Laboratory and SDG#: TADenver 280-137702 AECOM Chemist: Jared DeSadier

Date Verified: 7/7/2020 AECOM ITR: Jeff Aust

Guidance: DoD QSM Version 5.1 (January 2017)

Sample Identification #	Date Collected	Date Received	Matrix	Analysis
NW022-20A	6/15/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0109-20A	6/15/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0094-20A	6/15/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0099-20A	6/15/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0083-20A	6/14/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
NW020-20A	6/15/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
NW021-20A	6/15/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
NW023-20A	6/15/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0022-20A	6/15/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0024-20A	6/15/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0108-20A	6/14/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)

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Sample	Date	Date	Matrix	Analysis
Identification #	Collected	Received	Matrix	·
G0118-20A	6/14/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0098-20A	6/14/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0114-20A	6/14/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0097-20A	6/14/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0113-20A	6/14/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
PZ015-20A	6/13/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
PZ016-20A	6/13/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0110-20A	6/13/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0112-20A	6/14/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0085-20A	6/13/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0285-20A	6/13/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)

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Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2018) Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Sample Identification #	Date Collected	Date Received	Matrix	Analysis
G0084-20A	6/13/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0067-20A	6/13/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0023-20A	6/13/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0119-20A	6/13/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0048-20A	6/13/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0066R-20A	6/13/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0121-20A	6/13/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0049-20A	6/13/2020	6/16/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK- 175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)

1.0 Laboratory Case Narrative \ Cooler Receipt Form

Verification Criteria	Yes	No	N/A
Were any DoD QSM deviations noted in the laboratory case narrative?	X		
Were DoD QSM corrective actions followed if deviations were noted?	X		
Were any issues noted in the cooler receipt form?	X		

The case narrative indicated that some surrogate and MS/MSD recoveries and duplicate RPDs were outside evaluation criteria and some analytes were detected in blank samples. These issues are discussed further in the ADR report.

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Guidance: DoD QSM Version 5.1 (January 2017)

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The RPD between the primary and confirmation column for some explosives samples was above evaluation criteria. This issue is discussed further in Section 7.0. Some CCV %Ds were outside of evaluation criteria. This issue is discussed further in Section 5.0.

The cooler receipt form indicated some discrepancies between the collection times listed on the COC and sample label IDs. Per the chemist, samples were logged via the labels or COC where appropriate and no qualification of data was required.

No other issues were noted in the case narrative or cooler receipt form.

2.0 Sample Documentation

Verification Criteria		No
Were all samples documented correctly on the chain-of-custody (COC) and samples labels?		X
Were all sample identifications (IDs) documented correctly on sample labels?		X
Did samples listed on COCs match the sample labels?		X
Were samples relinquished properly on the COC?	X	

See Section 1.0.

3.0 Initial Calibration

Method 8330A Initial Calibration Criteria				
Instrument:		CHHPLC X3		
Date of Calibration:		3/4/2020		
	Yes	No	N/A	
Was at least a five point calibration completed for all analytes prior to sample analysis and one option below?	X			
Option 1: RSD for each analyte $\leq 20\%$?	X			
Option 2: If linear least squares regression was used was the $r^2 \ge 0.99$?			X	
Option 3: If non-linear regression was used was the coefficient of determination $r^2 \ge 0.99$?			X	
If non-linear regression was used were 6 points used for second order and 7 points for third order?			X	

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Method 8330A Initial Calibration Criteria					
Instrument:	CHI	CHHPLC_X3			
Date of Calibration:		3/4/2020			
	Yes	No	N/A		
Was at least a five point calibration completed for all analytes prior to sample analysis and one option below?	X				
Option 1: RSD for each analyte $\leq 20\%$?	X				
Option 2: If linear least squares regression was used was the $r^2 \ge 0.99$?			X		
Option 3: If non-linear regression was used was the coefficient of determination $r^2 \ge 0.99$?			X		
If non-linear regression was used were 6 points used for second order and 7 points for third order?			X		

Method 8330A Initial Calibration Criteria					
Instrument:	СНЕ	CHHPLC_X3			
Date of Calibration:	3/1	3/18/2020			
	Yes	No	N/A		
Was at least a five point calibration completed for all analytes prior to sample analysis and one option below?	X				
Option 1: RSD for each analyte ≤ 20%?	X				
Option 2: If linear least squares regression was used was the $r^2 \ge 0.99$?			X		
Option 3: If non-linear regression was used was the coefficient of determination $r^2 \ge 0.99$?			X		
If non-linear regression was used were 6 points used for second order and 7 points for third order?			X		

