CHAAP Data Verification

Laboratory and SDG#: Eurofins 280-162320 **AECOM Chemist: D. Casagrande**
Date Verified: 7/20/2022 **AECOM ITR: S. Louie**
Guidance: DoD QSM Version 5.1 (January 2017)
Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2019)
Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Sample Identification #	Date Collected	Date Received	Matrix	Analysis
G0080-22A	5/11/2022	5/13/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0082-22A	5/11/2022	5/13/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0083-22A	5/11/2022	5/13/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0075-22A	5/12/2022	5/13/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0076-22A	5/12/2022	5/13/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0091-22A	5/12/2022	5/13/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0070-22A	5/12/2022	5/13/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
NW060-22A	5/12/2022	5/13/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
NW061-22A	5/12/2022	5/13/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
NW062-22A	5/12/2022	5/13/2022	Water	Explosives (8330A), Nitrate, Nitrite (353.2), Ammonia (350.1), TKN (351.2), Methane (RSK-175), DOC (9060A), Sulfate (9056A), Alkalinity (2320B), Sulfide (9034)
G0079-22A	5/12/2022	5/13/2022	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 Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 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	

Validator comments in italics.

Method SW8330A:
3-Nitrotoluene failed the recovery criteria low for the MSD of sample NW062-22AMSD (280-162320-11) in batch 280-575546. 3-Nitrotoluene failed the recovery criteria low for the MS of sample G0070-22AMS (280-162320-7) in batch 280-575414. 3-Nitrotoluene failed the recovery criteria low for the MSD of sample G0070-22AMSD (280-162320-7) in batch 280-575414. *3-Nitrotoluene was not detected in samples NW062-22A or G007-22A, therefore these results are qualified (UJ). These issues are further discussed in the ADR report.*

The %RPD between the primary and confirmation column exceeded 40% for 2-Amino-4,6-dinitrotoluene, HMX and RDX for the following samples: G0082-22A (280-162320-2), G0075-22A (280-162320-4) and G0091-22A (280-162320-6) in preparation batch 280-575370 and analytical batch 280-575414 for method 8330. The results from both columns has been qualified and reported in accordance with the laboratory's QAS. *This issue is discussed further in Section 7.0.*

Method 350.1:
Ammonia failed the recovery criteria high for the MSD of sample G0070-22AMSD (280-162320-7) in batch 280-576196. Ammonia exceeded the RPD limit. *Ammonia was detected in sample G007-22A, therefore this result is qualified (J). This issue is further discussed in the ADR report.*

Method 351.2:
Nitrogen, Total Kjeldahl failed the recovery criteria high for the MS of sample G0070-22AMS (280-162320-7) in batch 280-576217. Nitrogen, Total Kjeldahl failed the recovery criteria high for the MSD of sample G0070-22AMSD (280-162320-7) in batch 280-576217. *No data are qualified or affected, since TKN is not detected in the associated sample. This issue is further discussed in the ADR report.*

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

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	

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Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2019)
Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

3.0 Initial Calibration

Method 8330A Initial Calibration Criteria			
Instrument:	**CHHPLC_X3**		
Date of Calibration:	**1/4/2022**		
	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 $r^2 \geq 0.99$?			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

%RSDs were met for all target analytes.

Method 8330A Initial Calibration Criteria			
Instrument:	**CHHPLC_X3**		
Date of Calibration:	**1/5/2022**		
	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 $r^2 \geq 0.99$?			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_X5**		
Date of Calibration:	**3/2/2022**		
	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 $r^2 \geq 0.99$?	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

CHAAP Data Verification

Laboratory and SDG#: Eurofins 280-162320 **AECOM Chemist: D. Casagrande**
Date Verified: 7/20/2022 **AECOM ITR: S. Louie**
Guidance: DoD QSM Version 5.1 (January 2017)
Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2019)
Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Method 8330A Initial Calibration Criteria			
Instrument:	**CHHPLC_X5**		
Date of Calibration:	**3/3/2022**		
	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 $r^2 \geq 0.99$?			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 RSK-175 Initial Calibration Criteria			
Instrument:	**VGC_J**		
Date of Calibration:	**9/24/2021**		
	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 $r^2 \geq 0.99$?	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

%RSD was not provided for methane; however, the r2 was met.

