

CHAAP Data Verification

Laboratory and SDG#: TADenver 280-137736

AECOM Chemist: Jared DeSadier

Date Verified: 7/16/2020

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: 8260B, 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Sample Identification #	Date Collected	Date Received	Matrix	Analysis
G0123-20A	6/16/2020	6/17/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0122-20A	6/16/2020	6/17/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0092-20A	6/16/2020	6/17/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
PZ019-20A	6/16/2020	6/17/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
WC-Q3-June20	6/16/2020	6/17/2020	Water	Explosives (8330A), VOCs (8260B)
TB03-061620	6/16/2020	6/17/2020	Water	VOCs (8260B)
G0091-20A	6/16/2020	6/17/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0096-20A	6/16/2020	6/17/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0296-20A	6/16/2020	6/17/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0093-20A	6/16/2020	6/17/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0086-20A	6/16/2020	6/17/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0088-20A	6/16/2020	6/17/2020	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 Identification #	Date Collected	Date Received	Matrix	Analysis
G0089-20A	6/16/2020	6/17/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
PZ020-20A	6/16/2020	6/17/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0087-20A	6/16/2020	6/17/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0077-20A	6/16/2020	6/17/2020	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0078-20A	6/16/2020	6/17/2020	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, LCS/LCSD and MS/MSD recoveries were outside evaluation criteria and some analytes were detected in blank samples. These issues are discussed further in the ADR report.

The RPD between the primary and confirmation column for some explosives samples was above evaluation criteria. This issue is discussed further in Section .0. Some CCV %Ds were outside of evaluation criteria. This issue is discussed further in Section 6.0.

The cooler receipt form indicated some sample containers required further preservation by the lab upon receipt.

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

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2.0 Sample Documentation

Verification Criteria	Yes	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	

3.0 Instrument Performance Check (Tuning)

Method 8260B Instrument Tuning Criteria (Filename)	P1658A.D		
Instrument:	VMS P		
Date of Tuning:	6/1/2020		
	Yes	No	N/A
Was instrument tuning completed prior to calibration?	X		
Were all samples analyzed under an acceptable 12 hour clock tune?	X		
Were ion relative abundances for each target mass within the required intensity limits listed in Table 4 of SW-846 Method 8260B?	X		

4.0 Initial Calibration

Method 8260B Initial Calibration Criteria			
Instrument:	VMS P		
Date of Calibration:	6/1/2020		
	Yes	No	N/A
Option 1: RSD for each analyte $\leq 15\%$?	X		
Option 2: If linear least squares regression was used was the $r^2 \geq 0.99$?	X		
Option 3: If non-linear regression was used was the coefficient of determination $r^2 \geq 0.99$?			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:	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 $r^2 \geq 0.99$?			X
Option 3: If non-linear regression was used was the coefficient of determination $r^2 \geq 0.99$?			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:	CHHPLC X3		
Date of Calibration:	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 $\leq 20\%$?	X		
Option 2: If linear least squares regression was used was the $r^2 \geq 0.99$?			X
Option 3: If non-linear regression was used was the coefficient of determination $r^2 \geq 0.99$?			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:	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 $r^2 \geq 0.99$?			X
Option 3: If non-linear regression was used was the coefficient of determination $r^2 \geq 0.99$?			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:	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 $r^2 \geq 0.99$?			X
Option 3: If non-linear regression was used was the coefficient of determination $r^2 \geq 0.99$?			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 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 $\leq 25\%$?	X		
Option 2: If linear least squares regression was used was the $r^2 \geq 0.99$?	X		
Option 3: If non-linear regression was used was the coefficient of determination $r^2 \geq 0.99$?			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 IonChrom11		
Date of Calibration:	6/9/2020		
	Yes	No	N/A
Was a minimum of three standards and a calibration blank used for ICAL?	X		
Was $r^2 \geq 0.99$?	X		

Method 9056A Initial Calibration Criteria			
Instrument:	WC IonChrom11		
Date of Calibration:	6/30/2020		
	Yes	No	N/A
Was a minimum of three standards and a calibration blank used for ICAL?	X		
Was $r^2 \geq 0.99$?	X		

Method 350.1 Initial Calibration Criteria			
Instrument:	WC Alp 4		
Date of Calibration:	6/23/2020		
	Yes	No	N/A
Was a minimum of three standards and a calibration blank used for ICAL?	X		
Was $r^2 \geq 0.99$?	X		

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

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

Method 9060A Initial Calibration Criteria			
Instrument:	WC_SHI2		
Date of Calibration:	7/2/2020		
	Yes	No	N/A
Was a minimum of three standards and a calibration blank used for ICAL?	X		
Was $r^2 \geq 0.99$?	X		

Method 9060A Initial Calibration Criteria			
Instrument:	WC_SHI2		
Date of Calibration:	7/6/2020		
	Yes	No	N/A
Was a minimum of three standards and a calibration blank used for ICAL?	X		
Was $r^2 \geq 0.99$?	X		

5.0 Initial Calibration Verification [(ICV) Second Source]

Method 8260B ICV Criteria (Filename)			
Instrument:	P1670.D		
Date of Initial Calibration Verification:	VMS P		
	6/1/2020		
	Yes	No	N/A
Was the ICV analyzed after each calibration?	X		
Were all reported analytes within $\pm 20\%$ of true value?	X		

Method 8330A ICV Criteria (Filename)			
Instrument:	03040033.D		
Date of Initial Calibration Verification:	CHHPLC_X3		
	3/5/2020		
	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		