Method 8330A Initial Calibration Criteria				
Instrument:	CHHPLO	CHHPLC G2 LUNA		
Date of Calibration:	5/1	5/14/2020		
	Yes	No	N/A	
Was at least a five point calibration completed for all analytes prior to sample analysis and one option below?	X			
Option 1: RSD for each analyte $\leq 20\%$?	X			
Option 2: If linear least squares regression was used was the $r^2 \ge 0.99$?			X	
Option 3: If non-linear regression was used was the coefficient of determination $r^2 \ge 0.99$?			X	
If non-linear regression was used were 6 points used for second order and 7 points for third order?			X	

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Method 8330A Initial Calibration Criteria					
Instrument:	CHHPLO	CHHPLC G2 LUNA			
Date of Calibration:	5/14/2020				
	Yes	No	N/A		
Was at least a five point calibration completed for all analytes prior to sample analysis and one option below?	X				
Option 1: RSD for each analyte $\leq 20\%$?	X				
Option 2: If linear least squares regression was used was the $r^2 \ge 0.99$?			X		
Option 3: If non-linear regression was used was the coefficient of determination $r^2 \ge 0.99$?			X		
If non-linear regression was used were 6 points used for second order and 7 points for third order?			X		

Method RSK-175 Initial Calibration Criteria			
Instrument:		VGC_	J
Date of Calibration:	5	5/16/20	20
	Yes	No	N/A
Was at least a five point calibration completed for all analytes prior to sample analysis and one option below?	X		
Option 1: RSD for each analyte ≤ 25%?	X		
Option 2: If linear least squares regression was used was the $r^2 \ge 0.99$?	X		
Option 3: If non-linear regression was used was the coefficient of determination $r^2 \ge 0.99$?			X
If non-linear regression was used were 6 points used for second order and 7 points for third order?			X

Method RSK-175 Initial Calibration Criteria			
Instrument:		VGC_	J
Date of Calibration:		6/24/2020	
	Yes	No	N/A
Was at least a five point calibration completed for all analytes prior to sample analysis and one option below?	X		
Option 1: RSD for each analyte ≤ 25%?	X		
Option 2: If linear least squares regression was used was the $r^2 \ge 0.99$?	X		
Option 3: If non-linear regression was used was the coefficient of determination $r^2 \ge 0.99$?			X
If non-linear regression was used were 6 points used for second order and 7 points for third order?			X

Method 9056A Initial Calibration Criteria			
Instrument:	WC_I	onChr	om10
Date of Calibration:	6/3/2020)
	Yes	No	N/A
Was a minimum of three standards and a calibration blank used for ICAL?	X		
Was $r^2 \ge 0.99$?	X		

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Method 9056A Initial Calibration Criteria			
Instrument:	WC_IonChrom10		
Date of Calibration:	6/29/2020		0
	Yes	No	N/A
Was a minimum of three standards and a calibration blank used for ICAL?	X		
Was $r^2 \ge 0.99$?	X		

Method 9056A Initial Calibration Criteria			
Instrument:	WC_IonChrom10		
Date of Calibration:	7/1/2020)
	Yes	No	N/A
Was a minimum of three standards and a calibration blank used for ICAL?	X		
Was $r^2 \ge 0.99$?	X		

Method 350.1 Initial Calibration Criteria			
Instrument:	W	/C_Alp	4
Date of Calibration:	6	6/17/2020	
	Yes	No	N/A
Was a minimum of three standards and a calibration blank used for ICAL?	X		
Was $r^2 \ge 0.99$?	X		

Method 353.2 Initial Calibration Criteria			
Instrument:	WC_Alp 2		
Date of Calibration:	6/22/2020		20
	Yes	No	N/A
Was a minimum of three standards and a calibration blank used for ICAL?	X		
Was $r^2 \ge 0.99$?	X		

Method 351.2 Initial Calibration Criteria			
Instrument:	W	WC_Astoria	
Date of Calibration:	6	6/23/2020	
	Yes	No	N/A
Was a minimum of three standards and a calibration blank used for ICAL?	X		
Was $r^2 \ge 0.99$?	X		

Method 351.2 Initial Calibration Criteria			
Instrument:	W	WC_Astoria	
Date of Calibration:	6	6/24/2020	
	Yes	No	N/A
Was a minimum of three standards and a calibration blank used for ICAL?	X		
Was $r^2 \ge 0.99$?	X		

