Data Validation Report
Remedial Investigation at RVAAP-66 Facility Wide Groundwater
Semi-Annual & Quarterly Sampling Event for April/May 2017

Former Ravenna Army Ammunition Plant
Portage and Trumbull Counties, Ohio

Contract Number: W9133L-14-D-0008

Task Order Number: 0003

Laboratory SDG 280-96439-1

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CONTRACTOR STATEMENT OF INDEPENDENT TECHNICAL REVIEW

TEC-WESTON Joint Venture has completed this Data Validation Report. Data validation was performed by the Validation Chemist and Secondary QC Review was performed by a Senior Chemist. Signatures indicate the report is approved for release.

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INTRODUCTION

This report summarizes the results of the **EPA Stage 2B** data validation performed on groundwater samples and quality control (QC) sample data for the Remedial Investigation for RVAAP-66, Former Ravenna Army Ammunition Plant, Portage and Trumbull Counties, Ohio. Results are reported in laboratory sample delivery group (SDG) **280-96439-1**.

TestAmerica, Inc., Denver, Colorado performed the analyses listed in the table below:

Parameters	Analytical Method	Laboratory Location
Volatile Organic Compounds (VOCs)	8260B	Denver, CO
Semivolatile Organic Compounds (SVOCs)	8270D	Denver, CO
Polycyclic Aromatic Hydrocarbons (PAHs)	8270D SIM	Denver, CO
Organochlorine Pesticides	8081B	Denver, CO
Polychlorinated Biphenyls (PCBs)	8082A	Denver, CO
Explosives	8330B	Denver, CO
Nitroguanidine	8330	Sacramento, CA
Metals	6010C/6020A/7470A	Denver, CO
Perchlorate	6860	Denver, CO
Total Cyanide	9012B	Denver, CO
Hexavalent Chromium	7196A	Denver, CO
Nitrocellulose	353.2	Sacramento, CA

The data were reviewed using guidance and quality control criteria documented in the *Draft Remedial Investigation Work Plan for Groundwater and Environmental Services for RVAAP-66 Facility-Wide Groundwater, Appendix A: Sampling Analysis Plan, A.2: Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) Former Ravenna Army Ammunition Plant, Portage and Trumbull Counties, Ohio Attachment A Data Validation Evaluation Sheets (January 2016)* which are based on the *Department of Defense Quality Systems Manual (DoD QSM), Version 5.0*; *USEPA National Functional Guidelines for Organic Data Review* (*EPA 2014*); and *USEPA National Functional Guidelines for Inorganic Data Review* (*EPA 2014*), the analytical methods, and professional judgment.

During data validation, qualifiers are assigned to assist in proper data interpretation. If values are estimated, data may be used for site evaluation purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. Data that have been rejected (R) should not be used for any purpose. Results with no qualifiers meet all data quality goals as outlined in the UFP-QAPP.

The data was reviewed and validated by calculating Relative Percent Difference (RPD) between spiked sample values according to the *USEPA National Functional Guidelines for Organic Data Review* (*EPA 2014*) and *USEPA National Functional Guidelines for Inorganic Data Review* (*EPA 2014*). Therefore, the RPDs were calculated using the percent recovery values as stated in the above referenced USEPA documents. SW-846 Methods were utilized for this project and they recommend using the actual spiked sample values to calculate RPD values. However, the laboratory used varying spike amounts due to sample aliquot and percent moisture differences which lead to variations in the spike amounts making it very difficult to compare the spiked sample values. These differences would have created poor precision results for the spiked sample values that were not necessarily indicative of the data quality. The use of comparing spike recovery values in this case was a much better indicator of analytical precision.

The following samples were validated:

Sample ID	Laboratory ID	Sample Date	Matrix	QC Sample	VOCs	SVOCs (phthalates)	SVOCs (phthalates, nitroaromatics)	SVOCs (full list)	PAHs	Pesticides	PCBs	Explosives	Nitroguanidine	Perchlorate	Metals	Total Cyanide	Hexavalent Chromium	Nitrocellulose
LL2mw-264-042717-GW	280-96439-1	04/27/17	Groundwater													✓		
LL2mw-272-042417-GW	280-96439-2	04/27/17	Groundwater		✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NTAmw-120-042717-GW	280-96439-3	04/27/17	Groundwater		✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NTAmw-116-042717-GW	280-96439-4	04/27/17	Groundwater					✓	✓									
NTAmw-117-042717-GW	280-96439-5	04/27/17	Groundwater													✓		
NTAmw-119-042717-GW	280-96439-6	04/27/17	Groundwater		✓		✓		✓			✓			✓			
NTAmw-507-042717-GW	280-96439-7	04/27/17	Groundwater	Field duplicate	✓		✓					✓						
FBQmw-176-042417-GW	280-96439-8	04/27/17	Groundwater							✓						✓		
FBQmw-166-042417-GW	280-96439-9	04/27/17	Groundwater			✓										✓		
FBQmw-501-042717-GW	280-96439-10	04/27/17	Groundwater	Field duplicate		✓										✓		
NTAmw-118-042717-GW	280-96439-11	04/27/17	Groundwater													✓		
TRIPBLANK	280-96439-12	04/27/17	Groundwater	Trip blank	✓													

Additional analyses reported for sample NTAmw-118-042717-GW are reported and validated under separate cover.
Sample NTAmw-507-042717-GW is the field duplicate of sample NTAmw-119-042717-GW
Sample FBQmw-501-042717-GW is the field duplicate of sample FBQmw-166-042717-GW

DATA VALIDATION REPORT

1.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative. All requested target analytes were reported for each sample.

1.2 SAMPLE RECEIPT

The samples were received by the laboratory on April 28, 2017; the samples were received in good condition, under chain-of-custody, and custody seals intact. Samples were properly preserved and cooler temperatures were less than 6°C.

Nitroguanidine and nitrocellulose analyses were performed by TestAmerica Sacramento.

Three of the four coolers received by the laboratory did not have temperatures recorded at receipt due to sample receiving technician error. The sample receiving supervisor ensured that the coolers were definitely received within temperature requirements.

Sample IDs LL2mw-264-042717-GW, LL2mw-042717-GW, NTAmw-120-042717-GW, NTAmw-116-042717-GW, NTAmw-117-042717-GW, NTAmw-119-042717-GW, and NTAmw-507-042717-GW were incorrectly recorded on the chain of custody with a sample date of 04/27/16 and 042716 as the six digit date string in the sample IDs. The laboratory was instructed to change the sample dates to 04/27/17 and the six digit date string in the sample IDs to 042717.

Eight trip blank vials were received by the laboratory, but were not listed on the chain of custody. All vials were logged as one trip blank sample with the sample ID TRIPBLANK.

One of three VOA vials submitted for sample NTA-120-042717-GW was received by the laboratory broken. Sufficient volume remained to proceed with the requested analysis.

The chain of custody incorrectly listed two sample bottles for the total cyanide analysis of sample LL2mw-264-042717-GW. One sample bottle was submitted for analysis and one sample bottle was received by the laboratory.

1.3 DEFINITIONS

Detection limit (DL): The smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration with 99% confidence. At the DL, the false positive rate is 1%. A DL may be used as the lowest concentration for reliably reporting a detection of a specific matrix with a specific method with 99% confidence.

Limit of detection (LOD): The smallest concentration of a substance that must be present in a sample in order to be detected at the DL with 99% confidence. At the LOD, the false negative rate is 1%. An LOD may be used as the lowest concentration for reliably reporting a non-detect of a specific analyte in a specific matrix with a specific method with 99% confidence.

Limits of Quantitation (LOQ): The smallest concentration that produces a quantitative result with known and recorded precision and bias. For DoD/DOE projects, the LOQ shall be set at or above the concentration of the lowest initial calibration standard and within the calibration range.

The following validation flags and reason codes were applied:

Validation Flag	Reason Code	Description
U	B	Non-detection; blank detection.
UJ	S	Estimated non-detection; surrogate outlier.
UJ	M	Estimated non-detection; MS/MSD percent recovery or RPD exceedance.
UJ	L	Estimated non-detection; LCS/LCSD percent recovery or RPD exceedance.
J	IC	Estimated detection; initial calibration criteria not met.
J	CC	Estimated detection; continuing calibration criteria not met.
R	L	Rejected; extremely low (<10%) LCS/LCSD percent recovery.
R	S	Rejected; extremely low (<10%) surrogate recovery.