Method 9056A Initial Calibration Criteria			
Instrument:	**WC_IonChrom11**		
Date of Calibration:	**5/26/2022**		
	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:	**5/24/2022**		
	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		

CHAAP Data Verification

Laboratory and SDG#: Eurofins 280-162320 **AECOM Chemist: D. Casagrande**
Date Verified: 7/20/2022 **AECOM ITR: S. Louie**
Guidance: DoD QSM Version 5.1 (January 2017)
Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2019)
Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Method 350.1 Initial Calibration Criteria			
Instrument:	**WC_Alp 4**		
Date of Calibration:	**5/27/2022**		
	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_SKALAR_01**		
Date of Calibration:	**5/25/2022**		
	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:	**5/24/2022**		
	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 351.2 Initial Calibration Criteria			
Instrument:	**WC_GAL1**		
Date of Calibration:	**5/25/2022**		
	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_SHI5**		
Date of Calibration:	**12/10/2021**		
	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		

CHAAP Data Verification

Laboratory and SDG#: Eurofins 280-162320 **AECOM Chemist: D. Casagrande**
Date Verified: 7/20/2022 **AECOM ITR: S. Louie**
Guidance: DoD QSM Version 5.1 (January 2017)
Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2019)
Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

4.0 Initial Calibration Verification [(ICV) Second Source]

Method 8330A ICV Criteria (Filename)	280-562503/20		
Instrument:	CHHPLC_X3		
Date of Initial Calibration Verification:	1/4/2022		
	Yes	No	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)	280-562503/38		
Instrument:	CHHPLC_X3		
Date of Initial Calibration Verification:	1/5/2022		
	Yes	No	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)	280-567560/19		
Instrument:	CHHPLC_X5		
Date of Initial Calibration Verification:	3/3/2022		
	Yes	No	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)	280-567560/28		
Instrument:	CHHPLC_X5		
Date of Initial Calibration Verification:	3/3/2022		
	Yes	No	N/A
Was the ICV analyzed after each calibration?	X		
Was the ICV for all analytes within ± 15% of the true value?	X		

Method RSK-175 ICV Criteria (Filename)	280-550959/13		
Instrument:	VGC_J		
Date of Initial Calibration Verification:	9/24/2021		
	Yes	No	N/A
Was the ICV analyzed after each calibration?	X		
Was the ICV for all analytes within ± 25% of the true value?	X		

CHAAP Data Verification

Laboratory and SDG#: Eurofins 280-162320 **AECOM Chemist: D. Casagrande**
Date Verified: 7/20/2022 **AECOM ITR: S. Louie**
Guidance: DoD QSM Version 5.1 (January 2017)
Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2019)
Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Method 9056A ICV	**WC_IonChrom11**		
Date of Initial Calibration Verification:	**5/26/2022**		
	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 ± 10% of the true value?	X		

Method 350.1 ICV Criteria	**WC_Alp 4**		
Date of Initial Calibration Verification:	**5/27/2022**		
	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 ± 10% of the true value?	X		

Method 350.1 ICV Criteria	**WC_SKALAR_01**		
Date of Initial Calibration Verification:	**5/25/2022**		
	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 ± 10% of the true value?	X		

Method 353.2 ICV Criteria	**WC_Alp 2**		
Date of Initial Calibration Verification:	**5/24/2022**		
	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 ± 10% of the true value?	X		

Method 351.2 ICV Criteria	**WC_GAL1**		
Date of Initial Calibration Verification:	**5/25/2022**		
	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 ± 10% of the true value?	X		

Method 9060A ICV Criteria	**WC_SHI5**		
Date of Initial Calibration Verification:	**5/24/2022**		
	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 ± 10% of the true value?	X		

CHAAP Data Verification

Laboratory and SDG#: Eurofins 280-162320 **AECOM Chemist: D. Casagrande**
Date Verified: 7/20/2022 **AECOM ITR: S. Louie**
Guidance: DoD QSM Version 5.1 (January 2017)
Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2019)
Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

5.0 Continuing Calibration Verification (CCV)

Method 8330A CCV Criteria (Filename)	**280-575414/32-33**		
Instrument:	**CHHPLC_X3**		
Date of Calibration Verification:	**5/19/2022**		
	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 ± 15% of the true value?	X		

Method 8330A CCV Criteria (Filename)	**280-575414/44-45**		
Instrument:	**CHHPLC_X3**		
Date of Calibration Verification:	**5/19/2022**		
	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 ± 15% of the true value?	X		

Method 8330A CCV Criteria (Filename)	**280-575414/56-57**		
Instrument:	**CHHPLC_X3**		
Date of Calibration Verification:	**5/19/2022**		
	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 ± 15% of the true value?	X		

CCV criteria were met for all target analytes.