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Guidance: DoD QSM Version 5.1 (January 2017)

Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2018) Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Method 9060A Initial Calibration Criteria			
Instrument:	WC_SHI2		
Date of Calibration:	6/29/2020		20
	Yes	No	N/A
Was a minimum of three standards and a calibration blank used for ICAL?	X		
Was $r^2 \ge 0.99$?	X		

4.0 Initial Calibration Verification [(ICV) Second Source]

Method 8330A ICV Criteria (Filename)	03040015.D			
Instrument:	CH	CHHPLC_X3		
Date of Initial Calibration Verification:	;	3/4/2020		
	Yes	Yes No No		
Was the ICV analyzed after each calibration?	X			
Was the ICV for all analytes within \pm 15% of the true value?	X			

Method 8330A ICV Criteria (Filename)	03040033.D		D
Instrument:	CHHPLC_X3		
Date of Initial Calibration Verification:	3/5/2020		
	Yes	N/A	
Was the ICV analyzed after each calibration?	X		
Was the ICV for all analytes within ± 15% of the true value?	X		

Method 8330A ICV Criteria (Filename)	03	03180016.D		
Instrument:	CH	CHHPLC_X3		
Date of Initial Calibration Verification:	3	3/18/2020		
	Yes	Yes No N		
Was the ICV analyzed after each calibration?	X			
Was the ICV for all analytes within \pm 15% of the true value?	X			

Method 8330A ICV Criteria (Filename)	05140016.D		
Instrument:	CHHPLC_G2-LUNA		
Date of Initial Calibration Verification:	5/14/2020		
	Yes	N/A	
Was the ICV analyzed after each calibration?	X		
Was the ICV for all analytes within \pm 15% of the true value?	X		

Method 8330A ICV Criteria (Filename)	05140026.D		
Instrument:	CHHPLC_G2-LUNA		
Date of Initial Calibration Verification:	5/15/2020		
	Yes	No	N/A
Was the ICV analyzed after each calibration?	X		
Was the ICV for all analytes within \pm 15% of the true value?	X		

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Method RSK-175 ICV Criteria (Filename)	010F1001.D		
Instrument:	VGC_J		Г
Date of Initial Calibration Verification:	5/16/2020		0
	Yes No N/A		
Was the ICV analyzed after each calibration?	X		
Was the ICV for all analytes within \pm 25% of the true value?	X		

Method RSK-175 ICV Criteria (Filename)	06242011.D		
Instrument:	VGC_J		
Date of Initial Calibration Verification:	6/24/2020		
	Yes No N/		N/A
Was the ICV analyzed after each calibration?	X		
Was the ICV for all analytes within \pm 25% of the true value?	X		

Method 9056A ICV	WC_IonChrom10		
Date of Initial Calibration Verification:	6/3/2020		
	Yes	No	N/A
Was the ICV analyzed after each ICAL, prior to the beginning of a sample analysis?	X		
Was the ICV for all analytes within \pm 10% of the true value?	X		

Method 9056A ICV	WC_IonChrom10		
Date of Initial Calibration Verification:	6/29/2020		0
	Yes	No	N/A
Was the ICV analyzed after each ICAL, prior to the beginning of a sample analysis?	X		
Was the ICV for all analytes within \pm 10% of the true value?	X		

Method 9056A ICV	WC_IonChrom10		
Date of Initial Calibration Verification:	7/1/2020		
	Yes	No	N/A
Was the ICV analyzed after each ICAL, prior to the beginning of a sample analysis?	X		
Was the ICV for all analytes within \pm 10% of the true value?	X		

Method 350.1 ICV Criteria	WC_Alp 4		
Date of Initial Calibration Verification:	6/17/2020		
	Yes	No	N/A
Was the ICV analyzed after each ICAL, prior to the beginning of a sample analysis?	X		
Was the ICV for all analytes within \pm 10% of the true value?	X		

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Method 353.2 ICV Criteria	WC_Alp 2		2
Date of Initial Calibration Verification:	6/22/2020		0
	Yes	No	N/A
Was the ICV analyzed after each ICAL, prior to the beginning of a sample analysis?	X		
Was the ICV for all analytes within \pm 10% of the true value?	X		

Method 351.2 ICV Criteria	WC_Astoria		
Date of Initial Calibration Verification:	6/23/2020		
	Yes	No	N/A
Was the ICV analyzed after each ICAL, prior to the beginning of a sample analysis?	X		
Was the ICV for all analytes within \pm 10% of the true value?	X		

