APPENDIX D.2.2

Data Quality Assessment Report
Fall 2019 Sampling Event

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ACRONYMS AND ABBREVIATIONS

ADR	Automated Data Review
CCV	Continuing Calibration Verification
DoD	U.S. Department of Defense
DQA	Data Quality Assessment
DQO	Data Quality Objective
EDD	Electronic Data Deliverable
FCR	Field Change Request
FWGWMP	Facility-wide Groundwater Monitoring Program
ICV	Initial Calibration Verification
LCS	Laboratory Control Sample
LOD	Limit of Detection
LOQ	Limit of Quantitation
MDL	Method Detection Level
MPC	Measurement Performance Criteria
MPR	Monthly Progress Report
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PAH	Polycyclic Aromatic Hydrocarbon
PARCC	Precision, Accuracy, Representativeness, Comparability, and Completeness
PCB	Polychlorinated Biphenyl
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
QSM	Quality Systems Manual
REIMS	RVAAP Environmental Information Management System
RI	Remedial Investigation
RIWP	Remedial Investigation Work Plan
RPD	Relative Percent Difference
RVAAP	Ravenna Army Ammunition Plant
SVOC	Semi-volatile Organic Compound
TestAmerica	TestAmerica Laboratories, Inc.
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compound

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D.2.2 PROJECT QUALITY ASSURANCE SUMMARY

D.2.2.1 PURPOSE OF THIS REPORT

Environmental data must be evaluated relative to their known limitations and intended use. As can be expected in environmental media, some analytical results and data points require the user to be cautioned relative to the quality of the project information presented. The data verification/validation process and this data quality assessment (DQA) are performed to assist current and future data users in interpreting these data.

The purpose of this DQA report is to document the following:

- The quality control (QC) procedures that were followed to ensure data generated by Leidos during the implementation of the October 2019 sampling event to support the Facility-wide Groundwater Monitoring Program (FWGWMP) at the former Ravenna Army Ammunition Plant (RVAAP) meet project requirements,
- The quality of the data collected, and
- Any problems encountered during the course of the study and their solutions.

This DQA report provides an assessment of the analytical information generated during the implementation of the *Facility-wide Groundwater Monitoring Program Plan RVAAP-66 Facility-wide Groundwater Addendum for 2019* (Leidos 2019; herein referred to as the 2019 Addendum). Implementation of the 2019 Addendum was conducted in accordance with the *Remedial Investigation Work Plan for Groundwater and Environmental Services for RVAAP-66 Facility-wide Groundwater* (TEC-Weston 2016; herein referred to as the Remedial Investigation Work Plan [RIWP]), Appendix A.2 Quality Assurance Project Plan (QAPP).

This DQA documents the quality of the data collected during the October 2019 sampling event and assesses if quality assurance (QA)/QC objectives were met. The primary intent of this assessment is to document that, except as noted, data generated for this investigation can withstand scientific scrutiny; are appropriate for their intended purpose; are technically defensible; and are of known and adequate quality (i.e., sensitivity, precision, accuracy, representativeness, comparability, and completeness [PARCC]).

Multiple activities were performed to achieve the required data quality for this project. Data quality objectives (DQOs), along with a QA program, were established to guide the implementation of the field sampling and laboratory analysis per the 2019 Addendum (Leidos 2019). The QA program was established to standardize procedures and document activities per the FWGWMP Plan (Portage Environmental 2004) and RIWP. This program provided a means to detect and correct any deficiencies in the process. Upon receipt by the project team, results provided in the electronic data deliverable (EDD) were subjected to electronic review by an automated data review (ADR) process to identify and qualify problems related to the analysis. This was followed by manual verification/validation of QC results not included in the EDD/ADR review. These combined verification/validation results are

summarized in this DQA to document that data used in the remedial investigation (RI) are identified as having met the criteria and are being utilized appropriately.

D.2.2.2 QUALITY ASSURANCE PROGRAM

The QAPP within the RIWP (TEC-Weston 2016) and field change request (FCR) LEIDOS_FWGW_004 were developed to enumerate the quantity and type of environmental samples needed and to define the quantity and type of QA/QC samples to be used to evaluate data quality. These documents established requirements for field and laboratory QC procedures. In general, field QC duplicate samples were required at a frequency of 10%; volatile organic compound (VOC) trip blanks were to accompany each cooler containing water samples for VOC determinations; field blanks and equipment blanks were collected as needed to demonstrate equipment decontamination and clean ambient field conditions; and analytical laboratory QC samples, including duplicates, matrix spikes (MSs), laboratory control samples (LCSs), and method blanks, were required for each preparation batch of 20 samples or less for each parameter. Note that during the October 2019 event only dedicated sampling equipment was used, and therefore, field blanks and equipment blanks were not required.

A primary goal of the QA program is to ensure that the quality of results for all environmental measurements is appropriate for their intended use and that standardized field procedures guide the investigation. Through the process of readiness review, training, equipment calibration, QC implementation, and detailed documentation, the project has successfully accomplished the goals set for the QA program.

D.2.2.2.1 Monthly Progress Reports

Monthly Progress Reports (MPRs) were completed by the Leidos Project Manager for the duration of the project. The MPRs contained information on work completed, a summary of anticipated upcoming work, discussion of any health and safety issues, and a summary of investigation-derived waste staged at the facility. These reports were issued to the U.S. Army Corps of Engineers (USACE), Louisville District Contracting Officer's Representative and Project Manager by email.

D.2.2.2.2 Daily Activity Logs

The Field Manager completed Daily Activity Logs. These include information such as, but not limited to, on-site sub-tier contractors, on-site equipment, work performed summaries, QC activities, health and safety activities, problems encountered, and corrective actions.

D.2.2.2.3 Laboratory "Definitive" Level Data Reporting

The QAPP for this project identified requirements for laboratory data reporting. White Water Associates of Amasa, Michigan, and their subcontracted partner TestAmerica Laboratories, Inc. (TestAmerica) of Denver, Colorado, performed the analysis of the samples. The TestAmerica facility in Denver, Colorado, performed all analyses, except nitroguanidine and nitrocellulose, which were performed at the TestAmerica facility in Sacramento, California, and hexavalent chromium, which was

performed at the Test America facility in North Canton, Ohio. TestAmerica Denver and Sacramento are accredited by the U.S. Department of Defense (DoD) for the analyses they performed. Test America in North Canton, Ohio, is not DoD accredited for hexavalent chromium; due to the short holding time associated with this analysis, an FCR (FCR No. 08, June 8, 2017) was sought and approved to use the North Canton laboratory due to its proximity to the site, which eliminated the delay of shipping samples to the laboratory. All analytical procedures were completed in accordance with U.S. Environmental Protection Agency (USEPA) requirements; the DoD Quality Systems Manual (QSM), Version 5.0 (DoD 2017); and the QAPP. USEPA "definitive" data have been reported, including laboratory-level IV data packages meeting QSM Appendix A guidance.

This information from the laboratory, along with field information, provides the basis for subsequent data evaluation relative to sensitivity and PARCC.

D.2.2.2.4 Field Change Requests

Prior to and during the implementation of the Fall 2019 sampling event, two FCRs pertinent to the FWGWMP field activities were provided and are presented in Appendix F. These FCRs are summarized below:

- LEIDOS_FWGW_009 – Specifies more sample locations and analyses beyond what was specified in the 2019 Addendum (Leidos 2019) to be conducted in Fall 2019. The additional sampling is summarized below:
  - FWGmw-002, BKGmw-021, LL1mw-080, B12mw-012, and EBGmw-125 for metals analysis to further understand nature and extent of contamination.
  - LL1mw-063 for explosives, propellants, and cyanide to address potential data gaps.
  - FWGmw-004 for cyanide to address a potential data gap.
- LEIDOS_FWGW_010 – Specifies that post-sample readings will not be obtained following groundwater sampling procedures. (NOTE: This FCR was approved near the completion of the Fall 2019 sampling event, and therefore, was not implemented in Fall 2019. This FCR will be implemented in future FWGWMP sampling events.)

D.2.2.3 DATA VERIFICATION/VALIDATION

The objective when evaluating the project data quality is to determine its usability. The evaluation is based on the interpretation of laboratory QC measures, field QC measures, and project DQOs. This project implemented ADR software to facilitate laboratory data review. The ADR output was reviewed by the project-designated verification staff, as discussed below.

D.2.2.3.1 Field Data Verification

Field-generated documents, such as sampling logs, boring logs, daily health and safety summaries, daily safety inspections, equipment calibration and maintenance logs, and sample management logs, were peer-reviewed on site.

D.2.2.3.2 Laboratory Data Verification/Validation

Analytical data generated for this project have been subjected to a process of automated and manual data verification, validation, and review. Criteria and protocols were established in the following documents:

- 2019 Addendum (Leidos 2019);
- RIWP, including Appendix A.2 QAPP (TEC-Weston 2016);
- DoD QSM, Version 5.0 (DoD 2017);
- USEPA *Contract Laboratory Program National Functional Guidelines for Organic Data Review*, EPA-540/R-99/008 (USEPA 1999);
- USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, EPA-540/R-04/004(USEPA 2004); and
- Leidos Technical Support Contractor QA Standard Operating Procedure (ESE-DM-05), *Data Verification and Validation* (Leidos 2015).

Upon receipt of analytical data, QA staff performed a systematic examination of 100% of the reports, including ADR outputs. Discrepancies identified during this process were recorded and documented. Any discrepancies were resolved prior to database flag entry. The QA Program Nonconformance Report and Corrective Action systems were implemented as required.

During the verification phase of the review and evaluation process, data were subjected to a systematic technical review by examining all field sample and analytical QC results against the measurement performance criteria (MPC) specified in the QAPP, following USEPA functional guidelines, DoD QSM criteria, and Leidos internal procedures for laboratory data review. These guidelines describe methods for evaluating the review criteria and actions to be performed resulting from the review of these criteria. The primary objectives of this phase were to assess and summarize the quality and reliability of the data for the intended use and to document factors that may affect the usability of the data. This data verification/validation and analytical review process included, but was not necessarily limited to, the following parameters:

- Data completeness;
- Analytical holding times and sample preservation;
- Calibration (initial and continuing);
- Method blanks and calibration blanks;
- Sample results verification;
- Surrogate recovery (organics);
- LCS analysis;
- Internal standard performance;
- MS/matrix spike duplicate (MSD) recovery;
- Serial dilution/post digestion spike, interference check standards (inorganics);
- Field duplicate analysis comparison;

- Reported detection limits; and
- Secondary dilutions.

As a result of this review, data were qualified based on the technical evaluations of QC sample results compared to MPC specified in the QAPP. Qualifiers were applied as needed to field and analytical results to indicate the usability of the data for its intended purpose.

D.2.2.3.3 Definitions of Data Qualifiers (Flags)

During the data verification/validation process, laboratory data were assigned appropriate data qualification flags with reason codes. Qualification flags are defined as follows:

- "U" Indicates the analyte was analyzed for, but not detected above, the level of the associated value.
- "J" Indicates the analyte was positively identified; however, the associated numerical value is an approximate concentration of the analyte in the sample.
- "UJ" Indicates the analyte was analyzed for, but not detected above, the associated value; however, the reported value is an estimate and demonstrates a decreased knowledge of its accuracy or precision.
- "R" Indicates the analyte value reported is unusable due to significant noncompliant QC results. One nitrite result (RQLmw-013-190401-GW) was qualified "R" due to a missed holding time.

D.2.2.3.4 Data Compliance

A total of 80 environmental groundwater samples were collected with approximately 2,632 discrete data points (i.e., analytes) obtained, reviewed, and integrated into the assessment (these totals do not include field measurements, field QC blanks, and field descriptions). During the project, samples were successfully collected and produced usable results for 00% of the sample analyses performed during the October 2019 sampling event. No data were rejected.

Table D.2.2-1 summarizes the number of environmental and QA split samples collected during the October 2019 sampling event. Cross-references for field duplicates and field QC samples and the associated primary samples are presented in Table D.2.2-2 along with the requested parameters for each sample. Table D.2.2-3 summarizes the qualified analyses grouped by parameter, and Table D.2.2-4 details the individual results qualified during review. The majority of the estimated values were based on concentrations between the laboratory method detection levels (MDLs) and the sample limit of quantitation (LOQ) (i.e., values determined in this region have an inherently higher variability and are considered to be estimated concentrations); qualifiers also were assigned based on noncompliant MS recoveries, holding times, blank contamination, surrogate recoveries, and LCS recoveries, as well as professional judgment.

During the October 2019 sampling event, 11 field duplicates were collected and analyzed with primary samples. QA split samples were collected and sent to an independent laboratory (CT Laboratories in

Baraboo, Wisconsin); these results were provided directly to USACE and are not included in this DQA. Four trip blanks were collected and analyzed. Equipment rinsate blanks were not required, since samples were collected via the use of dedicated sampling equipment. The project goal for blanks is to achieve concentrations less than the reporting levels. Table D.2.2-5 summarizes analytes that were detected in the trip blanks. In general, trip blank results indicate that the potential for sample contamination due to cross contamination is very low.

D.2.2.4 DATA QUALITY EVALUATION

D.2.2.4.1 Volatile Organic Groundwater Analysis

Analytical holding times were not met for 3 VOC samples, resulting in 108 data points qualified as estimated (UJ). Initial calibrations and continuing calibration criteria were achieved with the exception of three compounds in standards associated with six samples, resulting in nine data points qualified as estimated (UJ) based on professional judgment. Surrogate recoveries and internal area counts were within control limits for all analyses. No results were qualified based on laboratory method blanks. All LCS recoveries were within criteria. MS/MSD recoveries resulted in one data point being qualified as estimated (UJ); relative percent difference (RPD) values met control criteria. No samples required dilutions. No data were rejected for any reason. Although some analyses were qualified as estimated, the deviations observed should not have a significant impact on the results, and the values are considered technically sound and defensible. Complete data summary tables, with associated qualifiers, are provided in Appendix D and can be found in the RVAAP Environmental Information Management System (REIMS).

D.2.2.4.2 Semi-volatile Organic Groundwater Analysis

Extraction and analytical holding times were met for all samples. Initial and continuing calibration criteria were met with the exception of two compounds in standards associated with three samples; these six results are qualified as estimated (UJ) based on professional judgment. Surrogate recoveries met criteria. Internal standard area counts and compound retention times met criteria throughout the data analyses. Method blanks were free of contamination. LCS and/or MS/MSD recoveries and RPD values met control criteria, with the exception of MS/MSD recoveries associated with one compound, which was outside criteria, resulting in one data point being qualified as estimated (UJ). No semi-volatile organic compound (SVOC) samples required dilutions. No data were estimated or rejected for any reason, and the results are considered technically sound and defensible. Complete data summary tables, with associated qualifiers, are provided in Appendix D and can be found in REIMS.

D.2.2.4.3 Polycyclic Aromatic Hydrocarbon Groundwater Analysis

Extraction and analytical holding times were met for all samples. Initial and continuing calibration criteria were met. Surrogate recoveries, internal standard area counts, and compound retention times met criteria throughout the data analyses. Method blanks were free from contamination. LCS recoveries for polycyclic aromatic hydrocarbon (PAH) compounds associated with 3 samples resulted in 36 data points being qualified as estimated (UJ). MS/MSD recoveries and RPD values met criteria. No PAH

samples required dilutions. No data were rejected for any reason. All values are considered technically sound and defensible. Complete data summary tables, with associated qualifiers, are provided in Appendix D and can be found in REIMS.

D.2.2.4.4 Pesticide Analysis Groundwater Analysis

Analytical holding times were met for all samples; as needed, clean-up protocols (SW3660A and SW3665A) were used to reduce matrix interferences in the sample extracts. Surrogate recoveries met control criteria for all samples. Initial and continuing calibrations met criteria for all pesticide compounds, with the exception of toxaphene in standards associated with six samples, resulting in data points qualified as estimated (UJ). Pesticide method blanks were free of contamination. LCS recoveries and MS/MSD recoveries and RPD values were within criteria. No pesticide samples required dilutions. Column comparison criteria were met. No pesticide data were rejected for any reason. Although some analyses were qualified as estimated, the deviations observed should not have a significant impact on the results, and the values are considered technically sound and defensible. Complete data summary tables, with associated qualifiers, are provided in Appendix D and can be found in REIMS.

D.2.2.4.5 Polychlorinated Biphenyl Analysis Groundwater Analysis

Analytical holding times were met for all samples; as needed, clean-up protocols (SW3660A and SW3665A) were used to reduce matrix interferences in the sample extracts. Surrogate recoveries met control limits. Initial and continuing calibration criteria were met for all polychlorinated biphenyl (PCB) compounds. PCB method blanks were free from contamination. LCS recoveries were within acceptance criteria. MS/MSD recoveries and RPD values met criteria. No PCB data were estimated or rejected for any reason. No PCB samples required a dilution. All PCB values are considered technically sound and defensible. Complete data summary tables, with associated qualifiers, are provided in Appendix D and can be found in REIMS.

D.2.2.4.6 Explosives and Nitroglycerin Groundwater Analysis

Analytical holding times were met for all samples. Surrogate recoveries for 3 samples were outside control limits and resulted in 46 data points qualified as estimated (J/UJ). Initial and continuing calibration criteria were met. All method blanks were free of contamination. LCS recovery for several compounds exceeded criteria, resulting in 80 results being qualified as estimated (J/UJ). MS/MSD recoveries exceeded criteria for several compounds which caused 12 data points in 1 primary sample to be qualified as estimated (J/UJ). Column comparison criteria were exceeded for 10 results, which caused these data points to be qualified as “J” based on professional judgment. No explosives samples required dilutions. No data were rejected for any reason. Although some analyses were qualified as estimated, the deviations observed should not have a significant impact on the results, and the values are considered technically sound and defensible. Complete data summary tables, with associated qualifiers, are provided in Appendix D and can be found in REIMS.

D.2.2.4.7 Metals and Phosphorus Groundwater Analysis

Analytical holding times were met for all samples. Initial and continuing calibration criteria were evaluated and sample results associated with calibration standard exceedances were qualified as follows: if initial calibration verification (ICV) or continuing calibration verification (CCV) results were above criteria, detects were qualified as estimated (J); if ICV/CCV results were below criteria, detects were qualified as estimated (J) and non-detects were qualified at an estimated concentration (UJ). Method blank contamination resulted in 49 results being qualified as non-detect (U/UJ). LCS recoveries met criteria. MS/MSD recoveries exceeded criteria for several compounds which resulted in 319 sample results qualified as estimated (J/UJ). MS/MSD RPD values were within control limits. Professional judgment was used to qualify 72 results, based on ICV/CCV results per above, as well as initial and continuing calibration blank contamination, serial dilution, and post digestion spike results. No data were rejected for any reason. No dilutions were required. Although some analyses were qualified as estimated, the deviations observed should not have a significant impact on the results, and the reported values were considered technically sound and defensible. Complete data summary tables, with associated qualifiers, are provided in Appendix D and can be found in REIMS.

D.2.2.4.8 Propellants Groundwater Analysis

Analytical holding times were exceeded and the data were qualified as estimated (UJ). Initial and continuing calibration criteria were met for all compounds. Method blanks were free from contamination. LCS and MS/MSD recoveries were within criteria; RPD values were within control limits. No dilutions were required. No data were rejected for any reason. Although some analyses were qualified as estimated, the deviations observed should not have a significant impact on the results, and the values are considered technically sound and defensible. Complete data summary tables, with associated qualifiers, are provided in Appendix D and can be found in REIMS.

D.2.2.4.9 Anions

Results for four nitrate results were qualified as estimated (UJ) due to missed holding times. Initial and continuing calibration criteria were met for all compounds. Method and calibration blank were free from contamination that impacted sample results. MS/MSD recoveries were outside criteria for sulfate, which resulted in three results qualified as estimated (J); RPD values met criteria. Laboratory duplicate results met criteria. No groundwater samples required a dilution. Analyses that were qualified as estimated, should not have a significant impact on the results, and the values are considered technically sound and defensible. Complete data summary tables, with associated qualifiers, are provided in Appendix D and can be found in REIMS.

