National Aeronautics and
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P.O. Box 20
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April 29, 2022

Reply to Attn of: RE-22-055

Mr. Rick Shean, Bureau Chief
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

Subject: NASA WSTF Periodic Monitoring Report – First Quarter 2022

Enclosed is the NASA WSTF Periodic Monitoring Report (PMR) for the first quarter of 2022. This report provides detailed information about routine groundwater, Plume Front Treatment System (PFTS), and Mid-plume Interception and Treatment System (MPITS) monitoring performed between November 1, 2021 and January 31, 2022. Analytical data processed through the WSTF data management system, operational and performance data for both treatment systems, and site-wide potentiometric surface data are also provided for the same reporting period. Activity updates not associated with or reliant upon analytical data are reported for the previous calendar quarter.

This submittal includes an Executive Summary of the PMR that provides important events and observations as Enclosure 1, suggestions for installing and using WSTF PMR Databases as Enclosure 2, a bound paper copy of the main body of the report (pages i-78) as Enclosure 3, a DVD-ROM containing the entire report, the accompanying historical analytical databases, an Excel spreadsheet comprising groundwater data for the last four calendar quarters (February 2021 to January 2022) as Enclosure 4, and a CD-ROM containing analytical lab reports for the reporting period as Enclosure 5.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions or comments concerning this submittal, please contact Antonette Doherty of my staff at 575-202-5406.

AMANDA SKARSGARD
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For: Timothy J. Davis
Chief, Environmental Office

5 Enclosures

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Executive Summary

Groundwater monitoring is performed at the National Aeronautics and Space Administration (NASA) White Sands Test Facility (WSTF) to meet regulatory requirements, monitor the effectiveness of corrective actions, develop additional corrective actions, and provide environmental data for a variety of investigations. This Periodic Monitoring Report (PMR) includes the following:

- Purpose, scope, and discussion of the groundwater monitoring data contained in this report.
- Discussion of applicable cleanup levels and comparisons of those cleanup levels to current groundwater contaminant concentrations.
- Detailed information related to the operation, maintenance, and status of the Plume Front Treatment System (PFTS) and the Mid-plume Interception and Treatment System (MPITS), NASA's presumptive remedy interim measures corrective actions for groundwater.
- Information related to the development and implementation of source area investigations and, where applicable, related corrective actions.
- Evaluations of groundwater and treatment system monitoring results and chemical analytical data as it relates to the effectiveness of groundwater remediation.
- Conclusions and recommendations based upon groundwater and remediation system monitoring analytical data and the subsequent evaluations and interpretations of those data presented in this report.

Analytical data included in this report correspond to groundwater monitoring wells, PFTS, and MPITS samples collected between November 1, 2020 and January 31, 2021. The data were processed through the WSTF data management system during the first calendar quarter of 2021.

A variety of data elements including PFTS and MPITS operational and performance data, potentiometric surface maps, and plume isoconcentration maps are used to evaluate the effects of the PFTS and MPITS on the WSTF groundwater contaminant plume. An evaluation of the PFTS data elements indicates that the PFTS is currently achieving plume capture and contaminant extraction in the Plume Front area. Data elements related to MPITS operation are presented and contaminant mass removal for both systems is included in this report.

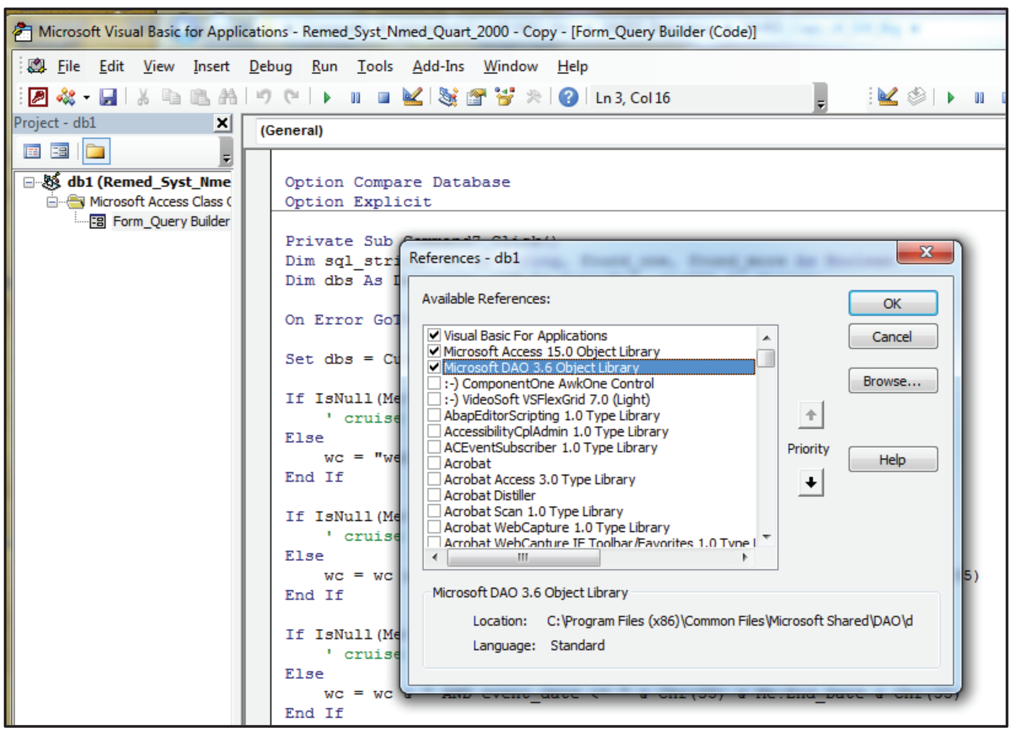
NASA's groundwater monitoring objectives are discussed in more detail in the applicable sections of this report. It is recommended that groundwater monitoring continue in accordance with the Groundwater Monitoring Plan (NASA, 2020f). NASA also recommends that groundwater corrective action operations at the PFTS and MPITS continue as scheduled. Further, NASA recommends that source area investigations continue in accordance with NMED-approved schedules.

Suggestions for Installing and Using WSTF PMR Databases

1. Ensure Microsoft Access 2013 is installed.
2. Ensure the following Microsoft libraries are installed:

    - Visual Basic for Applications
    - Microsoft Access 15.0 Object Library
    - Microsoft DAO 3.6 Object Library

    To verify the presence of these libraries, choose any table, click "Database Tools" on the menu bar, then click the "Visual Basic" button. A new window will open (see example below). Click "Tools" on the menu bar, then click "References". Another window will open (see example below), showing the libraries available. Ensure the boxes are checked for the three required libraries.



3. Copy the database files from the DVD to your hard drive. This will improve the performance of databases.
4. After running a query, you can export the data to Excel by selecting *External Data* on the menu bar, then click the *Export to Excel* button.

National Aeronautics and Space Administration

NASA WSTF Periodic Monitoring Report for First Quarter 2022

NM8800019434

NASA WSTF Periodic Monitoring Report for First Quarter 2022

Reporting Period: November 1, 2021 through January 31, 2022

Report Deadline: April 29, 2022

NM8800019434

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

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For: Timothy J. Davis
Chief, NASA Environmental Office

Date

National Aeronautics and Space Administration

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Executive Summary

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Analytical data included in this report correspond to groundwater monitoring wells, PFTS, and MPITS samples collected between November 1, 2021 and January 31, 2022. The data were processed through the WSTF data management system during the first calendar quarter of 2022.

A variety of data elements including PFTS and MPITS operational and performance data, potentiometric surface maps, and plume isoconcentration maps are used to evaluate the effects of the PFTS and MPITS on the WSTF groundwater contaminant plume. An evaluation of the PFTS data elements indicates that the PFTS is currently achieving plume capture and contaminant extraction in the Plume Front area. Data elements related to MPITS operation are presented and contaminant mass removal for both systems is included in this report.

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List of Acronyms and Abbreviations

µg/L	Micrograms per liter
AOC	Area of concern
bgs	Below ground surface
BLM	Bureau of Land Management
COC	Contaminant of concern
CoC	Chain-of-Custody
DP	Discharge Plan
EPA	Environmental Protection Agency
FLUTe	Flexible Liner Underground Technologies, LLC
Freon 11	Trichlorofluoromethane
ft	Foot/feet
g	Gram
GMP	Groundwater Monitoring Plan
gpm	Gallons per minute
gpm/ft	Gallons per minute per foot
HIS	Historical Information Summary
HWTL	Hazardous Waste Transmission Lines
IDW	Investigation-Derived Waste
IWP	Investigation Work Plan
JDMB	Jornada del Muerto Basin
JER	Jornada Experimental Range
kg	Kilogram
L	Liter
MDL	Method detection limit
MPCA	Mid-plume Constriction Area
MPE	Mid-plume Extraction
MPITS	Mid-plume Interception and Treatment System
NASA	National Aeronautics and Space Administration
ND	Not detected
NDMA	N-nitrosodimethylamine
ng/L	Nanograms per liter
NMED	New Mexico Environment Department
NMED HWB	New Mexico Environment Department Hazardous Waste Bureau
PCE	Tetrachloroethene
PFE	Plume Front Extraction
PFI	Plume Front Injection
PFTS	Plume Front Treatment System
PMR	Periodic Monitoring Report
QA	Quality Assurance
RSMP	Remediation System Monitoring Plan
scfm	Standard cubic feet per minute
STGT	Second TDRSS Ground Terminal
SWMU	Solid Waste Management Unit
T-C	Time-concentration
TCE	Trichloroethene
TDRSS	Tracking and Data Relay Satellite System
UV	Ultraviolet
VOC	Volatile Organic Compound

WBFZ	Western Boundary Fault Zone
WSTF	White Sands Test Facility

1.0 Introduction

National Aeronautics and Space Administration (NASA) White Sands Test Facility (WSTF) is located at 12600 NASA Road near Las Cruces, New Mexico. WSTF (U.S. Environmental Protection Agency [EPA] and New Mexico Environment Department [NMED] Facility Identification Number NM8800019434) currently operates as a field test facility under the NASA Lyndon B. Johnson Space Center in Houston, Texas. Figure 1.1 is a map showing the location of WSTF in southern Doña Ana County.

The facility provides testing services to NASA for United States space programs and support for the Department of Defense, Department of Energy, private industry, and foreign government agencies. The primary WSTF mission is to develop, qualify, and test the limits of spacecraft propulsion systems and subsystems. The installation also operates several laboratory facilities that conduct simulated use tests for space station materials, as well as compatibility testing.

WSTF historical operations resulted in a groundwater contaminant plume that requires extensive investigation activities and associated corrective actions. NASA developed and implemented a strategy for remediating contaminated WSTF groundwater in 1996, based on an analysis of potential risk to human health and the environmental and hydrogeological characteristics of the site. This strategy involves a sequential three-phase approach: 1) to stabilize the leading edge of the plume in the alluvial aquifer at the Plume Front area through operation of the Plume Front Treatment System (PFTS); 2) to intercept a high-concentration portion of the plume within fractured bedrock in the Mid-plume area through operation of the Mid-plume Interception and Treatment System (MPITS); and 3) to investigate contaminant source areas and remediate, as appropriate, any remaining sources of contamination identified during ongoing investigations.

There are currently 215 active groundwater monitoring locations (treatment system sample ports, extraction wells, conventional wells, and multiport well zones) in use at WSTF. Figure 1.2 provides a map of the facility and shows the locations of groundwater monitoring wells and components of the PFTS and the MPITS. Routine groundwater monitoring is performed in accordance with the NMED Hazardous Waste Permit (Permit; NMED, 2009, p68), the Groundwater Monitoring Plan (GMP; NASA, 2021a), and the Remediation System Monitoring Plan (RSMP; NASA, 2021d).

This report provides details of groundwater (routine and related to corrective actions), PFTS, and MPITS samples processed through the WSTF data management system during the first quarter of 2022. Between November 1, 2021 and January 31, 2021, groundwater samples were collected at 113 groundwater monitoring wells or zones (114 sample events), six PFTS sampling locations (10 sample events), and six MPITS sampling locations (10 sample events). Specific monitoring activities for routine groundwater sampling are discussed in Section 4.0. The individual sampling activity at each monitoring well, well zone, or other sampling point is identified as a discrete, sampling event (by location and sampling date). This report includes and discusses these sampling events.

The PFTS was operational on 82 of 92 days during the reporting period at an average flow rate of 780 gallons per minute (gpm) while running. Approximately 234 acre-feet (ft) of groundwater were treated at the PFTS during this timeframe. Specific information related to operation, maintenance, and monitoring of the PFTS is included in Section 5.1 of this report. The MPITS was operational on 88 of 92 days during the reporting period, treating approximately 3.22 acre-ft of groundwater including investigation-derived waste (IDW). Specific information on MPITS operation, maintenance, monitoring, and related activities is provided in Section 5.2.

2.0 Scope of Activities

Groundwater and remediation systems sampling event analytical results and remediation systems operational data are provided for the reporting period. Updates for activities that are not associated with or reliant upon groundwater analytical data are provided for the calendar quarter.

NASA routinely collects groundwater and treatment system samples for the analysis of volatile organic compounds (VOC), N-nitrosodimethylamine (NDMA), and several inorganic compounds. The GMP (NASA, 2021a) identifies the specific samples that are to be collected at each groundwater monitoring well. The RSMP (NASA, 2021d) provides sampling requirements for the PFTS and the MPITS.

Groundwater quality data, collectively referred to as indicator parameters, are collected during each sampling event. Indicator parameters may include temperature, pH, conductivity, turbidity, and (at wells sampled using low-flow procedures) oxidation-reduction potential and dissolved oxygen. Depth to groundwater (DTW) is also measured at each conventional monitoring well during the sampling event. Indicator parameters associated with sampling events during the reporting period are included in Appendix A as follows: groundwater monitoring wells (Section 4.2.2) – Appendix A.1; PFTS (Section 5.1.4.2) – Appendix A.3; and MPITS (Section 5.2.1.2) – Appendix A.5.

Chemical analytical data (detections only) for sampling events during the reporting period are discussed in the following sections: Groundwater monitoring wells (Section 4.3) – Appendix A.2; PFTS (Section 5.1.5) – Appendix A.4; and MPITS (Section 5.2.5) – Appendix A.6.

Field data and the recording of other specific sampling-related details for each sampling event are discussed in Sections 4.0, 5.1, and 5.2 of this report. Logbook entries and internal chain-of-custody (CoC) forms from sampling events included in the report are provided in Appendix B. The external CoC forms associated with the sampling events can be found in the Lab Reports included on the enclosed DVD. Appendix C provides internal monthly WSTF Quality Assurance (QA) Reports for the reporting period. Appendix D includes the comparison of analytical results from groundwater monitoring wells (Appendix D.1), the PFTS (Appendix D.2), and the MPITS (Appendix D.3) with cleanup levels. Only results that exceed cleanup levels are included in these appendices.

During the course of groundwater, PFTS, MPITS, and other related sampling, IDW such as decontamination water and purged groundwater is produced. This IDW is treated by the MPITS as specified in the GMP (NASA, 2021a).

3.0 Cleanup Levels

Cleanup levels for all hazardous constituents detected in WSTF groundwater are summarized in the GMP update (NASA, 2021a) for 2021, submitted to NMED on April 19, 2021. That document outlines the process for developing cleanup levels as specified in Attachment 15 of the Permit (NMED, 2009, p24).

3.1 Discharge Standards for PFTS and MPITS Effluent

The Ground Water Discharge Permit Renewal and Modification, DP-1255 (NMED, 2017) specifies that "Remediated groundwater discharged from the two remediation systems shall not exceed the concentrations in the most recent version of NMED's *Risk Assessment Guidance for Investigation and Remediation Table A-1 Soil Screening Levels for Tap Water…*" for NDMA, trichloroethene (TCE), tetrachloroethene (PCE), and chloroform (NMED, 2019). Table 3.1 includes the updated DP-1255 discharge standards for the four constituents. Please note that previous versions of the quarterly periodic monitoring reports (PMRs) included constituents that are not listed in the current version of DP-1255 (NMED, 2017). This PMR only lists the four constituents required by the current DP-1255 (NDMA, TCE, PCE, and chloroform).

3.2 New Detections

The GMP requires that NASA report new detections of hazardous constituents in groundwater (NASA, 2021b). Each quarter, NASA adds several new constituents to the list of analytes detected at certain WSTF groundwater wells. As a result, a number of new detections have been reported in sampling results at those wells. Most of the new detections are consistent with regional groundwater chemistry and require no action beyond continued monitoring and reporting. New detections, including non-hazardous constituents, reported in sampling events during the reporting period are provided in Table 3.2.

The GMP also requires detection monitoring at specific compliance points downgradient of the closures and operational areas of the facility. The wells specified are BLM-3-182 (for the 100 and 600 Areas), 200-B-240 and 200-SG-1 (for the 200 Area), 300-A-120 (for the 300 Area), and 400-C-118 (for the 400 Area). Detection monitoring was performed at well BLM-3-182 during the reporting period.

In addition to the inorganic constituents that are characteristic of regional groundwater, NASA observed several new detections that require further evaluation. The hazardous constituents in Table 3.3 have not been previously detected at the wells listed in the table. As specified in Section 3.3 of the GMP, NASA has scheduled resampling of these wells to confirm these detections (NASA, 2021a). Table 3.4 lists the resampling date and the resolution of some of the unconfirmed detections reported in previous PMRs. The wells were resampled as required and the new detections were resolved as indicated in the table.

4.0 Routine Groundwater Monitoring

A variety of groundwater monitoring data are collected from monitoring wells and the groundwater treatment systems during routine WSTF operations. These data consist of measured groundwater elevations, calculated groundwater piezometric elevations, the graphical representations of groundwater elevation generated from these data, and groundwater indicator parameters (field water quality measurements).

Data presented in this section, including groundwater elevations and indicator parameters, were collected from various groundwater monitoring locations during the reporting period. Groundwater chemical analytical data also from this timeframe, while not considered monitoring data in some contexts, are also presented in this section.

4.1 Current Status and Monitoring Performed

NASA continues to monitor groundwater to maintain a complete understanding of plume characteristics, contaminant migration, and the overall impact of ongoing corrective action efforts. This section discusses the results of routine groundwater samples collected from groundwater monitoring wells or zones during the reporting period and processed using the WSTF data management system during the first quarter of 2022. Table 4.1 provides a list of the monitoring wells, PFTS and MPITS sampling locations, and their associated sampling events for which analytical data are presented in this report.

4.2 Groundwater Monitoring Results

This section provides the results of groundwater monitoring, including groundwater elevations and groundwater quality measurements.

4.2.1 Groundwater Elevations

Groundwater elevations at WSTF's conventional monitoring wells, piezometers, and exploration wells are determined by manually measuring the water level. Piezometric elevations at Westbay®[1] multiport wells are calculated based on the groundwater formation pressures measured at target monitoring zones. Piezometric elevations for Flexible Liner Underground Technologies, LLC (FLUTe™) multiport monitoring wells are calculated from dedicated pressure transducer measurements at specified monitoring zones. DTW or formation pressures are measured quarterly and during each sampling event.

Formation pressures at multiport wells in the Plume Front and Mid-plume areas are typically measured during the same week as quarterly DTW measurements at conventional wells. Groundwater elevations from Westbay zones are calculated from pressure data typically collected at the uppermost sampling ports (proximal to the water table) using Westbay pressure measurement equipment. Potentiometric data from multiport wells in other areas of the site are also available. Groundwater elevations are subject to quality review prior to their use in data presentations. Anomalous or erroneous values are flagged as unusable and excluded from the dataset used to generate graphical presentations of groundwater elevation.

The groundwater surface depicted in Figure 4.1 was developed by hand-contouring the most recent water level dataset that corresponds to the analytical reporting period. These data were collected from November 24 to 29, 2021 and are provided in Table 4.2. In Figure 4.1 Groundwater elevation contours depict a general westward groundwater flow across the facility. Subtle variations in groundwater elevation may occur within discrete transmissive flow paths at varying depths below ground surface (bgs) in the fractured bedrock aquifer located east of the Western Boundary Fault Zone (WBFZ). Due to the scale, these local elevation variations may not be reflected in the figure. The prominent transition in the hydraulic gradient from the WSTF pediment area east of the WBFZ (0.05 ft/ft) to the relatively flat southern Jornada del Muerto Basin (JDMB) of the WSTF Plume Front area (0.0002 ft/ft) is also evident in the figure. No contours are depicted in the Plume Front area because the range of observed water elevations in that area is less than the contour interval (40 ft). Further discussion of Plume Front and Mid-plume groundwater elevations is provided in Section 6.3.1 of this report.

4.2.2 Groundwater Quality Measurements (Indicator Parameters)

Groundwater indicator parameters are obtained from field quality measurements performed during each sampling event. The groundwater indicator parameters associated with the groundwater monitoring well sampling events included in this report (see Table 4.1) are provided in Appendix A.1.

Indicator parameters and other specific sampling-related details associated with each monitor well sampling event are recorded by technicians in the field sampling record. Appendix B provides the field sampling records and field/internal CoC forms for each sampling event performed during the reporting period. The WSTF external CoC forms for groundwater samples collected during these sampling events are provided in the Lab Reports on the enclosed DVD.

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[1] Westbay is a registered trademark of Nova Metrix Ground Monitoring (Canada) Ltd.

4.3 Groundwater Chemical Analytical Results

Table 4.1 lists groundwater monitoring wells sampled during the reporting period. Groundwater chemical analytical data from these wells were processed through the WSTF data management system during the first calendar quarter of 2022 and detections are included in Appendix A.2.

NASA has also included a copy of the historical analytical database with this report. The database is provided to facilitate NMED's review of groundwater analytical data provided in this report and to allow for the historical comparisons required by the Permit (NMED, 2009; page 85). NASA's historical database is an operational tool developed, maintained, and used by NASA environmental staff to manage and archive environmental data. It is not intended to serve specifically as a regulatory reporting mechanism. NASA reserves the right to implement changes to the database that are deemed appropriate to meet the WSTF internal environmental data management requirements. Any changes will not affect the integrity of historical analytical data. The amount of historical data has exceeded the capacity of a Microsoft Access®[2] database, and as a result, all the historical data cannot be contained in the database included with this report for use by NMED. Historical data prior to 2000 was removed from the reporting database to facilitate database operation and ease of use by NMED. Pre-2000 historical data of significance in decision-making is appropriately reflected in the time-concentration (T-C) plots presented in Appendix E.

A summary of internal QA methods applied to groundwater chemical analytical data is provided in Appendix C. The QA reports included in Appendix C apply to analytical results from sampling events performed during the reporting period. All laboratory analytical reports corresponding to the analytical data presented in this report are also provided electronically (.pdf format) with this submittal.

The most recent chemical analytical data, which includes data processed in the first quarter of 2022, were used to develop manually contoured plume isoconcentration maps for NDMA (Figure 4.2) and TCE (Figure 4.3). The lowest iso-concentration contour on each map corresponds to the required cleanup level for that analyte.

5.0 Treatment System Monitoring

This section provides information related to NASA's environmental remediation systems at WSTF. It provides the current operational status of the treatment systems and includes a discussion of the capabilities and performance of the treatment systems, pertinent monitoring data from the systems, and applicable chemical analytical data associated with remediation system monitoring.

5.1 Plume Front Treatment System

The PFTS is a pump and treat groundwater remediation system that utilizes air stripping and ultraviolet (UV) photolysis to remove VOC and nitrosamines from contaminated groundwater. The system is an interim measures presumptive remedy located at the leading edge of the WSTF contaminant plume. It was implemented during the first phase of NASA's remediation strategy to stabilize plume migration. This section provides information related to PFTS operation, performance, and monitoring during the reporting period. Chemical analytical data from PFTS sampling events that occurred during the reporting period are also provided.