Method 351.2 ICV Criteria	WC_Astoria		
Date of Initial Calibration Verification:	6/24/2020		
	Yes	No	N/A
Was the ICV analyzed after each ICAL, prior to the beginning of a sample analysis?	X		
Was the ICV for all analytes within \pm 10% of the true value?	X		

Method 9060A ICV Criteria	WC_SHI2		
Date of Initial Calibration Verification:	6/29/2020		0
	Yes	No	N/A
Was the ICV analyzed after each ICAL, prior to the beginning of a sample analysis?	X		
Was the ICV for all analytes within \pm 10% of the true value?	X		

5.0 Continuing Calibration Verification (CCV)

Method 8330A CCV Criteria (Filename)	06230015-6.D			
Instrument:	СН	CHHPLC_X3		
Date of Calibration Verification:	6/23/2020			
	Yes	No	N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within \pm 15% of the true value?	X			

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Method 8330A CCV Criteria (Filename)	06230027-8.D			
Instrument:	СН	CHHPLC_X3		
Date of Calibration Verification:	6/24/2020			
	Yes	No	N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within \pm 15% of the true value?	X			

Method 8330A CCV Criteria (Filename)	06230037-8.D			
Instrument:	СН	CHHPLC_X3		
Date of Calibration Verification:	6/24/2020			
	Yes	No	N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within \pm 15% of the true value?	X			

Method 8330A CCV Criteria (Filename)	062	06270017-9.D		
Instrument:	CH	CHHPLC X3		
Date of Calibration Verification:	6	6/27/2020		
	Yes	No	N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within \pm 15% of the true value?		X		

The %D for 2,4,6-trinitrotoluene (17.6%) was outside of evaluation criteria with a high bias. Associated samples were nondetect and no qualification of data was required.

Method 8330A CCV Criteria (Filename)	062	06270030-2.D		
Instrument:	СН	CHHPLC_X3		
Date of Calibration Verification:	6	6/27/2020		
	Yes	No	N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within \pm 15% of the true value?	X			

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Date Verified: 7/7/2020 AECOM ITR: Jeff Aust

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Method 8330A CCV Criteria (Filename)	06270043-5.D			
Instrument:	СН	CHHPLC_X3		
Date of Calibration Verification:	6/28/2020			
	Yes	No	N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within \pm 15% of the true value?	X			

Method 8330A CCV Criteria (Filename)	06270051-3.D		
Instrument:	CHHPLC_X3		
Date of Calibration Verification:	6/28/2020		
	Yes	No	N/A
Was the CCV analyzed daily before sample analysis?	X		
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X		
Was the CCV for all analytes within \pm 15% of the true value?	X		

Method 8330A CCV Criteria (Filename)	063	06300007-9.D		
Instrument:	СН	CHHPLC_X3		
Date of Calibration Verification:	6	6/30/2020		
	Yes	No	N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within \pm 15% of the true value?	X			

Method 8330A CCV Criteria (Filename)	06300021-2.D		
Instrument:	CHHPLC_X3		
Date of Calibration Verification:	6/30/2020		
	Yes	No	N/A
Was the CCV analyzed daily before sample analysis?	X		
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X		
Was the CCV for all analytes within \pm 15% of the true value?	X		

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Method 8330A CCV Criteria (Filename)	06240028-9.D			
Instrument:	CHHP	CHHPLC_G2_LUNA		
Date of Calibration Verification:	6	6/25/2020		
	Yes No N/		N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within \pm 15% of the true value?	X			

Method 8330A CCV Criteria (Filename)	06240040-1.D			
Instrument:	СННР	CHHPLC G2 LUNA		
Date of Calibration Verification:	6	6/25/2020		
	Yes No N		N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within \pm 15% of the true value?	X			

Method 8330A CCV Criteria (Filename)	062	06240050-1.D		
Instrument:	CHHP	CHHPLC G2 LUNA		
Date of Calibration Verification:	6	6/25/2020		
	Yes No N		N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within \pm 15% of the true value?	X			

Method 8330A CCV Criteria (Filename)	06300007-8.D		
Instrument:	CHHPLC_G2_LUNA		
Date of Calibration Verification:	6/30/2020		
	Yes No N		N/A
Was the CCV analyzed daily before sample analysis?	X		
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X		
Was the CCV for all analytes within \pm 15% of the true value?	X		

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Date Verified: 7/7/2020 AECOM ITR: Jeff Aust