Method 8330A ICV Criteria (Filename)			
Instrument:	03180016.D		
Date of Initial Calibration Verification:	CHHPLC_X3		
	3/18/2020		
	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 8330A ICV Criteria (Filename)	05140016.D		
Instrument:	CHHPLC_G2-LUNA		
Date of Initial Calibration Verification:	5/14/2020		
	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		

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		

Method RSK-175 ICV Criteria (Filename)	06242011.D		
Instrument:	VGC J		
Date of Initial Calibration Verification:	6/24/2020		
	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 9056A ICV	WC IonChrom11		
Date of Initial Calibration Verification:	6/9/2020		
	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 IonChrom11		
Date of Initial Calibration Verification:	6/30/2020		
	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:	6/23/2020		
	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		

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Method 353.2 ICV Criteria	WC Alp 2		
Date of Initial Calibration Verification:	6/22/2020		
	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:	7/2/2020		
	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:	7/6/2020		
	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		

6.0 Continuing Calibration Verification (CCV)

Method 8260B Beginning CCV Criteria (Filename)	P2664.D		
Method 8260B Ending CCV Criteria (Filename)	P2690.D		
Instrument:	VMS P		
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 12 hours of analysis time?	X		
Were all reported analytes and surrogates within $\pm 20\%$ of true value?	X		
Were all reported analytes and surrogates within $\pm 50\%$ of true value for the end of analytical batch CCV?		X	

The closing %D for bromomethane (-52.7%) was outside of evaluation criteria with a high bias. The associated sample results were nondetect and no qualification of data was required.

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Method 8330A CCV Criteria (Filename)	06240007-9.D		
Instrument:	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)	06240020-1.D		
Instrument:	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)	06240032-3.D		
Instrument:	CHHPLC_X3		
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 $\pm 15\%$ of the true value?	X		

Method 8330A CCV Criteria (Filename)	06240044-5.D		
Instrument:	CHHPLC_X3		
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 $\pm 15\%$ of the true value?	X		

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Method 8330A CCV Criteria (Filename)	06240056-7.D		
Instrument:	CHHPLC X3		
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 $\pm 15\%$ of the true value?	X		

Method 8330A CCV Criteria (Filename)	06260007-9.D		
Instrument:	CHHPLC X3		
Date of Calibration Verification:	6/26/2020		
	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)	06260020-2.D		
Instrument:	CHHPLC X3		
Date of Calibration Verification:	6/26/2020		
	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)	06300034-5.D		
Instrument:	CHHPLC_X3		
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 2,6-dinitrotoluene (15.3%) was outside of evaluation criteria with a high bias. Associated sample results were nondetect and no qualification of data was required.

Method 8330A CCV Criteria (Filename)	06260007-8.D		
Instrument:	CHHPLC_G2_LUNA		
Date of Calibration Verification:	6/26/2020		
	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)	06260019-20.D		
Instrument:	CHHPLC_G2_LUNA		
Date of Calibration Verification:	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		

Method 8330A CCV Criteria (Filename)	06260027-8.D		
Instrument:	CHHPLC_G2_LUNA		
Date of Calibration Verification:	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		

CHAAP Data Verification

Laboratory and SDG#: TADenver 280-137736

AECOM Chemist: Jared DeSadier

Date Verified: 7/16/2020

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: 8260B, 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Method 8330A CCV Criteria (Filename)	06260038-9.D		
Instrument:	CHHPLC_G2_LUNA		
Date of Calibration Verification:	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		

Method 8330A CCV Criteria (Filename)	07010007-8.D		
Instrument:	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)	07010018-9.D		
Instrument:	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 RSK-175 CCVRT Criteria (Filename)	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		

CHAAP Data Verification

Laboratory and SDG#: TADenver 280-137736

AECOM Chemist: Jared DeSadier

Date Verified: 7/16/2020

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: 8260B, 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Method RSK-175 CCV Criteria (Filename)	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 RSK-175 CCV Criteria (Filename)	06252030.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 9056A, Instrument: WC_IonChrom11, All CCVs on 6/9/2020	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_IonChrom11, All CCVs on 6/30/2020	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_IonChrom11, 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 6/23/2020	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 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 6/24/2020	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	

CHAAP Data Verification

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AECOM Chemist: Jared DeSadier

Date Verified: 7/16/2020

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: 8260B, 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Method 9060A, Instrument: WC_SHI2, All CCVs on 7/2/2020	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 7/6/2020	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	

7.0 Internal Standard (IS) Recoveries

Method 8260B Criteria	Yes	No	N/A
Were internal standards spiked for all samples and standards?	X		
Were internal standard areas within -50% to +100% of the ICAL midpoint standard area?	X		
Were retention time ± 30 seconds from the retention time of the midpoint standard of the ICAL?	X		

8.0 Sensitivity

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

9.0 Additional Qualifications

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

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.

Sample ID	Analysis	Analyte	RPD	Qual
G0091-20A	Explosives	4-amino-2,6-dinitrotoluene	44.2	J
G0123-20A	Explosives	MNX	54.1	J
G0096-20A	Explosives	2,4-dinitrotoluene	82.2	J
G0096-20A	Explosives	2-amino-4,6-dinitrotoluene	48.6	J
G0087-20A	Explosives	HMX	50.5	J
G0088-20A	Explosives	2,4,6-trinitrotoluene	41.8	J
G0093-20A	Explosives	2-amino-4,6-dinitrotoluene	109.9	J

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Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2018)

Applicable Analytical Methods: 8260B, 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

10.0 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		