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[2] Microsoft Access is a registered trademark of the Microsoft Corporation.

5.1.1 PFTS Operational Status

The operational status of the PFTS is summarized in Table 5.1 and Table 5.2.

5.1.2 PFTS Performance

This section summarizes the performance of the air strippers and UV reactor for the reporting period. Additional operational status and other details may also be presented or discussed. A variety of parameters are monitored regularly to ensure that the PFTS is properly functioning and is adequately treating the WSTF contaminants of concern (COC).

Operational records indicate that the PFTS performed favorably during the reporting period. System availability statistics, which exclude scheduled shutdowns for planned maintenance, indicate that the system was operational for 100% of January, 90.44% of February, and 97.2% of March 2022. Notable events during the reporting period included the following:

- The submersible motor on extraction well PFE-1 failed on January 1, 2022 and the well remained offline throughout the reporting period. PFE-3, which experienced a motor failure in December 2021, also remained offline for the reporting period. As a result, total system flow was reduced relative to the preceding quarter. The selection of replacement motors and pumps for wells PFE-1 and PFE-3 is pending the completion of groundwater flow modeling and pipe flow analyses being conducted to evaluate optimum flow rates needed at the PFTS extraction wells to maintain hydraulic capture of the plume front and maximize contaminant mass removal.
- NASA conducted a planned shutdown of the system on January 20, 2022 upgrade the electric power line feeding wells PFE-2 and PFE-7.
- NASA completed scheduled testing on February 15, 2022 to verify the accuracy of the flow meter used to monitor discharges to the ModuTank.
- NASA investigated leak detection alarms on February 4 and March 29, 2022 which resulted from condensate build up in the extraction well network dual-wall piping.
- NASA reactivated the PFTS following power outages on February 16 and March 6, 2022.

5.1.2.1 Air Stripper Capabilities and Performance

The PFTS consists, in part, of two multi-sieve tray air strippers that operate in a parallel configuration to treat the WSTF VOC of concern. A single air stripper can be used when the system is operating at 650 gpm or less. Both air strippers are used when the system flow rate is greater than 650 gpm. The air strippers must maintain an air flow rate between 3,600 standard cubic feet per minute (scfm) and 4,680 scfm to ensure treatment of VOC. Table 5.3 provides the VOC performance data for the air strippers during the reporting period. Chemical analytical data provided in this report demonstrate that DP-1255 discharge limits and Permit-required cleanup levels were achieved throughout the reporting period.

5.1.2.2 UV Reactor Capabilities and Performance

The PFTS includes a 12-lamp Rayox®[3] UV reactor that uses UV photolysis to break down nitrosamines (specifically NDMA) in groundwater. The UV reactor is designed to operate at a minimum hydraulic flow rate of 200 gpm and a maximum flow rate of 3,000 gpm. Table 5.3 provides the NDMA treatment performance data for the UV reactor during the reporting period. As indicated by these data, system design parameters and cleanup levels for NDMA were achieved during the reporting period.

5.1.3 Extraction and Injection Well Performance

Extraction and injection well performance for the reporting period, as based on volumetric flow rates, extraction well drawdown, and water levels and injection well specific capacities, is summarized below. Average Plume Front injection (PFI) well flow rates and average Plume Front extraction (PFE) well flow rates for the reporting period are provided in Table 5.4. Additional events relevant to the performance of individual extraction or injection wells during the report period are summarized below.

Well PFI-1 started producing excessive gravel during backflushing in March 2019 and was taken offline in December 2019. In April, August, and September 2021 NASA attempted to remove the downhole equipment from PFI-1 using a pump hoist truck so that the well casing and screen could be inspected with a downhole video camera and potentially repaired. All efforts to remove the equipment from PFI-1 were unsuccessful due to the presence of a large volume of gravel pack within the well screen, along with a suspected breach in the well casing and/or screen that is acting as a subsurface obstruction to prevent the removal of the equipment. Based on this finding, NASA concluded that well PFI-1 is permanently out of service. An evaluation regarding options to either replace PFI-1 or redistribute treated groundwater produced by the PFTS is underway.

Wells PFE-1 and PFE-3 went out of service on January 1, 2022 and December 6, 2021, respectively, due to submersible motor failures believed to have been caused by overheating. Work to repair PFE-1 and PFE-3 is pending the completion of groundwater flow modeling studies to evaluate various extraction well flow rate scenarios with respect to maintaining plume front capture zones, as well as to evaluate the potential use of intermittent (pulse) pumping to increase contaminant mass removal. The findings of these evaluation are anticipated to determine if smaller replacement pumps and motors, which may be less susceptible to overheating, could be utilized in PFE-1 and PFE-3. Pipe flow and pressure distribution analysis of the extraction well network is also underway to evaluate motor sizing requirements under dynamic head conditions.

5.1.3.1 Extraction and Injection Well Flow Rates and Specific Capacities

Flow rates for extraction and injection wells were measured and monitored throughout the reporting period. While in operation during the reporting period, flow rates for extraction wells PFE-2, PFE-4A, PFE-5 and PFE-7 were stable and approximately unchanged from the previous reporting period. As noted above, wells PFE-1 and PFE-3 were offline during the reporting period.

Injection wells PFI-2 and PFI-3 operated within the design flow rate during the reporting period. Well PFI-4 operated above the design flow rate throughout the reporting period. As previously discussed, well PFI-1 was shut down in December 2019 to investigate a suspected casing breach. Attempts to remove the

[3] Rayox is a registered trademark of Calgon Carbon Corporation.

downhole equipment from the well were unsuccessful, resulting in the determination that the well cannot be placed back into service.

Flow rates for extraction wells PFE-2 and PFE-7 were slightly greater than their design flow rates during the reporting period, whereas PFE-4A and PFE-5 operated below their design flow rates. Because wells PFE-1, PFE-3, and PFI-1 were not operational during the reporting period, the overall production of the PFTS was reduced during this period.

Specific capacities for the PFE and PFI wells are provided in Table 5.5 and are expressed in gallons per minute per foot (gpm/ft). Generally, PFE well specific capacities are higher than PFI well specific capacities. This is due to the differences between extraction and injection well hydraulics.

5.1.3.2 Injection Well Water Level Variations, Well Monitoring, and Maintenance

Water levels at the PFI wells are monitored on a continual basis using dedicated pressure transducers that record the levels at 3-minute intervals. Specific well capacities are tracked daily while the system is in operation. Periodic backflushing of the injection wells is performed when the wells exhibit rising water levels associated with decreased well capacities and during start-ups and shutdowns. Operations personnel have been using static water table levels as a guide for setting the injection flow rates to each well to maintain a stable injection operation. This has lowered the initial design rates at the PFI wells. The original design flow rates in Table 5.4 were not reduced to account for the one nonoperational extraction well.

5.1.4 PFTS Monitoring Results

System monitoring involves the evaluation of a variety of data collected during routine PFTS sampling-related operations. Groundwater monitoring data consist of measured groundwater elevations, calculated groundwater piezometric elevations, graphical representations of groundwater elevation generated from the data (Section 6.3.3), and groundwater indicator parameters (water quality field measurements). The data presented in this section were collected from PFTS monitoring locations during the reporting period. Groundwater chemical analytical data from PFTS sampling events, while not considered monitoring data in some contexts, are also presented in this section.

5.1.4.1 PFTS Monitoring Events

This section and associated appendices discuss the results of routine PFTS samples processed through the WSTF data management system during the reporting period. Groundwater samples processed and included in this report were collected at six PFTS monitoring locations during the reporting period. Table 4.1 provides a list of the PFTS monitoring locations and sampling event dates for which analytical data are presented in this report.

5.1.4.2 PFTS Groundwater Quality Measurements (Indicator Parameters)

Groundwater indicator parameters and other specific sampling-related details associated with each sampling event are recorded by field technicians in the field sampling record. The groundwater indicator parameters measured at each PFTS sampling event in Table 4.1 are provided in Appendix A.3. Appendix B provides the field sampling records and internal CoC forms and the lab reports include laboratory CoC forms for each of the PFTS sampling events discussed in this section.

5.1.5 PFTS Chemical Analytical Results

This section and associated appendices provide the groundwater chemical analytical data processed through the WSTF data management system during the first calendar quarter of 2022. Appendix A.4 provides the analytical results (detections only) from PFTS sampling events performed during the reporting period. A summary of internal QA methods applied to groundwater chemical analytical data is provided in Appendix C.

5.1.6 PFTS Mass Removal

Table 5.6 uses available analytical data to calculate the mass of the various WSTF COC removed by the PFTS between February 1, 2021 and January 31, 2022. During this 12-month period, the PFTS removed approximately 27 kilograms (kg) of TCE, 25 kg of trichlorofluoromethane (Freon®[4] 11), 885 grams (g) of PCE, and 198 g of NDMA.

The contaminant mass removal was calculated as follows:

$$\textit{Mass Removal} = \textit{Total Volume Treated} \times (\textit{Influent Concentration} - \textit{Effluent Concentration})$$

5.2 Mid-plume Interception and Treatment System

The MPITS is the major component of the second phase of NASA's overall groundwater plume remediation strategy. This interim measure has been designed to intercept high COC concentrations within the fractured bedrock aquifer of the Mid-plume Constriction Area (MPCA).

The operational status of the MPITS is summarized below. Component/system failures, repair, and scheduled maintenance activities accounted for the majority of the short duration shutdowns during the reporting period.

5.2.1 MPITS Monitoring Results

System monitoring involves the collection and evaluation of a variety of data during routine MPITS sampling-related operations. Groundwater monitoring data consist of measured groundwater elevations, calculated groundwater piezometric elevations, graphical representations of groundwater elevation generated from these data (refer to Section 6.3.1), and groundwater indicator parameters (water quality field measurements).

The data presented in this section were collected from six MPITS monitoring locations during the reporting period. Groundwater chemical analytical data from MPITS sampling events, while not considered monitoring data in some contexts, are also presented in this section.

5.2.1.1 MPITS Monitoring Events

This section and associated appendices discuss the results of routine MPITS samples collected during the reporting period and processed by the WSTF data management system during the reporting period.

[4] Freon is a registered trademark of The Chemours Company CF, LLC.

Table 4.1 includes the MPITS monitoring locations and sampling event dates for which analytical data are presented in this report.

5.2.1.2 MPITS Groundwater Quality Measurements (Indicator Parameters)

Groundwater indicator parameters and other specific sampling-related details associated with each sampling event are recorded by the field technicians in the field sampling record. The groundwater indicator parameters measured at each MPITS sampling event listed in Table 4.1 are provided in Appendix A.5. Appendix B provides the field sampling records and internal CoC for each of the MPITS sampling events discussed in this section. The laboratory CoC for each of the MPITS sampling events discussed in this section are provided in the Lab Reports enclosed on the DVD.

5.2.2 MPITS Operational Status

The operational status of the MPITS is included in Table 5.1 and Table 5.2.

5.2.3 MPITS Performance

This section summarizes the MPITS air stripper and UV reactor performance during the reporting period. Operational status and other details may also be presented or discussed. A variety of parameters are monitored regularly to ensure that the MPITS is functioning properly and effectively treating the WSTF groundwater for COC reduction.

Operational records indicate that the MPITS performed favorably during the reporting period. System availability statistics, which exclude scheduled shutdowns for planned maintenance, indicate that the system was operational for 100% of January, 95% of February, and 94.1% of March 2022. Notable events during the reporting period included the following:

- NASA installed a new motor in well MPE-9 to replace a motor that failed in September 2021. Well MPE-9 was reactivated on January 5, 2022.
- Disruptions in the off-site electrical power supply caused system shutdowns on February 16, March 6, and March 31, 2022.
- NASA completed a planned Local Area Network outage on February 24, 2022.
- NASA completed a planned shutdown of the system on March 22, 2022 to replace damaged electrical wiring in the UV system power distribution cabinet.

5.2.3.1 Air Stripper Capabilities and Performance

The MPITS consists of a single sieve tray air stripper designed to treat WSTF groundwater VOCs of concern at flow rates up to 125 gpm. Table 5.7 provides the VOC performance data for the air stripper based on MPITS analytical data for the reporting period. As indicated by these data, system design parameters and discharge limits for the VOCs were achieved during the reporting period. The MPITS influent is composed of groundwater from operational Mid-plume extraction (MPE) wells and IDW generated during groundwater sampling, well maintenance, well evaluation activities, and other groundwater-related operations at WSTF. Effluent sample results will be closely monitored to ensure the air stripper continues to function properly.

5.2.3.2 UV Reactor Capabilities and Performance

The MPITS uses a 72-lamp UV photolysis reactor to break down nitrosamines in groundwater. The UV reactor is designed to operate at flow rates between 20 and 125 gpm. The reactor is capable of automatically adjusting power to the lamps to meet a target of 4.1 orders of magnitude reduction in contaminant concentrations. However, electrical power to the lamps is currently set manually at 100% to comply with current internal NASA operational requirements. The UV reactor achieved approximately four orders of magnitude reduction during the reporting period. Table 5.7 shows the UV reactor's performance for the reporting period. As indicated by these data, system design parameters and discharge limits for NDMA were achieved during the reporting period. Effluent sample results will be closely monitored to ensure the UV Reactor continues to function properly.

5.2.4 MPITS Extraction Well and Infiltration Basin Performance

Wells MPE-1, MPE-8, MPE-9, MPE-10, and MPE-11 operated at various flow rates during the reporting period. Well MPE-9 was repaired and placed back into service on March 23, 2022. There were no MPITS infiltration basin performance anomalies during the reporting period.

5.2.4.1 Extraction Well Flow Rates and Production Capacities

The MPE wells are completed in a fractured bedrock aquifer. Reduced well production capacity has resulted in cyclic operation of the extraction wells. Extraction well performance is characterized by evaluating well pumping rates and drawdown of water levels during pumping at each extraction well. No extraction well performance anomalies with respect to pumping rates and water-level drawdowns were observed during the reporting period.

5.2.4.2 Infiltration Basin Performance, Monitoring, and Maintenance

The MPITS infiltration basin was designed to accept up to 200 gpm. The treatment system must run at a minimum of 25 gpm to discharge to the infiltration basin. No operational or performance issues were identified during the reporting period.

5.2.5 MPITS Chemical Analytical Results

Appendix A.6 provides the MPITS chemical analytical data for the analytical reporting period (detections only). A summary of internal QA methods applied to groundwater chemical analytical data is provided in Appendix C.

5.2.6 MPITS Mass Removal

Table 5.8 summarizes the mass of the various WSTF COC removed by the MPITS between February 1, 2021, and January 31, 2022. Approximately 2.8 kg of COC mass was removed by the MPITS during this 12-month period. In addition to groundwater extracted in the MPCA, the MPITS accepts and treats IDW generated during other groundwater investigations. The contaminant mass removal was calculated as follows:

Mass Removal =
Volume of Water Extracted at Each Well x (Contaminant Concentration at Each Well – MPITS Effluent Concentration)

5.3 Remediation Systems Operation Costs

Table 5.9 presents the costs for operating the PFTS and MPITS for the 12 months from February 1, 2021 to January 31, 2022. The table summarizes the cost of the labor and materials for operation and maintenance of both systems, and includes the electrical costs associated with system operations.

6.0 Discussion and Conclusions

Routine groundwater monitoring is conducted at WSTF to support a variety of projects. The primary objectives of routine groundwater monitoring at WSTF are to delineate the extensive contaminant plume resulting from historical contaminant releases at the facility, support the development and implementation of corrective actions, and monitor the impact of these corrective actions during implementation and operation. Groundwater sampling at WSTF is currently focused on the Plume Front and Mid-plume areas, both of which are critical to NASA's overall remediation efforts.

This section provides discussion and conclusions based on the results of groundwater monitoring conducted at WSTF. Also included is a summary discussion of the remediation systems' performance, monitoring results, system modifications, and compliance with discharge requirements and/or applicable cleanup levels. Chemical analytical results from the PFTS, MPITS, and routine groundwater monitoring are compared to cleanup levels (refer to Appendix D). This section also provides NASA's anticipated future groundwater monitoring and related activities at WSTF.

6.1 Summary of Groundwater Monitoring Projects

Routine groundwater monitoring was performed during this quarter in accordance with currently approved permits, plans, and other regulatory requirements. In general, the WSTF contaminant plume is relatively stable in nature and extent. The potential for continued migration of the plume resulted in the development of the phased approach to groundwater remediation discussed in Section 1.0. NASA continues to collect a variety of groundwater data from the comprehensive WSTF groundwater monitoring network. Monitoring results are presented in detail in the relevant sections of this report and in later sections of this summary. Several noteworthy projects related to routine groundwater monitoring are discussed below.

6.1.1 Monitoring Well Performance or Sampling Equipment Issues

NASA was unable to sample three wells during the reporting period (November 1, 2021 – January 31, 2022) because of mechanical or well performance issues only. This section does not address wells that were not sampled due to resource limitations.

- In October 2021, NASA could not sample wells PL-3-453 and 400-C-118 because the water levels were inadequate for the collection of representative groundwater samples. NASA attempted to sample the wells in November 2021, but low water level conditions persisted.

- Wells ST-1-541 and ST-1-630 were rescheduled from November to December 2021 because of degraded sampling equipment following reactivation after recent TMRP pumping at these wells.

- In January 2022, NASA was unable to sample well 400-IV-123 because the water level was inadequate for sample collection.

The current new occurrences of sampling issues, backlog of prior unresolved issues, and issues resolved this quarter are shown on Table 6.1.

6.1.2 Monitoring Well Installation and Well Plugging and Abandonment

There was no physical well installation or plugging and abandonment activity this quarter. Other first quarter 2022 activity included:

- In its January 25, 2021 *Approval with Modifications of the NASA Groundwater Monitoring Plan 2020 Update*, NMED (2021a) directed NASA to submit a work plan for abandonment of monitoring wells 200-SG-2 and 200-SG-3 and installation of replacement wells by November 30, 2021. On November 30, 2021, NASA submitted a letter to NMED that attached a draft New Mexico Office of the State Engineer (NMOSE) Well Plugging Plan of Operations for Multiport Soil Vapor Groundwater Monitoring Wells 200-SG-2 and 200-SG-3 with an attachment indicating why NASA does not intend to replace the wells (NASA, 2021q). NMED approved the plan on January 10, 2022 (NMED, 2022a).
- NMED is reviewing the *NASA WSTF Work Plan for Drilling and Installation of Monitoring Well 600B-001-GW* (BLM-28 replacement), submitted to NMED on August 31, 2021 (NASA, 2021j).
- NMED is reviewing the *Work Plan for Drilling and Installation of Monitoring Well 600C-001-GW at the NASA White Sands Test Facility (WSTF)* (deeper well adjacent to BLM-10-517), submitted to NMED on August 31, 2021 (NASA, 2021k).

6.1.3 Westbay Well Reconfiguration

There was no physical well reconfiguration activity the first quarter of 2022. Historical information and full submittal history for well reconfiguration projects are provided in Appendix F.

- NMED is reviewing the *Westbay Well Reconfiguration Work Plan for Wells PL-7, PL-8, PL-10, ST-5, and WW-3*, submitted on April 29, 2021 (NASA, 2021b).
- NMED approved the *NASA WSTF Well Reconfiguration Work Plan for Well BW-4*, submitted on June 29, 2021 (NASA, 2021e), with modifications on January 18, 2022 (NMED, 2022b). In that approval, NMED provided two comments and directed NASA to provide a response no later than March 11, 2022. NASA prepared the response and submitted the *Response to Approval with Modifications of NASA WSTF Well Reconfiguration Work Plan for Well BW-4* on March 8, 2022 (NASA, 2022c). NMED also directed NASA to provide a well reconfiguration report for BW-4 no later than March 30, 2023.
- In the October 24, 2017 *Approval with Modifications Detections of NDMA (N-Nitrosodimethylamine) and TCE (Trichloroethylene) In WSTF Groundwater Monitoring Wells BLM-30, PL-5, PL-6, PL-7, PL-8, PL-10, ST-5, and WW-3*, NMED directed NASA to provide a well reconfiguration work plan that included well PL-6 (NMED, 2017*). NASA determined that the well is not suitable for reconfiguration and plans to plug and abandon the well and replace it. NASA submitted the *NASA WSTF Work Plan for Drilling and Installation of Monitoring Well 600C-002-GW and Abandonment of PL-6* on February 1, 2022 (NASA, 2022b).

6.1.4 Groundwater Monitoring Data Representativeness

Activities in the first quarter 2022 included the following:

- NMED is reviewing the *Abbreviated Investigation Work Plan for Groundwater Data Representativeness, Phase 2: FLUTe Well Evaluation*, submitted to NMED on November 2, 2021 (NASA, 2021p).

6.2 Comparison of Analytical Data to Cleanup Levels

This section and the associated appendix compare the chemical analytical data obtained from groundwater remediation system sampling points and groundwater monitoring wells to the approved cleanup levels provided in the GMP (NASA, 2021a). Appendix D provides a comparison of groundwater data to cleanup levels for the current analytical reporting period.

6.2.1 Groundwater Monitoring Wells

Appendix D.1 includes a comparison of groundwater monitoring well data to applicable cleanup levels for the analytical reporting period. Only analytical results that exceed cleanup levels are included in the tables.

6.2.2 Plume Front Treatment System

Groundwater samples were collected from the PFTS influent and effluent as required by the RSMP (NASA, 2021d) and DP-1255 (NMED, 2017). Chemical analytical data from these sampling events were presented in Section 5.1.5 and Appendix A.4. Appendix D.2 includes any PFTS influent data that exceeded cleanup levels during the current analytical reporting period. The PFTS effluent met all DP-1255 discharge limits and Permit cleanup levels.

6.2.3 Mid-plume Interception and Treatment System

Groundwater samples were collected from the MPITS influent and effluent as required by the RSMP (NASA, 2021d) and DP-1255 (NMED, 2017). Chemical analytical data from these sampling events were presented in Section 5.2.5 and Appendix A.6. Appendix D.3 includes any MPITS influent data that exceeded cleanup levels during the current analytical reporting period.

6.3 Contaminant Plume Evaluation

The plume evaluation for the first quarter of 2022 includes potentiometric surface maps and a variety of chemical analytical data.

6.3.1 Groundwater Elevations and Iso-concentration Maps

A manually contoured potentiometric surface map (Figure 6.1) is provided for the WSTF Plume Front area that correlates with the end of the current reporting period. Data used to generate contours for this map are identical to the data used to generate the site-wide contours (Figure 4.1). The 40-ft contour used in the site-wide piezometric map is supplemented by 2-ft contours in the Plume Front potentiometric surface map. Arrows indicate the direction of groundwater flow. The influence of PFTS operation is evident by the depression in the potentiometric surface that is caused by pumping at the PFE wells. The hydraulic mound produced by injecting treated water at the PFI wells is apparent at the southern edge of the figure.

Groundwater elevations measured in the MPCA during this analytical reporting period are presented in the manually contoured Mid-plume potentiometric surface map (Figure 6.2). The data used to generate contours for this map are the same values used to generate the site-wide potentiometric map (Figure 4.1). The general west-trending groundwater flow direction through the Mid-plume area is apparent in Figure 6.2, though local variations may exist within discrete fractures or higher conductivity flow zones within the fractured bedrock aquifer in this area. Groundwater elevation is generally depressed downgradient of well MPE-11 near well MPE-6 Plume isoconcentration maps.