Guidance: DoD QSM Version 5.1 (January 2017)

Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2018) Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Method 8330A CCV Criteria (Filename)	06300018-9.D			
Instrument:	CHHPI	CHHPLC_G2_LUNA		
Date of Calibration Verification:	7	7/1/2020		
	Yes	No	N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within \pm 15% of the true value?	X			

Method 8330A CCV Criteria (Filename)	06300030-1.D			
Instrument:	CHHP	CHHPLC_G2_LUNA		
Date of Calibration Verification:	,	7/1/2020		
	Yes	No	N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within \pm 15% of the true value?	X			

Method 8330A CCV Criteria (Filename)	063	06300035-6.D		
Instrument:	CHHP	CHHPLC G2 LUNA		
Date of Calibration Verification:	,	7/1/2020		
	Yes	No	N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within \pm 15% of the true value?		X		

The %D for 4-nitrotoluene (95.6%) was outside of evaluation criteria with a high bias. Associated sample results were nondetect and no qualification of data was required.

Method RSK-175 CCV Criteria (Filename)	0.	031F3101.D		
Instrument:		VGC_J		
Date of Calibration Verification:		6/18/2020		
	Yes	No	N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within $\pm 25\%$ of the true value?	X			

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Guidance: DoD QSM Version 5.1 (January 2017)

Method RSK-175 CCV Criteria (Filename)	0	048F4801.D		
Instrument:		VGC_J		
Date of Calibration Verification:		6/18/2020		
	Yes	No	N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within \pm 25% of the true value?	X			

Method RSK-175 CCV Criteria (Filename)	060F6001.D			
Instrument:		VGC_J		
Date of Calibration Verification:		6/18/2020		
	Yes	No	N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within \pm 25% of the true value?	X			

Method RSK-175 CCVRT Criteria (Filename)	06192001.D		
Instrument:		VGC J	
Date of Calibration Verification:		6/19/2020	
	Yes	No	N/A
Was the CCV analyzed daily before sample analysis?	X		
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X		
Was the CCV for all analytes within $\pm 25\%$ of the true value?	X		

Method RSK-175 CCV Criteria (Filename)	06192018.D		
Instrument:		VGC J	
Date of Calibration Verification:	(6/19/2020	
	Yes	No	N/A
Was the CCV analyzed daily before sample analysis?	X		
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X		
Was the CCV for all analytes within \pm 25% of the true value?	X		

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Method RSK-175 CCV Criteria (Filename)	0	06192030.D		
Instrument:		VGC_J		
Date of Calibration Verification:		6/20/2020		
	Yes	No	N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within $\pm 25\%$ of the true value?	X			

Method RSK-175 CCV Criteria (Filename)	041F4101.D		
Instrument:		VGC_J	
Date of Calibration Verification:		6/20/2020	
	Yes	No	N/A
Was the CCV analyzed daily before sample analysis?	X		
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X		
Was the CCV for all analytes within \pm 25% of the true value?	X		

Method RSK-175 CCV Criteria (Filename)	0	06222030.D		
Instrument:		VGC J		
Date of Calibration Verification:		6/22/2020		
	Yes	No	N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within \pm 25% of the true value?	X			

Method RSK-175 CCV Criteria (Filename)	06222035.D		
Instrument:		VGC J	
Date of Calibration Verification:	(6/22/2020	
	Yes	No	N/A
Was the CCV analyzed daily before sample analysis?	X		
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X		
Was the CCV for all analytes within \pm 25% of the true value?	X		

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Guidance: DoD QSM Version 5.1 (January 2017)

Method RSK-175 CCV Criteria (Filename)	0	041F4101.D		
Instrument:		VGC_J		
Date of Calibration Verification:		6/20/2020		
	Yes	No	N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within \pm 25% of the true value?	X			

Method RSK-175 CCV Criteria (Filename)	0:	057F5701.D		
Instrument:		VGC J		
Date of Calibration Verification:		6/20/2020		
	Yes	No	N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within ± 25% of the true value?	X			

Method RSK-175 CCVRT Criteria (Filename)	0	06252001.D		
Instrument:		VGC J		
Date of Calibration Verification:		6/25/2020		
	Yes	No	N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within $\pm 25\%$ of the true value?	X			

Method RSK-175 CCV Criteria (Filename)	0	06252018.D		
Instrument:		VGC_J		
Date of Calibration Verification:		6/25/2020		
	Yes	No	N/A	
Was the CCV analyzed daily before sample analysis?	X			
Was the CCV analyzed every 10 field samples and at the end of the analysis sequence?	X			
Was the CCV for all analytes within \pm 25% of the true value?	X			