D.2.2.4.10 Cyanide

Analytical holding times were met for all samples. Initial and continuing calibration criteria were met for all compounds. Method blanks were free from contamination. LCS recoveries were within criteria. MS/MSD recoveries and RPD values met criteria. No dilutions were required. No data were rejected for any reason. Although some analyses were qualified as estimated, the deviations observed should

not have a significant impact on the results, and the values are considered technically sound and defensible. Complete data summary tables, with associated qualifiers, are provided in Appendix D and can be found in REIMS.

D.2.2.4.11 Perchlorate

Analytical holding times were met for all samples. Initial and continuing calibration criteria were met for all compounds. Method blanks were free from contamination. LCS recoveries were within criteria. MS/MSD recoveries and RPD values met criteria. No dilutions were required. No data were estimated or rejected for any reason. Reported values are considered technically sound and defensible. Complete data summary tables, with associated qualifiers, are provided in Appendix D and can be found in REIMS.

D.2.2.4.12 Alkalinity

Analytical holding times were met for all samples. Initial and continuing calibration criteria were met for alkalinity. Method blanks were free from contamination. LCS recoveries were within criteria. MS/MSD recoveries and RPD values met criteria for alkalinity. No dilutions were required. No data were rejected for any reason. Complete data summary tables, with associated qualifiers, are provided in Appendix D and can be found in REIMS.

D.2.2.4.13 Hexavalent Chromium

Analytical holding times were met for all samples. Initial and continuing calibration criteria were met for all compounds. Method blanks were free from contamination. LCS recoveries were within criteria. MS/MSD recoveries and RPD values met criteria. No dilutions were required. No data were estimated or rejected for any reason. Reported values are considered technically sound and defensible. Complete data summary tables, with associated qualifiers, are provided in Appendix D and can be found in REIMS.

D.2.2.4.14 Precision

Field duplicate samples were collected to assess the combined variability (i.e., precision) due to environmental media, sampling reproducibility, and analytical precision. Field duplicate samples were collected from the same spatial and temporal conditions as the primary environmental sample.

Field duplicate comparison information is presented in Table D.2.2-6. If a given analyte was not detected in both the regular and field duplicate sample, precision was considered within limits, and results were not included in the table. The RPD was calculated only when both samples had reported concentrations greater than five times the LOQ. When one or both sample values were between the LOQ and five times the LOQ, the absolute difference was evaluated. Tables 12-1 through 12-17 of the QAPP set the RPD criteria, while the absolute difference is set at one times the reporting limit. Two metals results in one field duplicate pair exceeded RPD criteria; all other field duplicate comparisons met criteria.

D.2.2.4.15 Sensitivity

Determining minimum detectable values allows the investigation to assess the confidence that can be placed in a value relative to the magnitude of analyte concentration observed. The closer a measured value comes to the minimum detectable concentration, the less confidence and more variation the measurement may have. Project sensitivity goals were expressed relative to the project action limits in the QAPP as presented in Tables 15-1 through 15-19; these tables identified compounds for which the expected limit of detection (LOD) was greater than the project action limit. These limits were further evaluated relative to the applicable screening criteria, and LODs were at or below screening criteria, with the exceptions previously noted in the QAPP tables. In addition, several compounds not listed in the QAPP (benzo[a]anthracene; aldrin; dieldrin; 2,4-dinitrophenol; 2-methyl-4,6-dinitrophenol; and Aroclor 1016) were reported with LODs greater than the screening criteria; Aroclor 1016 and benzo(a)anthracene had MDLs below the screening criteria. With these exceptions, LODs are considered adequate for their intended use and have been considered during data interpretation and statistical applications.

Method blank determinations were performed with each analytical sample batch for each analyte under investigation. These blanks were evaluated to determine their potential impact on individual data points. Action levels are set at 5 times the blank concentration for all analytes, except those designated as common laboratory contaminants (i.e., methylene chloride, acetone, toluene, 2-butanone, and phthalate compounds), for which the action level is 10 times the blank concentration. Action limits for inorganics were set as 10 times the blank concentration. Reported sample concentrations are evaluated against blank action levels, and the following qualifications are made when reportable quantities of analytes were observed in the associated method blank:

- When the sample analyte concentration is above the action level (5–10 times the blank concentration), the data are not qualified and it is considered a positive value.
- If the sample concentration is below the action level, the data are considered impacted by the method blank. If the sample result is greater than the LOQ, the result is qualified as a non-detectable concentration at the analyte value reported and these data are qualified as "U." If the sample result is greater than the LOD but less than the LOQ, the result is qualified as a non-detectable concentration at the analyte value reported and these data are qualified as "UJ." If the sample result is less than the LOD (an estimated value), the result is qualified as non-detectable at the concentration of the LOD and qualified as "U."

No data were rejected as a result of method blank contamination; however, various analytes were qualified as a non-detectable concentration (U, UJ), as summarized in Table D.2.2-4.

Table D.2.2-5 summarizes analytes that were detected in the four trip blanks associated with this sampling event. Trace concentration of methylene chloride and acetone were detected, as listed in Table D.2.2-5, at concentrations less than the reporting level. The transportation and sample storage process, and the procedures and precautions employed, were effective in preserving the integrity of the sample analysis.

D.2.2.4.16 Representativeness and Comparability

Representativeness expresses the degree to which data accurately reflect the analyte or parameter of interest for the environmental media being studied and is the qualitative term most concerned with the proper design of the sampling program. Factors that affect the representativeness of analytical data include proper preservation, holding times, and use of standard sampling and analytical methods. Samples were picked up on site by the TestAmerica courier and then delivered or shipped to the appropriate laboratory location; samples were received within temperature specifications and in good condition. Holding times were met for all samples.

Comparability, like representativeness, is a qualitative term relative to an individual project data set. The RI employed appropriate sampling methodologies, sample containers and preservation, and site surveillance; used standard sampling devices and uniform training; and documented sampling procedures, standard analytical protocols/procedures, QC checks with standard control limits, and universally accepted data reporting units to ensure comparability to other data sets. Through the proper implementation and documentation of these standard practices, the project has established the confidence that the data will be comparable to other project and programmatic information. Table D.2.2-7 presents the standardized parameter groups, sample containers, preservation techniques, and associated holding times for environmental media.

D.2.2.4.17 Completeness

Usable data are defined as those data that pass individual scrutiny during the verification and validation process. These data, including estimated data, have been determined to be usable for RVAAP restoration program objectives.

The completeness goal for analytical data is 95%, as defined in Tables 12-1 through 12-17 of the FWGWMP Plan (Portage Environmental 2004). All samples specified in the 2019 Addendum (Leidos 2019) were collected as planned, and usable results were generated for 100% of sample analyses performed.

D.2.2.5 DATA QUALITY ASSESSMENT SUMMARY

The overall quality of the October 2019 sampling event meets established project objectives. Through implementation of the project data verification, validation, and assessment process, project information has been determined to be acceptable for use.

Data, as presented, have been qualified as usable; some data have been qualified estimated, “J” or “UJ.” One data point was rejected. Data that have been qualified as estimated indicate accuracy, precision, or sensitivity did not meet all requirements, but results are considered adequate for interpretation. All undetected analytes were reported at detection levels that were adequate for use during data interpretation and statistical applications.

Data produced for this project demonstrate they can withstand scientific scrutiny; are appropriate for its intended purpose; are technically defensible; and are of known and acceptable sensitivity, precision, and accuracy. Data integrity has been documented through proper implementation of QA and QC measures. The environmental information presented has an established confidence that allows utilization for the project objectives and provides data for future needs.

D.2.2.6 REFERENCES

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Table D.2.2-1. Number of Samples Collected – October 2019 Sampling Event

Media	Environmental Samples	Field Duplicates	USACE Split Samples	Trip Blanks	Equipment Rinsate Blanks[a]	Source Water Blanks[b]
Groundwater	69	11	11	4	0	0

[a] Equipment rinsate blanks were collected at a frequency of one per field cycle for the entire annual sampling event for the RVAAP-66 Facility-Wide Groundwater area of concern; only dedicated sampling equipment was needed therefore no rinsate blanks were collected.

[b] Source water blanks for deionized and potable water used during equipment decontamination were evaluated for the entire RVAAP-66 Facility-Wide Groundwater area of concern; none were collected during this event.

USACE = U.S. Army Corps of Engineers.

Table D.2.2-2. Identification of Regular and QC Samples Collected – October 2019 Sampling Event

Environmental Samples	Laboratory Sample Delivery Group	Field Duplicates	Trip Blanks[a]	Metals	Hexavalent Chromium	Explosives	Propellants[b]	SVOCs	PAHs	VOCs	Pesticides	PCBs	Cyanide	Perchlorate	Anions	Alkalinity
B12mw-012-191001-GW	280-129184-1			X												
BKGmw-021-191001-GW	280-129088-1	BKGmw-021-191002-GW		X												
CBPmw-008-191001-GW	280-129019-1												X			
CBPmw-009-191001-GW	280-129019-1												X			
DA2mw-115-191001-GW	280-128988-1	DA2mw-115-191002-GW		X												
DET-003-191001-GW	280-129019-1	DET-003-191002-GW	FWGTB-191009-TB	X		X		X	X	X	X	X	X			
DET-004-191001-GW	280-129019-1		FWGTB-191009-TB	X		X		X	X	X	X	X	X			
EBGmw-125-191001-GW	280-129277-1			X									X			
EBGmw-131-191001-GW	280-129277-1												X			
FBQmw-171-191001-GW	280-129088-1												X		X	X
FBQmw-172-191001-GW	280-129019-1	FBQmw-172-191002-GW											X			
FBQmw-174-191001-GW	280-129088-1					X									X	X
FBQmw-175-191001-GW	280-129019-1	FBQmw-175-191002-GW			X										X	X
FBQmw-176-191001-GW	280-129088-1												X			
FWGmw-002-191001-GW	280-129184-1			X												
FWGmw-004-191001-GW	280-129019-1			X		X							X			
FWGmw-007-191001-GW	280-129088-1			X		X										
FWGmw-011-191001-GW	280-129184-1			X		X										
FWGmw-012-191001-GW	280-129184-1			X		X										
FWGmw-015-191001-GW	280-128988-1			X		X										
FWGmw-016-191001-GW	280-128988-1			X		X										
FWGmw-018-191001-GW	280-129184-1		FWGTB-191011-TB	X						X			X			
FWGmw-020-191001-GW	280-129184-1		FWGTB-191011-TB	X						X			X			
FWGmw-021-191001-GW	280-129184-1	FWGmw-021-191002-GW		X		X										
FWGmw-024-191001-GW	280-129184-1			X		X										
LL10mw-003-191001-GW	280-129088-1		FWGTB-191012-TB							X						
LL10mw-005-191001-GW	280-129088-1			X												
LL11mw-005-191001-GW	280-129088-1												X			
LL12mw-183-191001-GW	280-129322-1												X			
LL12mw-185-191001-GW	280-129322-1														X	
LL12mw-187-191001-GW	280-129322-1			X											X	
LL12mw-242-191001-GW	280-129322-1			X											X	
LL12mw-245-191001-GW	280-129322-1			X		X									X	
LL12mw-247-191001-GW	280-129184-1			X											X	

Table D.2.2-3. Identification of Regular and QC Samples Collected – October 2019 Sampling Event (continued)

Environmental Samples	Laboratory Sample Delivery Group	Field Duplicates	Trip Blanks[a]	Metals	Hexavalent Chromium	Explosives	Propellants[b]	SVOCs	PAHs	VOCs	Pesticides	PCBs	Cyanide	Perchlorate	Anions	Alkalinity
LL1mw-063-191001-GW	280-129317-1					X	X						X			
LL1mw-064-191001-GW	280-129184-1			X												
LL1mw-065-191001-GW	280-129322-1			X		X										
LL1mw-080-191001-GW	280-129317-1			X		X										
LL1mw-081-191001-GW	280-129317-1					X							X			
LL1mw-083-191001-GW	280-129317-1					X									X	X
LL1mw-084-191001-GW	280-129317-1			X		X									X	X
LL1mw-086-191001-GW	280-129322-1			X									X			X
LL1mw-087-191001-GW	280-129184-1			X		X										
LL1mw-088-191001-GW	280-129184-1			X		X										X
LL1mw-089-191001-GW	280-129317-1	LL1mw-089-191002-GW				X										
LL2mw-059-191001-GW	280-129184-1			X		X										
LL2mw-264-191001-GW	280-129322-1												X			
LL2mw-267-191001-GW	280-129322-1			X		X										
LL2mw-272-191001-GW	280-129322-1												X			
LL3mw-234-191001-GW	280-129322-1												X			
LL3mw-237-191001-GW	280-129277-1					X										
LL3mw-244-191001-GW	280-129184-1			X		X										
LL3mw-246-191001-GW	280-129184-1	LL3mw-246-191002-GW		X		X								X		
LL4mw-200-191001-GW	280-129088-1												X			
LL7mw-001-191001-GW	280-129088-1			X									X			
LL7mw-006-191001-GW	280-129088-1					X										
NTAmw-119-191001-GW	280-129088-1	NTAmw-119-191002-GW		X		X			X							
RQLmw-007-191001-GW	280-129277-1	RQLmw-007-191002-GW	FWGTB-191013-TB	X		X		X	X	X	X	X	X			
RQLmw-008-191001-GW	280-129277-1		FWGTB-191013-TB	X		X		X	X	X	X	X	X			
RQLmw-009-191001-GW	280-129277-1		FWGTB-191013-TB	X		X		X	X	X	X	X	X			
RQLmw-011-191001-GW	280-129277-1	RQLmw-011-191002-GW													X	X
RQLmw-012-191001-GW	280-129277-1												X		X	X
RQLmw-013-191001-GW	280-129277-1														X	X
RQLmw-016-191001-GW	280-129277-1												X			
SCFmw-004-191001-GW	280-129184-1			X												
WBGmw-006-191001-GW	280-128988-1			X		X										
WBGmw-009-191001-GW	280-128988-1			X		X										

Table D.2.2-3. Identification of Regular and QC Samples Collected – October 2019 Sampling Event (continued)

Environmental Samples	Laboratory Sample Delivery Group	Field Duplicates	Trip Blanks[a]	Metals	Hexavalent Chromium	Explosives	Propellants[b]	SVOCs	PAHs	VOCs	Pesticides	PCBs	Cyanide	Perchlorate	Anions	Alkalinity
WBGmw-020-191001-GW	280-128988-1			X		X										
WBGmw-021-191001-GW	280-128988-1			X		X										

[a] Trip blanks only accompany samples for VOCs in water.
[b] Propellants include nitrocellulose and nitroguanidine.
PAH = Polycyclic aromatic hydrocarbon.
PCB = Polychlorinated biphenyl.
QC = Quality control.
SVOC = Semi-volatile organic compound.
TB = Trip blank.
VOC = Volatile organic compound.

Table D.2.2-3. Summary of Qualified Results for Samples – October 2019 Sampling Event

Analysis Group	Validation Qualifier	Validation Code	Number Qualified	Total Number of Analyses	Percent Qualified
All Analyses	J		344	2,632	13.1
All Analyses	UJ		479	2,632	18.2
All Analyses	U		38	2,632	1.4
All Analyses	None		1,771	2,632	67.3
Metals	J	MS-J	64	1,174	5.5
Metals	J	MS-J,RepLimit-J	52	1,174	4.4
Metals	J	ProJudge-J	46	1,174	3.9
Metals	J	RepLimit-J	141	1,174	12
Metals	J	RepLimit-J, ProJudge-J	4	1,174	0.3
Metals	UJ	HT-UJ	1	1,174	0.1
Metals	UJ	MB-U, MS-J, RepLimit-J	23	1,174	2
Metals	UJ	MB-U, RepLimit-J, ProJudge-UJ	1	1,174	0.1
Metals	UJ	MS-UJ	180	1,174	15.3
Metals	UJ	ProJudge-UJ	1	1,174	0.1
Metals	UJ	RepLimit-J, ProJudge-UJ	6	1,174	0.5
Metals	U	MB-U, RepLimit-J	24	1,174	2
Metals	U	MB-U, RepLimit-J, ProJudge-U	1	1,174	0.1
Metals	U	ProJudge-U	3	1,174	0.3
Metals	U	RepLimit-J, ProJudge-U	10	1,174	0.9
Metals	None	None	617	1,174	52.6
Explosives	J	LCS-J, RepLimit-J	1	624	0.2
Explosives	J	LCS-J, RepLimit-J, ProJudge-J	1	624	0.2
Explosives	J	ProJudge-J	6	624	1
Explosives	J	RepLimit-J	5	624	0.8
Explosives	J	RepLimit-J, ProJudge-J	3	624	0.5
Explosives	J	Surr-J, MS-J, LCS-J, RepLimit-J	1	624	0.2
Explosives	UJ	LCS-UJ	55	624	8.8
Explosives	UJ	Surr-UJ	19	624	3
Explosives	UJ	Surr-UJ, LCS-UJ	15	624	2.4
Explosives	UJ	Surr-UJ, MS-UJ	4	624	0.6
Explosives	UJ	Surr-UJ, MS-UJ, LCS-UJ	7	624	1.1
Explosives	None	None	507	624	81.3
Propellants	UJ	HT-UJ	1	2	50
Propellants	None	None	1	2	50
SVOCs	J	RepLimit-J	4	129	3.1
SVOCs	UJ	MS-UJ, ProJudge-UJ	1	129	0.8
SVOCs	UJ	ProJudge-UJ	5	129	3.9
SVOCs	None	None	119	129	92.2
PAHs	UJ	LCS-UJ	36	126	28.6
PAHs	None	None	90	126	71.4
VOCs	J	RepLimit-J	1	324	0.3
VOCs	UJ	HT-UJ	105	324	32.4
VOCs	UJ	HT-UJ, ProJudge-UJ	3	324	0.9
VOCs	UJ	MS-UJ, ProJudge-UJ	1	324	0.3
VOCs	UJ	ProJudge-UJ	5	324	1.5
VOCs	None	None	209	324	64.5
Pesticides	UJ	ProJudge-UJ	6	126	4.8
Pesticides	None	None	120	126	95.2
PCBs	None	None	42	42	100

Table D.2.2-3. Summary of Qualified Results for Samples – October 2019 Sampling Event (continued)

Analysis Group	Validation Qualifier	Validation Code	Number Qualified	Total Number of Analyses	Percent Qualified
Cyanide	J	RepLimit-J	3	30	10
Cyanide	None	None	27	30	90
Perchlorate	None	None	1	1	100
Anions	J	MS-J	3	41	7.3
Anions	J	RepLimit-J	8	41	19.5
Anions	UJ	HT-UJ	4	41	9.8
Anions	None	None	26	41	63.4
Alkalinity	J	RepLimit-J	1	11	9.1
Alkalinity	None	None	10	11	90.9
Hex Chromium	None	None	2	2	100
Cyanide	J	RepLimit-J	3	30	10
Cyanide	None	None	27	30	90
Perchlorate	None	None	1	1	100
Anions	J	MS-J	3	41	7.3
Anions	J	RepLimit-J	8	41	19.5
Anions	UJ	HT-UJ	4	41	9.8
Anions	None	None	26	41	63.4
Alkalinity	J	RepLimit-J	1	11	9.1
Alkalinity	None	None	10	11	90.9
Hex Chromium	None	None	2	2	100

[a] Validation Qualifiers: J = estimated, U = not detected, UJ = not detected and reporting limit estimated.
[b] Validation Reason Codes: HT = holding time, LCS = laboratory control sample, MB = method blank, MS = matrix spike, ProJudge = professional judgment, RptLimit = reporting limit, Surr = surrogate recovery.
PAH = Polycyclic aromatic hydrocarbon.
PCB = Polychlorinated biphenyl.
SVOC = Semi-volatile organic compound.
VOC = Volatile organic compound.
Hex chromium = Hexavalent chromium.