Figure 6.3 and Figure 6.4 present manually contoured isoconcentration maps of the Plume Front for NDMA and TCE using data processed during this reporting period. The manual contouring method allows a geologist to evaluate plume contaminants against interpreted hydrogeological features in order to create a realistic representation of the contaminant plume. Hydrogeological conditions considered during the manual contouring of contaminant concentrations are primarily hydrostratigraphic units or significant structural features that cause the juxtaposition of variable hydraulic conductivities. The lowest value solid isoconcentration line on each map corresponds to the required cleanup level for the analyte presented. The isoconcentration maps are consistent with the maps presented in previous reports (i.e., a like-to-like comparison in the case of NDMA), the monthly evaluation of contaminant concentrations, and site-wide plume maps that have been provided to NMED over the last several years.

Three exceedances of the NDMA cleanup level were observed in the northern Plume Front Area this quarter. These included NDMA detections at wells at well BLM-32 (1.8 ng/L), JER-1 (1.4 ng/L), and well JER-2 (1.8 ng/L). Six exceedances of NDMA cleanup levels were observed in sentinel wells this quarter. These included NDMA detections at wells PL-7 (2.9 ng/L), PL-8 (2.8 ng/L), PL-11 (5.1 ng/L), ST-5 (1.1 ng/L), WW-3 (2.2 ng/L), and WW-5 (2.3 ng/L). VOCs were not detected at or above the cleanup level at these wells. The following quality exceptions exist:

- The NDMA result at well PL-7 was qualified with an "*" data quality exception.
- The NDMA result at well PL-8 was qualified with "EB" data quality exception.
- The NDMA result at well ST-5 was qualified with "EB" data quality exceptions.

"A" indicates NDMA for a laboratory control sample, initial calibration verification or continuing calibration verification was outside standard limits. "EB" indicates NDMA was detected in the equipment blank. "FB" indicates NDMA was detected in the field blank. "RB" indicates NDMA was detected in the reference blank. "QD" indicates the relative percent difference for a field duplicate was outside standard limits. "*" indicates a user defined qualifier and to see the quality assurance narrative.

6.3.2 Combined Plume Isoconcentration Maps and Potentiometric Surface Map

Figure 6.5 shows the interrelationship of the Plume Front potentiometric surface and manually contoured TCE plume for the current analytical reporting period. TCE was selected because it is the most widely distributed health-risk-driving contaminant in the conceptualized contaminant plume.

6.3.3 Time-concentration Plots and Groundwater Data Analytical Trends

T-C plots are used to evaluate and summarize contaminant concentration trends in WSTF wells over time on a quarterly basis as presented in this report. A detailed interpretation of the concentration trends shown in T-C plots over the year is provided in the fourth quarter annual comprehensive monitoring report submitted in January.

To facilitate the evaluation of T-C plots, WSTF monitoring wells are grouped as listed in Table 5 of the GMP (NASA, 2021a). T-C plots are generated using analytical data from each monitoring and remediation well where sufficient data are available. The concentration trends for four of the primary COC (Freon 11, TCE, PCE and NDMA) in groundwater are reviewed by technical personnel to develop the summary table presented in Appendix E. This table includes the historical maximum contaminant concentrations, the latest concentrations, and an interpretation of the current concentration trend for each well. For NDMA, results are presented for both EPA Method 607 and low-level laboratory analysis. T-C trend evaluation places greater emphasis on the most recent analytical results reported over the last several years. As a result, the current T-C interpretation may therefore not reflect the full historical variability in T-C behavior through the life of the well, particularly for the older wells at WSTF installed in the mid-1980 through the 1990s.

The determination of a trend for an anomalous COC concentration within a specific well is based on the evaluation of analytical data collected over at least several quarters (typically a minimum of three to four sampling events). Concentrations are evaluated in conjunction with other potentially influencing factors (including hydrogeology, aquifer recharge conditions, monitoring well development activities, and changes in the operational status of remediation wells) before a modification to the T-C plot interpretation is performed. This approach is necessary to avoid the premature identification of a trend that represents a short-term fluctuation that reverts back to previous conditions.

A summary site-wide well map and analytical table depicting the most recent interpreted T-C trend for each individual well is included in Appendix E. A summary evaluation of each of the GMP well groups is provided in the following paragraphs, along with a discussion of the T-C plots for specific wells identified within the group. T-C plots (for the specific wells where identified) are also provided as attachments in Appendix E.

Upgradient Well Group: Four wells designated as upgradient monitoring wells are located east of the WSTF industrialized areas. There have been no confirmed VOC or NDMA detections in groundwater for these wells, and all four wells are classified as not detected (ND).

100/600 Area Well Group: Monitoring wells in this group are located within the 100 Area and adjacent easternmost part of the 600 Area. These wells are located in the vicinity of the southeastern boundary of the contaminant source areas and groundwater plume. Where located within the footprint of the groundwater plume, the wells typically reflect a decreasing groundwater concentration trend for Freon 11, TCE, and PCE. This trend is applicable to both wells within the primary bedrock aquifer and for well 600-G-138 (T-C plot provided) that is screened across a localized perched groundwater horizon identified on the top of andesite bedrock at the bedrock-alluvial interface. NDMA is derived primarily from the northern source areas and is not identified within the 100 and 600 Areas.

200 Area Well Group: The 200 Area represents the primary historical source of contamination for the TCE and Freon 11 components of the groundwater plume. Maximum concentrations for these contaminants in groundwater were identified in the late 1980s through mid-1990s. Over the last 30 years, the majority of 200 Area T-C plots have displayed a significant decreasing trend in contaminant concentrations for these VOCs. As an example, TCE in well 200-D-240 (T-C plot provided) has decreased from 110 μg/L in 1990 to 14 μg/L in 2021. The declines are interpreted to reflect natural plume migration and degradation under the influence of a steep horizontal hydraulic gradient of 0.05 ft/ft within a relatively porous fractured limestone bedrock aquifer, in conjunction with the implementation of effective waste management practices at WSTF that eliminated waste discharges. Wells that display more irregular concentrations with no distinct trend are typically associated with screened intervals characterized by lower hydraulic conductivity and reduced groundwater flow.

300/400 Area Well Group: The T-C plots for monitoring wells generally show groundwater VOC concentration trends that have been either fluctuating (most notably wells installed recently in January 2017 within poorly fractured andesite bedrock as part of the 400 Area Closure Investigation) or have declined since initial well installation. Declining concentrations primarily correlate to wells characterized by higher hydraulic conductivity and/or groundwater flow screened across the andesite bedrock-alluvium interface. These wells are located within or adjacent to the 300/400 Area primary arroyo that experiences greater natural recharge. Wells that do not display declines are typically located off the axis of recharge drainages and may also be protected from infiltration by localized less permeable surfaces such as the Closure impoundment caps. Similar to the 200 Area, the predominant declines in the 300 and 400 Areas reflect the influence of migration related to the strong hydraulic gradient of 0.05 ft/ft along the WSTF pediment slope in conjunction with the implementation of effective waste management practices that eliminated waste discharges. Local disparities for concentrations reported within adjacent bedrock monitoring wells (particularly for NDMA) is interpreted to be a result of both the limited connectivity of andesite bedrock fractures, and the position of the screened intervals relative to the andesite bedrock-alluvial interface. Higher hydraulic conductivity, groundwater flow, and declining contaminant concentrations are usually attributed to screened intervals across the interface of alluvium on top of bedrock.

Northern Boundary Well Group: The monitoring wells in this group are generally characterized by low-level contaminant concentrations that do not display any sustained T-C trends or are ND. Fluctuating low-level NDMA is reported this quarter from the latest samples collected in four wells BLM-32 (1.8 ng/L), BLM-41-420 (1.6 ng/L), JER-1 (1.4 ng/L), and JER-2 (1.8 ng/L). All four wells are located adjacent to the boundary of the northwest-trending plume arm that coincides with northwest-trending structural controls in the bedrock (identified from seismic geophysical surveys) that extend northwest from the Mid-plume constriction area.

Southern Boundary Well Group: Monitoring wells in this group are located south of the NDMA and TCE plumes, do not exceed the low-level NDMA cleanup level of 1.1 ng/L, and are classified as ND. A single well (BLM-6-488, T-C plot provided) continues to show a low fluctuating concentration of TCE (0.57 µg/L) below the NMED cleanup level and is characterized as exhibiting "natural migration - no overall T-C trend."

MPCA Well Group: T-C plots for monitoring wells in this group that characterize the MPCA generally show declining contaminant trends associated with either natural plume migration and degradation or the effect of system stresses imparted by MPITS pumping since startup in 2011. T-C plots for wells BLM-21-400, BLM-36-30, BLM-18-430, and BLM-5-527 are included in Appendix E.

Well BLM-21-400 is located adjacent and south of the MPITS extraction wells and immediately downgradient of the interpreted primary confluence of the TCE and NDMA groundwater plume from their respective source areas (Freon 11 and TCE originate from the 200 Area [upgradient well BLM-14-327] and NDMA originates from the 300 and 400 Areas [upgradient well BLM-15-305]). Contaminant concentrations in BLM-21-400 since installation in 1991 show a natural decreasing trend for Freon 11 (320 to 79 µg/L), TCE (220 to 48 µg/L), PCE (12 to 2.4 µg/L), and NDMA (5.6 to 1.1 µg/L). This well continues to be monitored with respect to potential pumping-related migration under the influence of nearby extraction well MPE-11.

Multiport well BLM-36 is located downgradient and to the south-southwest of the MPITS. The T-C plots for the shallow zone in well BLM-36 (BLM-36-350) identify groundwater contamination that has not been detected in deeper zones of this well, providing a significant location for vertical delineation in the Mid-plume. BLM-36-350 has shown fluctuating but relatively consistent concentrations for groundwater contaminants since activation of the MPITS and is currently classified as "pumping-related migration – no overall trend."

Wells BLM-18-430 and BLM-5-527 are located in the northwest-trending arm of the WSTF groundwater contaminant plume that extends from the MPCA. These wells are monitored to determine the effect of operation of the MPITS on the migration of groundwater contaminants into this area. The T-C plot for well BLM-18-430 shows a decline in contaminant concentrations since startup of the MPITS, inferred to be related to the arrest of contaminant migration to the northwest arm through continued operation of the MPE wells. Well BLM-5-527 is currently interpreted to display a "natural migration – increasing T-C" trend. Increases in this well are inferred to reflect the migration of contaminants into low conductivity rhyolite bedrock of the extreme northwest section of the northwest-trending arm not impacted since the inception of MPITS pumping. Pumping activity (13,350 gallons extracted) within well BLM-5-527 between April 6, 2020 and May 5, 2020 as part of the Targeted Mobile Remediation Process Pilot Test at WSTF may also have impacted contaminant concentrations in the area by temporarily creating a cone of depression.

Monitoring well BLM-38 has historically been characterized as ND and is located on the north side of the Mid-plume constriction. A low-level NDMA detection is reported this quarter from the latest sample collected (2.05 ng/L). This detection will be monitored with respect to any developing T-C trend.

Main Plume Well Group: Wells in this group are located within the western section of the groundwater plume at the Plume Front and show widespread declining trends related to natural migration or pumping depending on proximity to the PFTS remediation wells. Contaminant concentrations within this well group typically decline significantly during intervals of system operation and rebound during quiescent periods.

Plume Front Well Group: Monitoring wells within this group are generally located outside the boundary of the contaminant plume and groundwater analytical results are typically ND. Well BLM-10-517 (located south of the southern plume boundary, T-C plot provided) has displayed periodic trace detections of TCE and Freon 11, particularly between early 2012 and early 2016. The latest groundwater sampling indicated that the Freon 11 (detection limit 0.24 µg/L) and TCE (detection limit 0.21 µg/L) are both ND. Low-level NDMA was also below the detection limit of 0.4 ng/L. Well ST-7 is located west of PFTS extraction well PFE-2 and south of extraction well PFE-7. Low-level TCE (1.40 µg/L) may have migrated northward to ST-7 as a result of continued pumping of well PFE-7. The fluctuating concentrations of TCE and Freon 11 in the area of ST-7 demonstrate pumping related migration of contaminants through the heterogeneity of the alluvial aquifer. For this quarter, fluctuating low-level NDMA detections were identified in two Plume Front wells (PL-7 [2.9 ng/L] and ST-5 [1.1 ng/L].

Sentinel Well Group: Monitoring wells within this group form a more distal tier located outside the groundwater contaminant plume and have all historically shown analytical results that are ND. For this quarter, fluctuating low-level NDMA detections have been identified in four of the sentinel wells (PL-11 [5.1 ng/L], PL-8 [2.8 ng/L], WW-2-664 [1.8 ng/L], WW-3 [2.2 ng/L], and WW-5 [2.3 ng/L]).

Other Well Group – Mid-plume Extraction Wells: The T-C plots for the five MPITS wells are included in Appendix E. The COC concentrations for Freon 11 and TCE in wells MPE-8 and MPE-10 have displayed a generally increasing trend since 2013, under the influence of pumping-related plume migration. Wells MPE-1 (decreasing), MPE-9 (fluctuating), and MPE-11 (fluctuating) are also influenced by continued operation of the MPITS.

Other Well Group – Plume Front Extraction Wells: The T-C Plots for the six PFTS wells; PFE-1, PFE-2, PFE-3, PFE-4A, PFE-5, and PFE-7 are included in Appendix E. The high-volume extraction wells exhibit declining trends due to pumping-related plume dilution within the alluvial aquifer at the Plume Front. Well PFE-5 was installed further east with a screened zone primarily in fractured bedrock within the WBFZ displays significantly lower well yield, with a relatively high concentration of NDMA.

6.4 Summary of Source Area Investigations

The following subsections summarize the status of each solid waste management unit (SWMU) or hazardous waste management unit (HWMU) at WSTF and provide specific information on work performed during the first calendar quarter of 2022: January 1, 2022 – March 31, 2022. Historical information through the end of 2019 including investigation status, and full submittal history for each potential source area is provided in Appendix F.

6.4.1 200 Area

NASA continues work associated with the investigation of two HWMUs and SWMUs in the 200 Area. NASA performed a wide-area soil vapor survey in the 200 and 600 Areas to assess the potential risk to workers posed by soil vapor intrusion into the buildings adjacent to areas with the greatest soil vapor concentrations. NMED disapproved NASA's report on the assessment, stating that the vapor intrusion pathway is complete from the standpoint of risk assessment. During the first quarter of 2022, activities related to this SWMU included:

- NMED is reviewing the *NMED Disapproval Response for 200 Area and 600 Area Vapor Intrusion Assessment Report* (NASA, 2020a).

6.4.2 300 Area

NASA performed routine groundwater sampling at the 300 Area and recommended a corrective measures study in conjunction with the 400 Area. There was activity at the 300 Area based on NMED's prior disapproval of the 300 Area *Supplemental Abbreviated Drilling Work Plan* (NASA, 2019b) and resulting direction. See next Section and Appendix F, Section 2.2.

6.4.3 400 Area

There were no document submittals for the 400 Area in the first quarter of 2022. Recent and ongoing activity includes:

- NMED is reviewing the *Response to Disapproval of 400 Area Supplemental Groundwater and Soil Vapor Monitoring Plan* (July 14, 2021; NASA, 2021h).

- NMED is reviewing the *NASA WSTF 400 Area Closure Investigation Report – NMED Third Disapproval Response* (July 27, 2021; NASA, 2021i).

- NMED is reviewing the *Response to Disapproval of 300 Area Supplemental Abbreviated Drilling Work Plan* (July 14, 2021; NASA, 2021g).

6.4.4 600 Area Perched Groundwater Extraction and Investigations

NASA is currently conducting a perched groundwater extraction pilot test in the 600 Area and investigating the presence of additional perched groundwater beneath and adjacent to the 600 Area Closure. During the first quarter of 2022, activities related to this SWMU included:

- NASA suspended continued extraction of perched groundwater from monitoring well 600-G-138 for much of January 2022 to reduce the impact on the perched groundwater aquifer and maximize the potential of locating perched groundwater during the perched groundwater investigation. On

February 1, 2022 NASA resumed groundwater extraction in accordance with NMED's March 1, 2013, Approval Time Extension for Implementation of the Perched Groundwater Extraction Pilot Test at the 600 Area. Approximately 366 gallons of perched groundwater were removed from 600-G-138 between January and March 2022 and transported to the MPITS for treatment.

- NASA completed soil boring installation field activities for the perched groundwater investigation in accordance with NMED's *Approval with Modifications 600 Area Closure Geophysical Survey Status Report* (NMED, 2020). The off-site subcontract drilling company installed all six soil borings between January 4 and January 27, 2022 in the vicinity of the 600 Area Closure to depths of approximately 145 to 180 feet bgs. The soil borings were located in potential bedrock lows identified using the geophysical seismic survey performed previously as part of the investigation. The soil borings transcended the alluvial overburden into the top of the andesite bedrock in search of perched groundwater on the alluvial-bedrock interface. NASA identified perched groundwater at one location adjacent to the north corner of the Closure and installed groundwater well 600A-001-GW. NASA also installed a conventional monitoring well 600A-002-GW downgradient to the west of the Closure in andesite bedrock. This boring encountered the deeper fractured bedrock aquifer at the projected total depth of the soil boring and was subsequently drilled deeper than the planned depth to facilitate installation of the groundwater monitoring well. The remaining four soil borings did not encounter perched groundwater and were plugged and abandoned in accordance with the NMED-approved work plan.
- NASA performed colloidal borescope evaluations at the two new wells 600A-001-GW and 600A-002-GW, existing perched groundwater monitoring well 600-G-138, and 12 other conventional wells in the fractured bedrock aquifer with significant locations relative to the evaluation of regional flow. Ongoing fieldwork includes well development, surveying, and sampling.
- The final investigation report is due to NMED by May 31, 2022, though NASA requested an extension of time to June 30, 2022.

6.4.5 SWMUs 2, 8, and 34 and Area of Concern (AOC) 51 (Wastewater Lagoons)

NASA continued work required to investigate and close the WSTF Wastewater Lagoons in the 100, 200, and 600 Areas and at the Second Tracking and Data Relay Satellite (TDRS) Ground Terminal (STGT). Activities during the first quarter of 2022 included:

- NMED is reviewing the *NASA WSTF 100 Area Wastewater Lagoons Closure (SWMU 2) Investigation Report* (NASA, 2020b).
- NMED is reviewing the *NASA WSTF 200 Area Wastewater Lagoons Closure (SWMU 8) Investigation Report* (NASA, 2019d).
- NMED is reviewing the *NASA WSTF 600 Area Wastewater Lagoons Closure (SWMU 34) Investigation Report* (NASA, 2019e).
- NMED is reviewing the *NASA White Sands Test Facility WSTF STGT Wastewater Lagoons Closure (AOC 51) Investigation Report* (NASA, 2020e).

6.4.6 SWMU 10 (200 Area Hazardous Waste Transmission Lines [HWTL])

NASA performed an investigation of the abandoned HWTL that consisted of HWTL excavation, pipeline removal, soil sampling, and the submittal of an investigation report. Activities during the first quarter of 2022 included the following:

- Recognizing the need to address recent revisions to the NMED Risk Assessment Guidance, NASA submitted a request for extension of time for submittal of the revised investigation report on January 11, 2022 (NASA, 2022a). NMED approved the request on January 25, 2022 (NMED, 2022c), extending the report due date to February 28, 2022.
- NASA submitted the *Response to Second Disapproval of NASA WSTF 200 Area HWTL (SWMU 10) Investigation Report and Risk Assessment Report* on March 4, 2022 (NASA, 2022c).

6.4.7 SWMU 16 (600 Area Bureau of Land Management [BLM] Off-Site Soil Pile)

NASA completed a multi-part investigation of the 600 Area BLM Off-Site Soil Pile and has addressed NMED comments on multiple iterations of the investigation report. Activities in the first quarter of 2022 were:

- NMED is reviewing the *Accelerated Corrective Measures Work Plan for the NASA WSTF SWMU 16 (600 Area BLM Off-Site Soil Pile), submitted)* to NMED on September 28, 2021 (NASA, 2021m).

6.4.8 SWMUs 21–27 (Septic Tanks)

Activities during the first quarter of 2022 included the following:

- NMED is reviewing NASA's *Response to Disapproval of NASA WSTF Septic Tanks (SWMUs 21-27) Investigation Report* (May 18, 2021; revised IR; NASA, 2021c).

6.4.9 SWMUs 29–31 (Small Arms Firing Ranges)

During the fourth first quarter of 2022, activities related to these SWMUs included:

- NMED is reviewing the *Response to Second Disapproval Small Arms Firing Ranges (SWMUs 29-31) Remedy Completion Report and Risk Assessment Report* (August 3, 2020; NASA, 2020c).

6.4.10 SWMU 33 (300 Area Test Stand 302 Cooling Water Pond)

During the first quarter of 2022, activities related to this SWMU included:

- NMED is reviewing the 300 Area Test Stand 302 Cooling Water Pond (SWMU 33) IWP and HIS.

6.4.11 SWMU 47 (500 Fuel Storage Area)

NASA plans to perform an investigation of the 500 Area Fuel Storage Area (SWMU 47). During the first quarter of 2022, activities related to this SWMU included the following:

- NMED is reviewing NASA's *Response to Second Disapproval of 500 Area Fuel Storage (SWMU 47) Investigation Work Plan* (June 29, 2021; revised IWP; NASA, 2021f).

6.4.12 SWMU 49 (700 Area Landfill)

NASA continued NMED-approved investigation work at the closed landfill as described in the *Response to NMED Approval with Modifications SWMU 49 (700 Area Landfill) Phase I Investigation Work Plan* *and Historical Information Summary* (NASA, 2019c). Activities during the first quarter of 2022 include the following:

- NASA reviewed soil vapor data from the Phase 1A soil vapor survey and concluded that a Phase 1B survey would not provide any more useful information. NASA submitted a letter, *Discussion Relative to the Phase 1A and Phase 1B Soil Vapor Survey (SVS) Component of the Ongoing 700 Area Landfill Phase I Investigation,* on the lack of need to perform for a Phase 1B SVS for the 700 Area Landfill to NMED on October 19, 2021 (NASA, 2021o). NMED disapproved the approach and asked for clarification on November 12 (NMED, 2021c). NASA provided a revised discussion on December 21, 2021 (NASA, 2021s). NASA received NMED's February 11, 2022 approval of the *Revised Discussion Phase 1A and Phase 1B Soil Vapor Survey (SVS) Component of the Ongoing 700 Area Landfill Phase I Investigation* (NMED, 2022d) and will forgo the Phase IB passive soil vapor survey.
- NASA completed the plugging and abandonment of shallow soil borings installed for the Phase IA survey in accordance with the March 2019 *SWMU 49 700 Area Landfill Phase I Investigation Work Plan* (NASA, 2019c) and subsequent response to the NMED Disapproval.
- The Phase I field investigation report is due April 29, 2022.

6.4.13 SWMU 50 (First TDRSS Diesel Release)

NASA performed NMED-approved investigation fieldwork at SWMU 50 and provided the results to NMED in the *First Tracking Data Relay Satellite System (TDRSS) Diesel Release (SWMU 50) Investigation Report* (NASA, 2019a). Activities during the first quarter of 2022 include the following:

- NMED is reviewing NASA's *Response to Disapproval of First Tracking Data Relay Satellite System (TDRSS) Diesel Release (SWMU 50) Investigation Report and Risk Screen Evaluation Report* (November 9, 2020; NASA, 2020f).