Method 9056A, Instrument: WC_IonChrom10, All CCVs on 6/3/2020	Yes	No
Was a CCV analyzed after every 10 field samples and at the end of the analysis sequence?	X	
Were the CCVs for all analytes within \pm 10% of the true value?	X	

Method 9056A, Instrument: WC_IonChrom10, All CCVs on 6/29/2020	Yes	No
Was a CCV analyzed after every 10 field samples and at the end of the analysis sequence?	X	
Were the CCVs for all analytes within \pm 10% of the true value?	X	

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Date Verified: 7/7/2020 AECOM ITR: Jeff Aust

Guidance: DoD QSM Version 5.1 (January 2017)

Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2018) Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Method 9056A, Instrument: WC_IonChrom10, All CCVs on 7/1/2020	Yes	No
Was a CCV analyzed after every 10 field samples and at the end of the analysis sequence?	X	
Were the CCVs for all analytes within \pm 10% of the true value?	X	

Method 350.1, Instrument: WC_Alp 4, All CCVs on 6/17/2020	Yes	No
Was a CCV analyzed after every 10 field samples and at the end of the analysis sequence?	X	
Were the CCVs for all analytes within \pm 10% of the true value?	X	

Method 353.2, Instrument: WC_Alp 2, All CCVs on 6/22/2020	Yes	No
Was a CCV analyzed after every 10 field samples and at the end of the analysis sequence?	X	
Were the CCVs for all analytes within \pm 10% of the true value?	X	_

Method 351.2, Instrument: WC_Astoria, All CCVs on 6/23/2020	Yes	No
Was a CCV analyzed after every 10 field samples and at the end of the analysis sequence?	X	
Were the CCVs for all analytes within \pm 10% of the true value?	X	

Method 351.2, Instrument: WC_Astoria, All CCVs on 6/24/2020	Yes	No
Was a CCV analyzed after every 10 field samples and at the end of the analysis sequence?	X	
Were the CCVs for all analytes within \pm 10% of the true value?	X	

Method 9060A, Instrument: WC_SHI2, All CCVs on 6/29/2020	Yes	No
Was a CCV analyzed after every 10 field samples and at the end of the analysis sequence?	X	
Were the CCVs for all analytes within \pm 10% of the true value?	X	

6.0 Sensitivity

Sensitivity Criteria	Yes	No	N/A
Was the laboratory sensitivity consistent with project (QAPP) requirements?	X		
Did all analytes meet sensitivity requirements?	X		

7.0 Additional Qualifications

Additional Qualification Criteria		No	N/A
Were common laboratory contaminants detected?		X	
Was professional judgment used to qualify data (if yes, list below)?			

The RPD between the primary and confirmation column for some explosives samples was above evaluation criteria. Qualification of data is shown in the table below; results were reported from primary column unless otherwise noted.

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Guidance: DoD QSM Version 5.1 (January 2017)

Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2018) Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Sample ID	Analysis	Analyte	RPD	Qual
G0066R-20A	Explosives	HMX	123.7	J
G0085-20A	Explosives	HMX	59.6	J
PZ016-20A	Explosives	2-amino-4,6-dinitrotoluene	53.9	J
G0119-20A	Explosives	HMX	129.0	J
G0119-20A	Explosives	RDX	132.0	J
G0098-20A	Explosives	RDX	148.2	J
G0109-20A	Explosives	HMX	102.1	J
G0109-20A	Explosives	RDX	103.9	J
G0121-20A	Explosives	MNX	117.1	J
G0094-20A	Explosives	RDX	83.9	J
G0094-20A	Explosives	1,3-dinitrobenzene	61.3	J
G0099-20A	Explosives	RDX	89.4	J
G0099-20A	Explosives	2-amino-4,6-dinitrotoluene	135.8	J
G0022-20A	Explosives	2,4-dinitrotoluene	52.3	J
G0024-20A	Explosives	2,4,6-trinitrotoluene	57.2	J
G0113-20A	Explosives	1,3-dinitrobenzene	145.8	J

8.0 Completeness

Completeness Criteria	Yes	No	N/A
Were any data rejected during the verification process?		X	
Were any samples lost, broken, or in any other manner in not verified?		X	
Were requested sample analyses performed, the correct analyte lists used, and correct sample preparation and analyses methods and units utilized?	X		