1.4 TECHNICAL DATA VALIDATION

1.4.1 Volatile Organic Compounds by Method 8260B

The following parameters were evaluated and met the required criteria. No validation flags were assigned based on the following:

- Holding times
- LCS recoveries

- Method blanks
- Surrogate recoveries
- LODs and LOQs
- Instrument tuning
- Internal standard area counts
- Initial calibration
- Initial calibration verification
- Closing calibration verification
- Trip blank
- Field duplicates

No analytical or quality parameters required further discussion for Method 8260B.

1.4.2 Semivolatile Organic Compounds by Method 8270D

The following parameters were evaluated and met the required criteria. No validation flags were assigned based on the following:

- Holding times
- Surrogate recoveries
- LODs and LOQs
- Instrument tuning
- Internal standard area counts
- Initial calibration
- Initial calibration verification
- Continuing calibration verification
- Closing calibration verification
- Field duplicates

All analytical or quality parameters requiring further discussion for Method 8270D are described in the sections below.

1.4.2.1 Sample Concentration

Due to the matrix of sample FBQmw-501-042717-GW, the sample could not be concentrated to the final required volume. As a result, the reporting limits were elevated.

1.4.2.2 Dilutions

Due to a viscous matrix, sample FBQmw-501-042717-GW required a 20x dilution prior to analysis. The sample was non-detect for all analytes and was not reanalyzed at a lower dilution. As a result, the reporting limits were elevated.

1.4.2.3 Method Blanks

Nitrobenzene (4.87 µg/L) was detected in the method blank at a concentration below the LOQ (20 µg/L). All associated samples were non-detect for nitrobenzene; therefore, no qualification was necessary.

1.4.2.4 Laboratory Control Sample

Hexachlorocyclopentadiene (6%) recovered below the control limits (10-120%) in the LCS. All associated hexachlorocyclopentadiene sample results were rejected due to the extremely low (<10%) LCS recovery (R L). It is noted that hexachlorocyclopentadiene is a poor performer for this method.

1.4.3 Polycyclic Aromatic Hydrocarbons by Method 8270D SIM

The following parameters were evaluated and met the required criteria. No validation flags were assigned based on the following:

- Holding times
- Method blanks
- Laboratory control samples
- LODs and LOQs
- Instrument tuning
- Internal standard area counts
- Initial calibration
- Initial calibration verification
- Closing calibration verification

All analytical or quality parameters requiring further discussion for Method 8270D SIM are described in the sections below.

1.4.3.1 Surrogate Recoveries

Surrogates 2-fluorobiphenyl (37%), terphenyl-d14 (49%), and nitrobenzene-d5 (39%) recovered below their respective control limits (53-106%, 58-132%, 55-111%) in sample NTAmw-119-042717-GW. All associated sample results were qualified as estimated (UJ S).

1.4.4 Organochlorine Pesticides by Method 8081B

The following parameters were evaluated and met the required criteria. No validation flags were assigned based on the following:

- Holding times
- LODs and LOQs
- Surrogate recoveries
- Method blank
- LCS recoveries
- MS/MSD recoveries and RPDs
- Initial calibration
- Initial calibration verification
- Continuing calibration verification
- Internal standards
- Endrin/DDT breakdown check
- Second column confirmation

No analytical or quality parameters required further discussion for Method 8081B.

1.4.5 Polychlorinated Biphenyls by Method 8082A

The following parameters were evaluated and met the required criteria. No validation flags were assigned based on the following:

- Holding times
- LODs and LOQs
- Surrogate recoveries
- Method blank
- LCS recoveries
- MS/MSD recoveries and RPDs
- Initial calibration
- Initial calibration verification
- Continuing calibration verification
- Internal standards
- Second column confirmation

All analytical or quality parameters requiring further discussion for Method 8082A are described in the sections below.

1.4.5.1 Sample Preparation

It was noted in the case narrative that due to a limited sample volume, samples LL2mw-272-042717-GW and NTAmw-120-042717-GW did not undergo acid or mercury clean-ups. Based on professional judgement, no qualifications were made.

1.4.6 Explosives by Method 8330B

The following parameters were evaluated and met the required criteria. No validation flags were assigned:

- Method blanks
- Initial calibration
- Initial calibration verification
- Initial calibration blank
- Continuing calibration verification
- Continuing calibration blank
- LODs and LOQs
- Initial calibration verification
- 2nd column confirmation
- Field Duplicates

All analytical or quality parameters requiring further discussion for Method 8330B are described in the sections below.