6.4.14 SWMU 52 (Second TDRSS UST)

On August 11, 2020, NASA discovered a diesel fuel leak in the area of the SWMU 52 Underground Storage Tank (UST), which is located north of WSTF at the White Sands Complex. SWMU 52 related activities performed during the fourth quarter of 2021 included the following:

- On March 1, 2022, NMED provided *the Disapproval Second TRDSS Underground Storage Tank (SWMU 52) Release Assessment Report* (NMED, 2022e). NASA is addressing NMED's four comments and preparing the revised report, which is due to NMED no later than May 6, 2022

6.4.15 Newly Identified SWMU

While researching documentation related to the Fuel Treatment Unit, NASA identified the location of a former 500 Area oxidizer as a potential new SWMU. Activities during the first quarter of 2022 include the following:

- In the December 20, 2021, *Approval 500 Area Newly Identified SWMU Release Assessment Report* (NMED, 2021e), NMED directed NASA to list the former oxidizer burner as a SWMU requiring corrective action in the WSTF Hazardous Waste Permit (during a Permit renewal or modification, as applicable) and to submit an investigation work plan for the unit no later than

August 31, 2022. During the first quarter of 2022, NASA continued development of the investigation work plan and the accompanying Historical Information Summary (HIS).

7.0 Planned Activities

This section discusses NASA's planned activities related to groundwater monitoring at WSTF.

7.1 Groundwater Monitoring and Related Projects

7.1.1 Groundwater Monitoring

NASA plans to continue routine groundwater monitoring in accordance with the GMP (NASA, 2021a). Sampling for per- and polyfluoroalkyl substances will be included in 2022 per NMED's November 15, 2021 *Approval with Modifications of the 2021 GMP* (NMED, 2021d), and will be reflected in the GMP update for 2022. NASA committed to PFAS sampling in its *Response to Approval with Modifications of NASA WSTF Groundwater Monitoring Plan Update for 2021* (NASA, 2021r).

7.1.2 Monitoring Well Performance or Sampling Equipment Issues

This section presents plans to address wells that could not be sampled in the data reporting period (November 1, 2021 through January 31, 2022) due to mechanical or well performance issues and were not resolved by the end of the period. The backlog of prior unresolved issues is shown on Table 6.1. The section also presents issues that have been resolved.

- In October 2021, well JP-3-509 was not sampled because the sampling system was not operational. NASA repaired the sampling system and sampled the well in December 2022.
- In the Approval with Modifications of the 2021 GMP update, NMED stated, "Due to reported damage associated with root growth at monitoring well NASA 9, a work plan for abandonment and replacement of the monitoring well must be submitted to NMED for approval... The work plan for abandonment and replacement of monitoring well NASA 9 must be submitted no later than April 29, 2022" (NMED, 2021d). NASA plans to prepare and consider and submit the required well replacement work plan.
- In November 2021, NASA was unable to sample well ST-1-531 and ST-1-630 because the sampling systems were not operational. NASA planned and performed required troubleshooting, determined the cause of the sampling system failure, repaired the sampling systems, and performed sampling in December 2022.
- NASA was unable to sample well 400-IV-123 because the water level was insufficient for sample collection. NASA plans to monitor the water level in this well and sample if the water level recovers enough to obtain a representative sample.

7.1.3 Westbay Well Reconfiguration

NASA expects to plug and abandon well BLM-28. NASA plans to plug and abandon the borehole at former monitoring well BLM-30 in conjunction with drilling and completing replacement well BLM-43. NASA plans to plug and abandon Westbay well PL-6.

7.1.4 Monitoring Well Installation

In addition to replacement well BLM-43 mentioned in the preceding section, NASA plans to replace well BLM-28 and to install a deeper monitoring well adjacent to existing well BLM-10-517. NASA also plans to replace Westbay monitoring well PL-6.

7.2 Groundwater Remediation System Monitoring

The RSMP (NASA, 2021d) and DP-1255 (NMED, 2017) include provisions for monitoring the effectiveness of the PFTS and MPITS. Sampling at designated locations, including extraction wells and remediation system sampling points, will continue as required during remediation system operational periods in accordance with the RSMP and/or DP-1255. Monitoring well sampling to assess remediation system effectiveness will continue in accordance with the GMP (NASA, 2021a).

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Figures

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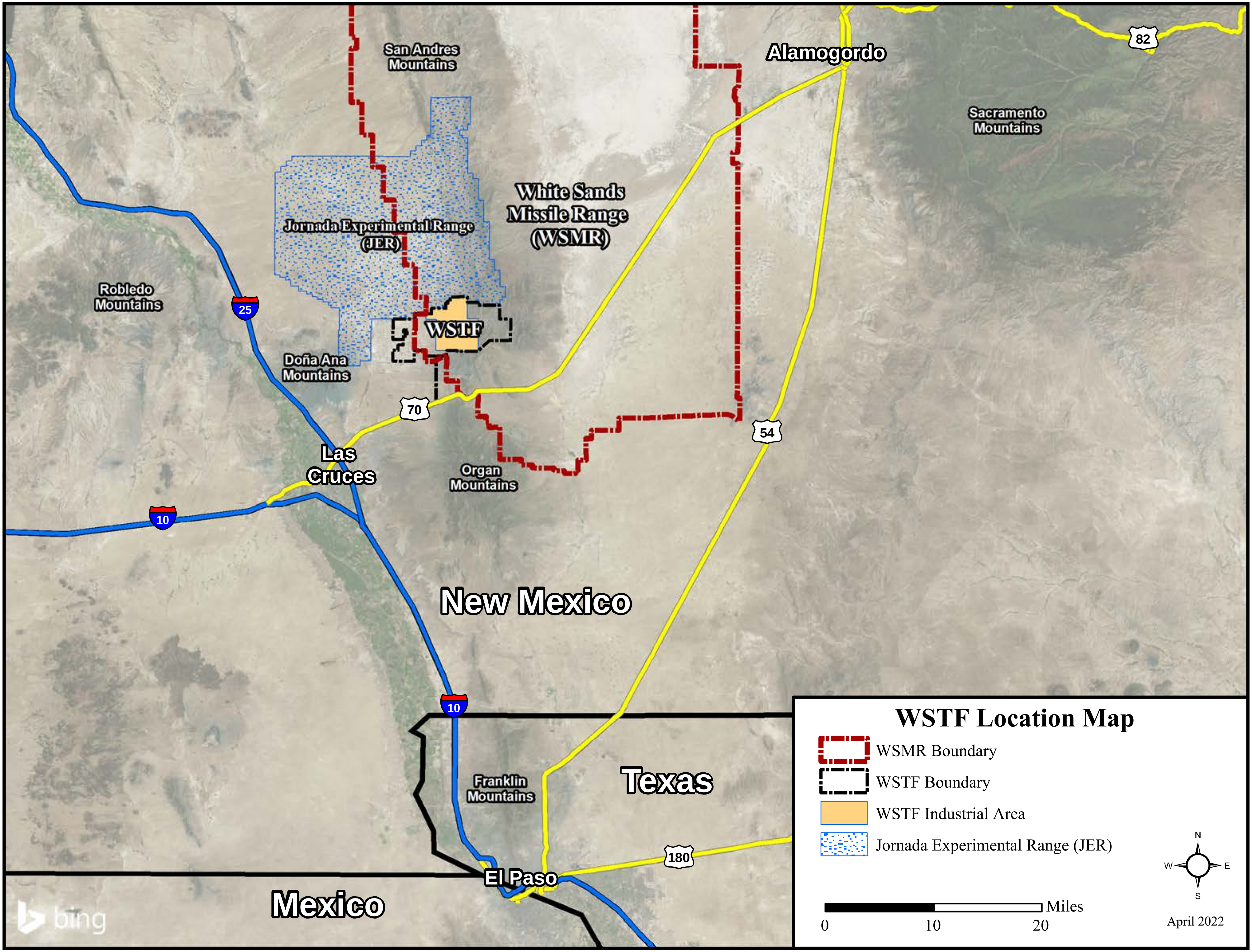

San Andres Mountains
Alamogordo
82
Sacramento Mountains
White Sands Missile Range (WSMR)
Jornada Experimental Range (JER)
Robledo Mountains
25
WSTF
Doña Ana Mountains
70
54
Las Cruces
Organ Mountains
10
New Mexico
10
Franklin Mountains
Texas
180
El Paso
Mexico
bing
WSTF Location Map
WSMR Boundary
WSTF Boundary
WSTF Industrial Area
Jornada Experimental Range (JER)
N
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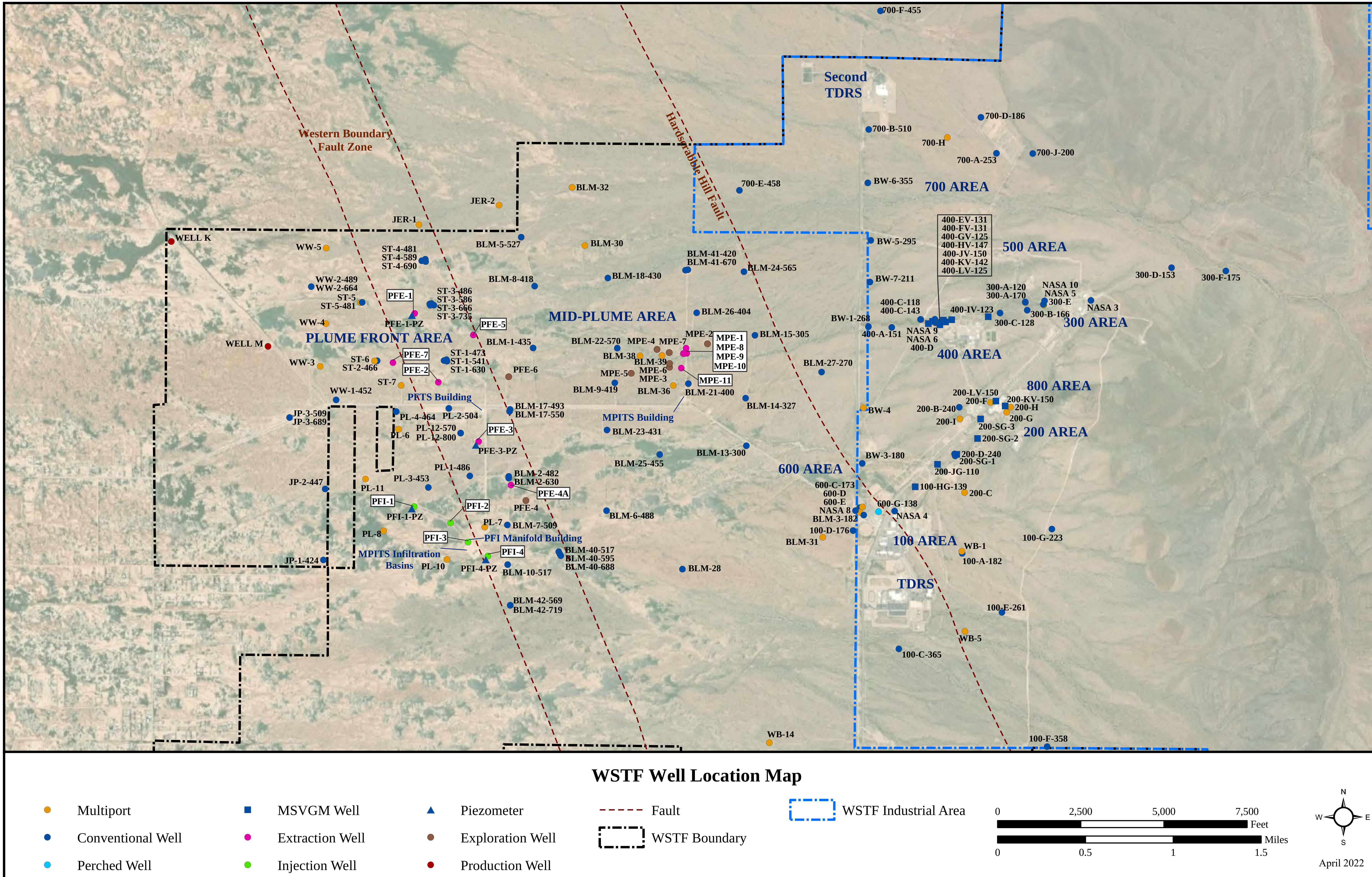
Miles
0
10
20
April 2022

Figure 1.2 **WSTF Well Location Map**

(SEE NEXT PAGE)



WSTF Well Location Map

Figure 4.1 Groundwater Elevations and Generalized Flow Directions for the Reporting Period

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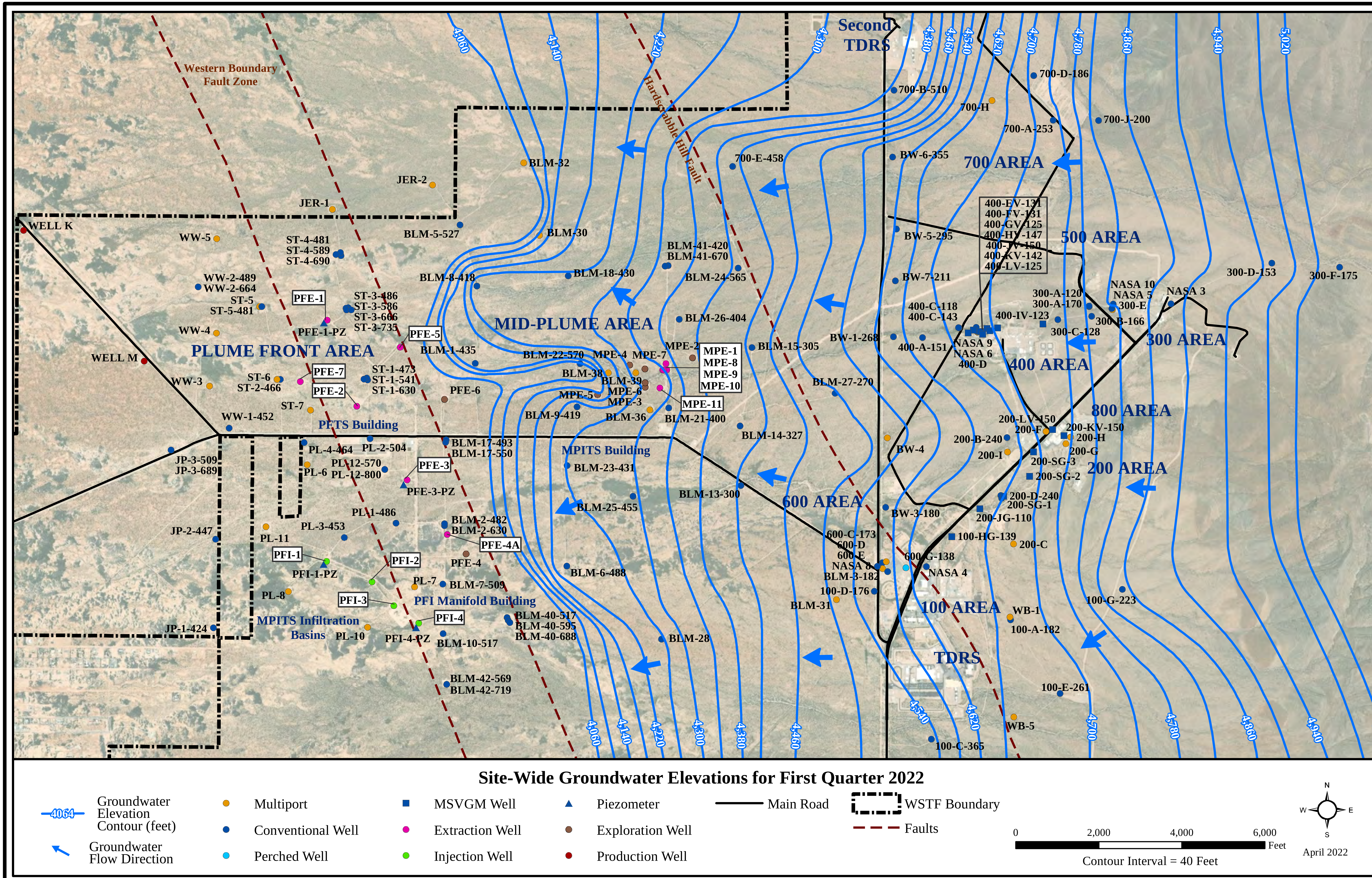

Site-Wide Groundwater Elevations for First Quarter 2022

Figure 4.2 Site-Wide N-Nitrosodimethylamine (NDMA) Concentrations for the Reporting Period

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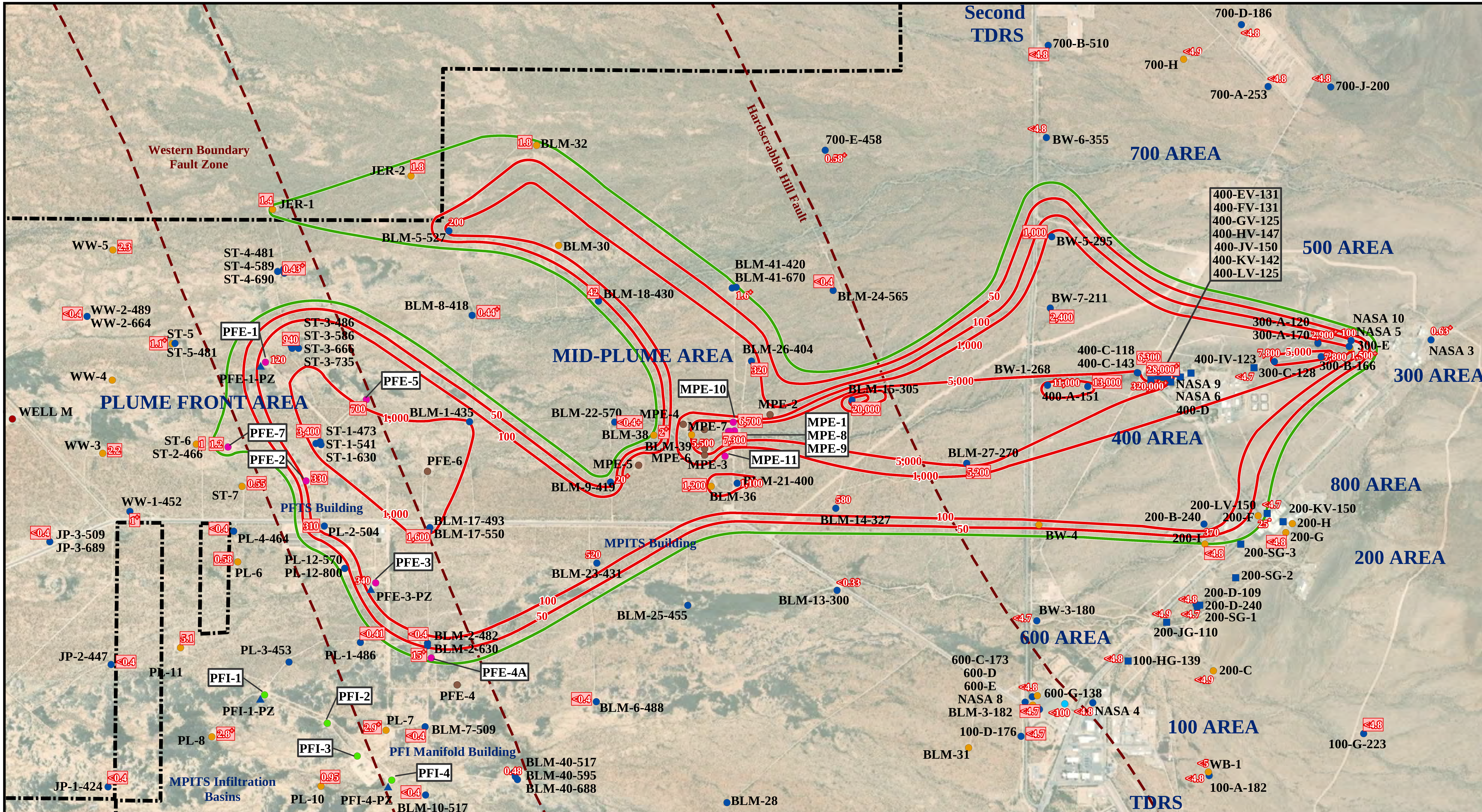


NDMA Maximum Concentrations in Groundwater for First Quarter 2022

- 50 Equiconcentration Line (ng/L)
- NDMA Cleanup Level (1.1 ng/L)
- Multiport
- Conventional Well
- Perched Well
- MSVGM Well
- Extraction Well
- Injection Well
- Piezometer
- Exploration Well
- Production Well
- Fault
- WSTF Boundary

Feet: 0, 4,000, 8,000

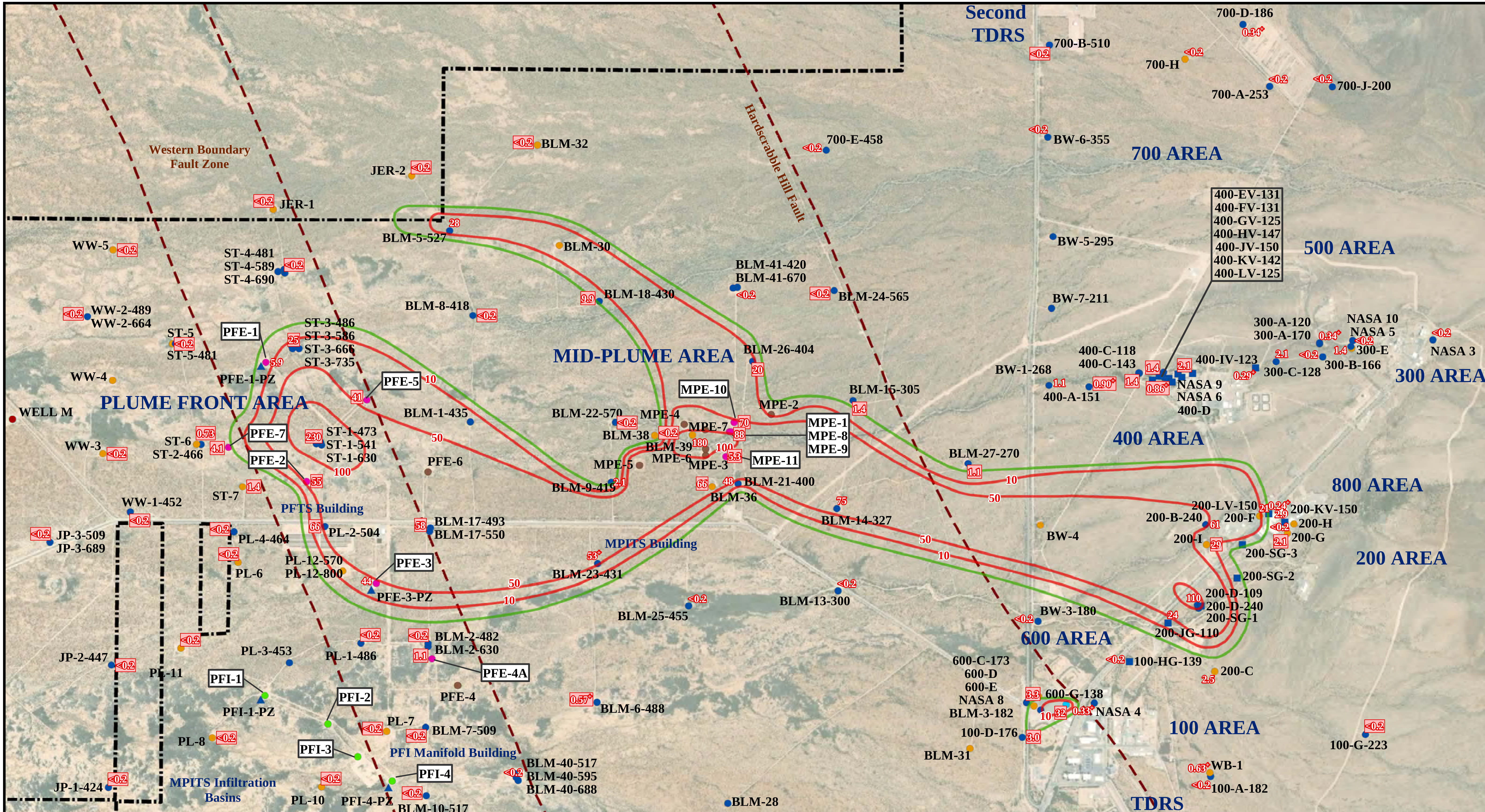
Note:
Method 607 NDMA results corrected for extraction efficiency.
* - The analytical batch LCS_01MAR21 laboratory control sample recoveries of NDMA (1.4%) were outside laboratory control limits; corrected detections were excluded for 1Q2022.
\+ - Data value has a QA flag. See Appendix A.2 for specific flags.
50 - Sample event result was within the quarterly date range. No outline indicates an earlier sample event.
- Non-detect values displayed "<Detection Limit" in ng/L.
- No value indicates the well has not been sampled in the last year.