Method 8330A CCV Criteria (Filename)	**280-575414/66-67**		
Instrument:	**CHHPLC_X3**		
Date of Calibration Verification:	**5/19/2022**		
	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 ± 15% of the true value?	X		

CCV criteria were met for all target analytes.

CHAAP Data Verification

Laboratory and SDG#: Eurofins 280-162320 **AECOM Chemist: D. Casagrande**
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Guidance: DoD QSM Version 5.1 (January 2017)
Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2019)
Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Method 8330A CCV Criteria (Filename)	**280-575546/20-21**		
Instrument:	**CHHPLC_X5**		
Date of Calibration Verification:	**5/19/2022**		
	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 ± 15% of the true value?	X		

Method 8330A CCV Criteria (Filename)	**280-575546/30-31**		
Instrument:	**CHHPLC_X5**		
Date of Calibration Verification:	**5/19/2022**		
	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 ± 15% of the true value?	X		

Method 8330A CCV Criteria (Filename)	**280-575546/47-48**		
Instrument:	**CHHPLC_X5**		
Date of Calibration Verification:	**5/19/2022**		
	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 ± 15% of the true value?	X		

Method RSK-175 CCVRT Criteria (Filename)	**280-575858/2**		
Instrument:	**VGC_J**		
Date of Calibration Verification:	**5/23/2022**		
	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		

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Laboratory and SDG#: Eurofins 280-162320 **AECOM Chemist: D. Casagrande**
Date Verified: 7/20/2022 **AECOM ITR: S. Louie**
Guidance: DoD QSM Version 5.1 (January 2017)
Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2019)
Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Method RSK-175 CCV Criteria (Filename)	280-575858/17		
Instrument:	VGC_J		
Date of Calibration Verification:	5/23/2022		
	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 CCV Criteria (Filename)	280-575858/31		
Instrument:	VGC_J		
Date of Calibration Verification:	5/23/2022		
	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)	280-575860/2		
Instrument:	VGC_J		
Date of Calibration Verification:	5/24/2022		
	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 CCV Criteria (Filename)	280-575860/17		
Instrument:	VGC_J		
Date of Calibration Verification:	5/24/2022		
	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 9056A, Instrument: WC_IonChrom11, All CCVs on 5/26/2022	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 ± 10% of the true value?	X	

Method 9056A, Instrument: WC_IonChrom11, All CCVs on 5/27/2022	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 ± 10% of the true value?	X	

CHAAP Data Verification

Laboratory and SDG#: Eurofins 280-162320 **AECOM Chemist: D. Casagrande**
Date Verified: 7/20/2022 **AECOM ITR: S. Louie**
Guidance: DoD QSM Version 5.1 (January 2017)
Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2019)
Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Method 350.1, Instrument: WC_Alp 4, All CCVs on 5/27/2022	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 ± 10% of the true value?	X	

Method 350.1, Instrument: WC_SKALAR_01, All CCVs on 5/25/2022	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 ± 10% of the true value?	X	

Method 353.2, Instrument: WC_Alp 2, All CCVs on 5/24/2022	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 ± 10% of the true value?	X	

Method 351.2, Instrument: WC_GAL1, All CCVs on 5/25/2022	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 ± 10% of the true value?	X	

Method 9060A, Instrument: WC_SHI5, All CCVs on 5/24/2022 and 5/25/2022	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 ± 10% of the true value?	X	

Method 2320B, Instrument: WC_AT4, All CCVs on 5/19/2022 and 5/20/2022	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 ± 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	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 were above evaluation criteria. Qualification of data is shown in the table below; results were reported from the primary column unless otherwise noted.

CHAAP Data Verification

Laboratory and SDG#: Eurofins 280-162320 **AECOM Chemist: D. Casagrande**
Date Verified: 7/20/2022 **AECOM ITR: S. Louie**
Guidance: DoD QSM Version 5.1 (January 2017)
Applicable QAPP: Cornhusker Army Ammunition Plant QAPP (Brice and AECOM, October 2019)
Applicable Analytical Methods: 8330A, 353.2, 350.1, 351.2, RSK-175, 9060A, 2320B, 9056A, 9034

Sample ID	Analysis	Analyte	RPD	Qual
G0082-22A	Explosives	2-amino-4,6-dinitrotoluene	66.2	**J**
G0075-22A	Explosives	HMX	73.7	**J**
G0091-22A	Explosives	2-amino-4,6-dinitrotoluene	57.6	**J**
		RDX	52.6	**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		