1.4.6.1 Surrogate Recoveries/Holding Times

Surrogate 1,2-dinitrobenzene recovered below control limits (83-119%) in samples NTAmw-119-042717-GW (2%) and NTAmw-507-042717-GW (0%). Due to the extremely low (<10%) surrogate recoveries, these samples were qualified as rejected (R S). The laboratory did re-extract and reanalyze

these samples, but outside of 2x the holding time; therefore, the results from the reanalysis are not viable.

1.4.6.2 Laboratory Control Samples

2-Amino-4,6-dinitrotoluene (74%) and 4-amino-2,6-dinitrotoluene (67%) recovered below their respective control limits (79-120%, 76-125%) in the LCS. All associated sample results were qualified as estimated (UJ L).

1.4.7 Nitroguanidine by Method 8330

The following parameters were evaluated and met the required criteria. No validation flags were assigned:

- Holding times
- Method blanks
- LCS recoveries
- Initial calibration
- Initial calibration verification
- Initial calibration blank
- Continuing calibration verification
- Continuing calibration blank
- LODs and LOQs
- Initial calibration verification

No analytical or quality parameters required further discussion for Method 8330.

1.4.8 Perchlorate by Method 6860

The following parameters were evaluated and met the required criteria. No validation flags were assigned based on the following:

- Holding times
- LODs and LOQs
- LCS recoveries
- Method blank
- Initial calibration verification
- Initial calibration blank
- Continuing calibration verification
- Continuing calibration blank
- Detection limit check
- Interference check standards

No analytical or quality parameters required further discussion for Method 6860.

1.4.9 Total Metals by Method 6010C/6020A/7470A

The following parameters were evaluated and met the required criteria. No validation flags were assigned based on the following:

- Holding times
- LODs and LOQs
- LCS recoveries
- Post digestion spike
- Serial dilution
- Initial calibration blanks
- Contract required detection limit standard
- Instrument tuning
- Interference check solutions

All analytical or quality issues requiring further discussion for Methods 6010C, 6020A, and/or 7470A are described in the sections below.

1.4.9.1 Method Blanks

Potassium (441 µg/L), sodium (269 µg/L), and beryllium (0.0980 µg/L) were detected in the method blank at concentrations below their respective LOQs (3000 µg/L, 5000 µg/L, 1.0 µg/L). Potassium was detected at a concentration below the LOQ in samples LL2mw-272-042717-GW (990 µg/L), NTAmw-120-042717-GW (2400 µg/L), and NTAmw-119-042717-GW (1000 µg/L). These sample results were qualified as non-detect at the LOQ (U B). All other associated sample results were either non-detect or at a concentration above the LOQ; therefore, no qualification was necessary.

1.4.9.2 Continuing calibration Blanks

Manganese (0.340 µg/L) was detected in the continuing calibration blank CCB 280-372581/92 at a concentration below the LOQ (1.0 µg/L). All associated manganese sample results were at a concentration above the LOQ; therefore, no qualification was necessary.

Beryllium (0.135 µg/L) was detected in the continuing calibration blank CCB 280-372581/92 at a concentration below the LOQ (1.0 µg/L). All associated samples were non-detect for beryllium; therefore, no qualification was necessary.

1.4.9.3 Initial/Continuing Calibrations Verifications

Iron (127%) recovered above control limits (80-120%) in the low-level initial calibration verification ICVL 280-373110/8. All associated iron detections were qualified as estimated (J IC).

Sodium (121%) recovered above control limits (80-120%) in the low-level continuing calibration verification CCVL 280-373110/106. All associated sodium detections were qualified as estimated (J CC).

Beryllium recovered above control limits (80-120%) in the low-level continuing calibration verifications CCVL 280-372581/93 (134%) and CCVL 280-372581/106 (132%). All associated samples were non-detect for beryllium; therefore, no qualification was necessary.

Barium (124%) recovered above control limits (80-120%) in the low-level continuing calibration verification CCVL 280-372581/106. All associated barium detections were qualified as estimated (J CC).