N, W, E, S

April 2022

Figure 4.3 Site-Wide Trichloroethene (TCE) Concentrations for the Reporting Period

(SEE NEXT PAGE)



TCE Maximum Concentrations in Groundwater for First Quarter 2022

- Equiconcentration Line (ug/L)
- TCE Cleanup Level (4.9 ug/L)
- Multiport
- Conventional Well
- Perched Well
- MSVGM Well
- Extraction Well
- Injection Well
- Piezometer
- Exploration Well
- Production Well
- Fault
- WSTF Boundary

0 4,000 8,000 Feet

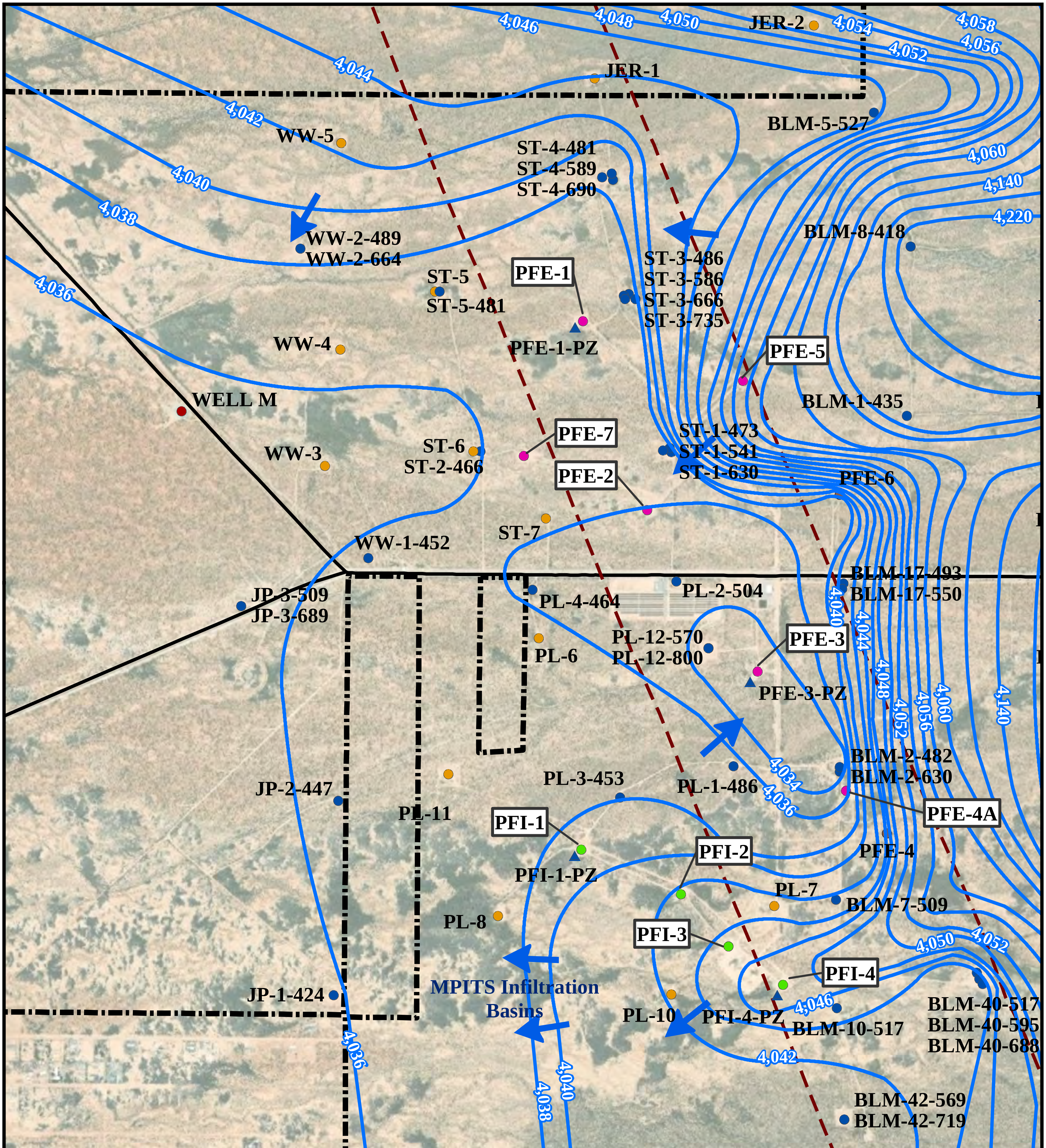
Note:
+ - Data value has a QA flag. See Appendix A.2 for specific flags.
50 - Sample event result was within the quarterly date range. No outline indicates an earlier sample event.
- Non-detect values displayed "<Detection Limit" in µg/L.
- No value indicates the well has not been sampled in the last year.

N S W E

April 2022

Figure 6.1 Plume Front Groundwater Elevations for the Reporting Period

(SEE NEXT PAGE)



Plume Front Groundwater Elevations for First Quarter 2022

4060 Groundwater Elevation Contour (feet)

Groundwater Flow Direction

Multiport

Conventional Well

Extraction Well

Injection Well

Piezometer

Exploration Well

Production Well

Western Boundary Fault Zone

WSTF Boundary

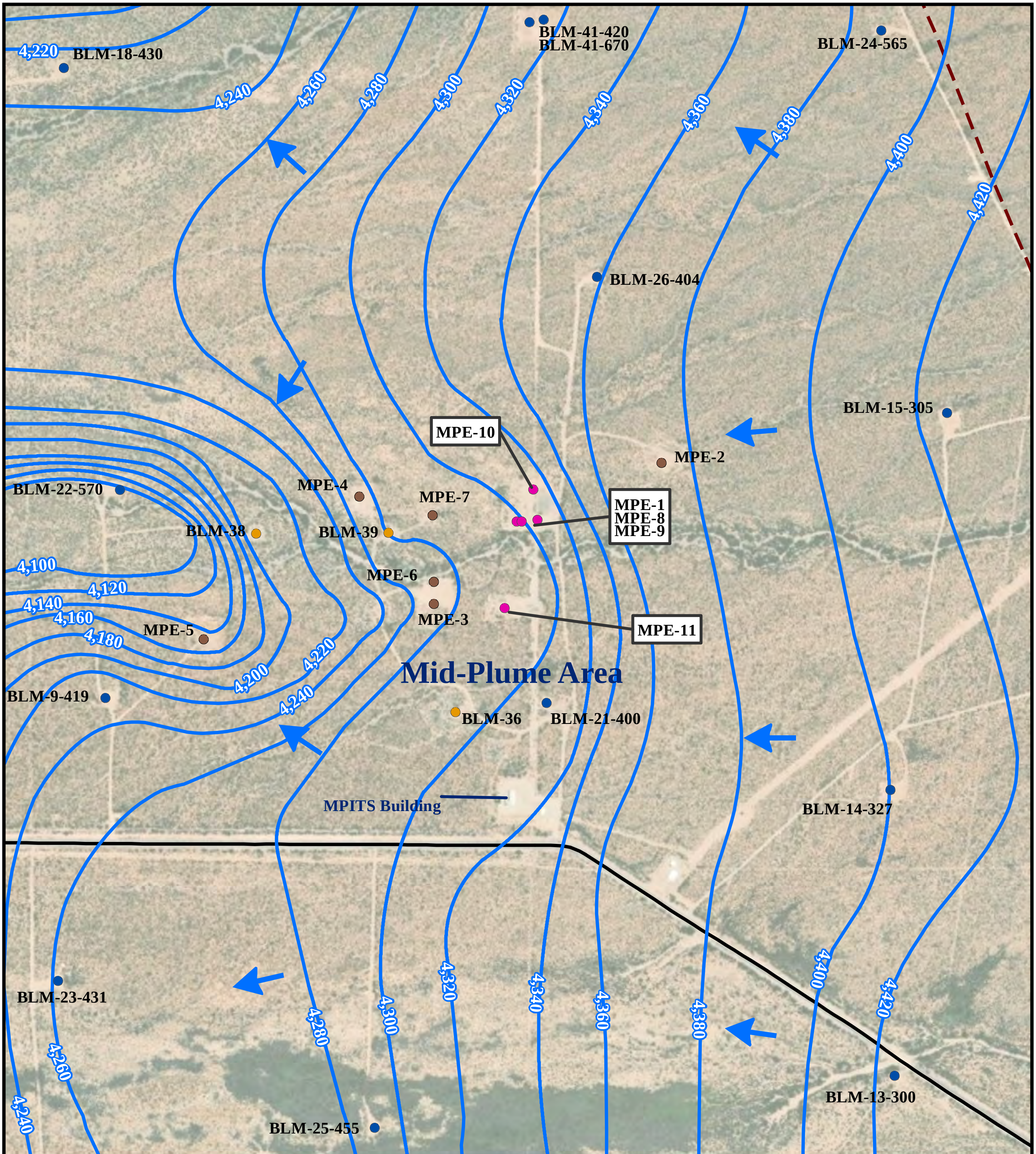
0 500 1,000 2,000 Feet

N
W E
S

April 2022

Figure 6.2 Mid-plume Groundwater Elevations for the Reporting Period

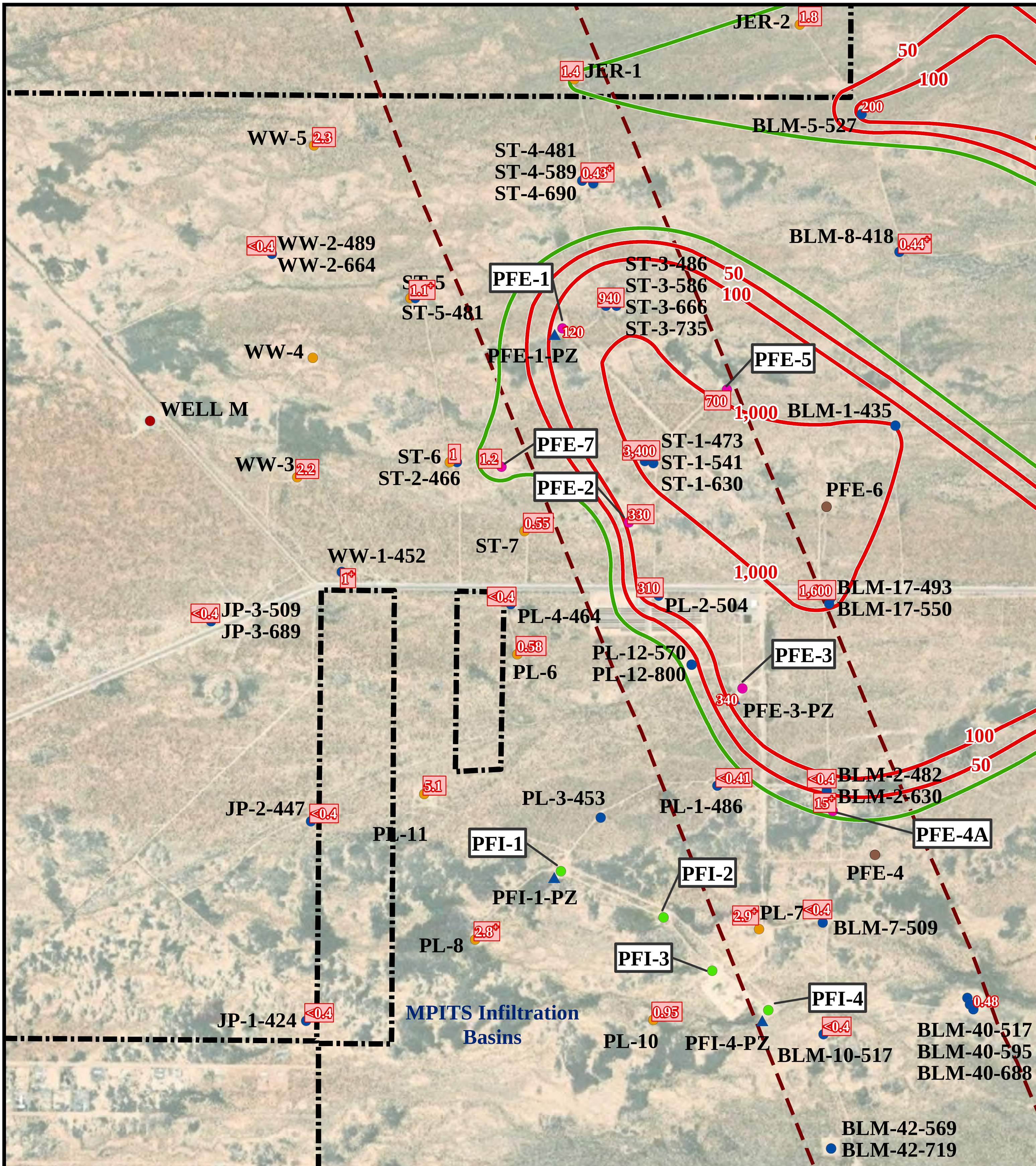
(SEE NEXT PAGE)



Mid-Plume Groundwater Elevations for First Quarter 2022

Figure 6.3 N-Nitrosodimethylamine Concentrations at the Plume Front for the Reporting Period

(SEE NEXT PAGE)



Plume Front NDMA Maximum Concentrations in Groundwater for First Quarter 2022

50 Equiconcentration Line (ng/L)

NDMA Cleanup Level (1.1 ng/L)

Multiport Well

Conventional Well

Extraction Well

Injection Well

Piezometer

Exploration Well

Production Well

Western Boundary Fault Zone

WSTF Boundary

0 750 1,500 Feet

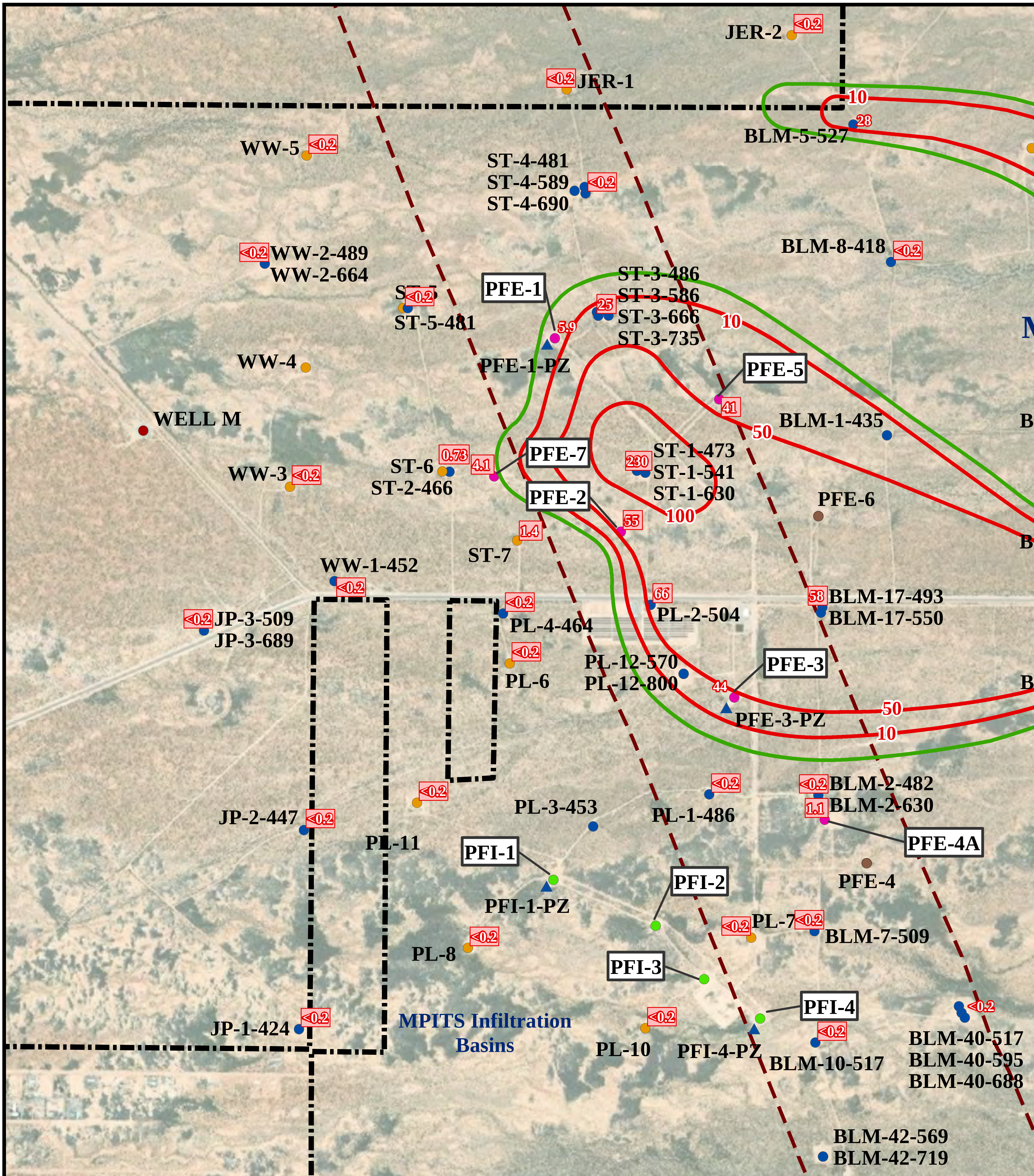
Note:
Method 607 NDMA results corrected for extraction efficiency.
+ - Data value has a QA flag. See Appendix A.2 for specific flags.
50 - Sample event result was within the quarterly date range. No outline indicates an earlier sample event.
- Non-detect values displayed "<Detection Limit" in ng/L.
- No value indicates the well has not been sampled in the last year.

N W E S

April 2022

Figure 6.4 Trichloroethene Concentrations at the Plume Front for the Reporting Period

(SEE NEXT PAGE)



Plume Front TCE Maximum Concentrations in Groundwater for First Quarter 2022

- 10 Equiconcentration Line (ug/L)
- TCE Cleanup Level (4.9 ug/L)
- Multiport Well
- Conventional Well
- Extraction Well
- Injection Well
- Piezometer
- Exploration Well
- Production Well
- Western Boundary Fault Zone
- WSTF Boundary

0 750 1,500 Feet

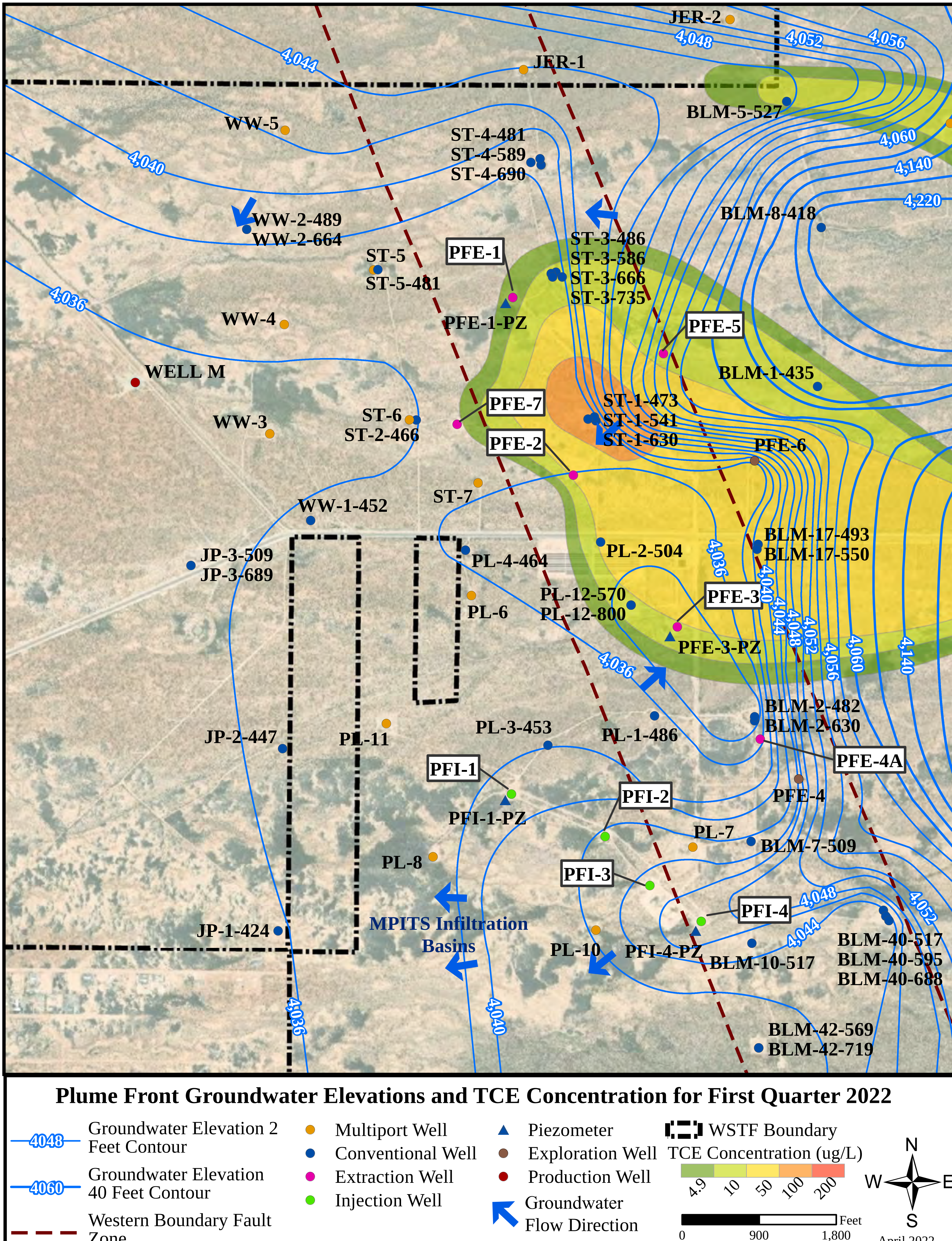
N W E S

Note:
+ - Data value has a QA flag. See Appendix A.2 for specific flags.
50 - Sample event result was within the quarterly date range. No outline indicates an earlier sample event.
- Non-detect values displayed "<Detection Limit" in µg/L.
- No value indicates the well has not been sampled in the last year.