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
Metals	Aluminum	280-129184-1	FWGmw-002-191001-GW	740	300	J1	J	MS-J
Metals	Aluminum	280-129088-1	FWGmw-007-191001-GW	26	300	J	J	RepLimit-J
Metals	Aluminum	280-129184-1	FWGmw-011-191001-GW	31	300	J	J	RepLimit-J
Metals	Aluminum	280-129184-1	FWGmw-012-191001-GW	26	300	J	J	RepLimit-J
Metals	Aluminum	280-129184-1	FWGmw-021-191001-GW	19	300	J	J	RepLimit-J
Metals	Aluminum	280-129184-1	FWGmw-021-191002-GW	29	300	J	J	RepLimit-J
Metals	Aluminum	280-129184-1	LL12mw-247-191001-GW	42	300	J	J	RepLimit-J
Metals	Aluminum	280-129317-1	LL1mw-080-191001-GW	64	300	J	J	RepLimit-J
Metals	Aluminum	280-129184-1	LL1mw-087-191001-GW	45	300	J	J	RepLimit-J
Metals	Aluminum	280-129184-1	LL1mw-088-191001-GW	110	300	J	J	RepLimit-J
Metals	Aluminum	280-129322-1	LL2mw-267-191001-GW	30	300	J	J	RepLimit-J
Metals	Aluminum	280-129277-1	RQLmw-009-191001-GW	33	300	J	J	RepLimit-J
Metals	Aluminum	280-129184-1	SCFmw-004-191001-GW	21	300	J	J	RepLimit-J
Metals	Aluminum	280-128988-1	WBGmw-020-191001-GW	23	300	J	J	RepLimit-J
Metals	Antimony	280-129184-1	B12mw-012-191001-GW	1.0	6.0	U	UJ	MS-UJ
Metals	Antimony	280-129088-1	BKGmw-021-191001-GW	1.0	6.0	U J1	UJ	MS-UJ
Metals	Antimony	280-129088-1	BKGmw-021-191002-GW	1.0	6.0	U	UJ	MS-UJ
Metals	Antimony	280-128988-1	DA2mw-115-191001-GW	1.0	6.0	U	U	ProJudge-U
Metals	Antimony	280-128988-1	DA2mw-115-191002-GW	0.44	6.0	J	J	RepLimit-J
Metals	Antimony	280-129184-1	FWGmw-002-191001-GW	1.0	6.0	U	UJ	MS-UJ
Metals	Antimony	280-129088-1	FWGmw-007-191001-GW	1.0	6.0	U	UJ	MS-UJ
Metals	Antimony	280-129184-1	FWGmw-011-191001-GW	1.0	6.0	U	UJ	MS-UJ
Metals	Antimony	280-129184-1	FWGmw-018-191001-GW	1.0	6.0	U	UJ	MS-UJ
Metals	Antimony	280-129184-1	FWGmw-020-191001-GW	1.0	6.0	U	UJ	MS-UJ
Metals	Antimony	280-129184-1	FWGmw-021-191001-GW	1.0	6.0	U J1	UJ	MS-UJ
Metals	Antimony	280-129184-1	FWGmw-021-191002-GW	0.60	6.0	J	J	MS-J, RepLimit-J
Metals	Antimony	280-129184-1	FWGmw-024-191001-GW	1.0	6.0	U	UJ	MS-UJ
Metals	Antimony	280-129088-1	LL10mw-005-191001-GW	1.0	6.0	U	UJ	MS-UJ
Metals	Antimony	280-129184-1	LL12mw-247-191001-GW	1.0	6.0	U	UJ	MS-UJ
Metals	Antimony	280-129184-1	LL1mw-064-191001-GW	1.0	6.0	U	UJ	MS-UJ
Metals	Antimony	280-129184-1	LL1mw-087-191001-GW	1.0	6.0	U	UJ	MS-UJ
Metals	Antimony	280-129184-1	LL1mw-088-191001-GW	1.0	6.0	U	UJ	MS-UJ
Metals	Antimony	280-129184-1	LL2mw-059-191001-GW	1.0	6.0	U	UJ	MS-UJ
Metals	Antimony	280-129184-1	LL3mw-244-191001-GW	0.43	6.0	J	J	MS-J, RepLimit-J
Metals	Antimony	280-129184-1	LL3mw-246-191001-GW	0.42	6.0	J	J	MS-J, RepLimit-J
Metals	Antimony	280-129184-1	LL3mw-246-191002-GW	1.0	6.0	U	UJ	MS-UJ
Metals	Antimony	280-129088-1	LL7mw-001-191001-GW	1.0	6.0	U	UJ	MS-UJ
Metals	Antimony	280-129088-1	NTAmw-119-191001-GW	1.0	6.0	U	UJ	MS-UJ

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
Metals	Antimony	280-129277-1	RQLmw-009-191001-GW	0.45	6.0	J	J	RepLimit-J
Metals	Antimony	280-129184-1	SCFmw-004-191001-GW	1.0	6.0	U	UJ	MS-UJ
Metals	Antimony	280-128988-1	WBGmw-009-191001-GW	1.0	6.0	J	U	RepLimit-J, ProJudge-U
Metals	Arsenic	280-129184-1	B12mw-012-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Arsenic	280-129088-1	BKGmw-021-191001-GW	1.0	5.0	U J1	UJ	MS-UJ
Metals	Arsenic	280-129088-1	BKGmw-021-191002-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Arsenic	280-128988-1	DA2mw-115-191001-GW	1.3	5.0	J	J	RepLimit-J
Metals	Arsenic	280-128988-1	DA2mw-115-191002-GW	1.5	5.0	J	J	RepLimit-J
Metals	Arsenic	280-129019-1	DET-004-191001-GW	0.34	5.0	J	J	RepLimit-J
Metals	Arsenic	280-129184-1	FWGmw-002-191001-GW	5.5	5.0		J	MS-J
Metals	Arsenic	280-129088-1	FWGmw-007-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Arsenic	280-129184-1	FWGmw-011-191001-GW	3.7	5.0	J	J	MS-J, RepLimit-J
Metals	Arsenic	280-129184-1	FWGmw-012-191001-GW	1.5	5.0	J	J	MS-J, RepLimit-J
Metals	Arsenic	280-128988-1	FWGmw-015-191001-GW	0.37	5.0	J	J	RepLimit-J
Metals	Arsenic	280-128988-1	FWGmw-016-191001-GW	3.9	5.0	J	J	RepLimit-J
Metals	Arsenic	280-129184-1	FWGmw-018-191001-GW	19	5.0		J	MS-J
Metals	Arsenic	280-129184-1	FWGmw-020-191001-GW	31	5.0		J	MS-J
Metals	Arsenic	280-129184-1	FWGmw-021-191001-GW	0.75	5.0	J J1	J	MS-J, RepLimit-J
Metals	Arsenic	280-129184-1	FWGmw-021-191002-GW	0.69	5.0	J	J	MS-J, RepLimit-J
Metals	Arsenic	280-129184-1	FWGmw-024-191001-GW	2.7	5.0	J	J	MS-J, RepLimit-J
Metals	Arsenic	280-129088-1	LL10mw-005-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Arsenic	280-129322-1	LL12mw-187-191001-GW	0.98	5.0	J	J	RepLimit-J
Metals	Arsenic	280-129322-1	LL12mw-245-191001-GW	4.0	5.0	J	J	RepLimit-J
Metals	Arsenic	280-129184-1	LL12mw-247-191001-GW	7.1	5.0		J	MS-J
Metals	Arsenic	280-129184-1	LL1mw-064-191001-GW	6.3	5.0		J	MS-J
Metals	Arsenic	280-129322-1	LL1mw-086-191001-GW	3.2	5.0	J	J	RepLimit-J
Metals	Arsenic	280-129322-1	LL1mw-086-191001-GW	2.4	5.0	J	J	RepLimit-J
Metals	Arsenic	280-129184-1	LL1mw-087-191001-GW	0.48	5.0	J	J	MS-J, RepLimit-J
Metals	Arsenic	280-129184-1	LL1mw-088-191001-GW	28	5.0		J	MS-J
Metals	Arsenic	280-129184-1	LL2mw-059-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Arsenic	280-129322-1	LL2mw-267-191001-GW	3.7	5.0	J	J	RepLimit-J
Metals	Arsenic	280-129184-1	LL3mw-244-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Arsenic	280-129184-1	LL3mw-246-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Arsenic	280-129184-1	LL3mw-246-191002-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Arsenic	280-129088-1	LL7mw-001-191001-GW	2.2	5.0	J	J	MS-J, RepLimit-J
Metals	Arsenic	280-129088-1	NTAmw-119-191001-GW	5.6	5.0		J	MS-J

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
Metals	Arsenic	280-129277-1	RQLmw-009-191001-GW	4.3	5.0	J	J	RepLimit-J
Metals	Arsenic	280-129184-1	SCFmw-004-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Arsenic	280-128988-1	WBGmw-009-191001-GW	0.78	5.0	J	J	RepLimit-J
Metals	Arsenic	280-128988-1	WBGmw-020-191001-GW	1.5	5.0	J	J	RepLimit-J
Metals	Barium	280-129184-1	B12mw-012-191001-GW	4.7	3.0		J	MS-J
Metals	Barium	280-129088-1	BKGmw-021-191001-GW	36	3.0	J1	J	MS-J
Metals	Barium	280-129088-1	BKGmw-021-191002-GW	31	3.0		J	MS-J
Metals	Barium	280-128988-1	DA2mw-115-191001-GW	20	3.0		J	ProJudge-J
Metals	Barium	280-128988-1	DA2mw-115-191002-GW	19	3.0		J	ProJudge-J
Metals	Barium	280-129019-1	DET-004-191001-GW	65	3.0		J	ProJudge-J
Metals	Barium	280-129184-1	FWGmw-002-191001-GW	110	3.0		J	MS-J
Metals	Barium	280-129088-1	FWGmw-007-191001-GW	17	3.0		J	MS-J
Metals	Barium	280-129184-1	FWGmw-011-191001-GW	25	3.0		J	MS-J
Metals	Barium	280-129184-1	FWGmw-012-191001-GW	18	3.0		J	MS-J
Metals	Barium	280-128988-1	FWGmw-015-191001-GW	8.7	3.0		J	ProJudge-J
Metals	Barium	280-128988-1	FWGmw-016-191001-GW	50	3.0		J	ProJudge-J
Metals	Barium	280-129184-1	FWGmw-018-191001-GW	64	3.0		J	MS-J
Metals	Barium	280-129184-1	FWGmw-020-191001-GW	68	3.0		J	MS-J
Metals	Barium	280-129184-1	FWGmw-021-191001-GW	13	3.0	J1	J	MS-J
Metals	Barium	280-129184-1	FWGmw-021-191002-GW	14	3.0		J	MS-J
Metals	Barium	280-129184-1	FWGmw-024-191001-GW	10	3.0		J	MS-J
Metals	Barium	280-129088-1	LL10mw-005-191001-GW	12	3.0		J	MS-J
Metals	Barium	280-129322-1	LL12mw-187-191001-GW	260	3.0	Q	J	ProJudge-J
Metals	Barium	280-129322-1	LL12mw-242-191001-GW	31	3.0		J	ProJudge-J
Metals	Barium	280-129322-1	LL12mw-245-191001-GW	25	3.0	Q	J	ProJudge-J
Metals	Barium	280-129184-1	LL12mw-247-191001-GW	22	3.0		J	MS-J
Metals	Barium	280-129184-1	LL1mw-064-191001-GW	41	3.0		J	MS-J
Metals	Barium	280-129322-1	LL1mw-065-191001-GW	52	3.0	Q	J	ProJudge-J
Metals	Barium	280-129322-1	LL1mw-086-191001-GW	110	3.0		J	ProJudge-J
Metals	Barium	280-129184-1	LL1mw-087-191001-GW	29	3.0		J	MS-J
Metals	Barium	280-129184-1	LL1mw-088-191001-GW	30	3.0		J	MS-J
Metals	Barium	280-129184-1	LL2mw-059-191001-GW	2.0	3.0	J	J	MS-J,RepLimit-J
Metals	Barium	280-129322-1	LL2mw-267-191001-GW	22	3.0	Q	J	ProJudge-J
Metals	Barium	280-129184-1	LL3mw-244-191001-GW	14	3.0		J	MS-J
Metals	Barium	280-129184-1	LL3mw-246-191001-GW	14	3.0		J	MS-J
Metals	Barium	280-129184-1	LL3mw-246-191002-GW	13	3.0		J	MS-J
Metals	Barium	280-129088-1	LL7mw-001-191001-GW	18	3.0		J	MS-J
Metals	Barium	280-129088-1	NTAmw-119-191001-GW	76	3.0		J	MS-J

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
Metals	Barium	280-129184-1	SCFmw-004-191001-GW	50	3.0		J	MS-J
Metals	Barium	280-128988-1	WBGmw-006-191001-GW	21	3.0		J	ProJudge-J
Metals	Barium	280-128988-1	WBGmw-009-191001-GW	14	3.0		J	ProJudge-J
Metals	Barium	280-128988-1	WBGmw-020-191001-GW	16	3.0		J	ProJudge-J
Metals	Barium	280-128988-1	WBGmw-021-191001-GW	56	3.0		J	ProJudge-J
Metals	Beryllium	280-129088-1	BKGmw-021-191001-GW	0.30	1.0	U J1	UJ	MS-UJ
Metals	Beryllium	280-129088-1	BKGmw-021-191002-GW	0.11	1.0	J	J	MS-J, RepLimit-J
Metals	Beryllium	280-128988-1	DA2mw-115-191002-GW	0.13	1.0	J	J	RepLimit-J
Metals	Beryllium	280-129277-1	EBGmw-125-191001-GW	0.30	1.0	J	U	RepLimit-J, ProJudge-U
Metals	Beryllium	280-129184-1	FWGmw-002-191001-GW	0.16	1.0	J	J	RepLimit-J
Metals	Beryllium	280-129088-1	FWGmw-007-191001-GW	0.30	1.0	U	UJ	MS-UJ
Metals	Beryllium	280-129184-1	FWGmw-024-191001-GW	0.19	1.0	J	J	RepLimit-J
Metals	Beryllium	280-129088-1	LL10mw-005-191001-GW	0.30	1.0	U	UJ	MS-UJ
Metals	Beryllium	280-129322-1	LL12mw-242-191001-GW	0.30	1.0	J	UJ	RepLimit-J, ProJudge-UJ
Metals	Beryllium	280-129322-1	LL12mw-242-191001-GW	0.087	1.0	J	J	RepLimit-J
Metals	Beryllium	280-129317-1	LL1mw-084-191001-GW	0.30	1.0	J	U	RepLimit-J, ProJudge-U
Metals	Beryllium	280-129322-1	LL1mw-086-191001-GW	0.30	1.0	J	UJ	RepLimit-J, ProJudge-UJ
Metals	Beryllium	280-129322-1	LL1mw-086-191001-GW	0.11	1.0	J	J	RepLimit-J
Metals	Beryllium	280-129088-1	LL7mw-001-191001-GW	0.15	1.0	J	J	MS-J, RepLimit-J
Metals	Beryllium	280-129088-1	NTAmw-119-191001-GW	0.30	1.0	U	UJ	MS-UJ
Metals	Beryllium	280-129277-1	RQLmw-007-191002-GW	0.30	1.0	J	U	RepLimit-J, ProJudge-U
Metals	Beryllium	280-129277-1	RQLmw-009-191001-GW	0.30	1.0	J	U	RepLimit-J, ProJudge-U
Metals	Beryllium	280-128988-1	WBGmw-020-191001-GW	0.081	1.0	J	J	RepLimit-J
Metals	Cadmium	280-129184-1	B12mw-012-191001-GW	1.0	1.0	U	UJ	MS-UJ
Metals	Cadmium	280-129088-1	BKGmw-021-191001-GW	1.0	1.0	U J1	UJ	MS-UJ
Metals	Cadmium	280-129088-1	BKGmw-021-191002-GW	1.0	1.0	U	UJ	MS-UJ
Metals	Cadmium	280-129019-1	DET-004-191001-GW	0.39	1.0	J	J	RepLimit-J
Metals	Cadmium	280-129184-1	FWGmw-002-191001-GW	1.0	1.0	U	UJ	MS-UJ
Metals	Cadmium	280-129088-1	FWGmw-007-191001-GW	1.0	1.0	U	UJ	MS-UJ
Metals	Cadmium	280-129184-1	FWGmw-011-191001-GW	1.0	1.0	U	UJ	MS-UJ
Metals	Cadmium	280-129184-1	FWGmw-012-191001-GW	1.0	1.0	U	UJ	MS-UJ
Metals	Cadmium	280-129184-1	FWGmw-018-191001-GW	1.0	1.0	U	UJ	MS-UJ
Metals	Cadmium	280-129184-1	FWGmw-020-191001-GW	1.0	1.0	U	UJ	MS-UJ
Metals	Cadmium	280-129184-1	FWGmw-021-191001-GW	1.0	1.0	U J1	UJ	MS-UJ
Metals	Cadmium	280-129184-1	FWGmw-021-191002-GW	1.0	1.0	U	UJ	MS-UJ
Metals	Cadmium	280-129184-1	FWGmw-024-191001-GW	1.0	1.0	U	UJ	MS-UJ

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
Metals	Cadmium	280-129088-1	LL10mw-005-191001-GW	1.0	1.0	U	UJ	MS-UJ
Metals	Cadmium	280-129184-1	LL12mw-247-191001-GW	1.0	1.0	U	UJ	MS-UJ
Metals	Cadmium	280-129184-1	LL1mw-064-191001-GW	1.0	1.0	U	UJ	MS-UJ
Metals	Cadmium	280-129184-1	LL1mw-087-191001-GW	1.0	1.0	U	UJ	MS-UJ
Metals	Cadmium	280-129184-1	LL1mw-088-191001-GW	1.0	1.0	U	UJ	MS-UJ
Metals	Cadmium	280-129184-1	LL2mw-059-191001-GW	1.0	1.0	U	UJ	MS-UJ
Metals	Cadmium	280-129184-1	LL3mw-244-191001-GW	1.0	1.0	U	UJ	MS-UJ
Metals	Cadmium	280-129184-1	LL3mw-246-191001-GW	1.0	1.0	U	UJ	MS-UJ
Metals	Cadmium	280-129184-1	LL3mw-246-191002-GW	1.0	1.0	U	UJ	MS-UJ
Metals	Cadmium	280-129088-1	LL7mw-001-191001-GW	1.0	1.0	U	UJ	MS-UJ
Metals	Cadmium	280-129088-1	NTAmw-119-191001-GW	1.0	1.0	U	UJ	MS-UJ
Metals	Cadmium	280-129184-1	SCFmw-004-191001-GW	1.0	1.0	U	UJ	MS-UJ
Metals	Calcium	280-129088-1	BKGmw-021-191001-GW	78,000	1,000	J1	J	ProJudge-J
Metals	Calcium	280-129277-1	EBGmw-125-191001-GW	73,000	1,000		J	ProJudge-J
Metals	Calcium	280-129322-1	LL12mw-187-191001-GW	1,100,000	5,000	D	J	ProJudge-J
Metals	Calcium	280-129322-1	LL12mw-242-191001-GW	75,000	1,000		J	ProJudge-J
Metals	Calcium	280-129322-1	LL12mw-245-191001-GW	150,000	1,000		J	ProJudge-J
Metals	Calcium	280-129322-1	LL1mw-065-191001-GW	77,000	1,000		J	ProJudge-J
Metals	Calcium	280-129322-1	LL1mw-086-191001-GW	63,000	1,000		J	ProJudge-J
Metals	Calcium	280-129322-1	LL2mw-267-191001-GW	40,000	1,000		J	ProJudge-J
Metals	Calcium	280-129277-1	RQLmw-007-191001-GW	22,000	1,000		J	ProJudge-J
Metals	Calcium	280-129277-1	RQLmw-007-191002-GW	92,000	1,000		J	ProJudge-J
Metals	Calcium	280-129277-1	RQLmw-008-191001-GW	59,000	1,000		J	ProJudge-J
Metals	Calcium	280-129277-1	RQLmw-009-191001-GW	62,000	1,000		J	ProJudge-J
Metals	Chromium	280-129184-1	FWGmw-002-191001-GW	2.3	10	J	J	RepLimit-J
Metals	Chromium	280-129184-1	FWGmw-002-191001-GW	6.0	10	J	J	RepLimit-J
Metals	Chromium	280-129322-1	LL12mw-242-191001-GW	2.6	10	J	J	RepLimit-J
Metals	Chromium	280-129322-1	LL12mw-242-191001-GW	3.4	10	J	J	RepLimit-J
Metals	Chromium	280-129322-1	LL1mw-086-191001-GW	2.7	10	J	J	RepLimit-J
Metals	Chromium	280-129322-1	LL1mw-086-191001-GW	2.8	10	J	J	RepLimit-J
Metals	Chromium	280-129184-1	LL3mw-246-191001-GW	0.51	10	J	J	RepLimit-J
Metals	Chromium	280-129184-1	SCFmw-004-191001-GW	0.81	10	J	J	RepLimit-J
Metals	Cobalt	280-129184-1	B12mw-012-191001-GW	0.94	1.0	J	J	MS-J, RepLimit-J
Metals	Cobalt	280-129088-1	BKGmw-021-191001-GW	0.35	1.0	U J1	UJ	MS-UJ
Metals	Cobalt	280-129088-1	BKGmw-021-191002-GW	0.35	1.0	U	UJ	MS-UJ
Metals	Cobalt	280-129019-1	DET-003-191001-GW	0.32	1.0	J	J	RepLimit-J
Metals	Cobalt	280-129019-1	DET-004-191001-GW	0.20	1.0	J	J	RepLimit-J
Metals	Cobalt	280-129277-1	EBGmw-125-191001-GW	0.22	1.0	J	J	RepLimit-J