1.4.10 Nitrocellulose by Method 353.2

The following parameters were evaluated and met the required criteria. No validation flags were assigned based on the following:

- Holding times
- LODs and LOQs
- LCS recoveries
- Method blank
- Initial calibration verification
- Continuing calibration verification
- Initial calibration blank
- Continuing calibration blank

All analytical or quality parameters requiring further discussion for Method 353.2 are described in the sections below.

1.4.10.1 Matrix Spike/Matrix Spike Duplicate

An MS/MSD was performed on sample NTAmw-120-042717-GW. The MSD (20%) recovered below control limits (26-144%) and the RPD (128%) exceeded the RPD limit (45%). The associated parent sample result was qualified as estimated (UJ M).

1.4.11 Hexavalent Chromium by Method 7196A

The following parameters were evaluated and met the required criteria. No validation flags were assigned based on the following:

- Holding times
- LODs and LOQs
- LCS recoveries
- Method blank
- MS/MSD recoveries and RPDs
- Initial calibration verification
- Continuing calibration verification
- Initial calibration blank
- Continuing calibration blank

No analytical or quality issues required further discussion for Method 7196A.

1.4.12 Total Cyanide by Method 9012B

The following parameters were evaluated and met the required criteria. No validation flags were assigned based on the following:

- Holding times
- LODs and LOQs
- LCS recoveries
- Method blanks
- MS/MSD recoveries and RPDs
- Initial calibration verification
- Continuing calibration verification
- Initial calibration blank
- Continuing calibration blank
- Field duplicates

No analytical or quality issues required further discussion for Methods 9012B.