April 2022

Figure 6.5 Plume Front Groundwater Elevations and Trichloroethene Concentrations for the Reporting Period

(SEE NEXT PAGE)



Plume Front Groundwater Elevations and TCE Concentration for First Quarter 2022

Tables

Table 3.1 DP-1255 Discharge Standards and Groundwater Cleanup Levels for WSTF COC

Contaminant	Chemical Abstract Number	DP-1255 Standard (µg/L)	Cleanup Level (µg/L)
Carcinogens			
NDMA	62-75-9	0.0049	0.0011[1]
TCE	79-01-6	2.59	4.9[1]
PCE	127-18-4	40.3	5.0[2]
Chloroform	67-66-3	2.29	2.2[1]

Notes:

1 Cleanup Level based on EPA RSL equivalent to the most conservative value equivalent to 1E-05 risk for carcinogens or H=1 for non-carcinogens as updated in the 2021 GMP update (NASA, 2021a).

2 Cleanup Level based on Maximum Contaminant Levels found in 40 Code of Federal Regulations Parts 141: https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=a4752225928ed82c597f05b633d21806&mc=true&n=pt40.25.141&r=PART&ty=HTML

Table 3.2 Accepted New Detections for This Reporting Period

Well ID	CAS Number	Analyte
BLM-17-493	7440-38-2	Arsenic, Total
BLM-17-550	7440-38-2	Arsenic, Total
BLM-18-430	7439-89-6	Iron, Total

Table 3.3 Unconfirmed New Detections – Resolution Pending

Well ID	CAS Number	Analyte	Scheduled Resample Date
ST-2-466	314-40-9	Bromacil	2/2/2022
BLM-13-300	314-40-9	Bromacil	3/4/2022
BLM-42-709	117-81-7	Bis(2-ethylhexyl) Phthalate	3/13/2022
BLM-42-709	62-75-9	N-Nitrosodimethylamine	3/14/2022
WW-4-948	314-40-9	Bromacil	3/18/2022
BLM-40-517	314-40-9	Bromacil	4/1/2022
BLM-40-517	62-75-9	N-Nitrosodimethylamine	4/4/2022
PL-10-484	123-91-1	1,4-Dioxane	4/11/2022
BLM-14-327	7429-90-5	Aluminum, Total	4/15/2022
BLM-8-418	314-40-9	Bromacil	5/6/2022
BLM-38-480	314-40-9	Bromacil	5/11/2022
WB-1-200	75-15-0	Carbon Disulfide	5/18/2022
ST-6-568	117-81-7	Bis(2-ethylhexyl) Phthalate	9/15/2022
ST-6-678	314-40-9	Bromacil	9/16/2022
PL-3-453	314-40-9	Bromacil	10/4/2022
ST-7-779	7440-50-8	Copper, Total	10/6/2022
JER-2-584	7440-66-6	Zinc, Total	10/13/2022
JER-1-483	314-40-9	Bromacil	10/14/2022
BLM-41-420	314-40-9	Bromacil	10/18/2022
WW-5-459	117-81-7	Bis(2-ethylhexyl) Phthalate	10/19/2022
WW-5-809	117-81-7	Bis(2-ethylhexyl) Phthalate	10/20/2022
400-C-143	7429-90-5	Aluminum, Total	11/17/2022
700-B-510	314-40-9	Bromacil	12/9/2022
BLM-40-595	14797-73-0	Perchlorate	4/12/2023
PL-10-484	314-40-9	Bromacil	10/6/2023
ST-2-466	314-40-9	Bromacil	2/2/2022
BLM-13-300	314-40-9	Bromacil	3/4/2022
BLM-42-709	117-81-7	Bis(2-ethylhexyl) Phthalate	3/13/2022
BLM-42-709	62-75-9	N-Nitrosodimethylamine	3/14/2022

Table 3.4 Unconfirmed Detections Resolved This Reporting Period

Well ID	CAS Number	Analyte	Scheduled Resample Date	Resolution
BLM-2-630	7440-02-0	Nickel, Total	11/9/2021	Confirmed
ST-1-541	7440-47-3	Chromium, Total	11/11/2021	Unconfirmed
200-I-795	314-40-9	Bromacil	11/18/2021	Confirmed
200-I-795	62-75-9	N-Nitrosodimethylamine	11/18/2021	Unconfirmed
PL-6-1195	7440-47-3	Chromium, Total	1/6/2022	Confirmed
PL-6-1335	4164-28-7	N-Nitrodimethylamine	1/7/2022	Unconfirmed
100-F-358	12672-29-6	Aroclor 1248	1/20/2022	Unconfirmed
100-F-358	314-40-9	Bromacil	1/20/2022	Unconfirmed
BLM-2-630	7440-02-0	Nickel, Total	11/9/2021	Confirmed
ST-1-541	7440-47-3	Chromium, Total	11/11/2021	Unconfirmed

Table 4.1 Groundwater Monitoring Wells/Zones Analyzed for the Reporting Period

Well Name	Event Date	Well Group	Well Name	Event Date	Well Group	Well Name	Event Date	Well Group
100-D-176	11/11/21	100/600	BLM-22-570	11/10/21	Mid-plume	JP-2-447	01/04/22	Sentinel
100-F-358	01/18/22	Upgradient	BLM-24-565	11/02/21	N. Boundary	JP-3-509	12/09/21	Sentinel
100-G-223	01/18/22	Upgradient	BLM-2-630	11/09/21	In Plume	JP-3-509	01/06/22	Sentinel
200-G-175	12/06/21	200	BLM-26-404	11/03/21	Mid-plume	JP-3-689	01/06/22	Sentinel
200-G-220	12/02/21	200	BLM-27-270	12/15/21	Mid-plume	NASA 6	11/15/21	300/400
200-G-340	12/02/21	200	BLM-3-182	11/02/21	100/600	PL-10-484	01/11/22	Sentinel
200-G-420	12/01/21	200	BLM-32-543	11/01/21	N. Boundary	PL-10-592	01/10/22	Sentinel
200-G-495	12/01/21	200	BLM-32-571	11/01/21	N. Boundary	PL-11-470	12/01/21	Sentinel
200-I-185	11/10/21	200	BLM-32-632	11/01/21	N. Boundary	PL-11-530	12/01/21	Sentinel
200-I-300	11/16/21	200	BLM-36-350	11/03/21	Mid-plume	PL-11-710	12/02/21	Sentinel
200-I-375	11/16/21	200	BLM-36-610	11/02/21	Mid-plume	PL-11-820	12/02/21	Sentinel
200-I-490	11/15/21	200	BLM-36-800	11/03/21	Mid-plume	PL-11-980	12/02/21	Sentinel
200-I-675	11/15/21	200	BLM-36-860	11/02/21	Mid-plume	PL-12-570	11/03/21	In Plume
200-I-795	11/12/21	200	BLM-38-480	11/04/21	Mid-plume	PL-12-800	11/03/21	In Plume
300-F-175	01/19/22	Upgradient	BLM-38-620	11/04/21	Mid-plume	PL-1-486	01/10/22	In Plume
400-A-151	01/05/22	300/400	BLM-42-569	12/13/21	Sentinel	PL-2-504	12/10/21	In Plume
400-C-143	11/17/21	300/400	BLM-42-709	12/13/21	Sentinel	PL-4-464	12/15/21	Plume Front
400-EV-131	11/01/21	300/400	BLM-6-488	01/05/22	S. Boundary	PL-6-1195	01/12/22	Plume Front
400-FV-131	01/18/22	300/400	BLM-7-509	12/06/21	Plume Front	PL-6-1335	01/13/22	Plume Front
400-GV-125	11/02/21	300/400	BLM-8-418	11/04/21	Mid-plume	PL-6-545	01/19/22	Plume Front
400-HV-147	01/18/22	300/400	BW-5-295	11/04/21	300/400	PL-6-725	01/19/22	Plume Front
400-JV-150	11/01/21	300/400	BW-7-211	12/15/21	300/400	PL-6-915	01/18/22	Plume Front
600-G-138	01/19/22	100/600	JER-1-483	01/06/22	N. Boundary	PL-7-480	11/08/21	Plume Front
700-B-510	12/09/21	N. Boundary	JER-1-563	01/06/22	N. Boundary	PL-7-560	11/08/21	Plume Front
BLM-10-517	01/03/22	Plume Front	JER-1-683	01/07/22	N. Boundary	PL-8-455	12/08/21	Sentinel
BLM-15-305	01/12/22	Mid-plume	JER-2-504	01/05/22	N. Boundary	PL-8-605	12/08/21	Sentinel
BLM-17-493	11/03/21	In Plume	JER-2-584	01/05/22	N. Boundary	ST-1-473	11/15/21	In Plume
BLM-17-550	01/03/22	In Plume	JER-2-684	01/05/22	N. Boundary	ST-1-541	12/16/21	In Plume
BLM-18-430	01/13/22	Mid-plume	JP-1-424	01/04/22	Sentinel	ST-1-630	12/16/21	In Plume

Well Name	Event Date	Well Group
ST-3-486	12/09/21	In Plume
ST-3-586	12/13/21	In Plume
ST-3-666	12/15/21	In Plume
ST-3-735	12/14/21	In Plume
ST-4-481	12/08/21	Plume Front
ST-4-589	11/02/21	Plume Front
ST-4-690	12/08/21	Plume Front
ST-5-485	11/01/21	Plume Front
ST-5-655	11/01/21	Plume Front

Well Name	Event Date	Well Group
ST-6-528	12/06/21	Plume Front
ST-6-568	12/06/21	Plume Front
ST-6-678	12/07/21	Plume Front
ST-6-824	12/07/21	Plume Front
ST-6-970	12/07/21	Plume Front
ST-7-453	01/03/22	Plume Front
ST-7-544	01/03/22	Plume Front
ST-7-779	01/04/22	Plume Front
ST-7-970	01/04/22	Plume Front

Well Name	Event Date	Well Group
WW-1-452	12/06/21	Plume Front
WW-2-489	12/14/21	Sentinel
WW-2-664	12/14/21	Sentinel
WW-3-469	12/07/21	Sentinel
WW-3-569	12/07/21	Sentinel
WW-5-459	01/10/22	Sentinel
WW-5-579	01/10/22	Sentinel
WW-5-809	01/11/22	Sentinel
WW-5-909	01/11/22	Sentinel

Plume Front	
Well Name	**Event Date**
B650-EFF-1	11/02/21
B650-EFF-1	12/06/21
B650-EFF-1	01/06/22
B650-INF-1	11/02/21
B650-INF-1	12/06/21
B650-INF-1	01/06/22

Plume Front	
Well Name	**Event Date**
PFE-2	01/12/22
PFE-4A	01/11/22
PFE-5	01/11/22
PFE-7	01/12/22

Mid-plume	
Well Name	**Event Date**
B655-EFF-2	11/02/21
B655-EFF-2	12/06/21
B655-EFF-2	01/07/22
B655-INF-2	11/02/21
B655-INF-2	12/06/21
B655-INF-2	01/07/22

Mid-plume	
Well Name	**Event Date**
MPE-1	11/04/21
MPE-10	11/04/21
MPE-11	11/04/21
MPE-8	11/04/21

Table 4.2 Groundwater Elevation Data

Well Name	Total Depth (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Groundwater Elevation (ft amsl)	Measurement Date
100-A-182	198	182	192	4,669.69	11/29/21
100-C-365	391	365	386	4,535.06	11/29/21
100-D-176	201	176	196	4,568.79	11/29/21
100-E-261	277	261	271	4,681.96	11/29/21
100-F-358	378	358	368	4,713.07	11/29/21
100-G-223	238	223	233	4,851.26	11/29/21
100-HG-139	165	139	159	4,647.21	11/29/21
200-B-240	255	240	250	4,647.00	11/29/21
200-C(170)[i]	290	N/A	N/A	4,680.80	11/24/21
200-D-240	280	240	250	4,661.89	11/29/21
200-F(370)[i]	590	N/A	N/A	4,715.01	11/24/21
200-G(220)[i]	515	N/A	N/A	4,722.98	11/24/21
200-H(331)[i]	458	N/A	N/A	4,734.06	11/24/21
200-I(300)[i]	815	N/A	N/A	4,651.95	11/24/21
200-JG-110	150	110	130	4,655.35	11/29/21
200-KV-150	175	150	170	4,726.03	11/29/21
200-LV-150	175	150	170	4,727.86	11/29/21
200-SG-1	138	123	138	4,652.16	11/29/21
300-A-120	151	120	146	4,785.43	11/29/21
300-B-166	181	165	176	4,773.22	11/29/21
300-C-128	160	128	154	4,739.78	11/29/21
300-D-153	179	153	174	4,949.42	11/29/21
300-E(138)[i]	395	N/A	N/A	4,805.40	11/24/21
300-F-175	195	175	185	5,043.80	11/29/21
400-A-151	187	151	176	4,636.53	11/29/21
400-C-143	159	143	153	4,669.24	11/29/21
400-D(275)[i]	380	N/A	N/A	4,663.73	11/24/21
600-E(280)[i]	690	N/A	N/A	4,559.00	11/24/21
700-A-253	269	253	263	4,723.73	11/29/21
700-B-510	550	510	531	4,341.58	11/29/21
700-D-186	202	186	196	4,720.45	11/29/21
700-H(350)[i]	695	N/A	N/A	4,636.90	11/24/21
700-J-200	230	200	220	4,834.07	11/29/21
BLM-10-517	532	517	527	4,045.95	11/29/21
BLM-13-300	316	300	310	4,421.92	11/29/21
BLM-1-435	451	435	446	4,145.52	11/29/21
BLM-14-327	343	327	337	4,400.19	11/29/21
BLM-15-305	321	305	315	4,423.02	11/29/21
BLM-17-493	519	493	513	4,041.53	11/29/21

Well Name	Total Depth (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Groundwater Elevation (ft amsl)	Measurement Date
BLM-18-430	456	430	451	4,226.22	11/29/21
BLM-21-400	413	400	410	4,312.85	11/29/21
BLM-22-570	597	570	592	4,095.55	11/29/21
BLM-23-431	447	431	441	4,261.06	11/29/21
BLM-24-565	590	565	585	4,385.44	11/29/21
BLM-25-455	470	455	465	4,283.40	11/29/21
BLM-2-630	498	482	493	4,037.36	11/29/21
BLM-26-404	420	404	414	4,358.22	11/29/21
BLM-27-270	286	270	280	4,498.03	11/29/21
BLM-28 (Borehole)[i]	555	N/A	N/A	4,257.99	11/29/21
BLM-3-182	208	182	203	4,568.73	11/29/21
BLM-36(350)[ii]	905	604	614	4,334.88	11/24/21
BLM-38(480)[ii]	641	475	485	4,207.47	11/24/21
BLM-39(385)[ii]	595	379	389	4,282.31	11/24/21
BLM-40-517	532	517	527	4,043.46	11/29/21
BLM-41-420	435	420	430	4,317.81	11/29/21
BLM-5-527	560	527	538	4,045.90	11/29/21
BLM-6-488	503	488	498	4,231.32	11/29/21
BLM-7-509	525	509	520	4,041.99	11/29/21
BLM-8-418	434	418	428	4,223.67	11/29/21
BLM-9-419	445	419	440	4,226.99	11/29/21
BW-1-268	294	268	289	4,606.70	11/29/21
BW-3-180	205	180	200	4,565.24	11/29/21
BW-5-295	311	295	305	4,581.65	11/29/21
BW-6-355	381	355	376	4,573.22	11/29/21
BW-7-211	225	211	222	4,606.91	11/29/21
JP-1-424	440	424	434	4,035.57	11/29/21
JP-2-447	462	446	457	4,036.75	11/29/21
MPE-2	600	400	580	4,372.21	11/29/21
MPE-5	590	450	570	4,145.22	11/29/21
MPE-6	603	383	602	4,269.62	11/29/21
MPE-7	600	401	600	4,231.24	11/29/21
NASA 10	135	110	130	4,823.11	11/29/21
NASA 3	144	119	139	4,889.30	11/29/21
NASA 4	171	146	166	4,637.64	11/29/21
NASA 5	135	110	130	4,792.49	11/29/21
NASA 6	153	128	148	4,690.09	11/29/21
NASA 8	197	172	192	4,568.49	11/29/21
PFE-1-PZ	609	588	598	4,037.48	11/29/21

Well Name	Total Depth (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Groundwater Elevation (ft amsl)	Measurement Date
PFE-3-PZ	620	590	600	4,032.07	11/29/21
PFE-4	877	397	876	4,042.78	11/29/21
PFE-6	539	434	534	4,038.21	11/29/21
PFI-1-PZ	619	589	599	4,034.43	11/29/21
PFI-4-PZ	600	398	600	4,047.18	11/29/21
PL-10(484)[ii]	1000	479	489	4,041.23	11/24/21
PL-1-486	502	486	496	4,037.14	11/29/21
PL-2-504	520	504	514	4,033.83	11/29/21
PL-3-453	469	453	464	4,037.98	11/29/21
PL-4-464	480	464	474	4,036.01	11/29/21
PL-6(545)[ii]	1860	540	550	4,034.66	11/24/21
PL-7(480)[ii]	655	475	485	4,042.81	11/24/21
PL-8(455)[ii]	1000	448	458	4,036.76	11/24/21
ST-1-473	488	473	483	4,034.63	11/29/21
ST-2-466	481	466	476	4,035.91	11/29/21
ST-3-486	502	486	496	4,038.03	11/29/21
ST-4-481	497	481	491	4,038.97	11/29/21
ST-5-481	497	481	491	4,038.33	11/29/21
WB-14(520)[i]	545	N/A	N/A	4,432.71	11/24/21
WB-5(250)[i]	400	N/A	N/A	4,667.13	11/24/21
WW-1-452	468	452	462	4,036.58	11/29/21
WW-3(469)[ii]	1014	464	474	4,035.94	11/24/21

Notes:

i Depth to top and bottom of screen are indicated as not applicable (N/A) for multiport Westbay wells that are completed in an open borehole. The depth of the Westbay monitoring port used to calculate the piezometric surface is provided in parenthesis with the well name. Depth to water and groundwater elevation were calculated from the formation pressure at the indicated port depth.

ii The screen depths listed for retrofit multiport wells indicate the top and bottom of the screen in the outer casing of the well that corresponds to the measurement port used at that location. The depth of the monitoring port used to calculate the piezometric surface is provided in parenthesis with the well name. Depth to water and groundwater elevation for Westbay multiport monitoring wells were calculated from the formation pressure at the indicated port depth. Depth to water and groundwater elevation for FLUTe multiport monitoring wells were calculated from pressure transducer readings collected on the measurement date.

Table 5.1 PFTS and MPITS Operational Status for the Reporting Period

Month	Plume Front Treatment System			Mid-plume Treatment System		
	Days Operated	Average Flow Rate (gpm)	Groundwater Treated (acre-ft)	Days Operated	Average Flow Rate (gpm)	Groundwater Treated (acre-ft)
Nov-21	29 of 30	789	90.2	28 of 30	9.6	0.99
Dec-21	22 of 31	776	68.7	29 of 31	8.8	0.98
Jan-22	31 of 31	776	75.8	31 of 31	9.1	1.25

Table 5.2 PFTS and MPITS System Shutdowns for the Reporting Period

Shutdown Date	Restart Date	Type of Shutdown	Description
Plume Front Treatment System Shutdowns			
11/2/21	11/2/21	Unplanned	The system shut down automatically because of a disruption in the electrical power supply.
11/11/21	11/11/21	Unplanned	The system shut down automatically because of a disruption in the electrical power supply.
11/13/21	11/15/21	Unplanned	The system shut down automatically because of a disruption in the electrical power supply.
11/15/21	11/16/21	Unplanned	The system shut down automatically because of a communication error at well PFI-4.
11/18/21	11/19/21	Planned	NASA shut the system down to accommodate a scheduled outage at the WSTF Data Center.
12/2/21	12/2/21	Unplanned	The system shut down automatically because of a communication loss at well PFI-4.
12/11/21	12/12/21	Unplanned	The system shut down automatically because of a disruption in the electrical power supply.
12/12/21	12/21/21	Planned	NASA shut the system down to accommodate scheduled maintenance to replace a portion of the recirculation piping, install an isolation valve at each air stripper, and install a new electrical power recloser.
1/20/22	1/20/22	Planned	NASA shut the system down to support a planned power outage for an arc-flash upgrade project.
Mid-plume Interception and Treatment System Shutdowns			
11/6/21	11/8/21	Unplanned	The system shut down automatically because of a disruption in the electrical power supply.
11/13/21	11/13/21	Unplanned	The system shut down automatically because of a disruption in the electrical power supply.
11/13/21	11/15/21	Planned	NASA left the down to accommodate a scheduled local area network outage.
12/1/21	12/1/21	Planned	NASA shut the system down to modify the air stripper exhaust stack.
12/7/21	12/7/21	Planned	NASA shut the system down to add an extension to the air stripper exhaust stack.
12/16/21	12/19/21	Planned	NASA shut the system down to accommodate installation of a new electrical power recloser.

Table 5.3 PFTS Air Stripper and UV Reactor Performance for the Reporting Period

	Analyte	Unit	Design	Nov-21	Dec-21	Jan-22
Air Stripper Influent Concentrations	TCE	µg/L	130	25	18	16
	PCE	µg/L	0.66	0.97 J	0.82 J	1
	Freon 11	µg/L	860	19	16	25
	Chloroform	µg/L	NA[1]	< 0.24[2]	< 0.24[2]	< 0.24[2]
Air Stripper Effluent Concentrations	TCE	µg/L	5.0	<0.20[2]	< 0.20[2]	< 0.20[2]
	PCE	µg/L	5.0	< 0.21[2]	< 0.21[2]	< 0.21[2]
	Freon 11	µg/L	100	< 0.24[2]	< 0.24[2]	< 0.24[2]
	Chloroform	µg/L	NA[1]	< 0.24[2]	< 0.24[2]	< 0.24[2]
UV Reactor Influent Concentrations	NDMA[3]	ng/L	2,000	142[a]	168[b]	186[c]
UV Reactor Effluent Concentrations	NDMA[4]	ng/L	< 2.0	<0.4[2]	0.74 FB	<0.4[2]

FB - The analyte was detected in the field blank.J - The result is an estimated value less than the quantitation limit, but greater than or equal to the detection limit.
NS – Not sampled during the reporting period.
RB - The analyte was detected in the method blank.
TB - The analyte was detected in the trip blank.
[1] Chloroform was not included as an analyte in the system design criteria; not applicable (NA).
[2] Analytical result for the constituent was below the method detection limit (MDL; provided).
[3] Reported NDMA concentration is corrected for extraction efficiency. Modified EPA Method 607 batch-specific laboratory control sample recovery of NDMA: 53%[a], 59%[b], 43%[c]
[4] Analytical results from the low-level NDMA analytical method. NDMA was not detected by modified Method 607.

Table 5.4 PFTS Extraction and Injection Well Flow Rates for the Reporting Period

	Well Name	Design Flow Rate (gpm)	Operational Average Flow Rate[1] (gpm)	Overall Average Flow Rate[2] (gpm)	Operational Percent of Well Design	Overall Percent of Well Design
Extraction Wells (gpm)	**PFE-1**	288	256	1	89%	0%
	PFE-2	224	224	212	100%	95%
	PFE-3	213	N/O	N/O	N/O	N/O
	PFE-4A	200	165	156	82%	78%
	PFE-5	5.5	4.0	3.8	72%	69%
	PFE-7	125	150	142	120%	113%
Injection Wells (gpm)	**PFI-1**	269	N/O	N/O	N/O	N/O
	PFI-2	269	189	179	70%	66%
	PFI-3	344	211	200	61%	58%
	PFI-4	194	157	148	81%	76%

[1] Operational averages are averages based on when a well was in operating status. Backwashing and downtime events are not included.

[2] Overall averages are averages based on the overall status of the well and include backwashing and downtime events.

N/O - Not operating during reporting period.