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
Metals	Cobalt	280-129184-1	FWGmw-002-191001-GW	1.9	1.0		J	MS-J
Metals	Cobalt	280-129088-1	FWGmw-007-191001-GW	0.25	1.0	J	J	MS-J, RepLimit-J
Metals	Cobalt	280-129184-1	FWGmw-011-191001-GW	0.94	1.0	J	J	MS-J, RepLimit-J
Metals	Cobalt	280-129184-1	FWGmw-012-191001-GW	1.3	1.0		J	MS-J
Metals	Cobalt	280-128988-1	FWGmw-015-191001-GW	0.31	1.0	J	J	RepLimit-J
Metals	Cobalt	280-129184-1	FWGmw-018-191001-GW	2.3	1.0		J	MS-J
Metals	Cobalt	280-129184-1	FWGmw-020-191001-GW	1.7	1.0		J	MS-J
Metals	Cobalt	280-129184-1	FWGmw-021-191001-GW	2.5	1.0	J1	J	MS-J
Metals	Cobalt	280-129184-1	FWGmw-021-191002-GW	2.5	1.0		J	MS-J
Metals	Cobalt	280-129184-1	FWGmw-024-191001-GW	0.51	1.0	J	J	MS-J, RepLimit-J
Metals	Cobalt	280-129088-1	LL10mw-005-191001-GW	0.35	1.0	U	UJ	MS-UJ
Metals	Cobalt	280-129184-1	LL12mw-247-191001-GW	0.41	1.0	J	J	MS-J, RepLimit-J
Metals	Cobalt	280-129184-1	LL1mw-064-191001-GW	0.13	1.0	J	J	MS-J, RepLimit-J
Metals	Cobalt	280-129322-1	LL1mw-065-191001-GW	0.10	1.0	J	J	RepLimit-J
Metals	Cobalt	280-129322-1	LL1mw-086-191001-GW	0.92	1.0	J	J	RepLimit-J
Metals	Cobalt	280-129184-1	LL1mw-087-191001-GW	0.46	1.0	J	J	MS-J, RepLimit-J
Metals	Cobalt	280-129184-1	LL1mw-088-191001-GW	0.15	1.0	J	J	MS-J, RepLimit-J
Metals	Cobalt	280-129184-1	LL2mw-059-191001-GW	0.35	1.0	J	J	MS-J, RepLimit-J
Metals	Cobalt	280-129184-1	LL3mw-244-191001-GW	0.35	1.0	U	UJ	MS-UJ
Metals	Cobalt	280-129184-1	LL3mw-246-191001-GW	0.35	1.0	U	UJ	MS-UJ
Metals	Cobalt	280-129184-1	LL3mw-246-191002-GW	0.35	1.0	U	UJ	MS-UJ
Metals	Cobalt	280-129088-1	LL7mw-001-191001-GW	5.4	1.0		J	MS-J
Metals	Cobalt	280-129088-1	NTAmw-119-191001-GW	0.35	1.0	U	UJ	MS-UJ
Metals	Cobalt	280-129184-1	SCFmw-004-191001-GW	0.35	1.0	U	UJ	MS-UJ
Metals	Cobalt	280-128988-1	WBGmw-006-191001-GW	0.13	1.0	J	J	RepLimit-J
Metals	Cobalt	280-128988-1	WBGmw-009-191001-GW	0.79	1.0	J	J	RepLimit-J
Metals	Cobalt	280-128988-1	WBGmw-020-191001-GW	0.53	1.0	J	J	RepLimit-J
Metals	Cobalt	280-128988-1	WBGmw-021-191001-GW	0.27	1.0	J	J	RepLimit-J
Metals	Copper	280-129184-1	B12mw-012-191001-GW	1.8	2.0	U	UJ	MS-UJ
Metals	Copper	280-129088-1	BKGmw-021-191001-GW	1.8	2.0	U J1	UJ	MS-UJ
Metals	Copper	280-129088-1	BKGmw-021-191002-GW	1.8	2.0	U	UJ	MS-UJ
Metals	Copper	280-129019-1	DET-004-191001-GW	0.73	2.0	J	J	RepLimit-J
Metals	Copper	280-129184-1	FWGmw-002-191001-GW	1.6	2.0	J	J	RepLimit-J
Metals	Copper	280-129184-1	FWGmw-002-191001-GW	1.4	2.0	J	J	MS-J, RepLimit-J
Metals	Copper	280-129088-1	FWGmw-007-191001-GW	1.8	2.0	U	UJ	MS-UJ
Metals	Copper	280-129184-1	FWGmw-011-191001-GW	1.8	2.0	U	UJ	MS-UJ
Metals	Copper	280-129184-1	FWGmw-012-191001-GW	0.65	2.0	J	J	MS-J, RepLimit-J
Metals	Copper	280-129184-1	FWGmw-018-191001-GW	1.8	2.0	U	UJ	MS-UJ

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
Metals	Copper	280-129184-1	FWGmw-020-191001-GW	1.8	2.0	U	UJ	MS-UJ
Metals	Copper	280-129184-1	FWGmw-021-191001-GW	1.8	2.0	U J1	UJ	MS-UJ
Metals	Copper	280-129184-1	FWGmw-021-191002-GW	1.8	2.0	U	UJ	MS-UJ
Metals	Copper	280-129184-1	FWGmw-024-191001-GW	1.8	2.0	U	UJ	MS-UJ
Metals	Copper	280-129088-1	LL10mw-005-191001-GW	1.8	2.0	U	UJ	MS-UJ
Metals	Copper	280-129322-1	LL12mw-242-191001-GW	1.2	2.0	J	J	RepLimit-J
Metals	Copper	280-129322-1	LL12mw-245-191001-GW	0.57	2.0	J	J	RepLimit-J
Metals	Copper	280-129184-1	LL12mw-247-191001-GW	0.79	2.0	J	J	MS-J, RepLimit-J
Metals	Copper	280-129184-1	LL1mw-064-191001-GW	1.8	2.0	U	UJ	MS-UJ
Metals	Copper	280-129317-1	LL1mw-080-191001-GW	0.92	2.0	J	J	RepLimit-J
Metals	Copper	280-129322-1	LL1mw-086-191001-GW	1.3	2.0	J	J	RepLimit-J
Metals	Copper	280-129184-1	LL1mw-087-191001-GW	1.8	2.0	U	UJ	MS-UJ
Metals	Copper	280-129184-1	LL1mw-088-191001-GW	1.8	2.0	U	UJ	MS-UJ
Metals	Copper	280-129184-1	LL2mw-059-191001-GW	1.8	2.0	U	UJ	MS-UJ
Metals	Copper	280-129184-1	LL3mw-244-191001-GW	0.59	2.0	J	J	MS-J, RepLimit-J
Metals	Copper	280-129184-1	LL3mw-246-191001-GW	1.8	2.0	U	UJ	MS-UJ
Metals	Copper	280-129184-1	LL3mw-246-191002-GW	1.8	2.0	U	UJ	MS-UJ
Metals	Copper	280-129088-1	LL7mw-001-191001-GW	0.83	2.0	J	J	MS-J, RepLimit-J
Metals	Copper	280-129088-1	NTAmw-119-191001-GW	1.8	2.0	U	UJ	MS-UJ
Metals	Copper	280-129277-1	RQLmw-007-191001-GW	0.61	2.0	J	J	RepLimit-J
Metals	Copper	280-129277-1	RQLmw-007-191002-GW	0.72	2.0	J	J	RepLimit-J
Metals	Copper	280-129277-1	RQLmw-009-191001-GW	0.91	2.0	J	J	RepLimit-J
Metals	Copper	280-129184-1	SCFmw-004-191001-GW	1.0	2.0	J	J	MS-J, RepLimit-J
Metals	Iron	280-128988-1	DA2mw-115-191001-GW	750	100	J1	J	ProJudge-J
Metals	Iron	280-128988-1	DA2mw-115-191002-GW	810	100		J	ProJudge-J
Metals	Iron	280-129019-1	DET-003-191001-GW	2200	100	J1	J	ProJudge-J
Metals	Iron	280-129019-1	DET-004-191001-GW	60	100	J	J	RepLimit-J
Metals	Iron	280-128988-1	FWGmw-015-191001-GW	85	100	J	UJ	MB-U, RepLimit-J, ProJudge-UJ
Metals	Iron	280-128988-1	FWGmw-016-191001-GW	640	100		J	ProJudge-J
Metals	Iron	280-129088-1	LL10mw-005-191001-GW	27	100	J	J	RepLimit-J
Metals	Iron	280-129317-1	LL1mw-080-191001-GW	32	100	J	J	RepLimit-J
Metals	Iron	280-129184-1	LL2mw-059-191001-GW	53	100	J	J	RepLimit-J
Metals	Iron	280-129184-1	SCFmw-004-191001-GW	61	100	J	J	RepLimit-J
Metals	Iron	280-128988-1	WBGmw-009-191001-GW	190	100		UJ	ProJudge-UJ
Metals	Iron	280-128988-1	WBGmw-020-191001-GW	4200	100		J	ProJudge-J
Metals	Iron	280-128988-1	WBGmw-021-191001-GW	1000	100		J	ProJudge-J
Metals	Lead	280-129184-1	B12mw-012-191001-GW	0.70	3.0	U	UJ	MS-UJ

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
Metals	Lead	280-129088-1	BKGmw-021-191001-GW	0.70	3.0	U J1	UJ	MS-UJ
Metals	Lead	280-129088-1	BKGmw-021-191002-GW	0.70	3.0	U	UJ	MS-UJ
Metals	Lead	280-129184-1	FWGmw-002-191001-GW	2.4	3.0	J	J	MS-J, RepLimit-J
Metals	Lead	280-129184-1	FWGmw-002-191001-GW	1.5	3.0	J	U	MB-U, RepLimit-J
Metals	Lead	280-129088-1	FWGmw-007-191001-GW	0.70	3.0	U	UJ	MS-UJ
Metals	Lead	280-129184-1	FWGmw-011-191001-GW	0.70	3.0	U	UJ	MS-UJ
Metals	Lead	280-129184-1	FWGmw-012-191001-GW	0.23	3.0	J	J	MS-J, RepLimit-J
Metals	Lead	280-129184-1	FWGmw-018-191001-GW	0.70	3.0	U	UJ	MS-UJ
Metals	Lead	280-129184-1	FWGmw-020-191001-GW	0.70	3.0	U	UJ	MS-UJ
Metals	Lead	280-129184-1	FWGmw-021-191001-GW	0.70	3.0	U J1	UJ	MS-UJ
Metals	Lead	280-129184-1	FWGmw-021-191002-GW	0.70	3.0	U	UJ	MS-UJ
Metals	Lead	280-129184-1	FWGmw-024-191001-GW	0.70	3.0	U	UJ	MS-UJ
Metals	Lead	280-129088-1	LL10mw-005-191001-GW	0.70	3.0	U	UJ	MS-UJ
Metals	Lead	280-129322-1	LL12mw-242-191001-GW	1.8	3.0	J	J	RepLimit-J
Metals	Lead	280-129322-1	LL12mw-242-191001-GW	0.87	3.0	J	U	MB-U, RepLimit-J
Metals	Lead	280-129184-1	LL12mw-247-191001-GW	0.70	3.0	U	UJ	MS-UJ
Metals	Lead	280-129184-1	LL1mw-064-191001-GW	0.24	3.0	J	J	MS-J, RepLimit-J
Metals	Lead	280-129317-1	LL1mw-080-191001-GW	0.22	3.0	J	J	RepLimit-J
Metals	Lead	280-129317-1	LL1mw-084-191001-GW	0.78	3.0	J	J	RepLimit-J
Metals	Lead	280-129322-1	LL1mw-086-191001-GW	0.94	3.0	J	U	MB-U, RepLimit-J
Metals	Lead	280-129184-1	LL1mw-087-191001-GW	0.70	3.0	U	UJ	MS-UJ
Metals	Lead	280-129184-1	LL1mw-088-191001-GW	0.70	3.0	U	UJ	MS-UJ
Metals	Lead	280-129184-1	LL2mw-059-191001-GW	0.70	3.0	U	UJ	MS-UJ
Metals	Lead	280-129184-1	LL3mw-244-191001-GW	0.70	3.0	U	UJ	MS-UJ
Metals	Lead	280-129184-1	LL3mw-246-191001-GW	0.70	3.0	U	UJ	MS-UJ
Metals	Lead	280-129184-1	LL3mw-246-191002-GW	0.70	3.0	U	UJ	MS-UJ
Metals	Lead	280-129088-1	LL7mw-001-191001-GW	0.31	3.0	J	J	MS-J, RepLimit-J
Metals	Lead	280-129088-1	NTAmw-119-191001-GW	0.70	3.0	U	UJ	MS-UJ
Metals	Lead	280-129277-1	RQLmw-007-191001-GW	0.20	3.0	J	J	RepLimit-J
Metals	Lead	280-129277-1	RQLmw-007-191002-GW	0.20	3.0	J	J	RepLimit-J
Metals	Lead	280-129277-1	RQLmw-008-191001-GW	0.22	3.0	J	J	RepLimit-J
Metals	Lead	280-129277-1	RQLmw-009-191001-GW	0.61	3.0	J	J	RepLimit-J
Metals	Lead	280-129184-1	SCFmw-004-191001-GW	0.40	3.0	J	J	MS-J, RepLimit-J
Metals	Lead	280-128988-1	WBGmw-006-191001-GW	0.20	3.0	J	J	RepLimit-J
Metals	Magnesium	280-129088-1	BKGmw-021-191001-GW	3,5000	500		J	ProJudge-J
Metals	Manganese	280-129184-1	B12mw-012-191001-GW	550	3.5		J	MS-J
Metals	Manganese	280-129088-1	BKGmw-021-191001-GW	0.95	3.5	U J1	UJ	MS-UJ
Metals	Manganese	280-129088-1	BKGmw-021-191002-GW	0.58	3.5	J	J	MS-J, RepLimit-J

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
Metals	Manganese	280-129277-1	EBGmw-125-191001-GW	560	3.5		J	ProJudge-J
Metals	Manganese	280-129184-1	FWGmw-002-191001-GW	160	3.5		J	MS-J
Metals	Manganese	280-129019-1	FWGmw-004-191001-GW	2.3	3.5	J	J	RepLimit-J
Metals	Manganese	280-129088-1	FWGmw-007-191001-GW	88	3.5		J	MS-J
Metals	Manganese	280-129184-1	FWGmw-011-191001-GW	240	3.5		J	MS-J
Metals	Manganese	280-129184-1	FWGmw-012-191001-GW	75	3.5		J	MS-J
Metals	Manganese	280-129184-1	FWGmw-018-191001-GW	130	3.5		J	MS-J
Metals	Manganese	280-129184-1	FWGmw-020-191001-GW	38	3.5		J	MS-J
Metals	Manganese	280-129184-1	FWGmw-021-191001-GW	360	3.5	J1	J	MS-J
Metals	Manganese	280-129184-1	FWGmw-021-191002-GW	390	3.5		J	MS-J
Metals	Manganese	280-129184-1	FWGmw-024-191001-GW	260	3.5		J	MS-J
Metals	Manganese	280-129088-1	LL10mw-005-191001-GW	2,200	3.5		J	MS-J
Metals	Manganese	280-129184-1	LL12mw-247-191001-GW	150	3.5		J	MS-J
Metals	Manganese	280-129184-1	LL1mw-064-191001-GW	120	3.5		J	MS-J
Metals	Manganese	280-129184-1	LL1mw-087-191001-GW	280	3.5		J	MS-J
Metals	Manganese	280-129184-1	LL1mw-088-191001-GW	39	3.5		J	MS-J
Metals	Manganese	280-129184-1	LL2mw-059-191001-GW	54	3.5		J	MS-J
Metals	Manganese	280-129184-1	LL3mw-244-191001-GW	0.57	3.5	J	J	MS-J, RepLimit-J
Metals	Manganese	280-129184-1	LL3mw-246-191001-GW	0.51	3.5	J	J	MS-J, RepLimit-J
Metals	Manganese	280-129184-1	LL3mw-246-191002-GW	0.43	3.5	J	J	MS-J, RepLimit-J
Metals	Manganese	280-129088-1	LL7mw-001-191001-GW	380	3.5		J	MS-J
Metals	Manganese	280-129088-1	NTAmw-119-191001-GW	290	3.5		J	MS-J
Metals	Manganese	280-129277-1	RQLmw-007-191001-GW	1,700	3.5		J	ProJudge-J
Metals	Manganese	280-129277-1	RQLmw-007-191002-GW	1,700	3.5		J	ProJudge-J
Metals	Manganese	280-129277-1	RQLmw-008-191001-GW	540	3.5		J	ProJudge-J
Metals	Manganese	280-129277-1	RQLmw-009-191001-GW	650	3.5		J	ProJudge-J
Metals	Manganese	280-129184-1	SCFmw-004-191001-GW	770	3.5		J	MS-J
Metals	Mercury	280-129317-1	LL1mw-080-191001-GW	0.080	0.20	U H	UJ	HT-UJ
Metals	Mercury	280-129088-1	NTAmw-119-191001-GW	0.027	0.20	J	J	RepLimit-J
Metals	Nickel	280-129184-1	B12mw-012-191001-GW	8.5	3.0		J	MS-J
Metals	Nickel	280-129088-1	BKGmw-021-191001-GW	1.0	3.0	U J1	UJ	MS-UJ
Metals	Nickel	280-129088-1	BKGmw-021-191002-GW	1.0	3.0	U	UJ	MS-UJ
Metals	Nickel	280-129019-1	DET-004-191001-GW	2.3	3.0	J	UJ	RepLimit-J, ProJudge-UJ
Metals	Nickel	280-129277-1	EBGmw-125-191001-GW	1.0	3.0	J	J	RepLimit-J
Metals	Nickel	280-129184-1	FWGmw-002-191001-GW	3.2	3.0		J	ProJudge-J
Metals	Nickel	280-129184-1	FWGmw-002-191001-GW	3.3	3.0		J	MS-J

