ID: —	Spike ID: SV2846	Spike ID: —
Methylene Chloride Lot #: DT742	pH Paper Lot # NC727135	KI Starch Paper ID: 022017	Note samples requiring TRC neutralization in comments section.
pH (1st Extraction) ≤2	H_2SO_4 Lot # 177543	pH (2nd Extraction) ≥11	NaOH Lot # 190393
$NaSO_4$ Lot # 27964001	Filter Paper Lot #: 14081047	Boiling Stones ID: 3-27-2014	Vial Lot #: 393232
Nitrogen Bath Temperature: 38°C	—	—	—
Prep Start Time: 1020	Prep End Time: 1255	CLLE Start Time: —	CLLE End Date & Time: —

Date Extracted	Ext. Init.	Sample ID	Initial Vol. mL	Surr. Vol.	Spike Vol.	Fraction SV	Fraction SIM	Final Vol. mL	Date Conc.	Tray Location	Initials	Comments
5-9-18	KF	W6227901-1	1000	1mL	NR		✓	1mL	5-9-18	SV305 E5	DP	R
		-2	1000		1mL					6		
		-3	1040							7		MS SL3902-12M
		-4	1050							8		MSD R
									KF	5-9-18		

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QAEX342

0000179



Date Extracted	Ext. Init.	Sample ID	Initial Vol. mL	Surr. Vol.	Spike Vol.	Fraction SV	Fraction SIM	Final Vol. mL	Date Conc.	Tray Location	Initials	Comments
5-9-18	KF	SL3839-2A	940	1mL	NR		✓	1mL	5-9-18	SV305 E9	DP	
		SL3902-2F	1020							10		
		-4G	1010							SV306 A1		
		-6H	980							2		
		-8H	1050							3		
		-10F	970							4		
		-12V	1000							5		MS/MSD
		-14I	1030							6		
		SL3952-2G	1000							7		em-S.S.
		-4F	1020							8		
		-6F	1020							9		
		-8H	1010							10		
		-10H	1000							B1		
		-12G	1050							2		
		-16H	1040							3		
		-18I	1010							4		
		-19H	990							5		
		-21F	1030							6		
		-23F	1020							7		
									KF	5-9-18		

Reviewed By_____ Date_____

EX-007 – Revision 5 – 11/08/2017

QAEX342

0000179