Table 5.5 Comparison of Specific Capacities for the Plume Front Wells

Well Name	Specific Capacity at Installation	Specific Capacity Apr-21	Specific Capacity Jul-21	Specific Capacity Oct-21	Specific Capacity Dec-22[3]
PFE-1	8.3	NA[1]	NA[1]	6.6	6.9
PFE-2	5.7	6.4	6.5	6.6	6.4
PFE-3	19.4	10.6	10.0	10.5	NA[1]
PFE-4A	3.1	2.3	2.7	2.4	2.8
PFE-5	0.14	<0.1	NA[1]	0.1	0.1
PFE-7	6	5.9	6.0	5.8	5.9
Well Name	**Specific Capacity at Installation (Ideal Range)**	**Specific Capacity Apr-21**	**Specific Capacity Jul-21**	**Specific Capacity Oct-21**	**Specific Capacity Dec-22[3]**
PFI-1	2.8–5	NA[1]	NA[1]	NA[1]	NA[1]
PFI-2	2.8–7	2.3	2.2	1.6	1.7
PFI-3	2–4	2.3	1.9	2.0	1.9
PFI-4	2.3–3.5	2.3	1.6	1.5	1.4

Notes: Specific capacities are used to measure well performances and have units of gallons per minute per foot of drawdown.
NA[1] – Not Applicable due to well being inoperative during reporting period.
NA[2] – Not Applicable due to questionable transducer readings during reporting period.
3 – Measurements are from December 2021 were used because not all wells experienced a drawdown and recovery cycle in January 2022.

Table 5.6 Plume Front Mass Removal[1]

Date	TCE (kg)	Freon 11 (kg)	Chloroform(g)	PCE (g)	NDMA (g)
Feb-21	1.4	0.91	ND	23	16
Mar-21	1.5	1.4	ND	57	15
Apr-21	1.4	1.3	ND	36	8.5
May-21	3.7	3.9	ND	115	27
Jun-21	3.3	3.4	ND	99	24
Jul-21	4.4	3.7	ND	172	28
Aug-21	4.0	4.1	ND	159	23
Sep-21	0.45	0.28	ND	13	3.9
Oct-21	0.26	0.15	ND	ND	5.9
Nov-21	2.8	2.1	ND	85	16
Dec-21	1.5	1.3	ND	52	14
Jan-22	2.4	2.3	ND	74	17
Total[2]	**27**	**25**	**ND**	**885**	**198**

Notes:

1) Mass removed calculated as:
   *(Influent concentration - Effluent concentration) * volume of water extracted*
2) Total mass removed during the period covered by this table.

Table 5.7 MPITS Air Stripper and UV Reactor Performance for the Reporting Period

	Analyte	Unit	Design Parameter	Nov-21	Dec-21	Jan-22
Air Stripper Influent Concentrations (MPE Wells)	TCE	µg/L	140	49	39	51
	PCE	µg/L	6.4	2.6	1.9	2.8
	Freon 11	µg/L	240	80	78	110
	Chloroform	µg/L	NA[2]	<0.24[1]	<0.24[1]	<0.24[1]
Air Stripper Influent Concentrations (Well 600-G-138)	TCE	µg/L	140	NS	NS	32
	PCE	µg/L	6.4	NS	NS	<0.21[1]
	Freon 11	µg/L	240	NS	NS	0.76 J
	Chloroform	µg/L	NA[2]	NS	NS	0.28 J
Air Stripper Effluent Concentrations	TCE	µg/L	1.0	<0.20[1]	<0.20[1]	<0.20[1]
	PCE	µg/L	1.0	<0.21[1]	<0.21[1]	<0.21[1]
	Freon 11	µg/L	50	<0.24[1]	<0.24[1]	<0.24[1]
	Chloroform	µg/L	NA[2]	<0.24[1]	<0.24[1]	<0.24[1]
UV Reactor Influent Concentrations (MPE Wells)	NDMA[3]	ng/L	25,500	3,400[a]	2,700[b]	4,400[c]
UV Reactor Influent Concentrations (Well 600-G-138)	NDMA	ng/L	25,500	NS	NS	NS
UV Reactor Effluent Concentrations[4]	NDMA[4]	ng/L	< 2.0	<0.4[2]	1.1 FB	<0.4[2]

Notes:

* = For Low Level Nitrosamine Method, the recovery of N-nitrosodimethylamine (179%) in the laboratory fortified blank (LFB21A28CM1) was outside laboratory control limits (70-130%). Affected data are appropriately qualified.

FB = The analyte was detected in the field blank.J = The result is an estimated value less than the quantitation limit, but greater than or equal to the detection limit.

NS = Not sampled during the reporting period. Well 600-G-138 is sampled annually for NDMA in accordance with the GMP (NASA, 2021a). Analytical data are provided in this table when available.

RB = The analyte was detected in the method blank.

[1] Analytical result for the constituent was below the MDL (provided).

[2] Chloroform was not included in the design analyte list; not applicable (NA).

[3] Reported NDMA concentration is corrected for extraction efficiency. Modified EPA Method 607 batch-specific laboratory control sample recovery of NDMA: 53%[a], 59%[b], 43%[c].

[4] Analytical results from low-level analytical method and was below the MDL (provided). Results for Method 607 were ND.

Table 5.8 Mid-plume Mass Removal[1]

Date	TCE (g)	F11 (g)	Chloroform (g)	PCE (g)	NDMA (g)
Feb-21	94	190	0.01	4.0	11
Mar-21	120	190	0.01	5.2	14
Apr-21	100	210	0.01	4.4	12
May-21	69	150	ND	3.1	6.2
Jun-21	83	179	ND	3.6	7.3
Jul-21	70	151	ND	3.1	6.2
Aug-21	65	113	ND	2.8	6.0
Sep-21	62	121	ND	2.5	5.3
Oct-21	35	70	ND	1.4	3.0
Nov-21	65	123	ND	3.1	4.1
Dec-21	63	120	ND	3.0	4.4
Jan-22	72	138	ND	3.4	5.0
Total[2]	898	1755	0.03	40	85

Notes: .

1) Mass calculation: volume of water extracted at each well * (*contaminant concentration at each well – MPITS effluent concentration*)

2) Total mass removed during the period covered by this table.

Table 5.9 Groundwater Treatment System Operation Costs ($ / 1,000 gals)

Date	Gallons[1] Treated	ECO Labor + Materials	TEST Labor + Materials	L+M cost per 1,000 gal	Energy Cost	Energy Cost per 1,000 gal	Total Cost	Total Cost per 1,000 gal treated
Feb-21	22,918,654	$60,571	$62,487	$5.37	$23,938	$1.04	$146,996	$6.41
Mar-21	24,723,395	$60,571	$89,304	$6.06	$21,923	$0.89	$171,798	$6.95
Apr-21	26,173,206	$48,457	$56,956	$4.03	$24,106	$0.92	$129,519	$4.95
May-21	28,802,957	$60,547	$53,940	$3.97	$23,373	$0.81	$137,860	$4.79
Jun-21	26,672,390	$118,079	$66,298	$6.91	$29,110[2]	$1.09	$213,487	$8.00
Jul-21	28,005,674	$65,147	$49,923	$4.11	$38,421[2]	$1.37	$153,491	$5.48
Aug-21	33,533,267	$101,792	$49,614	$4.52	$40,390[2]	$1.20	$191,796	$5.72
Sep-21	9,661,806	$122,151	$55,846	$18.42	$20,021[2]	$2.07	$198,017	$20.49
Oct-21	24,289,224	$81,434	$45,431	$5.22	$26,150[2]	$1.08	$153,015	$6.30
Nov-21	29,904,475	$101,792	$50,793	$5.10	$19,193	$0.64	$171,779	$5.74
Dec-21	23,578,185	$81,434	$49,834	$5.57	$18,756	$0.80	$150,024	$6.36
Jan-22	27,294,811	$61,075	$35,658	$3.54	$22,271	$0.82	$119,004	$4.36
12-Month Total	305,558,044	$963,050	$666,084	$5.33	$307,652	$1.01	$1,936,786	$6.34

Notes:
1) Gallons treated reflects amount of water extracted during power reporting period.
2) Includes peak demand rates.

Table 6.1 Status of Wells with Sampling Issues

Well	Date of Discovery	Description	Scheduled for Sampling this Qtr? / Next Sampling Date per GMP	Description of Future Plan or Resolution
New Occurrences this Quarter				
ST-1-541	Nov-21	Sampling system not operational		NASA planned and performed required troubleshooting, determined the cause of the sampling system failure, repaired the sampling system, and performed sampling in December 2021.
ST-1-630	Nov-21	Sampling system not operational		NASA planned and performed required troubleshooting, determined the cause of the sampling system failure, repaired the sampling system, and performed sampling in December 2021.
400-IV-123	Jan-22	The water level in the well was insufficient for sample collection.		
Unresolved Issues				
BLM-1-435	Apr-20	Sampling failed, as there was not enough water in the screen to fill the sample bottles. Failed again, in April 2021 and October 2021.	Yes / Apr-22	The well does not provide sufficient water for representative sampling. NASA recommends plugging and abandoning this well as described in the 2022 GMP update.
400-C-118	Nov-20	Unable to collect groundwater sample because the water level in the well was insufficient for sampling. Insufficient recharge.	NA	The well does not provide sufficient water for representative sampling. NASA recommends plugging and abandoning this well as described in the 2022 GMP update.
400-C-143	Apr-21	Unable to collect groundwater sample because the water level in the well was insufficient for sampling.	No / Apr-22	Monitor the water level in this well and sample if the water level recovers enough to obtain a representative sample.

Well	Date of Discovery	Description	Scheduled for Sampling this Qtr? / Next Sampling Date per GMP	Description of Future Plan or Resolution
PL-3-453	Dec-20	Unable to collect groundwater sample because the water level in the well was insufficient for sampling. Insufficient recharge.	NA	The well does not provide sufficient water for representative sampling. NASA recommends plugging and abandoning this well as described in the 2022 GMP update.
WW-4	Jul-19 (FLUTe removal)	Water FLUTe sampling system removed Data Representativeness Phase 1: Water FLUTe Well Evaluation.	No / TBD (quarterly)	NASA installed a new Water FLUTe system in the well in February 2022 and plans to resume routine groundwater sampling in accordance with the GMP.
NASA 9	Oct-20	Could not be sampled - intrusion of roots into the well casing and screen.	NA	A work plan for abandonment and possible replacement of the monitoring well will be submitted to NMED for approval no later than April 29, 2022.
Issues Resolved this Quarter (will not appear in future Periodic Monitoring Reports)				
JP-3-509	Oct-21	Sampling system not operational	Yes / Apr 22	NASA repaired the sampling system and sampled the well in December 2021 and January 2022.
ST-1-541	Nov-21	Sampling system not operational		NASA planned and performed required troubleshooting, determined the cause of the sampling system failure, repaired the sampling system, and performed sampling in December 2021.
ST-1-630	Nov-21	Sampling system not operational		NASA planned and performed required troubleshooting, determined the cause of the sampling system failure, repaired the sampling system, and performed sampling in December 2021.

Appendix A
Indicator Parameters and Analytical Data

Appendix A.1
Monitor Well Indicator Parameters

Summary of Water Quality Parameters
for the Sampling Events in this Reporting Period

Well ID **100-D-176** **Event Date** **11/11/2021**

Sample	Parameter	Result	Units
2111111000A	Conductivity	3190	µS/cm
2111111000A	DO	6.21	mg/L
2111111000A	DTW	183.82	ft
2111111000A	ORP	44	mV
2111111000A	pH	7.05	NA
2111111000A	Temperature	25.25	ºC
2111111000A	Turbidity	13.1	NTU
2111111002A	Conductivity	3210	µS/cm
2111111002A	DO	6.17	mg/L
2111111002A	DTW	184.21	ft
2111111002A	ORP	44	mV
2111111002A	pH	7.06	NA
2111111002A	Temperature	25.22	ºC
2111111002A	Turbidity	13.2	NTU
2111111004A	Conductivity	3210	µS/cm
2111111004A	DO	6.18	mg/L
2111111004A	DTW	184.80	ft
2111111004A	ORP	41	mV
2111111004A	pH	7.09	NA
2111111004A	Temperature	25.24	ºC
2111111004A	Turbidity	12.9	NTU

Well ID **100-F-358** **Event Date** **1/18/2022**

Sample	Parameter	Result	Units
2201180920C	Conductivity	1218	µS/cm
2201180920C	DO	1.31	mg/L
2201180920C	ORP	137	mV
2201180920C	pH	6.96	NA
2201180920C	Temperature	21.35	ºC
2201180920C	Turbidity	0.36	NTU
2201180921C	Conductivity	1203	µS/cm
2201180921C	DO	1.43	mg/L
2201180921C	ORP	137	mV
2201180921C	pH	6.97	NA
2201180921C	Temperature	21.35	ºC
2201180921C	Turbidity	0.33	NTU
2201180922C	Conductivity	1210	µS/cm
2201180922C	DO	1.38	mg/L
2201180922C	ORP	136	mV
2201180922C	pH	6.97	NA
2201180922C	Temperature	21.37	ºC
2201180922C	Turbidity	0.38	NTU

Well ID **100-G-223** **Event Date** **1/18/2022**

Sample	Parameter	Result	Units
2201181425C	Conductivity	1065	µS/cm
2201181425C	DO	2.63	mg/L
2201181425C	ORP	192	mV
2201181425C	pH	7.04	NA
2201181425C	Temperature	20.34	ºC
2201181425C	Turbidity	0.52	NTU
2201181426C	Conductivity	1067	µS/cm
2201181426C	DO	2.61	mg/L
2201181426C	ORP	192	mV
2201181426C	pH	7.03	NA
2201181426C	Temperature	20.38	ºC
2201181426C	Turbidity	0.48	NTU
2201181427C	Conductivity	1073	µS/cm
2201181427C	DO	2.65	mg/L
2201181427C	ORP	192	mV
2201181427C	pH	7.04	NA
2201181427C	Temperature	20.34	ºC
2201181427C	Turbidity	0.49	NTU

Well ID	200-G-175	Event Date	12/6/2021
Sample	**Parameter**	**Result**	**Units**
2112061000Y	Atmospheric Pressure	12.55	psia
2112061000Y	Conductivity	1075	µS/cm
2112061000Y	DTW	173.13	ft
2112061000Y	Formation Pressure	23.27	psia
2112061000Y	pH	8.58	NA
2112061000Y	Temperature	19.8	ºC
2112061000Y	Turbidity	1.53	NTU
2112061330Y	Atmospheric Pressure	12.52	psia
2112061330Y	Conductivity	1088	µS/cm
2112061330Y	DTW	173.19	ft
2112061330Y	pH	8.45	NA
2112061330Y	Temperature	20.1	ºC
2112061330Y	Turbidity	1.34	NTU

Well ID	200-G-220	Event Date	12/2/2021
Sample	**Parameter**	**Result**	**Units**
2112021100Y	Atmospheric Pressure	12.54	psia
2112021100Y	Conductivity	1531	µS/cm
2112021100Y	DTW	173.01	ft
2112021100Y	Formation Pressure	42.85	psia
2112021100Y	pH	7.51	NA
2112021100Y	Temperature	22.8	ºC
2112021100Y	Turbidity	2.05	NTU
2112021351Y	Atmospheric Pressure	12.53	psia
2112021351Y	Conductivity	1514	µS/cm
2112021351Y	DTW	173.13	ft
2112021351Y	pH	7.63	NA
2112021351Y	Temperature	23.0	ºC
2112021351Y	Turbidity	1.74	NTU

Well ID **200-G-340** **Event Date** **12/2/2021**

Sample	Parameter	Result	Units
2112020809Y	Atmospheric Pressure	12.56	psia
2112020809Y	Conductivity	2380	µS/cm
2112020809Y	DTW	172.88	ft
2112020809Y	Formation Pressure	122.66	psia
2112020809Y	pH	8.10	NA
2112020809Y	Temperature	21.2	ºC
2112020809Y	Turbidity	3.88	NTU
2112020925Y	Atmospheric Pressure	12.56	psia
2112020925Y	Conductivity	2400	µS/cm
2112020925Y	DTW	173.01	ft
2112020925Y	pH	8.14	NA
2112020925Y	Temperature	20.9	ºC
2112020925Y	Turbidity	2.95	NTU

Well ID **200-G-420** **Event Date** **12/1/2021**

Sample	Parameter	Result	Units
2112011355Y	Atmospheric Pressure	12.57	psia
2112011355Y	Conductivity	2400	µS/cm
2112011355Y	DTW	172.76	ft
2112011355Y	Formation Pressure	185.30	psia
2112011355Y	pH	7.96	NA
2112011355Y	Temperature	22.6	ºC
2112011355Y	Turbidity	4.71	NTU
2112011446Y	Atmospheric Pressure	12.59	psia
2112011446Y	Conductivity	2420	µS/cm
2112011446Y	DTW	172.88	ft
2112011446Y	pH	8.05	NA
2112011446Y	Temperature	23.0	ºC
2112011446Y	Turbidity	3.88	NTU

Well ID 200-G-495 Event Date 12/1/2021

Sample	Parameter	Result	Units
2112011010Y	Atmospheric Pressure	12.54	psia
2112011010Y	Conductivity	2460	µS/cm
2112011010Y	DTW	172.68	ft
2112011010Y	Formation Pressure	217.68	psia
2112011010Y	pH	8.55	NA
2112011010Y	Temperature	20.7	ºC
2112011010Y	Turbidity	4.43	NTU
2112011101Y	Atmospheric Pressure	12.52	psia
2112011101Y	Conductivity	2440	µS/cm
2112011101Y	DTW	172.76	ft
2112011101Y	pH	8.37	NA
2112011101Y	Temperature	20.4	ºC
2112011101Y	Turbidity	3.49	NTU

Well ID 200-I-185 Event Date 11/10/2021

Sample	Parameter	Result	Units
2111100925Y	Atmospheric Pressure	12.43	psia
2111100925Y	Conductivity	1942	µS/cm
2111100925Y	DTW	214.40	ft
2111100925Y	Formation Pressure	13.19	psia
2111100925Y	pH	8.10	NA
2111100925Y	Temperature	16.6	ºC
2111100925Y	Turbidity	0.82	NTU
2111111431Y	Atmospheric Pressure	12.47	psia
2111111431Y	Conductivity	1967	µS/cm
2111111431Y	DTW	214.42	ft
2111111431Y	pH	7.96	NA
2111111431Y	Temperature	17.5	ºC
2111111431Y	Turbidity	0.78	NTU

Well ID 200-I-300 Event Date 11/16/2021

Sample	Parameter	Result	Units
2111161335Y	Atmospheric Pressure	12.37	psia
2111161335Y	Conductivity	701	µS/cm
2111161335Y	DTW	215.00	ft
2111161335Y	Formation Pressure	63.39	psia
2111161335Y	pH	7.97	NA
2111161335Y	Temperature	18.7	ºC
2111161335Y	Turbidity	1.59	NTU
2111161426Y	Atmospheric Pressure	12.39	psia
2111161426Y	Conductivity	714	µS/cm
2111161426Y	DTW	215.11	ft
2111161426Y	pH	7.86	NA
2111161426Y	Temperature	18.6	ºC
2111161426Y	Turbidity	1.30	NTU

Well ID 200-I-375 Event Date 11/16/2021

Sample	Parameter	Result	Units
2111160910Y	Atmospheric Pressure	12.41	psia
2111160910Y	Conductivity	989	µS/cm
2111160910Y	DTW	214.87	ft
2111160910Y	Formation Pressure	98.20	psia
2111160910Y	pH	8.08	NA
2111160910Y	Temperature	17.7	ºC
2111160910Y	Turbidity	1.35	NTU
2111161011Y	Atmospheric Pressure	12.38	psia
2111161011Y	Conductivity	1003	µS/cm
2111161011Y	DTW	215.00	ft
2111161011Y	pH	8.01	NA
2111161011Y	Temperature	18.2	ºC
2111161011Y	Turbidity	1.13	NTU

Well ID **200-I-490** **Event Date** **11/15/2021**

Sample	Parameter	Result	Units
2111151340Y	Atmospheric Pressure	12.46	psia
2111151340Y	Conductivity	1026	µS/cm
2111151340Y	DTW	214.72	ft
2111151340Y	Formation Pressure	174.94	psia
2111151340Y	pH	7.99	NA
2111151340Y	Temperature	18.6	ºC
2111151340Y	Turbidity	0.75	NTU
2111151439Y	Atmospheric Pressure	12.44	psia
2111151439Y	Conductivity	1017	µS/cm
2111151439Y	DTW	214.87	ft
2111151439Y	pH	7.88	NA
2111151439Y	Temperature	19.0	ºC
2111151439Y	Turbidity	0.70	NTU

Well ID **200-I-675** **Event Date** **11/15/2021**

Sample	Parameter	Result	Units
2111150950Y	Atmospheric Pressure	12.41	psia
2111150950Y	Conductivity	1450	µS/cm
2111150950Y	DTW	214.58	ft
2111150950Y	Formation Pressure	254.24	psia
2111150950Y	pH	7.98	NA
2111150950Y	Temperature	18.3	ºC
2111150950Y	Turbidity	0.72	NTU
2111151101Y	Atmospheric Pressure	12.43	psia
2111151101Y	Conductivity	1433	µS/cm
2111151101Y	DTW	214.72	ft
2111151101Y	pH	8.05	NA
2111151101Y	Temperature	18.6	ºC
2111151101Y	Turbidity	0.65	NTU

Well ID 200-I-795 Event Date 11/12/2021

Sample	Parameter	Result	Units
2111120900Y	Atmospheric Pressure	12.42	psia
2111120900Y	Conductivity	1994	µS/cm
2111120900Y	DTW	214.42	ft
2111120900Y	Formation Pressure	305.55	psia
2111120900Y	pH	8.00	NA
2111120900Y	Temperature	16.7	ºC
2111120900Y	Turbidity	0.57	NTU
2111121011Y	Atmospheric Pressure	12.44	psia
2111121011Y	Conductivity	1982	µS/cm
2111121011Y	DTW	214.58	ft
2111121011Y	pH	7.86	NA
2111121011Y	Temperature	16.9	ºC
2111121011Y	Turbidity	0.54	NTU

Well ID 300-F-175 Event Date 1/19/2022

Sample	Parameter	Result	Units
2201190921C	Conductivity	1150	µS/cm
2201190921C	DO	9.83	mg/L
2201190921C	ORP	202	mV
2201190921C	pH	6.04	NA
2201190921C	Temperature	18.55	ºC
2201190921C	Turbidity	1.20	NTU
2201190923C	Conductivity	1147	µS/cm
2201190923C	DO	9.80	mg/L
2201190923C	ORP	201	mV
2201190923C	pH	6.02	NA
2201190923C	Temperature	18.51	ºC
2201190923C	Turbidity	1.18	NTU
2201190925C	Conductivity	1151	µS/cm
2201190925C	DO	9.82	mg/L
2201190925C	ORP	201	mV
2201190925C	pH	6.03	NA
2201190925C	Temperature	18.52	ºC
2201190925C	Turbidity	1.17	NTU