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
Metals	Nickel	280-129019-1	FWGmw-004-191001-GW	1.0	3.0	J	UJ	RepLimit-J, ProJudge-UJ
Metals	Nickel	280-129088-1	FWGmw-007-191001-GW	0.83	3.0	J	J	MS-J, RepLimit-J
Metals	Nickel	280-129184-1	FWGmw-011-191001-GW	0.78	3.0	J	J	MS-J, RepLimit-J
Metals	Nickel	280-129184-1	FWGmw-012-191001-GW	0.84	3.0	J	J	MS-J, RepLimit-J
Metals	Nickel	280-128988-1	FWGmw-015-191001-GW	1.1	3.0	J	U	RepLimit-J, ProJudge-U
Metals	Nickel	280-129184-1	FWGmw-018-191001-GW	2.9	3.0	J	J	MS-J, RepLimit-J
Metals	Nickel	280-129184-1	FWGmw-020-191001-GW	1.0	3.0	J	J	MS-J, RepLimit-J
Metals	Nickel	280-129184-1	FWGmw-021-191001-GW	5.9	3.0	J1	J	MS-J
Metals	Nickel	280-129184-1	FWGmw-021-191002-GW	6.2	3.0		J	MS-J
Metals	Nickel	280-129184-1	FWGmw-024-191001-GW	1.6	3.0	J	J	MS-J, RepLimit-J
Metals	Nickel	280-129088-1	LL10mw-005-191001-GW	2.2	3.0	J	J	MS-J, RepLimit-J
Metals	Nickel	280-129322-1	LL12mw-242-191001-GW	2.0	3.0	J	J	RepLimit-J, ProJudge-J
Metals	Nickel	280-129322-1	LL12mw-245-191001-GW	1.6	3.0	J	J	RepLimit-J
Metals	Nickel	280-129184-1	LL12mw-247-191001-GW	1.0	3.0	U	UJ	MS-UJ
Metals	Nickel	280-129184-1	LL1mw-064-191001-GW	1.0	3.0	U	UJ	MS-UJ
Metals	Nickel	280-129317-1	LL1mw-080-191001-GW	1.0	3.0	J	J	RepLimit-J
Metals	Nickel	280-129322-1	LL1mw-086-191001-GW	2.7	3.0	J	J	RepLimit-J, ProJudge-J
Metals	Nickel	280-129184-1	LL1mw-087-191001-GW	1.7	3.0	J	J	MS-J, RepLimit-J
Metals	Nickel	280-129184-1	LL1mw-088-191001-GW	1.0	3.0	U	UJ	MS-UJ
Metals	Nickel	280-129184-1	LL2mw-059-191001-GW	3.7	3.0		J	MS-J
Metals	Nickel	280-129184-1	LL3mw-244-191001-GW	1.3	3.0	J	J	MS-J, RepLimit-J
Metals	Nickel	280-129184-1	LL3mw-246-191001-GW	1.4	3.0	J	J	MS-J, RepLimit-J
Metals	Nickel	280-129184-1	LL3mw-246-191002-GW	1.2	3.0	J	J	MS-J, RepLimit-J
Metals	Nickel	280-129088-1	LL7mw-001-191001-GW	7.1	3.0		J	MS-J
Metals	Nickel	280-129088-1	NTAmw-119-191001-GW	1.0	3.0	U	UJ	MS-UJ
Metals	Nickel	280-129184-1	SCFmw-004-191001-GW	1.0	3.0	U	UJ	MS-UJ
Metals	Nickel	280-128988-1	WBGmw-006-191001-GW	1.0	3.0	J	U	RepLimit-J, ProJudge-U
Metals	Nickel	280-128988-1	WBGmw-009-191001-GW	2.2	3.0	J	U	RepLimit-J, ProJudge-U
Metals	Nickel	280-128988-1	WBGmw-020-191001-GW	3.1	3.0		U	ProJudge-U
Metals	Nickel	280-128988-1	WBGmw-021-191001-GW	1.0	3.0	J	U	RepLimit-J, ProJudge-U
Metals	Potassium	280-129184-1	B12mw-012-191001-GW	2200	3000	J	J	RepLimit-J
Metals	Potassium	280-129088-1	BKGmw-021-191001-GW	940	3000	J	J	RepLimit-J
Metals	Potassium	280-129088-1	BKGmw-021-191002-GW	920	3000	J	J	RepLimit-J
Metals	Potassium	280-129019-1	DET-003-191001-GW	2100	3000	J	J	RepLimit-J
Metals	Potassium	280-129019-1	DET-004-191001-GW	1700	3000	J	J	RepLimit-J
Metals	Potassium	280-129184-1	FWGmw-002-191001-GW	2900	3000	J	J	RepLimit-J
Metals	Potassium	280-129019-1	FWGmw-004-191001-GW	840	3000	J	J	RepLimit-J

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
Metals	Potassium	280-129088-1	FWGmw-007-191001-GW	2100	3000	J	J	RepLimit-J
Metals	Potassium	280-129184-1	FWGmw-011-191001-GW	2900	3000	J	J	RepLimit-J
Metals	Potassium	280-129184-1	FWGmw-012-191001-GW	910	3000	J	J	RepLimit-J
Metals	Potassium	280-128988-1	FWGmw-016-191001-GW	2100	3000	J	J	RepLimit-J
Metals	Potassium	280-129184-1	FWGmw-018-191001-GW	2000	3000	J	J	RepLimit-J
Metals	Potassium	280-129184-1	FWGmw-021-191001-GW	1400	3000	J	J	RepLimit-J
Metals	Potassium	280-129184-1	FWGmw-021-191002-GW	1500	3000	J	J	RepLimit-J
Metals	Potassium	280-129184-1	FWGmw-024-191001-GW	1100	3000	J	J	RepLimit-J
Metals	Potassium	280-129088-1	LL10mw-005-191001-GW	730	3000	J	J	RepLimit-J
Metals	Potassium	280-129322-1	LL12mw-242-191001-GW	2100	3000	J	J	RepLimit-J
Metals	Potassium	280-129322-1	LL12mw-242-191001-GW	1900	3000	J	J	RepLimit-J
Metals	Potassium	280-129184-1	LL12mw-247-191001-GW	2500	3000	J	J	RepLimit-J
Metals	Potassium	280-129184-1	LL1mw-064-191001-GW	840	3000	J	J	RepLimit-J
Metals	Potassium	280-129322-1	LL1mw-065-191001-GW	1400	3000	J	J	RepLimit-J
Metals	Potassium	280-129184-1	LL1mw-087-191001-GW	950	3000	J	J	RepLimit-J
Metals	Potassium	280-129184-1	LL1mw-088-191001-GW	2600	3000	J	J	RepLimit-J
Metals	Potassium	280-129184-1	LL2mw-059-191001-GW	740	3000	J	J	RepLimit-J
Metals	Potassium	280-129322-1	LL2mw-267-191001-GW	1000	3000	J	J	RepLimit-J
Metals	Potassium	280-129184-1	LL3mw-244-191001-GW	1400	3000	J	J	RepLimit-J
Metals	Potassium	280-129184-1	LL3mw-246-191001-GW	1300	3000	J	J	RepLimit-J
Metals	Potassium	280-129184-1	LL3mw-246-191002-GW	1400	3000	J	J	RepLimit-J
Metals	Potassium	280-129088-1	LL7mw-001-191001-GW	1100	3000	J	J	RepLimit-J
Metals	Potassium	280-129088-1	NTAmw-119-191001-GW	1300	3000	J	J	RepLimit-J
Metals	Potassium	280-129277-1	RQLmw-009-191001-GW	1500	3000	J	J	RepLimit-J
Metals	Potassium	280-129184-1	SCFmw-004-191001-GW	2800	3000	J	J	RepLimit-J
Metals	Potassium	280-128988-1	WBGmw-006-191001-GW	930	3000	J	J	RepLimit-J
Metals	Potassium	280-128988-1	WBGmw-009-191001-GW	800	3000	J	J	RepLimit-J
Metals	Potassium	280-128988-1	WBGmw-020-191001-GW	710	3000	J	J	RepLimit-J
Metals	Potassium	280-128988-1	WBGmw-021-191001-GW	1300	3000	J	J	RepLimit-J
Metals	Selenium	280-129184-1	B12mw-012-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Selenium	280-129088-1	BKGmw-021-191001-GW	0.41	5.0	J J1	J	MS-J, RepLimit-J
Metals	Selenium	280-129088-1	BKGmw-021-191002-GW	0.54	5.0	J	J	MS-J, RepLimit-J
Metals	Selenium	280-129184-1	FWGmw-002-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Selenium	280-129019-1	FWGmw-004-191001-GW	0.40	5.0	J	J	RepLimit-J
Metals	Selenium	280-129088-1	FWGmw-007-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Selenium	280-129184-1	FWGmw-011-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Selenium	280-129184-1	FWGmw-012-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Selenium	280-129184-1	FWGmw-018-191001-GW	1.0	5.0	U	UJ	MS-UJ

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
Metals	Selenium	280-129184-1	FWGmw-020-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Selenium	280-129184-1	FWGmw-021-191001-GW	1.0	5.0	U J1	UJ	MS-UJ
Metals	Selenium	280-129184-1	FWGmw-021-191002-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Selenium	280-129184-1	FWGmw-024-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Selenium	280-129088-1	LL10mw-005-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Selenium	280-129184-1	LL12mw-247-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Selenium	280-129184-1	LL1mw-064-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Selenium	280-129317-1	LL1mw-084-191001-GW	1.5	5.0	J	J	RepLimit-J
Metals	Selenium	280-129184-1	LL1mw-087-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Selenium	280-129184-1	LL1mw-088-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Selenium	280-129184-1	LL2mw-059-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Selenium	280-129184-1	LL3mw-244-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Selenium	280-129184-1	LL3mw-246-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Selenium	280-129184-1	LL3mw-246-191002-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Selenium	280-129088-1	LL7mw-001-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Selenium	280-129088-1	NTAmw-119-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Selenium	280-129277-1	RQLmw-009-191001-GW	1.0	5.0	J	U	RepLimit-J, ProJudge-U
Metals	Selenium	280-129184-1	SCFmw-004-191001-GW	1.0	5.0	U	UJ	MS-UJ
Metals	Silver	280-129088-1	FWGmw-007-191001-GW	0.034	5.0	J	J	RepLimit-J
Metals	Sodium	280-129088-1	BKGmw-021-191001-GW	8200	5000		J	ProJudge-J
Metals	Sodium	280-129088-1	BKGmw-021-191002-GW	7900	5000		J	ProJudge-J
Metals	Sodium	280-129019-1	DET-004-191001-GW	2600	5000	J	J	RepLimit-J
Metals	Sodium	280-129019-1	FWGmw-004-191001-GW	3900	5000	J	J	RepLimit-J
Metals	Sodium	280-129088-1	FWGmw-007-191001-GW	8800	5000		J	ProJudge-J
Metals	Sodium	280-129184-1	FWGmw-021-191001-GW	3500	5000	J	J	RepLimit-J
Metals	Sodium	280-129184-1	FWGmw-021-191002-GW	3600	5000	J	J	RepLimit-J
Metals	Sodium	280-129088-1	LL10mw-005-191001-GW	3400	5000	J	J	RepLimit-J, ProJudge-J
Metals	Sodium	280-129184-1	LL1mw-064-191001-GW	4900	5000	J	J	RepLimit-J
Metals	Sodium	280-129317-1	LL1mw-080-191001-GW	1300	5000	J	J	RepLimit-J
Metals	Sodium	280-129317-1	LL1mw-084-191001-GW	3100	5000	J	J	RepLimit-J
Metals	Sodium	280-129184-1	LL2mw-059-191001-GW	2900	5000	J	J	RepLimit-J
Metals	Sodium	280-129184-1	LL3mw-244-191001-GW	3300	5000	J	J	RepLimit-J
Metals	Sodium	280-129184-1	LL3mw-246-191001-GW	3000	5000	J	J	RepLimit-J
Metals	Sodium	280-129184-1	LL3mw-246-191002-GW	3000	5000	J	J	RepLimit-J
Metals	Sodium	280-129088-1	LL7mw-001-191001-GW	5900	5000		J	ProJudge-J
Metals	Sodium	280-129088-1	NTAmw-119-191001-GW	6800	5000		J	ProJudge-J
Metals	Sodium	280-129277-1	RQLmw-007-191001-GW	3600	5000	J	J	RepLimit-J
Metals	Sodium	280-129277-1	RQLmw-007-191002-GW	3400	5000	J	J	RepLimit-J

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
Metals	Sodium	280-129277-1	RQLmw-008-191001-GW	3300	5000	J	J	RepLimit-J
Metals	Sodium	280-129277-1	RQLmw-009-191001-GW	1200	5000	J	J	RepLimit-J
Metals	Sodium	280-128988-1	WBGmw-009-191001-GW	3600	5000	J	J	RepLimit-J
Metals	Sodium	280-128988-1	WBGmw-020-191001-GW	3500	5000	J	J	RepLimit-J
Metals	Thallium	280-129184-1	B12mw-012-191001-GW	0.20	1.0	U	UJ	MS-UJ
Metals	Thallium	280-129088-1	BKGmw-021-191001-GW	0.20	1.0	U J1	UJ	MS-UJ
Metals	Thallium	280-129088-1	BKGmw-021-191002-GW	0.099	1.0	J	J	MS-J, RepLimit-J
Metals	Thallium	280-129184-1	FWGmw-002-191001-GW	0.20	1.0	U	UJ	MS-UJ
Metals	Thallium	280-129088-1	FWGmw-007-191001-GW	0.20	1.0	U	UJ	MS-UJ
Metals	Thallium	280-129184-1	FWGmw-011-191001-GW	0.20	1.0	U	UJ	MS-UJ
Metals	Thallium	280-129184-1	FWGmw-012-191001-GW	0.20	1.0	U	UJ	MS-UJ
Metals	Thallium	280-129184-1	FWGmw-018-191001-GW	0.20	1.0	U	UJ	MS-UJ
Metals	Thallium	280-129184-1	FWGmw-020-191001-GW	0.20	1.0	U	UJ	MS-UJ
Metals	Thallium	280-129184-1	FWGmw-021-191001-GW	0.20	1.0	U J1	UJ	MS-UJ
Metals	Thallium	280-129184-1	FWGmw-021-191002-GW	0.20	1.0	U	UJ	MS-UJ
Metals	Thallium	280-129184-1	FWGmw-024-191001-GW	0.20	1.0	U	UJ	MS-UJ
Metals	Thallium	280-129088-1	LL10mw-005-191001-GW	0.20	1.0	U	UJ	MS-UJ
Metals	Thallium	280-129322-1	LL12mw-187-191001-GW	0.71	1.0	J	J	RepLimit-J
Metals	Thallium	280-129184-1	LL12mw-247-191001-GW	0.20	1.0	U	UJ	MS-UJ
Metals	Thallium	280-129184-1	LL1mw-064-191001-GW	0.20	1.0	U	UJ	MS-UJ
Metals	Thallium	280-129317-1	LL1mw-084-191001-GW	0.44	1.0	J	J	RepLimit-J
Metals	Thallium	280-129184-1	LL1mw-087-191001-GW	0.20	1.0	U	UJ	MS-UJ
Metals	Thallium	280-129184-1	LL1mw-088-191001-GW	0.20	1.0	U	UJ	MS-UJ
Metals	Thallium	280-129184-1	LL2mw-059-191001-GW	0.20	1.0	U	UJ	MS-UJ
Metals	Thallium	280-129184-1	LL3mw-244-191001-GW	0.20	1.0	U	UJ	MS-UJ
Metals	Thallium	280-129184-1	LL3mw-246-191001-GW	0.20	1.0	U	UJ	MS-UJ
Metals	Thallium	280-129184-1	LL3mw-246-191002-GW	0.20	1.0	U	UJ	MS-UJ
Metals	Thallium	280-129088-1	LL7mw-001-191001-GW	0.12	1.0	J	J	MS-J, RepLimit-J
Metals	Thallium	280-129088-1	NTAmw-119-191001-GW	0.20	1.0	U	UJ	MS-UJ
Metals	Thallium	280-129277-1	RQLmw-009-191001-GW	0.17	1.0	J	J	RepLimit-J
Metals	Thallium	280-129184-1	SCFmw-004-191001-GW	0.20	1.0	U	UJ	MS-UJ
Metals	Vanadium	280-129184-1	B12mw-012-191001-GW	3.0	6.0	U	UJ	MS-UJ
Metals	Vanadium	280-129088-1	BKGmw-021-191001-GW	3.0	6.0	U J1	UJ	MS-UJ
Metals	Vanadium	280-129088-1	BKGmw-021-191002-GW	3.0	6.0	U	UJ	MS-UJ
Metals	Vanadium	280-129184-1	FWGmw-002-191001-GW	3.0	6.0	U	UJ	MS-UJ
Metals	Vanadium	280-129184-1	FWGmw-002-191001-GW	4.8	6.0	J	UJ	RepLimit-J, ProJudge-UJ
Metals	Vanadium	280-129088-1	FWGmw-007-191001-GW	3.0	6.0	U	UJ	MS-UJ

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
Metals	Vanadium	280-129184-1	FWGmw-011-191001-GW	3.0	6.0	U	UJ	MS-UJ
Metals	Vanadium	280-129184-1	FWGmw-012-191001-GW	3.0	6.0	U	UJ	MS-UJ
Metals	Vanadium	280-129184-1	FWGmw-018-191001-GW	3.0	6.0	U	UJ	MS-UJ
Metals	Vanadium	280-129184-1	FWGmw-020-191001-GW	3.0	6.0	U	UJ	MS-UJ
Metals	Vanadium	280-129184-1	FWGmw-021-191001-GW	3.0	6.0	U J1	UJ	MS-UJ
Metals	Vanadium	280-129184-1	FWGmw-021-191002-GW	3.0	6.0	U	UJ	MS-UJ
Metals	Vanadium	280-129184-1	FWGmw-024-191001-GW	3.0	6.0	U	UJ	MS-UJ
Metals	Vanadium	280-129088-1	LL10mw-005-191001-GW	3.0	6.0	U	UJ	MS-UJ
Metals	Vanadium	280-129322-1	LL12mw-242-191001-GW	2.0	6.0	J	J	RepLimit-J
Metals	Vanadium	280-129322-1	LL12mw-242-191001-GW	3.2	6.0	J	J	RepLimit-J, ProJudge-J
Metals	Vanadium	280-129184-1	LL12mw-247-191001-GW	3.0	6.0	U	UJ	MS-UJ
Metals	Vanadium	280-129184-1	LL1mw-064-191001-GW	3.0	6.0	U	UJ	MS-UJ
Metals	Vanadium	280-129322-1	LL1mw-086-191001-GW	2.7	6.0	J	J	RepLimit-J
Metals	Vanadium	280-129322-1	LL1mw-086-191001-GW	1.8	6.0	J	UJ	RepLimit-J, ProJudge-UJ
Metals	Vanadium	280-129184-1	LL1mw-087-191001-GW	3.0	6.0	U	UJ	MS-UJ
Metals	Vanadium	280-129184-1	LL1mw-088-191001-GW	3.0	6.0	U	UJ	MS-UJ
Metals	Vanadium	280-129184-1	LL2mw-059-191001-GW	3.0	6.0	U	UJ	MS-UJ
Metals	Vanadium	280-129184-1	LL3mw-244-191001-GW	3.0	6.0	U	UJ	MS-UJ
Metals	Vanadium	280-129184-1	LL3mw-246-191001-GW	3.0	6.0	U	UJ	MS-UJ
Metals	Vanadium	280-129184-1	LL3mw-246-191002-GW	3.0	6.0	U	UJ	MS-UJ
Metals	Vanadium	280-129088-1	LL7mw-001-191001-GW	3.0	6.0	U	UJ	MS-UJ
Metals	Vanadium	280-129088-1	NTAmw-119-191001-GW	3.0	6.0	U	UJ	MS-UJ
Metals	Vanadium	280-129184-1	SCFmw-004-191001-GW	3.0	6.0	U	UJ	MS-UJ
Metals	Zinc	280-129184-1	B12mw-012-191001-GW	10	20	J	UJ	MB-U, MS-J, RepLimit-J
Metals	Zinc	280-129088-1	BKGmw-021-191001-GW	5.2	20	J J1	UJ	MB-U,MS-J,RepLimit-J
Metals	Zinc	280-129088-1	BKGmw-021-191002-GW	3.5	20	J	UJ	MB-U,MS-J,RepLimit-J
Metals	Zinc	280-128988-1	DA2mw-115-191001-GW	6.1	20	J	U	MB-U,RepLimit-J
Metals	Zinc	280-128988-1	DA2mw-115-191002-GW	9.3	20	J	U	MB-U,RepLimit-J
Metals	Zinc	280-129019-1	DET-003-191001-GW	9.6	20	J	U	MB-U,RepLimit-J
Metals	Zinc	280-129019-1	DET-004-191001-GW	50	20		J	ProJudge-J
Metals	Zinc	280-129277-1	EBGmw-125-191001-GW	4.0	20	J J1	U	MB-U,RepLimit-J
Metals	Zinc	280-129184-1	FWGmw-002-191001-GW	9.6	20	J	UJ	MB-U,MS-J,RepLimit-J
Metals	Zinc	280-129184-1	FWGmw-002-191001-GW	11	20	J	U	MB-U,RepLimit-J
Metals	Zinc	280-129019-1	FWGmw-004-191001-GW	5.6	20	J	U	MB-U,RepLimit-J
Metals	Zinc	280-129088-1	FWGmw-007-191001-GW	4.6	20	J	UJ	MB-U,MS-J,RepLimit-J
Metals	Zinc	280-129184-1	FWGmw-011-191001-GW	4.2	20	J	UJ	MB-U,MS-J,RepLimit-J