DATA VALIDATION TABLE

SDG	Field Sample ID	Lab Sample ID	Matrix	Parameter	CAS Number	Units	Result	Lab Flag	DV Flag	Detection	LOQ	LOD	MDL	AnalyticMethod	Reason Code
280-96439-1	LL2mw-272-042716-GW	280-96439-2	Ground Water	Iron	7439-89-6	µg/L	6700	v	j	y	100	85	22	Metals	IC
280-96439-1	LL2mw-272-042716-GW	280-96439-2	Ground Water	Potassium	7440-09-7	µg/L	3000	j	u	n	3000	940	240	Metals	B
280-96439-1	LL2mw-272-042716-GW	280-96439-2	Ground Water	Sodium	7440-23-5	µg/L	5700	v	j	y	5000	350	120	Metals	CC
280-96439-1	LL2mw-272-042716-GW	280-96439-2	Ground Water	Barium	7440-39-3	µg/L	30	v	j	y	3	0.95	0.29	Metals	CC
280-96439-1	LL2mw-272-042716-GW	280-96439-2	Ground Water	Hexachlorocyclopentadiene	77-47-4	µg/L	29	u q	r	n	49	29	9.8	SVOCs	L
280-96439-1	LL2mw-272-042716-GW	280-96439-2	Ground Water	2-Amino-4,6-dinitrotoluene	35572-78-2	µg/L	0.13	u	uj	n	0.21	0.13	0.054	Explosives	L
280-96439-1	LL2mw-272-042716-GW	280-96439-2	Ground Water	4-Amino-2,6-dinitrotoluene	19406-51-0	µg/L	0.13	u	uj	n	0.21	0.13	0.061	Explosives	L
280-96439-1	NTAmw-120-042716-GW	280-96439-3	Ground Water	Iron	7439-89-6	µg/L	870	v	j	y	100	85	22	Metals	IC
280-96439-1	NTAmw-120-042716-GW	280-96439-3	Ground Water	Potassium	7440-09-7	µg/L	3000	j	u	n	3000	940	240	Metals	B
280-96439-1	NTAmw-120-042716-GW	280-96439-3	Ground Water	Sodium	7440-23-5	µg/L	14000	v	j	y	5000	350	120	Metals	CC
280-96439-1	NTAmw-120-042716-GW	280-96439-3	Ground Water	Barium	7440-39-3	µg/L	26	v	j	y	3	0.95	0.29	Metals	CC
280-96439-1	NTAmw-120-042716-GW	280-96439-3	Ground Water	Hexachlorocyclopentadiene	77-47-4	µg/L	29	u q	r	n	49	29	9.8	SVOCs	L
280-96439-1	NTAmw-120-042716-GW	280-96439-3	Ground Water	2-Amino-4,6-dinitrotoluene	35572-78-2	µg/L	0.13	u	uj	n	0.21	0.13	0.054	Explosives	L
280-96439-1	NTAmw-120-042716-GW	280-96439-3	Ground Water	4-Amino-2,6-dinitrotoluene	19406-51-0	µg/L	0.13	u	uj	n	0.21	0.13	0.062	Explosives	L
280-96439-1	NTAmw-120-042716-GW	280-96439-3	Ground Water	Nitrocellulose	9004-70-0	µg/L	1000	u j	uj	n	2000	1000	480	Nitrocellulose	M
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Iron	7439-89-6	µg/L	1400	v	j	y	100	85	22	Metals	IC
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Potassium	7440-09-7	µg/L	3000	j	u	n	3000	940	240	Metals	B
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Sodium	7440-23-5	µg/L	7000	v	j	y	5000	350	120	Metals	CC
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Barium	7440-39-3	µg/L	88	v	j	y	3	0.95	0.29	Metals	CC
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Acenaphthene	83-32-9	µg/L	0.04	u q	uj	n	0.1	0.04	0.0042	PAHs	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Acenaphthylene	208-96-8	µg/L	0.04	u q	uj	n	0.1	0.04	0.0052	PAHs	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Anthracene	120-12-7	µg/L	0.04	u q	uj	n	0.1	0.04	0.0057	PAHs	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Benz(a)anthracene	56-55-3	µg/L	0.012	u q	uj	n	0.1	0.012	0.0042	PAHs	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Benzo(a)pyrene	50-32-8	µg/L	0.012	u q	uj	n	0.1	0.012	0.007	PAHs	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Benzo(b)fluoranthene	205-99-2	µg/L	0.012	u q	uj	n	0.1	0.012	0.0031	PAHs	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Benzo(g,h,i)perylene	191-24-2	µg/L	0.012	u q	uj	n	0.1	0.012	0.0063	PAHs	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Benzo(k)fluoranthene	207-08-9	µg/L	0.012	u q	uj	n	0.1	0.012	0.0064	PAHs	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Chrysene	218-01-9	µg/L	0.012	u q	uj	n	0.1	0.012	0.0033	PAHs	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Dibenz(a,h)anthracene	53-70-3	µg/L	0.012	u q	uj	n	0.1	0.012	0.0041	PAHs	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Fluoranthene	206-44-0	µg/L	0.012	u q	uj	n	0.1	0.012	0.0049	PAHs	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Fluorene	86-73-7	µg/L	0.04	u q	uj	n	0.1	0.04	0.0056	PAHs	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	0.04	u q	uj	n	0.1	0.04	0.0046	PAHs	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Naphthalene	91-20-3	µg/L	0.012	u q	uj	n	0.1	0.012	0.0081	PAHs	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Phenanthrene	85-01-8	µg/L	0.02	u q	uj	n	0.1	0.02	0.0094	PAHs	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Pyrene	129-00-0	µg/L	0.02	u q	uj	n	0.1	0.02	0.0062	PAHs	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	1,3,5-Trinitrobenzene	99-35-4	µg/L	0.42	u q	r	n	1	0.42	0.21	Explosives	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	1,3-Dinitrobenzene	99-65-0	µg/L	0.21	u q	r	n	0.42	0.21	0.093	Explosives	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	2,4,6-Trinitrotoluene	118-96-7	µg/L	0.21	u q	r	n	0.42	0.21	0.076	Explosives	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	2,4-Dinitrotoluene	121-14-2	µg/L	0.21	u q	r	n	0.42	0.21	0.088	Explosives	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	2,6-Dinitrotoluene	606-20-2	µg/L	0.21	u q	r	n	0.21	0.21	0.068	Explosives	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	2-Amino-4,6-dinitrotoluene	35572-78-2	µg/L	0.13	u q	r	n	0.21	0.13	0.053	Explosives	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	2-Nitrotoluene	88-72-2	µg/L	0.21	u q	r	n	0.42	0.21	0.09	Explosives	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	3-Nitrotoluene	99-08-1	µg/L	0.21	u q	r	n	0.42	0.21	0.088	Explosives	S