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
Metals	Zinc	280-129184-1	FWGmw-012-191001-GW	4.6	20	J	UJ	MB-U,MS-J,RepLimit-J
Metals	Zinc	280-128988-1	FWGmw-015-191001-GW	4.6	20	J	U	MB-U,RepLimit-J
Metals	Zinc	280-128988-1	FWGmw-016-191001-GW	7.9	20	J	U	MB-U,RepLimit-J
Metals	Zinc	280-129184-1	FWGmw-018-191001-GW	2.8	20	J	UJ	MB-U,MS-J,RepLimit-J
Metals	Zinc	280-129184-1	FWGmw-020-191001-GW	3.6	20	J	UJ	MB-U,MS-J,RepLimit-J
Metals	Zinc	280-129184-1	FWGmw-021-191001-GW	12	20	J J1	UJ	MB-U,MS-J,RepLimit-J
Metals	Zinc	280-129184-1	FWGmw-021-191002-GW	13	20	J	UJ	MB-U,MS-J,RepLimit-J
Metals	Zinc	280-129184-1	FWGmw-024-191001-GW	3.6	20	J	UJ	MB-U,MS-J,RepLimit-J
Metals	Zinc	280-129088-1	LL10mw-005-191001-GW	5.3	20	J	UJ	MB-U,MS-J,RepLimit-J
Metals	Zinc	280-129322-1	LL12mw-187-191001-GW	6.2	20	J	U	MB-U,RepLimit-J
Metals	Zinc	280-129322-1	LL12mw-242-191001-GW	11	20	J	U	MB-U,RepLimit-J
Metals	Zinc	280-129322-1	LL12mw-242-191001-GW	14	20	J	U	MB-U,RepLimit-J
Metals	Zinc	280-129322-1	LL12mw-245-191001-GW	4.9	20	J	U	MB-U,RepLimit-J
Metals	Zinc	280-129184-1	LL12mw-247-191001-GW	4.7	20	J	UJ	MB-U,MS-J,RepLimit-J
Metals	Zinc	280-129184-1	LL1mw-064-191001-GW	3.6	20	J	UJ	MB-U,MS-J,RepLimit-J
Metals	Zinc	280-129322-1	LL1mw-065-191001-GW	3.2	20	J	U	MB-U,RepLimit-J
Metals	Zinc	280-129317-1	LL1mw-080-191001-GW	8.0	20	J	U	MB-U,RepLimit-J,ProJudge-U
Metals	Zinc	280-129317-1	LL1mw-084-191001-GW	60	20		U	ProJudge-U
Metals	Zinc	280-129322-1	LL1mw-086-191001-GW	8.9	20	J	U	MB-U,RepLimit-J
Metals	Zinc	280-129184-1	LL1mw-087-191001-GW	5.0	20	J	UJ	MB-U,MS-J,RepLimit-J
Metals	Zinc	280-129184-1	LL1mw-088-191001-GW	3.2	20	J	UJ	MB-U,MS-J,RepLimit-J
Metals	Zinc	280-129184-1	LL2mw-059-191001-GW	3.6	20	J	UJ	MB-U,MS-J,RepLimit-J
Metals	Zinc	280-129322-1	LL2mw-267-191001-GW	3.4	20	J	U	MB-U,RepLimit-J
Metals	Zinc	280-129184-1	LL3mw-244-191001-GW	5.1	20	J	UJ	MB-U,MS-J,RepLimit-J
Metals	Zinc	280-129184-1	LL3mw-246-191001-GW	4.3	20	J	UJ	MB-U,MS-J,RepLimit-J
Metals	Zinc	280-129184-1	LL3mw-246-191002-GW	5.4	20	J	UJ	MB-U,MS-J,RepLimit-J
Metals	Zinc	280-129088-1	LL7mw-001-191001-GW	48	20		J	MS-J
Metals	Zinc	280-129088-1	NTAmw-119-191001-GW	3.6	20	J	UJ	MB-U,MS-J,RepLimit-J
Metals	Zinc	280-129277-1	RQLmw-007-191001-GW	4.4	20	J	U	MB-U,RepLimit-J
Metals	Zinc	280-129277-1	RQLmw-007-191002-GW	4.1	20	J	U	MB-U,RepLimit-J
Metals	Zinc	280-129277-1	RQLmw-009-191001-GW	3.7	20	J	U	MB-U,RepLimit-J
Metals	Zinc	280-129184-1	SCFmw-004-191001-GW	13	20	J	UJ	MB-U,MS-J,RepLimit-J
Metals	Zinc	280-128988-1	WBGmw-006-191001-GW	7.3	20	J	U	MB-U,RepLimit-J
Metals	Zinc	280-128988-1	WBGmw-020-191001-GW	4.5	20	J	U	MB-U,RepLimit-J
Metals	Zinc	280-128988-1	WBGmw-021-191001-GW	5.6	20	J	U	MB-U,RepLimit-J
Explosives	1,3,5-Trinitrobenzene	280-129088-1	FBQmw-174-191001-GW	0.42	1.1	U Q	UJ	Surr-UJ
Explosives	1,3,5-Trinitrobenzene	280-129019-1	FWGmw-004-191001-GW	0.44	1.1	U Q	UJ	Surr-UJ

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
Explosives	1,3,5-Trinitrobenzene	280-129317-1	LL1mw-084-191001-GW	1.3	1.1	M J1	J	ProJudge-J
Explosives	1,3,5-Trinitrobenzene	280-129088-1	NTAmw-119-191001-GW	0.37	0.93	U Q J1	UJ	Surr-UJ,MS-UJ
Explosives	1,3-Dinitrobenzene	280-129019-1	DET-003-191001-GW	0.20	0.40	U Q	UJ	LCS-UJ
Explosives	1,3-Dinitrobenzene	280-129019-1	DET-004-191001-GW	0.20	0.41	U Q	UJ	LCS-UJ
Explosives	1,3-Dinitrobenzene	280-129088-1	FBQmw-174-191001-GW	0.21	0.42	U	UJ	LCS-UJ
Explosives	1,3-Dinitrobenzene	280-129019-1	FWGmw-004-191001-GW	0.22	0.44	U Q	UJ	Surr-UJ,LCS-UJ
Explosives	1,3-Dinitrobenzene	280-129088-1	FWGmw-007-191001-GW	0.22	0.43	U Q	UJ	LCS-UJ
Explosives	1,3-Dinitrobenzene	280-129317-1	LL1mw-063-191001-GW	0.41	0.42	J	J	RepLimit-J
Explosives	1,3-Dinitrobenzene	280-129317-1	LL1mw-083-191001-GW	1.7	0.42	J1	J	ProJudge-J
Explosives	1,3-Dinitrobenzene	280-129317-1	LL1mw-084-191001-GW	2.5	0.43	M J1	J	ProJudge-J
Explosives	1,3-Dinitrobenzene	280-129184-1	LL2mw-059-191001-GW	0.31	0.40	J Q J1	J	LCS-J,RepLimit-J,ProJudge-J
Explosives	1,3-Dinitrobenzene	280-129184-1	LL3mw-244-191001-GW	0.20	0.41	U Q	UJ	LCS-UJ
Explosives	1,3-Dinitrobenzene	280-129088-1	LL7mw-006-191001-GW	0.21	0.42	U Q	UJ	LCS-UJ
Explosives	1,3-Dinitrobenzene	280-129088-1	NTAmw-119-191001-GW	0.19	0.37	U Q J1	UJ	Surr-UJ,MS-UJ,LCS-UJ
Explosives	1,3-Dinitrobenzene	280-129088-1	NTAmw-119-191002-GW	0.19	0.38	U Q	UJ	LCS-UJ
Explosives	2,4,6-Trinitrotoluene	280-129088-1	FBQmw-174-191001-GW	0.42	0.42	U Q M	UJ	Surr-UJ
Explosives	2,4,6-Trinitrotoluene	280-129019-1	FWGmw-004-191001-GW	0.44	0.44	U Q	UJ	Surr-UJ
Explosives	2,4,6-Trinitrotoluene	280-129317-1	LL1mw-063-191001-GW	0.40	0.42	J	J	RepLimit-J
Explosives	2,4,6-Trinitrotoluene	280-129088-1	NTAmw-119-191001-GW	0.37	0.37	U Q J1	UJ	Surr-UJ,MS-UJ
Explosives	2,4-Dinitrotoluene	280-129019-1	DET-003-191001-GW	0.20	0.40	U Q	UJ	LCS-UJ
Explosives	2,4-Dinitrotoluene	280-129019-1	DET-004-191001-GW	0.20	0.41	U Q	UJ	LCS-UJ
Explosives	2,4-Dinitrotoluene	280-129088-1	FBQmw-174-191001-GW	0.21	0.42	U Q M	UJ	Surr-UJ,LCS-UJ
Explosives	2,4-Dinitrotoluene	280-129019-1	FWGmw-004-191001-GW	0.22	0.44	U Q	UJ	Surr-UJ,LCS-UJ
Explosives	2,4-Dinitrotoluene	280-129088-1	FWGmw-007-191001-GW	0.22	0.43	U Q	UJ	LCS-UJ
Explosives	2,4-Dinitrotoluene	280-129317-1	LL1mw-063-191001-GW	0.22	0.42	J	J	RepLimit-J
Explosives	2,4-Dinitrotoluene	280-129317-1	LL1mw-080-191001-GW	0.23	0.42	J J1	J	RepLimit-J,ProJudge-J
Explosives	2,4-Dinitrotoluene	280-129317-1	LL1mw-084-191001-GW	1.4	0.43	J1	J	ProJudge-J
Explosives	2,4-Dinitrotoluene	280-129184-1	LL2mw-059-191001-GW	0.20	0.40	U Q M	UJ	LCS-UJ
Explosives	2,4-Dinitrotoluene	280-129184-1	LL3mw-244-191001-GW	0.20	0.41	U Q	UJ	LCS-UJ
Explosives	2,4-Dinitrotoluene	280-129088-1	LL7mw-006-191001-GW	0.21	0.42	U Q	UJ	LCS-UJ
Explosives	2,4-Dinitrotoluene	280-129088-1	NTAmw-119-191001-GW	0.19	0.37	U Q J1	UJ	Surr-UJ,MS-UJ,LCS-UJ
Explosives	2,4-Dinitrotoluene	280-129088-1	NTAmw-119-191002-GW	0.19	0.38	U Q	UJ	LCS-UJ
Explosives	2,6-Dinitrotoluene	280-129019-1	DET-003-191001-GW	0.20	0.20	U Q	UJ	LCS-UJ
Explosives	2,6-Dinitrotoluene	280-129019-1	DET-004-191001-GW	0.20	0.20	U Q	UJ	LCS-UJ
Explosives	2,6-Dinitrotoluene	280-129088-1	FBQmw-174-191001-GW	0.21	0.21	U Q M	UJ	Surr-UJ,LCS-UJ
Explosives	2,6-Dinitrotoluene	280-129019-1	FWGmw-004-191001-GW	0.22	0.22	U Q	UJ	Surr-UJ,LCS-UJ
Explosives	2,6-Dinitrotoluene	280-129088-1	FWGmw-007-191001-GW	0.22	0.22	U Q	UJ	LCS-UJ

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
Explosives	2,6-Dinitrotoluene	280-129184-1	LL2mw-059-191001-GW	0.20	0.20	U Q M	UJ	LCS-UJ
Explosives	2,6-Dinitrotoluene	280-129184-1	LL3mw-244-191001-GW	0.20	0.20	U Q M	UJ	LCS-UJ
Explosives	2,6-Dinitrotoluene	280-129088-1	LL7mw-006-191001-GW	0.21	0.21	U Q	UJ	LCS-UJ
Explosives	2,6-Dinitrotoluene	280-129088-1	NTAmw-119-191001-GW	0.19	0.19	U Q J1	UJ	Surr-UJ,MS-UJ,LCS-UJ
Explosives	2,6-Dinitrotoluene	280-129088-1	NTAmw-119-191002-GW	0.19	0.19	U Q	UJ	LCS-UJ
Explosives	2-Amino-4,6-Dinitrotoluene	280-129019-1	DET-003-191001-GW	0.12	0.20	U Q	UJ	LCS-UJ
Explosives	2-Amino-4,6-Dinitrotoluene	280-129019-1	DET-004-191001-GW	0.12	0.20	U Q	UJ	LCS-UJ
Explosives	2-Amino-4,6-Dinitrotoluene	280-129088-1	FBQmw-174-191001-GW	0.13	0.21	U Q	UJ	Surr-UJ,LCS-UJ
Explosives	2-Amino-4,6-Dinitrotoluene	280-129019-1	FWGmw-004-191001-GW	0.13	0.22	U Q	UJ	Surr-UJ,LCS-UJ
Explosives	2-Amino-4,6-Dinitrotoluene	280-129088-1	FWGmw-007-191001-GW	0.13	0.22	U Q	UJ	LCS-UJ
Explosives	2-Amino-4,6-Dinitrotoluene	280-129184-1	LL2mw-059-191001-GW	0.12	0.20	U Q	UJ	LCS-UJ
Explosives	2-Amino-4,6-Dinitrotoluene	280-129184-1	LL3mw-244-191001-GW	0.12	0.20	U Q	UJ	LCS-UJ
Explosives	2-Amino-4,6-Dinitrotoluene	280-129184-1	LL3mw-246-191001-GW	0.31	0.20	J1	J	ProJudge-J
Explosives	2-Amino-4,6-Dinitrotoluene	280-129088-1	LL7mw-006-191001-GW	0.13	0.21	U Q	UJ	LCS-UJ
Explosives	2-Amino-4,6-Dinitrotoluene	280-129088-1	NTAmw-119-191001-GW	0.11	0.19	U Q J1	UJ	Surr-UJ,MS-UJ,LCS-UJ
Explosives	2-Amino-4,6-Dinitrotoluene	280-129088-1	NTAmw-119-191002-GW	0.12	0.19	U Q	UJ	LCS-UJ
Explosives	2-Nitrotoluene	280-129019-1	DET-003-191001-GW	0.20	0.40	U Q	UJ	LCS-UJ
Explosives	2-Nitrotoluene	280-129019-1	DET-004-191001-GW	0.20	0.41	U Q	UJ	LCS-UJ
Explosives	2-Nitrotoluene	280-129088-1	FBQmw-174-191001-GW	0.21	0.42	U Q	UJ	Surr-UJ,LCS-UJ
Explosives	2-Nitrotoluene	280-129019-1	FWGmw-004-191001-GW	0.22	0.44	U Q	UJ	Surr-UJ,LCS-UJ
Explosives	2-Nitrotoluene	280-129088-1	FWGmw-007-191001-GW	0.22	0.43	U Q	UJ	LCS-UJ
Explosives	2-Nitrotoluene	280-129184-1	LL2mw-059-191001-GW	0.20	0.40	U Q M	UJ	LCS-UJ
Explosives	2-Nitrotoluene	280-129184-1	LL3mw-244-191001-GW	0.20	0.41	U Q	UJ	LCS-UJ
Explosives	2-Nitrotoluene	280-129088-1	LL7mw-006-191001-GW	0.21	0.42	U Q	UJ	LCS-UJ
Explosives	2-Nitrotoluene	280-129088-1	NTAmw-119-191001-GW	0.19	0.37	U Q J1	UJ	Surr-UJ,MS-UJ,LCS-UJ
Explosives	2-Nitrotoluene	280-129088-1	NTAmw-119-191002-GW	0.19	0.38	U Q	UJ	LCS-UJ
Explosives	3-Nitrotoluene	280-129019-1	DET-003-191001-GW	0.40	0.40	U Q	UJ	LCS-UJ
Explosives	3-Nitrotoluene	280-129019-1	DET-004-191001-GW	0.41	0.41	U Q	UJ	LCS-UJ
Explosives	3-Nitrotoluene	280-129088-1	FBQmw-174-191001-GW	0.42	0.42	U Q	UJ	Surr-UJ,LCS-UJ
Explosives	3-Nitrotoluene	280-129019-1	FWGmw-004-191001-GW	0.44	0.44	U Q	UJ	Surr-UJ,LCS-UJ
Explosives	3-Nitrotoluene	280-129088-1	FWGmw-007-191001-GW	0.43	0.43	U Q	UJ	LCS-UJ
Explosives	3-Nitrotoluene	280-129184-1	LL2mw-059-191001-GW	0.40	0.40	U Q	UJ	LCS-UJ
Explosives	3-Nitrotoluene	280-129184-1	LL3mw-244-191001-GW	0.41	0.41	U Q	UJ	LCS-UJ
Explosives	3-Nitrotoluene	280-129088-1	LL7mw-006-191001-GW	0.42	0.42	U Q	UJ	LCS-UJ
Explosives	3-Nitrotoluene	280-129088-1	NTAmw-119-191001-GW	0.37	0.37	U Q J1	UJ	Surr-UJ,MS-UJ,LCS-UJ
Explosives	3-Nitrotoluene	280-129088-1	NTAmw-119-191002-GW	0.38	0.38	U Q	UJ	LCS-UJ
Explosives	4-Amino-2,6-Dinitrotoluene	280-129019-1	DET-003-191001-GW	0.12	0.20	U Q	UJ	LCS-UJ
Explosives	4-Amino-2,6-Dinitrotoluene	280-129019-1	DET-004-191001-GW	0.12	0.20	U Q	UJ	LCS-UJ

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
Explosives	4-Amino-2,6-Dinitrotoluene	280-129088-1	FBQmw-174-191001-GW	0.13	0.21	U Q M	UJ	Surr-UJ,LCS-UJ
Explosives	4-Amino-2,6-Dinitrotoluene	280-129019-1	FWGmw-004-191001-GW	0.13	0.22	U Q	UJ	Surr-UJ,LCS-UJ
Explosives	4-Amino-2,6-Dinitrotoluene	280-129088-1	FWGmw-007-191001-GW	0.13	0.22	U Q	UJ	LCS-UJ
Explosives	4-Amino-2,6-Dinitrotoluene	280-129184-1	LL2mw-059-191001-GW	0.12	0.20	U Q M	UJ	LCS-UJ
Explosives	4-Amino-2,6-Dinitrotoluene	280-129184-1	LL3mw-244-191001-GW	0.12	0.20	U Q M	UJ	LCS-UJ
Explosives	4-Amino-2,6-Dinitrotoluene	280-129184-1	LL3mw-246-191002-GW	0.22	0.20	J1	J	ProJudge-J
Explosives	4-Amino-2,6-Dinitrotoluene	280-129088-1	LL7mw-006-191001-GW	0.13	0.21	U Q	UJ	LCS-UJ
Explosives	4-Amino-2,6-Dinitrotoluene	280-129088-1	NTAmw-119-191001-GW	0.11	0.19	U Q J1	UJ	Surr-UJ,MS-UJ,LCS-UJ
Explosives	4-Amino-2,6-Dinitrotoluene	280-129088-1	NTAmw-119-191002-GW	0.12	0.19	U Q	UJ	LCS-UJ
Explosives	4-Nitrotoluene	280-129019-1	DET-003-191001-GW	0.40	0.99	U Q	UJ	LCS-UJ
Explosives	4-Nitrotoluene	280-129019-1	DET-004-191001-GW	0.41	1.0	U Q	UJ	LCS-UJ
Explosives	4-Nitrotoluene	280-129088-1	FBQmw-174-191001-GW	0.42	1.1	U Q M	UJ	Surr-UJ,LCS-UJ
Explosives	4-Nitrotoluene	280-129019-1	FWGmw-004-191001-GW	0.44	1.1	U Q	UJ	Surr-UJ,LCS-UJ
Explosives	4-Nitrotoluene	280-129088-1	FWGmw-007-191001-GW	0.43	1.1	U Q	UJ	LCS-UJ
Explosives	4-Nitrotoluene	280-129184-1	LL2mw-059-191001-GW	0.40	1.0	U Q	UJ	LCS-UJ
Explosives	4-Nitrotoluene	280-129184-1	LL3mw-244-191001-GW	0.41	1.0	U Q	UJ	LCS-UJ
Explosives	4-Nitrotoluene	280-129088-1	LL7mw-006-191001-GW	0.42	1.1	U Q	UJ	LCS-UJ
Explosives	4-Nitrotoluene	280-129088-1	NTAmw-119-191001-GW	0.31	0.93	J Q J1	J	Surr-J,MS-J,LCS-J,RepLimit-J
Explosives	4-Nitrotoluene	280-129088-1	NTAmw-119-191002-GW	0.63	0.96	J Q M	J	LCS-J,RepLimit-J
Explosives	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	280-129019-1	DET-004-191001-GW	0.33	0.41	J M	J	RepLimit-J
Explosives	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	280-129019-1	FWGmw-004-191001-GW	0.44	0.44	U Q	UJ	Surr-UJ
Explosives	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	280-129088-1	NTAmw-119-191001-GW	0.37	0.37	U Q	UJ	Surr-UJ
Explosives	Nitrobenzene	280-129088-1	FBQmw-174-191001-GW	0.21	0.42	U Q	UJ	Surr-UJ
Explosives	Nitrobenzene	280-129019-1	FWGmw-004-191001-GW	0.22	0.44	U Q	UJ	Surr-UJ
Explosives	Nitrobenzene	280-129317-1	LL1mw-063-191001-GW	0.27	0.42	J J1	J	RepLimit-J,ProJudge-J
Explosives	Nitrobenzene	280-129277-1	LL3mw-237-191001-GW	0.10	0.39	J J1	J	RepLimit-J,ProJudge-J
Explosives	Nitrobenzene	280-129088-1	NTAmw-119-191001-GW	0.19	0.37	U Q J1	UJ	Surr-UJ,MS-UJ
Explosives	Nitroglycerine	280-129088-1	FBQmw-174-191001-GW	2.1	3.2	U Q	UJ	Surr-UJ
Explosives	Nitroglycerine	280-129019-1	FWGmw-004-191001-GW	2.2	3.3	U Q	UJ	Surr-UJ
Explosives	Nitroglycerine	280-129088-1	NTAmw-119-191001-GW	1.9	2.8	U Q	UJ	Surr-UJ
Explosives	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	280-129088-1	FBQmw-174-191001-GW	0.21	0.42	U Q	UJ	Surr-UJ
Explosives	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	280-129019-1	FWGmw-004-191001-GW	0.22	0.44	U Q	UJ	Surr-UJ

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
Explosives	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	280-129088-1	LL7mw-006-191001-GW	0.15	0.42	J M	J	RepLimit-J
Explosives	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	280-129088-1	NTAmw-119-191001-GW	0.19	0.37	U Q	UJ	Surr-UJ
Explosives	PETN	280-129088-1	FBQmw-174-191001-GW	4.2	4.2	U Q	UJ	Surr-UJ
Explosives	PETN	280-129019-1	FWGmw-004-191001-GW	4.4	4.4	U Q	UJ	Surr-UJ
Explosives	PETN	280-129088-1	NTAmw-119-191001-GW	3.7	3.7	U Q J1	UJ	Surr-UJ,MS-UJ
Explosives	Tetryl	280-129088-1	FBQmw-174-191001-GW	0.21	0.25	U Q M	UJ	Surr-UJ
Explosives	Tetryl	280-129019-1	FWGmw-004-191001-GW	0.22	0.26	U Q	UJ	Surr-UJ
Explosives	Tetryl	280-129088-1	NTAmw-119-191001-GW	0.19	0.22	U Q	UJ	Surr-UJ
Propellants	Nitroguanidine	280-129317-1	LL1mw-063-191001-GW	6.0	20	U	UJ	HT-UJ
SVOCs	2,4-Dinitrophenol	280-129019-1	DET-003-191001-GW	32	84	U Q	UJ	ProJudge-UJ
SVOCs	2,4-Dinitrophenol	280-129019-1	DET-003-191002-GW	31	83	U Q	UJ	ProJudge-UJ
SVOCs	2,4-Dinitrophenol	280-129019-1	DET-004-191001-GW	31	83	U Q	UJ	ProJudge-UJ
SVOCs	4,6-Dinitro-2-Methylphenol	280-129019-1	DET-003-191001-GW	9.2	84	U J1 Q	UJ	MS-UJ,ProJudge-UJ
SVOCs	4,6-Dinitro-2-Methylphenol	280-129019-1	DET-003-191002-GW	9.1	83	U Q	UJ	ProJudge-UJ
SVOCs	4,6-Dinitro-2-Methylphenol	280-129019-1	DET-004-191001-GW	9.2	83	U Q	UJ	ProJudge-UJ
SVOCs	Bis(2-Ethylhexyl) Phthalate	280-129277-1	RQLmw-007-191001-GW	2.8	10	J	J	RepLimit-J
SVOCs	Butyl Benzyl Phthalate	280-129277-1	RQLmw-007-191001-GW	2.1	21	J	J	RepLimit-J
SVOCs	Di-N-Butyl Phthalate	280-129277-1	RQLmw-007-191001-GW	1.3	21	J	J	RepLimit-J
SVOCs	Di-N-Octyl Phthalate	280-129277-1	RQLmw-007-191001-GW	4.2	21	J	J	RepLimit-J
PAHs	Benzo(A)Anthracene	280-129277-1	RQLmw-007-191001-GW	0.11	0.11	U Q	UJ	LCS-UJ
PAHs	Benzo(A)Anthracene	280-129277-1	RQLmw-008-191001-GW	0.10	0.10	U Q	UJ	LCS-UJ
PAHs	Benzo(A)Anthracene	280-129277-1	RQLmw-009-191001-GW	0.10	0.10	U Q	UJ	LCS-UJ
PAHs	Benzo(A)Pyrene	280-129277-1	RQLmw-007-191001-GW	0.057	0.11	U M Q	UJ	LCS-UJ
PAHs	Benzo(A)Pyrene	280-129277-1	RQLmw-008-191001-GW	0.051	0.10	U Q	UJ	LCS-UJ
PAHs	Benzo(A)Pyrene	280-129277-1	RQLmw-009-191001-GW	0.052	0.10	U Q	UJ	LCS-UJ
PAHs	Benzo(B)Fluoranthene	280-129277-1	RQLmw-007-191001-GW	0.11	0.11	U M Q	UJ	LCS-UJ
PAHs	Benzo(B)Fluoranthene	280-129277-1	RQLmw-008-191001-GW	0.10	0.10	U Q	UJ	LCS-UJ
PAHs	Benzo(B)Fluoranthene	280-129277-1	RQLmw-009-191001-GW	0.10	0.10	U Q	UJ	LCS-UJ
PAHs	Benzo(G,H,I)Perylene	280-129277-1	RQLmw-007-191001-GW	0.11	0.11	U Q	UJ	LCS-UJ
PAHs	Benzo(G,H,I)Perylene	280-129277-1	RQLmw-008-191001-GW	0.10	0.10	U Q	UJ	LCS-UJ
PAHs	Benzo(G,H,I)Perylene	280-129277-1	RQLmw-009-191001-GW	0.10	0.10	U Q	UJ	LCS-UJ
PAHs	Benzo(K)Fluoranthene	280-129277-1	RQLmw-007-191001-GW	0.057	0.11	U Q	UJ	LCS-UJ
PAHs	Benzo(K)Fluoranthene	280-129277-1	RQLmw-008-191001-GW	0.051	0.10	U M Q	UJ	LCS-UJ
PAHs	Benzo(K)Fluoranthene	280-129277-1	RQLmw-009-191001-GW	0.052	0.10	U Q	UJ	LCS-UJ
PAHs	Chrysene	280-129277-1	RQLmw-007-191001-GW	0.11	0.11	U Q	UJ	LCS-UJ
PAHs	Chrysene	280-129277-1	RQLmw-008-191001-GW	0.10	0.10	U Q	UJ	LCS-UJ

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
PAHs	Chrysene	280-129277-1	RQLmw-009-191001-GW	0.10	0.10	U Q	UJ	LCS-UJ
PAHs	Dibenzo(A,H)Anthracene	280-129277-1	RQLmw-007-191001-GW	0.11	0.11	U Q	UJ	LCS-UJ
PAHs	Dibenzo(A,H)Anthracene	280-129277-1	RQLmw-008-191001-GW	0.10	0.10	U Q	UJ	LCS-UJ
PAHs	Dibenzo(A,H)Anthracene	280-129277-1	RQLmw-009-191001-GW	0.10	0.10	U Q	UJ	LCS-UJ
PAHs	Fluoranthene	280-129277-1	RQLmw-007-191001-GW	0.11	0.11	U Q	UJ	LCS-UJ
PAHs	Fluoranthene	280-129277-1	RQLmw-008-191001-GW	0.10	0.10	U Q	UJ	LCS-UJ
PAHs	Fluoranthene	280-129277-1	RQLmw-009-191001-GW	0.10	0.10	U Q	UJ	LCS-UJ
PAHs	Fluorene	280-129277-1	RQLmw-007-191001-GW	0.045	0.11	U Q	UJ	LCS-UJ
PAHs	Fluorene	280-129277-1	RQLmw-008-191001-GW	0.041	0.10	U Q	UJ	LCS-UJ
PAHs	Fluorene	280-129277-1	RQLmw-009-191001-GW	0.042	0.10	U Q	UJ	LCS-UJ
PAHs	Indeno(1,2,3-Cd)Pyrene	280-129277-1	RQLmw-007-191001-GW	0.11	0.11	U Q	UJ	LCS-UJ
PAHs	Indeno(1,2,3-Cd)Pyrene	280-129277-1	RQLmw-008-191001-GW	0.10	0.10	U Q	UJ	LCS-UJ
PAHs	Indeno(1,2,3-Cd)Pyrene	280-129277-1	RQLmw-009-191001-GW	0.10	0.10	U Q	UJ	LCS-UJ
PAHs	Phenanthrene	280-129277-1	RQLmw-007-191001-GW	0.11	0.11	U Q	UJ	LCS-UJ
PAHs	Phenanthrene	280-129277-1	RQLmw-008-191001-GW	0.10	0.10	U Q	UJ	LCS-UJ
PAHs	Phenanthrene	280-129277-1	RQLmw-009-191001-GW	0.10	0.10	U Q	UJ	LCS-UJ
PAHs	Pyrene	280-129277-1	RQLmw-007-191001-GW	0.11	0.11	U Q	UJ	LCS-UJ
PAHs	Pyrene	280-129277-1	RQLmw-008-191001-GW	0.10	0.10	U Q	UJ	LCS-UJ
PAHs	Pyrene	280-129277-1	RQLmw-009-191001-GW	0.10	0.10	U Q	UJ	LCS-UJ
VOCs	1,1,1-Trichloroethane	280-129277-1	RQLmw-007-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	1,1,1-Trichloroethane	280-129277-1	RQLmw-008-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	1,1,1-Trichloroethane	280-129277-1	RQLmw-009-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	1,1,2,2-Tetrachloroethane	280-129277-1	RQLmw-007-191001-GW	0.80	1.0	U H	UJ	HT-UJ
VOCs	1,1,2,2-Tetrachloroethane	280-129277-1	RQLmw-008-191001-GW	0.80	1.0	U H	UJ	HT-UJ
VOCs	1,1,2,2-Tetrachloroethane	280-129277-1	RQLmw-009-191001-GW	0.80	1.0	U H	UJ	HT-UJ
VOCs	1,1,2-Trichloroethane	280-129277-1	RQLmw-007-191001-GW	0.80	1.0	U H	UJ	HT-UJ
VOCs	1,1,2-Trichloroethane	280-129277-1	RQLmw-008-191001-GW	0.80	1.0	U H	UJ	HT-UJ
VOCs	1,1,2-Trichloroethane	280-129277-1	RQLmw-009-191001-GW	0.80	1.0	U H	UJ	HT-UJ
VOCs	1,1-Dichloroethane	280-129277-1	RQLmw-007-191001-GW	0.80	1.0	U H	UJ	HT-UJ
VOCs	1,1-Dichloroethane	280-129277-1	RQLmw-008-191001-GW	0.80	1.0	U H	UJ	HT-UJ
VOCs	1,1-Dichloroethane	280-129277-1	RQLmw-009-191001-GW	0.80	1.0	U H	UJ	HT-UJ
VOCs	1,1-Dichloroethene	280-129277-1	RQLmw-007-191001-GW	0.80	1.0	U H	UJ	HT-UJ
VOCs	1,1-Dichloroethene	280-129277-1	RQLmw-008-191001-GW	0.80	1.0	U H	UJ	HT-UJ
VOCs	1,1-Dichloroethene	280-129277-1	RQLmw-009-191001-GW	0.80	1.0	U H	UJ	HT-UJ
VOCs	1,2-Dibromoethane	280-129277-1	RQLmw-007-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	1,2-Dibromoethane	280-129277-1	RQLmw-008-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	1,2-Dibromoethane	280-129277-1	RQLmw-009-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	1,2-Dichloroethane	280-129277-1	RQLmw-007-191001-GW	0.40	1.0	U H	UJ	HT-UJ

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
VOCs	1,2-Dichloroethane	280-129277-1	RQLmw-008-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	1,2-Dichloroethane	280-129277-1	RQLmw-009-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	1,2-Dichloroethene (Total)	280-129277-1	RQLmw-007-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	1,2-Dichloroethene (Total)	280-129277-1	RQLmw-008-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	1,2-Dichloroethene (Total)	280-129277-1	RQLmw-009-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	1,2-Dichloropropane	280-129277-1	RQLmw-007-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	1,2-Dichloropropane	280-129277-1	RQLmw-008-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	1,2-Dichloropropane	280-129277-1	RQLmw-009-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	2-Butanone	280-129277-1	RQLmw-007-191001-GW	4.0	6.0	U H	UJ	HT-UJ
VOCs	2-Butanone	280-129277-1	RQLmw-008-191001-GW	4.0	6.0	U H	UJ	HT-UJ
VOCs	2-Butanone	280-129277-1	RQLmw-009-191001-GW	4.0	6.0	U H	UJ	HT-UJ
VOCs	2-Hexanone	280-129277-1	RQLmw-007-191001-GW	4.0	5.0	U H	UJ	HT-UJ
VOCs	2-Hexanone	280-129277-1	RQLmw-008-191001-GW	4.0	5.0	U H	UJ	HT-UJ
VOCs	2-Hexanone	280-129277-1	RQLmw-009-191001-GW	4.0	5.0	U H	UJ	HT-UJ
VOCs	4-Methyl-2-Pentanone	280-129277-1	RQLmw-007-191001-GW	3.2	5.0	U H	UJ	HT-UJ
VOCs	4-Methyl-2-Pentanone	280-129277-1	RQLmw-008-191001-GW	3.2	5.0	U H	UJ	HT-UJ
VOCs	4-Methyl-2-Pentanone	280-129277-1	RQLmw-009-191001-GW	3.2	5.0	U H	UJ	HT-UJ
VOCs	Acetone	280-129277-1	RQLmw-007-191001-GW	6.4	10	U H	UJ	HT-UJ
VOCs	Acetone	280-129277-1	RQLmw-008-191001-GW	6.4	10	U H	UJ	HT-UJ
VOCs	Acetone	280-129277-1	RQLmw-009-191001-GW	6.4	10	U H	UJ	HT-UJ
VOCs	Benzene	280-129277-1	RQLmw-007-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Benzene	280-129277-1	RQLmw-008-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Benzene	280-129277-1	RQLmw-009-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Bromochloromethane	280-129277-1	RQLmw-007-191001-GW	0.20	1.0	U H	UJ	HT-UJ
VOCs	Bromochloromethane	280-129277-1	RQLmw-008-191001-GW	0.20	1.0	U H	UJ	HT-UJ
VOCs	Bromochloromethane	280-129277-1	RQLmw-009-191001-GW	0.20	1.0	U H	UJ	HT-UJ
VOCs	Bromodichloromethane	280-129277-1	RQLmw-007-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Bromodichloromethane	280-129277-1	RQLmw-008-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Bromodichloromethane	280-129277-1	RQLmw-009-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Bromoform	280-129019-1	DET-003-191001-GW	1.0	1.0	U J1 Q	UJ	MS-UJ,ProJudge-UJ
VOCs	Bromoform	280-129019-1	DET-003-191002-GW	1.0	1.0	U Q	UJ	ProJudge-UJ
VOCs	Bromoform	280-129019-1	DET-004-191001-GW	1.0	1.0	U Q	UJ	ProJudge-UJ
VOCs	Bromoform	280-129277-1	RQLmw-007-191001-GW	1.0	1.0	U H	UJ	HT-UJ
VOCs	Bromoform	280-129277-1	RQLmw-008-191001-GW	1.0	1.0	U H	UJ	HT-UJ
VOCs	Bromoform	280-129277-1	RQLmw-009-191001-GW	1.0	1.0	U H	UJ	HT-UJ
VOCs	Bromomethane	280-129277-1	RQLmw-007-191001-GW	0.80	2.0	U H Q	UJ	HT-UJ,ProJudge-UJ
VOCs	Bromomethane	280-129277-1	RQLmw-008-191001-GW	0.80	2.0	U H Q	UJ	HT-UJ,ProJudge-UJ
VOCs	Bromomethane	280-129277-1	RQLmw-009-191001-GW	0.80	2.0	U H Q	UJ	HT-UJ,ProJudge-UJ

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
VOCs	Bromobenzene	280-129277-1	RQLmw-007-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Bromobenzene	280-129277-1	RQLmw-008-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Bromobenzene	280-129277-1	RQLmw-009-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Carbon Disulfide	280-129277-1	RQLmw-007-191001-GW	0.80	2.0	U H	UJ	HT-UJ
VOCs	Carbon Disulfide	280-129277-1	RQLmw-008-191001-GW	0.80	2.0	U H	UJ	HT-UJ
VOCs	Carbon Disulfide	280-129277-1	RQLmw-009-191001-GW	0.80	2.0	U H	UJ	HT-UJ
VOCs	Carbon Tetrachloride	280-129277-1	RQLmw-007-191001-GW	0.40	2.0	U H	UJ	HT-UJ
VOCs	Carbon Tetrachloride	280-129277-1	RQLmw-008-191001-GW	0.40	2.0	U H	UJ	HT-UJ
VOCs	Carbon Tetrachloride	280-129277-1	RQLmw-009-191001-GW	0.40	2.0	U H	UJ	HT-UJ
VOCs	Chlorobenzene	280-129277-1	RQLmw-007-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Chlorobenzene	280-129277-1	RQLmw-008-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Chlorobenzene	280-129277-1	RQLmw-009-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Chloroethane	280-129019-1	DET-003-191001-GW	1.6	2.0	U Q M	UJ	ProJudge-UJ
VOCs	Chloroethane	280-129019-1	DET-003-191002-GW	1.6	2.0	U Q M	UJ	ProJudge-UJ
VOCs	Chloroethane	280-129019-1	DET-004-191001-GW	1.6	2.0	U Q M	UJ	ProJudge-UJ
VOCs	Chloroethane	280-129277-1	RQLmw-007-191001-GW	1.6	2.0	U H	UJ	HT-UJ
VOCs	Chloroethane	280-129277-1	RQLmw-008-191001-GW	1.6	2.0	U H	UJ	HT-UJ
VOCs	Chloroethane	280-129277-1	RQLmw-009-191001-GW	1.6	2.0	U H	UJ	HT-UJ
VOCs	Chloroform	280-129088-1	LL10mw-003-191001-GW	0.29	1.0	J	J	RepLimit-J
VOCs	Chloroform	280-129277-1	RQLmw-007-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Chloroform	280-129277-1	RQLmw-008-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Chloroform	280-129277-1	RQLmw-009-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Chloromethane	280-129277-1	RQLmw-007-191001-GW	0.80	2.0	U H	UJ	HT-UJ
VOCs	Chloromethane	280-129277-1	RQLmw-008-191001-GW	0.80	2.0	U H	UJ	HT-UJ
VOCs	Chloromethane	280-129277-1	RQLmw-009-191001-GW	0.80	2.0	U H	UJ	HT-UJ
VOCs	Cis-1,3-Dichloropropene	280-129277-1	RQLmw-007-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Cis-1,3-Dichloropropene	280-129277-1	RQLmw-008-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Cis-1,3-Dichloropropene	280-129277-1	RQLmw-009-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Dibromochloromethane	280-129277-1	RQLmw-007-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Dibromochloromethane	280-129277-1	RQLmw-008-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Dibromochloromethane	280-129277-1	RQLmw-009-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Ethylbenzene	280-129277-1	RQLmw-007-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Ethylbenzene	280-129277-1	RQLmw-008-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Ethylbenzene	280-129277-1	RQLmw-009-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Methylene Chloride	280-129277-1	RQLmw-007-191001-GW	2.0	5.0	U H	UJ	HT-UJ
VOCs	Methylene Chloride	280-129277-1	RQLmw-008-191001-GW	2.0	5.0	U H	UJ	HT-UJ
VOCs	Methylene Chloride	280-129277-1	RQLmw-009-191001-GW	2.0	5.0	U H	UJ	HT-UJ
VOCs	Styrene	280-129277-1	RQLmw-007-191001-GW	0.80	1.0	U H	UJ	HT-UJ