280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	4-Amino-2,6-dinitrotoluene	19406-51-0	µg/L	0.13	u q	r	n	0.21	0.13	0.061	Explosives	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	4-Nitrotoluene	99-99-0	µg/L	0.42	u q	r	n	1	0.42	0.21	Explosives	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	HMX	2691-41-0	µg/L	0.21	u q	r	n	0.42	0.21	0.092	Explosives	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Nitrobenzene	98-95-3	µg/L	0.21	u q	r	n	0.42	0.21	0.096	Explosives	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Nitroglycerin	55-63-0	µg/L	2.1	u q	r	n	3.1	2.1	0.97	Explosives	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	PETN	78-11-5	µg/L	1.3	u q	r	n	2.1	1.3	0.44	Explosives	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	RDX	121-82-4	µg/L	0.13	u q	r	n	0.21	0.13	0.055	Explosives	S
280-96439-1	NTAmw-119-042716-GW	280-96439-6	Ground Water	Tetryl	479-45-8	µg/L	0.21	u q	r	n	0.25	0.21	0.083	Explosives	S
280-96439-1	NTAmw-507-042716-GW	280-96439-7	Ground Water	1,3,5-Trinitrobenzene	99-35-4	µg/L	0.43	u q	r	n	1.1	0.43	0.22	Explosives	S
280-96439-1	NTAmw-507-042716-GW	280-96439-7	Ground Water	1,3-Dinitrobenzene	99-65-0	µg/L	0.22	u q	r	n	0.43	0.22	0.096	Explosives	S
280-96439-1	NTAmw-507-042716-GW	280-96439-7	Ground Water	2,4,6-Trinitrotoluene	118-96-7	µg/L	0.22	u q	r	n	0.43	0.22	0.078	Explosives	S
280-96439-1	NTAmw-507-042716-GW	280-96439-7	Ground Water	2,4-Dinitrotoluene	121-14-2	µg/L	0.22	u q	r	n	0.43	0.22	0.091	Explosives	S
280-96439-1	NTAmw-507-042716-GW	280-96439-7	Ground Water	2,6-Dinitrotoluene	606-20-2	µg/L	0.22	u q	r	n	0.22	0.22	0.07	Explosives	S
280-96439-1	NTAmw-507-042716-GW	280-96439-7	Ground Water	2-Amino-4,6-dinitrotoluene	35572-78-2	µg/L	0.13	u q	r	n	0.22	0.13	0.055	Explosives	S
280-96439-1	NTAmw-507-042716-GW	280-96439-7	Ground Water	2-Nitrotoluene	88-72-2	µg/L	0.22	u q	r	n	0.43	0.22	0.092	Explosives	S
280-96439-1	NTAmw-507-042716-GW	280-96439-7	Ground Water	3-Nitrotoluene	99-08-1	µg/L	0.22	u q	r	n	0.43	0.22	0.09	Explosives	S
280-96439-1	NTAmw-507-042716-GW	280-96439-7	Ground Water	4-Amino-2,6-dinitrotoluene	19406-51-0	µg/L	0.13	u q	r	n	0.22	0.13	0.062	Explosives	S
280-96439-1	NTAmw-507-042716-GW	280-96439-7	Ground Water	4-Nitrotoluene	99-99-0	µg/L	0.43	u q	r	n	1.1	0.43	0.22	Explosives	S
280-96439-1	NTAmw-507-042716-GW	280-96439-7	Ground Water	HMX	2691-41-0	µg/L	0.22	u q	r	n	0.43	0.22	0.095	Explosives	S
280-96439-1	NTAmw-507-042716-GW	280-96439-7	Ground Water	Nitrobenzene	98-95-3	µg/L	0.22	u q	r	n	0.43	0.22	0.098	Explosives	S
280-96439-1	NTAmw-507-042716-GW	280-96439-7	Ground Water	Nitroglycerin	55-63-0	µg/L	2.2	u q	r	n	3.2	2.2	1	Explosives	S
280-96439-1	NTAmw-507-042716-GW	280-96439-7	Ground Water	PETN	78-11-5	µg/L	1.3	u q	r	n	2.2	1.3	0.45	Explosives	S
280-96439-1	NTAmw-507-042716-GW	280-96439-7	Ground Water	RDX	121-82-4	µg/L	0.13	u q	r	n	0.22	0.13	0.057	Explosives	S
280-96439-1	NTAmw-507-042716-GW	280-96439-7	Ground Water	Tetryl	479-45-8	µg/L	0.22	u q	r	n	0.26	0.22	0.086	Explosives	S