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
VOCs	Styrene	280-129277-1	RQLmw-008-191001-GW	0.80	1.0	U H	UJ	HT-UJ
VOCs	Styrene	280-129277-1	RQLmw-009-191001-GW	0.80	1.0	U H	UJ	HT-UJ
VOCs	Tetrachloroethene	280-129277-1	RQLmw-007-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Tetrachloroethene	280-129277-1	RQLmw-008-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Tetrachloroethene	280-129277-1	RQLmw-009-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Toluene	280-129277-1	RQLmw-007-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Toluene	280-129277-1	RQLmw-008-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Toluene	280-129277-1	RQLmw-009-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Trans-1,3-Dichloropropene	280-129277-1	RQLmw-007-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Trans-1,3-Dichloropropene	280-129277-1	RQLmw-008-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Trans-1,3-Dichloropropene	280-129277-1	RQLmw-009-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Trichloroethene	280-129277-1	RQLmw-007-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Trichloroethene	280-129277-1	RQLmw-008-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Trichloroethene	280-129277-1	RQLmw-009-191001-GW	0.40	1.0	U H	UJ	HT-UJ
VOCs	Vinyl Chloride	280-129277-1	RQLmw-007-191001-GW	0.20	1.5	U H	UJ	HT-UJ
VOCs	Vinyl Chloride	280-129277-1	RQLmw-008-191001-GW	0.20	1.5	U H	UJ	HT-UJ
VOCs	Vinyl Chloride	280-129277-1	RQLmw-009-191001-GW	0.20	1.5	U H	UJ	HT-UJ
VOCs	Xylenes (Total)	280-129277-1	RQLmw-007-191001-GW	0.80	1.0	U H	UJ	HT-UJ
VOCs	Xylenes (Total)	280-129277-1	RQLmw-008-191001-GW	0.80	1.0	U H	UJ	HT-UJ
VOCs	Xylenes (Total)	280-129277-1	RQLmw-009-191001-GW	0.80	1.0	U H	UJ	HT-UJ
Pesticides	Toxaphene	280-129019-1	DET-003-191001-GW	0.78	2.0	U	UJ	ProJudge-UJ
Pesticides	Toxaphene	280-129019-1	DET-003-191002-GW	0.76	1.9	U	UJ	ProJudge-UJ
Pesticides	Toxaphene	280-129019-1	DET-004-191001-GW	0.80	2.0	U	UJ	ProJudge-UJ
Pesticides	Toxaphene	280-129277-1	RQLmw-007-191001-GW	0.82	2.0	U Q	UJ	ProJudge-UJ
Pesticides	Toxaphene	280-129277-1	RQLmw-008-191001-GW	0.87	2.2	U	UJ	ProJudge-UJ
Pesticides	Toxaphene	280-129277-1	RQLmw-009-191001-GW	0.82	2.0	U	UJ	ProJudge-UJ
Cyanide	Cyanide, Total	280-129019-1	DET-003-191001-GW	0.0050	0.010	J	J	RepLimit-J
Cyanide	Cyanide, Total	280-129019-1	FWGmw-004-191001-GW	0.0095	0.010	J	J	RepLimit-J
Cyanide	Cyanide, Total	280-129277-1	RQLmw-016-191001-GW	0.0069	0.010	J	J	RepLimit-J
Anions	Nitrate as N	280-129088-1	FBQmw-171-191001-GW	0.30	0.50	J	J	RepLimit-J
Anions	Nitrate as N	280-129322-1	LL12mw-245-191001-GW	0.23	0.50	J M	J	RepLimit-J
Anions	Nitrate as N	280-129317-1	LL1mw-083-191001-GW	0.44	0.50	J	J	RepLimit-J
Anions	Nitrate as N	280-129317-1	LL1mw-084-191001-GW	0.47	0.50	J	J	RepLimit-J
Anions	Nitrite as N	280-129019-1	FBQmw-175-191001-GW	0.050	0.50	J	J	RepLimit-J
Anions	Nitrite as N	280-129277-1	RQLmw-011-191001-GW	0.10	0.50	U H	UJ	HT-UJ
Anions	Nitrite as N	280-129277-1	RQLmw-011-191002-GW	0.10	0.50	U H	UJ	HT-UJ
Anions	Nitrite as N	280-129277-1	RQLmw-012-191001-GW	0.10	0.50	U H	UJ	HT-UJ
Anions	Nitrite as N	280-129277-1	RQLmw-013-191001-GW	0.10	0.50	U H	UJ	HT-UJ

Table D.2.2-4. Detailed Listing of Qualified Results – October 2019 Sampling Event (continued)

Analysis Type	Chemical	Sample Delivery Group	Sample ID	Results	Det. Limit (LOQ)	Laboratory Qualifier	Validation Qualifier	Validation Code
Anions	Sulfate	280-129088-1	FBQmw-171-191001-GW	22	25	J D	J	RepLimit-J
Anions	Sulfate	280-129088-1	FBQmw-174-191001-GW	12	25	J D	J	RepLimit-J
Anions	Sulfate	280-129277-1	RQLmw-011-191001-GW	180	5.0	J1	J	MS-J
Anions	Sulfate	280-129277-1	RQLmw-011-191002-GW	170	5.0		J	MS-J
Anions	Sulfate	280-129277-1	RQLmw-013-191001-GW	170	5.0		J	MS-J
Anions	Sulfide	280-129019-1	FBQmw-175-191001-GW	0.80	4.0	J	J	RepLimit-J
Alkalinity	Alkalinity	280-129019-1	FBQmw-175-191001-GW	8.7	10	J	J	RepLimit-J

[a] Laboratory Qualifiers: J = estimated because result is between the method detection limit and the reporting limit, J1= Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria, U = not detected, H = Holding Time, M = Manually integrated compound, Q = One or more quality control failed.

[b] Validation Qualifiers: J = estimated, R = rejected, U = not detected, and UJ = not detected and reporting limit estimated.

[c] Validation Reason Codes: HT = holding time, LCS = laboratory control sample, MB = method blank, MS = matrix spike, ProJudge = professional judgment, RptLimit = reporting limit, and Surr = surrogate recovery.

ID = Identifier.
LOQ = Limit of quantitation.
PAH = Polycyclic aromatic hydrocarbon.
PETN = Pentaerythritol tetranitrate.
SVOC = Semi-volatile organic compound.
VOC = Volatile organic compound.

Table D.2.2-5. Results for Analytes Detected in Field Blanks or Trip Blanks – October 2019 Sampling Event

Sample ID	Analysis Type	Analyte Name	Result
FWGTB-191009-TB	VOCs	METHYLENE CHLORIDE	2 J
FWGTB-191011-TB	VOCs	ACETONE	2.2 J
FWGTB-191011-TB	VOCs	METHYLENE CHLORIDE	2.1 J
FWGTB-191012-TB	VOCs	METHYLENE CHLORIDE	2 J
FWGTB-191013-TB	VOCs	METHYLENE CHLORIDE	2.3 J

Explosives, propellants, pesticides, and polychlorinated biphenyls were analyzed for and not detected.
Sample Type: TB = Trip blank.
Data Qualifiers: J = estimated
ID = Identifier.
VOC Volatile organic compound.

Table D.2.2-6. Field Duplicate Pair Comparisons for Analytes Detected in Samples – October 2019 Sampling Event

Sample ID	Chemical	Regular Result	Duplicate Result	RPD % or (Absolute Difference)[a]	Test[b]
BKGmw-021-191001-GW/ BKGmw-021-191002-GW	BARIUM	0.036 J	0.031 J	15%	RPD
BKGmw-021-191001-GW/ BKGmw-021-191002-GW	BERYLLIUM	0.0003 UJ	0.00011 J	(0.19)	D
BKGmw-021-191001-GW/ BKGmw-021-191002-GW	CALCIUM	78 J	75	4%	RPD
BKGmw-021-191001-GW/ BKGmw-021-191002-GW	MAGNESIUM	35 J	34	3%	RPD
BKGmw-021-191001-GW/ BKGmw-021-191002-GW	MANGANESE	0.00095 UJ	0.00058 J	(0.09)	D
BKGmw-021-191001-GW/ BKGmw-021-191002-GW	POTASSIUM	0.94 J	0.92 J	(0.01)	D
BKGmw-021-191001-GW/ BKGmw-021-191002-GW	SELENIUM	0.00041 J	0.00054 J	(0.03)	D
BKGmw-021-191001-GW/ BKGmw-021-191002-GW	SODIUM	8.2 J	7.9 J	(0.06)	D
BKGmw-021-191001-GW/ BKGmw-021-191002-GW	THALLIUM	0.0002 UJ	0.000099 J	(0.10)	D
DA2mw-115-191001-GW/ DA2mw-115-191002-GW	ANTIMONY	0.001 U	0.00044 J	(0.09)	D
DA2mw-115-191001-GW/ DA2mw-115-191002-GW	ARSENIC	0.0013 J	0.0015 J	(0.04)	D
DA2mw-115-191001-GW/ DA2mw-115-191002-GW	BARIUM	0.02 J	0.019 J	5%	RPD
DA2mw-115-191001-GW/ DA2mw-115-191002-GW	BERYLLIUM	0.0003 U	0.00013 J	(0.17)	D
DA2mw-115-191001-GW/ DA2mw-115-191002-GW	CALCIUM	94	100	6%	RPD
DA2mw-115-191001-GW/ DA2mw-115-191002-GW	IRON	0.75 J	0.81 J	8%	RPD
DA2mw-115-191001-GW/ DA2mw-115-191002-GW	MAGNESIUM	26	28	7%	RPD
DA2mw-115-191001-GW/ DA2mw-115-191002-GW	MANGANESE	0.089	0.092	3%	RPD
DA2mw-115-191001-GW/ DA2mw-115-191002-GW	POTASSIUM	3.1	3.4	(0.10)	D
DA2mw-115-191001-GW/ DA2mw-115-191002-GW	SODIUM	10	11	(0.20)	D
DET-003-191001-GW/ DET-003-191002-GW	CYANIDE, TOTAL	0.005 J	0.01 U	(0.50)	D
FWGmw-021-191001-GW/ FWGmw-021-191002-GW	ALUMINUM	0.019 J	0.029 J	(0.03)	D
FWGmw-021-191001-GW/ FWGmw-021-191002-GW	ANTIMONY	0.001 UJ	0.0006 J	(0.07)	D
FWGmw-021-191001-GW/ FWGmw-021-191002-GW	ARSENIC	0.00075 J	0.00069 J	(0.01)	D
FWGmw-021-191001-GW/ FWGmw-021-191002-GW	BARIUM	0.013 J	0.014 J	(0.33)	D
FWGmw-021-191001-GW/ FWGmw-021-191002-GW	CALCIUM	18	19	5%	RPD
FWGmw-021-191001-GW/ FWGmw-021-191002-GW	COBALT	0.0025 J	0.0025 J	(0.00)	D
FWGmw-021-191001-GW/ FWGmw-021-191002-GW	IRON	2.7	2.8	4%	RPD
FWGmw-021-191001-GW/ FWGmw-021-191002-GW	MAGNESIUM	6.8	6.9	2%	RPD
FWGmw-021-191001-GW/ FWGmw-021-191002-GW	MANGANESE	0.36 J	0.39 J	8%	RPD
FWGmw-021-191001-GW/ FWGmw-021-191002-GW	NICKEL	0.0059 J	0.0062 J	(0.10)	D
FWGmw-021-191001-GW/ FWGmw-021-191002-GW	POTASSIUM	1.4 J	1.5 J	(0.03)	D
FWGmw-021-191001-GW/ FWGmw-021-191002-GW	SODIUM	3.5 J	3.6 J	(0.02)	D

Table D.2.2-6. Field Duplicate Pair Comparisons for Analytes Detected in Samples – October 2019 Sampling Event (continued)

Sample ID	Chemical	Regular Result	Duplicate Result	RPD % or (Absolute Difference)[a]	Test[b]
FWGmw-021-191001-GW/ FWGmw-021-191002-GW	2-AMINO-4,6-DINITROTOLUENE	0.00012 U	0.00022	(0.49)	D
LL3mw-246-191001-GW/ LL3mw-246-191002-GW	ANTIMONY	0.00042 J	0.001 UJ	(0.10)	D
LL3mw-246-191001-GW/ LL3mw-246-191002-GW	BARIUM	0.014 J	0.013 J	(0.33)	D
LL3mw-246-191001-GW/ LL3mw-246-191002-GW	CALCIUM	22	22	0%	RPD
LL3mw-246-191001-GW/ LL3mw-246-191002-GW	CHROMIUM	0.00051 J	0.0018 U	(0.13)	D
LL3mw-246-191001-GW/ LL3mw-246-191002-GW	MAGNESIUM	7.4	7.5	1%	RPD
LL3mw-246-191001-GW/ LL3mw-246-191002-GW	MANGANESE	0.00051 J	0.00043 J	(0.02)	D
LL3mw-246-191001-GW/ LL3mw-246-191002-GW	NICKEL	0.0014 J	0.0012 J	(0.07)	D
LL3mw-246-191001-GW/ LL3mw-246-191002-GW	POTASSIUM	1.3 J	1.4 J	(0.03)	D
LL3mw-246-191001-GW/ LL3mw-246-191002-GW	SODIUM	3 J	3 J	(0.00)	D
LL3mw-246-191001-GW/ LL3mw-246-191002-GW	2-AMINO-4,6-DINITROTOLUENE	0.00031 J	0.00012 U	(0.95)	D
LL3mw-246-191001-GW/ LL3mw-246-191002-GW	4-AMINO-2,6-DINITROTOLUENE	0.00026	0.00022 J	(0.20)	D
NTAmw-119-191001-GW/ NTAmw-119-191002-GW	4-NITROTOLUENE	0.00031 J	0.00063 J	(0.34)	D
RQLmw-007-191001-GW/ RQLmw-007-191002-GW	ARSENIC	0.0072	0.007	(0.04)	D
RQLmw-007-191001-GW/ RQLmw-007-191002-GW	BARIUM	0.031	0.032	3%	RPD
RQLmw-007-191001-GW/ RQLmw-007-191002-GW	CALCIUM	22 J	92 J	120%	RPD*
RQLmw-007-191001-GW/ RQLmw-007-191002-GW	COBALT	0.012	0.013	8%	RPD
RQLmw-007-191001-GW/ RQLmw-007-191002-GW	COPPER	0.00061 J	0.00072 J	(0.06)	D
RQLmw-007-191001-GW/ RQLmw-007-191002-GW	IRON	2.8	2.8	0%	RPD
RQLmw-007-191001-GW/ RQLmw-007-191002-GW	LEAD	0.0002 J	0.0002 J	(0.00)	D
RQLmw-007-191001-GW/ RQLmw-007-191002-GW	MAGNESIUM	27	49	58%	RPD*
RQLmw-007-191001-GW/ RQLmw-007-191002-GW	MANGANESE	1.7 J	1.7 J	0%	RPD
RQLmw-007-191001-GW/ RQLmw-007-191002-GW	NICKEL	0.039	0.039	0%	RPD
RQLmw-007-191001-GW/ RQLmw-007-191002-GW	POTASSIUM	3.1	4.7	(0.53)	D
RQLmw-007-191001-GW/ RQLmw-007-191002-GW	SODIUM	3.6 J	3.4 J	(0.04)	D
RQLmw-011-191001-GW/ RQLmw-011-191002-GW	SULFATE	180 J	170 J	6%	RPD
RQLmw-011-191001-GW/ RQLmw-011-191002-GW	ALKALINITY	22	27	(0.50)	D

[a] RPD is calculated as 100x |R-D|/(R-D)/2, where R is the concentration of the regular sample and D is the concentration of the duplicate. The absolute difference is calculated as |R-D|/L, where L is the average reporting limit of the two samples. Values followed by a "%" are RPD values. Values in parentheses are absolute difference values.

[b] The test used to evaluate the duplicate comparison is the RPD if both sample results were more than five times the reporting limit or D if any result was less than five times the reporting limit.

*RPD or D outside criteria.

Data Qualifiers: J = estimated, U = not detected, and UJ = not detected and reporting limit estimated.

D = Absolute difference.

ID = Identifier.

RDX = Hexahydro-1,3,5-Trinitro-1,3,5-Triazine.

RPD = Relative percent difference.

Table D.2.2-7. Container Requirements for Groundwater Samples

Analyte Group	Container	Minimum Sample Size	Preservative	Holding Time
Volatile Organic Compounds	Three 40-mL glass vial	40 mL	HCl to pH <2 Cool ≤ 6°C	14 days
Semi-volatile Organic Compounds	Two 1-L amber glass	1 L	Cool ≤6°C	7 days (extraction) 40 days (analysis)
Polycyclic Aromatic Hydrocarbon Compounds	Two 1-L amber glass	1 L	Cool ≤6°C	7 days (extraction) 40 days (analysis)
Pesticide Compounds	Two 1-L amber glass	1 L	Cool ≤6°C	7 days (extraction) 40 days (analysis)
Polychlorinated Biphenyls	Two 1-L amber glass	1 L	Cool ≤6°C	1 year (extraction) 40 days (analysis)
Explosive Compounds	Two 500-mL amber glass	500 mL	Cool ≤6°C	7 days (extraction) 40 days (analysis)
Nitroguanidine	Two 1-L amber glass	1 L	Cool ≤6°C	7 days (extraction) 40 days (analysis)
Nitrocellulose	500-mL amber glass	250 mL	H_2SO_4, pH<2 Cool ≤ 6°C	28 days
Perchlorate	125-mL HDPE	10 mL	Cool ≤ 6°C	28 days
Metals (TAL)+Phosphorus+Mercury	500-mL HDPE poly	100 mL	HNO_3 to pH <2 Cool ≤ 6°C	180 days; Hg at 28 days
Sulfide	500-mL HDPE	250 mL	NaOH/Zn Acetate, pH >9; Cool ≤ 6°C	7 days
Anions	50-mL HDPE	15 mL	Cool ≤ 6°C	48 hours (nitrate, nitrite) 28 days (sulfate)
Alkalinity	250-mL HDPE	250 mL	Cool ≤ 6°C	14 days
Total Cyanide	250-mL HDPE	100 mL	NaOH, Cool ≤ 6°C	14 days
Hexavalent Chromium	125-mL HDPE	50 mL	Cool ≤ 6°C	24 hours

HCl = Hydrochloric acid.
HDPE = High density polyethylene.
Hg = Mercury.
HNO_3 = Nitric acid.
hr = Hour.
L = Liter.
mL = Milliliter.
NaOH = Sodium hydroxide.
TAL = Target analyte list.
Zn = Zinc.