Well ID 400-A-151 Event Date 1/5/2022

Sample	Parameter	Result	Units
2201050945A	Conductivity	1261	µS/cm
2201050945A	DO	4.47	mg/L
2201050945A	DTW	163.30	ft
2201050945A	ORP	248	mV
2201050945A	pH	6.97	NA
2201050945A	Temperature	19.27	ºC
2201050945A	Turbidity	0.72	NTU
2201050948A	Conductivity	1258	µS/cm
2201050948A	DO	4.43	mg/L
2201050948A	DTW	162.98	ft
2201050948A	ORP	246	mV
2201050948A	pH	6.97	NA
2201050948A	Temperature	20.12	ºC
2201050948A	Turbidity	0.68	NTU
2201050951A	Conductivity	1254	µS/cm
2201050951A	DO	4.50	mg/L
2201050951A	DTW	162.90	ft
2201050951A	ORP	247	mV
2201050951A	pH	6.98	NA
2201050951A	Temperature	19.87	ºC
2201050951A	Turbidity	0.66	NTU

Well ID **400-C-143** **Event Date** **11/17/2021**

Sample	Parameter	Result	Units
2111171045C	Conductivity	1317	µS/cm
2111171045C	DO	7.04	mg/L
2111171045C	DTW	143.65	ft
2111171045C	ORP	83	mV
2111171045C	pH	6.91	NA
2111171045C	Temperature	20.43	ºC
2111171045C	Turbidity	4.81	NTU
2111171048C	Conductivity	1310	µS/cm
2111171048C	DO	6.81	mg/L
2111171048C	DTW	143.86	ft
2111171048C	ORP	78	mV
2111171048C	pH	6.94	NA
2111171048C	Temperature	20.50	ºC
2111171048C	Turbidity	4.14	NTU
2111171051C	Conductivity	1306	µS/cm
2111171051C	DO	6.62	mg/L
2111171051C	DTW	143.86	ft
2111171051C	ORP	76	mV
2111171051C	pH	6.95	NA
2111171051C	Temperature	20.56	ºC
2111171051C	Turbidity	3.93	NTU

Well ID 400-EV-131 **Event Date** 11/1/2021

Sample	Parameter	Result	Units
2111010930C	Conductivity	1370	µS/cm
2111010930C	DO	7.68	mg/L
2111010930C	DTW	141	ft
2111010930C	ORP	99	mV
2111010930C	pH	6.79	NA
2111010930C	Temperature	20.50	ºC
2111010930C	Turbidity	0.79	NTU
2111010935C	Conductivity	1369	µS/cm
2111010935C	DO	6.54	mg/L
2111010935C	DTW	141.84	ft
2111010935C	ORP	99	mV
2111010935C	pH	6.78	NA
2111010935C	Temperature	20.48	ºC
2111010935C	Turbidity	0.88	NTU
2111010940C	Conductivity	1362	µS/cm
2111010940C	DO	6.50	mg/L
2111010940C	DTW	141.84	ft
2111010940C	ORP	99	mV
2111010940C	pH	6.40	NA
2111010940C	Temperature	20.51	ºC
2111010940C	Turbidity	0.72	NTU

Well ID 400-FV-131 **Event Date** 1/18/2022

Sample	Parameter	Result	Units
2201181340A	Conductivity	1464	µS/cm
2201181340A	DTW	129.80	ft
2201181340A	pH	4.67	NA
2201181340A	Temperature	19.6	ºC
2201181340A	Turbidity	1.04	NTU
2201181342A	Conductivity	1479	µS/cm
2201181342A	DTW	130.60	ft
2201181342A	pH	7.79	NA
2201181342A	Temperature	19.1	ºC
2201181342A	Turbidity	0.90	NTU
2201181344A	Conductivity	1470	µS/cm
2201181344A	DTW	130.60	ft
2201181344A	pH	7.72	NA
2201181344A	Temperature	19.2	ºC
2201181344A	Turbidity	1.07	NTU

Well ID **400-GV-125** **Event Date** **11/2/2021**

Sample	Parameter	Result	Units
2111020943B	Conductivity	1502	µS/cm
2111020943B	pH	7.43	NA
2111020943B	Temperature	20.2	ºC
2111020943B	Turbidity	0.39	NTU
2111020945B	Conductivity	1506	µS/cm
2111020945B	pH	7.40	NA
2111020945B	Temperature	20.1	ºC
2111020945B	Turbidity	0.41	NTU
2111020947B	Conductivity	1501	µS/cm
2111020947B	pH	7.44	NA
2111020947B	Temperature	20.2	ºC
2111020947B	Turbidity	0.38	NTU

Well ID **400-HV-147** **Event Date** **1/18/2022**

Sample	Parameter	Result	Units
2201180910A	Conductivity	2060	µS/cm
2201180910A	DTW	139.82	ft
2201180910A	pH	7.84	NA
2201180910A	Temperature	17.3	ºC
2201180910A	Turbidity	0.58	NTU
2201180912A	Conductivity	2010	µS/cm
2201180912A	DTW	140.20	ft
2201180912A	pH	7.32	NA
2201180912A	Temperature	17.6	ºC
2201180912A	Turbidity	0.94	NTU
2201180914A	Conductivity	2020	µS/cm
2201180914A	DTW	140.20	ft
2201180914A	pH	7.11	NA
2201180914A	Temperature	17.2	ºC
2201180914A	Turbidity	0.24	NTU

Well ID 400-JV-150 Event Date 11/1/2021

Sample	Parameter	Result	Units
2111011425C	Conductivity	1760	µS/cm
2111011425C	DO	3.55	mg/L
2111011425C	DTW	145.59	ft
2111011425C	ORP	91	mV
2111011425C	pH	6.65	NA
2111011425C	Temperature	21.77	ºC
2111011425C	Turbidity	0.63	NTU
2111011430C	Conductivity	1760	µS/cm
2111011430C	DO	3.60	mg/L
2111011430C	DTW	146.90	ft
2111011430C	ORP	91	mV
2111011430C	pH	6.65	NA
2111011430C	Temperature	21.71	ºC
2111011430C	Turbidity	0.59	NTU
2111011435C	Conductivity	1770	µS/cm
2111011435C	DO	3.65	mg/L
2111011435C	DTW	146.90	ft
2111011435C	ORP	91	mV
2111011435C	pH	6.65	NA
2111011435C	Temperature	21.70	ºC
2111011435C	Turbidity	0.55	NTU

Well ID 600-G-138 Event Date 1/19/2022

Sample	Parameter	Result	Units
2201191100A	Conductivity	1651	µS/cm
2201191100A	DTW	144.80	ft
2201191100A	pH	7.82	NA
2201191100A	Temperature	20.9	ºC
2201191100A	Turbidity	4.23	NTU
2201191110A	Conductivity	1658	µS/cm
2201191110A	DTW	145.27	ft
2201191110A	pH	7.94	NA
2201191110A	Temperature	21.2	ºC
2201191110A	Turbidity	3.13	NTU

Well ID **700-B-510** **Event Date** **12/9/2021**

Sample	Parameter	Result	Units
2112091410A	Conductivity	578	µS/cm
2112091410A	DO	3.66	mg/L
2112091410A	DTW	464.80	ft
2112091410A	ORP	297	mV
2112091410A	pH	7.90	NA
2112091410A	Temperature	21.34	ºC
2112091410A	Turbidity	0.63	NTU
2112091412A	Conductivity	574	µS/cm
2112091412A	DO	3.49	mg/L
2112091412A	DTW	465.70	ft
2112091412A	ORP	296	mV
2112091412A	pH	7.88	NA
2112091412A	Temperature	21.40	ºC
2112091412A	Turbidity	0.34	NTU
2112091414A	Conductivity	575	µS/cm
2112091414A	DO	3.11	mg/L
2112091414A	DTW	465.70	ft
2112091414A	ORP	295	mV
2112091414A	pH	7.83	NA
2112091414A	Temperature	21.44	ºC
2112091414A	Turbidity	0.44	NTU

Well ID **BLM-10-517** **Event Date** **1/3/2022**

Sample	Parameter	Result	Units
2201031035A	Conductivity	997	µS/cm
2201031035A	DO	6.54	mg/L
2201031035A	DTW	493.34	ft
2201031035A	ORP	306	mV
2201031035A	pH	6.91	NA
2201031035A	Temperature	17.30	ºC
2201031035A	Turbidity	1.19	NTU
2201031038A	Conductivity	999	µS/cm
2201031038A	DO	6.38	mg/L
2201031038A	DTW	493.44	ft
2201031038A	ORP	303	mV
2201031038A	pH	6.95	NA
2201031038A	Temperature	17.34	ºC
2201031038A	Turbidity	1.02	NTU
2201031041A	Conductivity	1006	µS/cm
2201031041A	DO	6.10	mg/L
2201031041A	DTW	493.44	ft
2201031041A	ORP	302	mV
2201031041A	pH	6.96	NA
2201031041A	Temperature	17.41	ºC
2201031041A	Turbidity	0.96	NTU

Well ID **BLM-15-305** **Event Date** **1/12/2022**

Sample	Parameter	Result	Units
2201121410C	Conductivity	1130	µS/cm
2201121410C	DO	1.38	mg/L
2201121410C	ORP	164	mV
2201121410C	pH	7.52	NA
2201121410C	Temperature	21.04	ºC
2201121410C	Turbidity	1.85	NTU
2201121411C	Conductivity	1139	µS/cm
2201121411C	DO	1.43	mg/L
2201121411C	ORP	164	mV
2201121411C	pH	7.55	NA
2201121411C	Temperature	20.79	ºC
2201121411C	Turbidity	1.52	NTU
2201121412C	Conductivity	1133	µS/cm
2201121412C	DO	1.48	mg/L
2201121412C	ORP	164	mV
2201121412C	pH	7.56	NA
2201121412C	Temperature	20.89	ºC
2201121412C	Turbidity	1.48	NTU

Well ID	BLM-17-493	Event Date	11/3/2021
Sample	**Parameter**	**Result**	**Units**
2111030945B	Conductivity	1227	µS/cm
2111030945B	DTW	500.20	ft
2111030945B	pH	7.66	NA
2111030945B	Temperature	17.9	ºC
2111030945B	Turbidity	1.00	NTU
2111030947B	Conductivity	1243	µS/cm
2111030947B	DTW	500.95	ft
2111030947B	pH	7.54	NA
2111030947B	Temperature	18.4	ºC
2111030947B	Turbidity	1.17	NTU
2111030949B	Conductivity	1176	µS/cm
2111030949B	DTW	500.95	ft
2111030949B	pH	7.57	NA
2111030949B	Temperature	18.7	ºC
2111030949B	Turbidity	0.98	NTU

Well ID	BLM-17-550	Event Date	1/3/2022
Sample	**Parameter**	**Result**	**Units**
2201031420A	Conductivity	1164	µS/cm
2201031420A	DO	7.20	mg/L
2201031420A	ORP	128	mV
2201031420A	pH	6.85	NA
2201031420A	Temperature	18.89	ºC
2201031420A	Turbidity	1.69	NTU
2201031423A	Conductivity	1155	µS/cm
2201031423A	DO	6.90	mg/L
2201031423A	ORP	130	mV
2201031423A	pH	6.85	NA
2201031423A	Temperature	19.01	ºC
2201031423A	Turbidity	1.72	NTU
2201031426A	Conductivity	1151	µS/cm
2201031426A	DO	6.72	mg/L
2201031426A	ORP	133	mV
2201031426A	pH	6.87	NA
2201031426A	Temperature	19.06	ºC
2201031426A	Turbidity	1.43	NTU

Well ID **BLM-18-430** **Event Date** **1/13/2022**

Sample	Parameter	Result	Units
2201130955C	Conductivity	994	µS/cm
2201130955C	DO	8.21	mg/L
2201130955C	ORP	225	mV
2201130955C	pH	6.73	NA
2201130955C	Temperature	18.89	ºC
2201130955C	Turbidity	0.60	NTU
2201130957C	Conductivity	991	µS/cm
2201130957C	DO	8.19	mg/L
2201130957C	ORP	223	mV
2201130957C	pH	6.70	NA
2201130957C	Temperature	18.87	ºC
2201130957C	Turbidity	0.62	NTU
2201130959C	Conductivity	992	µS/cm
2201130959C	DO	8.16	mg/L
2201130959C	ORP	223	mV
2201130959C	pH	6.74	NA
2201130959C	Temperature	18.91	ºC
2201130959C	Turbidity	0.61	NTU

Well ID **BLM-22-570** **Event Date** **11/10/2021**

Sample	Parameter	Result	Units
2111101430B	Conductivity	1323	µS/cm
2111101430B	pH	7.95	NA
2111101430B	Temperature	22.9	ºC
2111101430B	Turbidity	0.43	NTU
2111101432B	Conductivity	1337	µS/cm
2111101432B	pH	7.90	NA
2111101432B	Temperature	22.5	ºC
2111101432B	Turbidity	0.21	NTU
2111101434B	Conductivity	1324	µS/cm
2111101434B	pH	7.83	NA
2111101434B	Temperature	21.7	ºC
2111101434B	Turbidity	0.24	NTU

Well ID	BLM-24-565	Event Date	11/2/2021
Sample	**Parameter**	**Result**	**Units**
2111021430C	Conductivity	1304	µS/cm
2111021430C	pH	10.53	NA
2111021430C	Temperature	22.3	ºC
2111021430C	Turbidity	0.37	NTU
2111021445C	Conductivity	1310	µS/cm
2111021445C	pH	10.48	NA
2111021445C	Temperature	22.5	ºC
2111021445C	Turbidity	0.27	NTU

Well ID	BLM-2-630	Event Date	11/9/2021
Sample	**Parameter**	**Result**	**Units**
2111091410C	Conductivity	924	µS/cm
2111091410C	DO	6.90	mg/L
2111091410C	ORP	-30	mV
2111091410C	pH	7.17	NA
2111091410C	Temperature	21.72	ºC
2111091410C	Turbidity	32	NTU
2111091415C	Conductivity	921	µS/cm
2111091415C	DO	6.59	mg/L
2111091415C	ORP	-31	mV
2111091415C	pH	7.18	NA
2111091415C	Temperature	21.75	ºC
2111091415C	Turbidity	30	NTU
2111091420C	Conductivity	922	µS/cm
2111091420C	DO	6.63	mg/L
2111091420C	ORP	-31	mV
2111091420C	pH	7.10	NA
2111091420C	Temperature	21.59	ºC
2111091420C	Turbidity	29	NTU

Well ID	BLM-26-404	Event Date	11/3/2021
Sample	**Parameter**	**Result**	**Units**
2111031445B	Conductivity	1105	µS/cm
2111031445B	DTW	310.65	ft
2111031445B	pH	7.78	NA
2111031445B	Temperature	22.0	ºC
2111031445B	Turbidity	1.77	NTU
2111031447B	Conductivity	1097	µS/cm
2111031447B	DTW	310.90	ft
2111031447B	pH	7.69	NA
2111031447B	Temperature	22.7	ºC
2111031447B	Turbidity	1.36	NTU
2111031449B	Conductivity	1041	µS/cm
2111031449B	DTW	310.90	ft
2111031449B	pH	7.41	NA
2111031449B	Temperature	21.8	ºC
2111031449B	Turbidity	1.64	NTU

Well ID	BLM-27-270	Event Date	12/15/2021
Sample	**Parameter**	**Result**	**Units**
2112150920A	Conductivity	912	µS/cm
2112150920A	DTW	233.91	ft
2112150920A	pH	8.43	NA
2112150920A	Temperature	19.5	ºC
2112150920A	Turbidity	0.82	NTU
2112150923A	Conductivity	920	µS/cm
2112150923A	DTW	234.15	ft
2112150923A	pH	8.45	NA
2112150923A	Temperature	19.4	ºC
2112150923A	Turbidity	0.75	NTU
2112150926A	Conductivity	923	µS/cm
2112150926A	DTW	234.15	ft
2112150926A	pH	8.51	NA
2112150926A	Temperature	19.4	ºC
2112150926A	Turbidity	0.73	NTU

Well ID **BLM-3-182** **Event Date** **11/2/2021**

Sample	Parameter	Result	Units
2111021336B	Conductivity	5300	µS/cm
2111021336B	DTW	179.70	ft
2111021336B	pH	7.28	NA
2111021336B	Temperature	22.2	ºC
2111021336B	Turbidity	7.41	NTU
2111021338B	Conductivity	5370	µS/cm
2111021338B	DTW	180.50	ft
2111021338B	pH	7.27	NA
2111021338B	Temperature	22.1	ºC
2111021338B	Turbidity	7.36	NTU
2111021340B	Conductivity	5320	µS/cm
2111021340B	DTW	180.50	ft
2111021340B	pH	7.24	NA
2111021340B	Temperature	22.1	ºC
2111021340B	Turbidity	7.30	NTU

Well ID **BLM-32-543** **Event Date** **11/1/2021**

Sample	Parameter	Result	Units
2111011445B	Conductivity	1010	µS/cm
2111011445B	pH	8.37	NA
2111011445B	Temperature	23.2	ºC
2111011445B	Turbidity	0.69	NTU
2111011559B	Conductivity	1011	µS/cm
2111011559B	pH	8.42	NA
2111011559B	Temperature	23.1	ºC
2111011559B	Turbidity	0.27	NTU

Well ID **BLM-32-571** **Event Date** **11/1/2021**

Sample	Parameter	Result	Units
2111011500B	Conductivity	990	µS/cm
2111011500B	pH	7.95	NA
2111011500B	Temperature	21.9	ºC
2111011500B	Turbidity	0.36	NTU
2111011512B	Conductivity	986	µS/cm
2111011512B	pH	7.97	NA
2111011512B	Temperature	21.8	ºC
2111011512B	Turbidity	0.41	NTU

Well ID	BLM-32-632	Event Date	11/1/2021
Sample	**Parameter**	**Result**	**Units**
2111011519B	Conductivity	998	µS/cm
2111011519B	pH	8.43	NA
2111011519B	Temperature	21.9	ºC
2111011519B	Turbidity	0.18	NTU
2111011538B	Conductivity	1002	µS/cm
2111011538B	pH	8.51	NA
2111011538B	Temperature	21.8	ºC
2111011538B	Turbidity	0.24	NTU

Well ID	BLM-36-350	Event Date	11/3/2021
Sample	**Parameter**	**Result**	**Units**
2111031325Y	Atmospheric Pressure	12.51	psia
2111031325Y	Conductivity	1203	µS/cm
2111031325Y	Formation Pressure	32.71	psia
2111031325Y	pH	7.83	NA
2111031325Y	Temperature	21.9	ºC
2111031325Y	Turbidity	0.50	NTU
2111031450Y	Atmospheric Pressure	12.53	psia
2111031450Y	Conductivity	1191	µS/cm
2111031450Y	pH	7.75	NA
2111031450Y	Temperature	22.4	ºC
2111031450Y	Turbidity	0.44	NTU

Well ID	BLM-36-610	Event Date	11/2/2021
Sample	**Parameter**	**Result**	**Units**
2111020932Y	Atmospheric Pressure	12.50	psia
2111020932Y	Conductivity	1026	µS/cm
2111020932Y	Formation Pressure	100.28	psia
2111020932Y	pH	8.40	NA
2111020932Y	Temperature	20.0	ºC
2111020932Y	Turbidity	2.48	NTU
2111021036Y	Atmospheric Pressure	12.48	psia
2111021036Y	Conductivity	1036	µS/cm
2111021036Y	pH	8.26	NA
2111021036Y	Temperature	19.8	ºC
2111021036Y	Turbidity	1.77	NTU

Well ID BLM-36-800 Event Date 11/3/2021

Sample	Parameter	Result	Units
2111030950Y	Atmospheric Pressure	12.45	psia
2111030950Y	Conductivity	1060	µS/cm
2111030950Y	Formation Pressure	176.43	psia
2111030950Y	pH	8.35	NA
2111030950Y	Temperature	19.9	ºC
2111030950Y	Turbidity	1.25	NTU
2111031032Y	Atmospheric Pressure	12.47	psia
2111031032Y	Conductivity	1070	µS/cm
2111031032Y	pH	8.17	NA
2111031032Y	Temperature	20.3	ºC
2111031032Y	Turbidity	1.13	NTU

Well ID BLM-36-860 Event Date 11/2/2021

Sample	Parameter	Result	Units
2111021410Y	Atmospheric Pressure	12.47	psia
2111021410Y	Conductivity	988	µS/cm
2111021410Y	Formation Pressure	138.54	psia
2111021410Y	pH	8.04	NA
2111021410Y	Temperature	22.9	ºC
2111021410Y	Turbidity	8.86	NTU
2111021442Y	Atmospheric Pressure	12.49	psia
2111021442Y	Conductivity	985	µS/cm
2111021442Y	pH	7.89	NA
2111021442Y	Temperature	23.0	ºC
2111021442Y	Turbidity	3.13	NTU

Well ID BLM-38-480 Event Date 11/4/2021

Sample	Parameter	Result	Units
2111041432Y	Atmospheric Pressure	12.51	psia
2111041432Y	Conductivity	892	µS/cm
2111041432Y	DTW	402.12	ft
2111041432Y	Formation Pressure	40.05	psia
2111041432Y	pH	7.91	NA
2111041432Y	Temperature	19.7	ºC
2111041432Y	Turbidity	0.44	NTU
2111041515Y	Atmospheric Pressure	12.48	psia
2111041515Y	Conductivity	869	µS/cm
2111041515Y	DTW	402.26	ft
2111041515Y	pH	7.85	NA
2111041515Y	Temperature	19.8	ºC
2111041515Y	Turbidity	0.41	NTU

Well ID BLM-38-620 Event Date 11/4/2021

Sample	Parameter	Result	Units
2111041055Y	Atmospheric Pressure	12.59	psia
2111041055Y	Conductivity	970	µS/cm
2111041055Y	DTW	401.96	ft
2111041055Y	Formation Pressure	87.34	psia
2111041055Y	pH	8.05	NA
2111041055Y	Temperature	18.5	ºC
2111041055Y	Turbidity	0.43	NTU
2111041312Y	Atmospheric Pressure	12.62	psia
2111041312Y	Conductivity	978	µS/cm
2111041312Y	DTW	402.12	ft
2111041312Y	pH	8.13	NA
2111041312Y	Temperature	18.9	ºC
2111041312Y	Turbidity	0.39	NTU

Well ID BLM-42-569 Event Date 12/13/2021

Sample	Parameter	Result	Units
2112131000A	Conductivity	654	µS/cm
2112131000A	pH	8.53	NA
2112131000A	Temperature	18.7	ºC
2112131000A	Transducer	14.01	ft
2112131000A	Turbidity	2.29	NTU
2112131003A	Conductivity	661	µS/cm
2112131003A	pH	8.50	NA
2112131003A	Temperature	18.9	ºC
2112131003A	Transducer	14.01	ft
2112131003A	Turbidity	1.88	NTU
2112131006A	Conductivity	667	µS/cm
2112131006A	pH	8.46	NA
2112131006A	Temperature	18.9	ºC
2112131006A	Transducer	14.01	ft
2112131006A	Turbidity	1.74	NTU

Well ID BLM-42-709 Event Date 12/13/2021

Sample	Parameter	Result	Units
2112131405A	Conductivity	626	µS/cm
2112131405A	pH	8.12	NA
2112131405A	Temperature	19.0	ºC
2112131405A	Transducer	14.01	ft
2112131405A	Turbidity	0.77	NTU
2112131408A	Conductivity	630	µS/cm
2112131408A	pH	8.09	NA
2112131408A	Temperature	19.4	ºC
2112131408A	Transducer	14.01	ft
2112131408A	Turbidity	0.79	NTU
2112131411A	Conductivity	635	µS/cm
2112131411A	pH	8.07	NA
2112131411A	Temperature	19.5	ºC
2112131411A	Transducer	14.01	ft
2112131411A	Turbidity	0.67	NTU

Well ID BLM-6-488 Event Date 1/5/2022

Sample	Parameter	Result	Units
2201051430A	Conductivity	1413	µS/cm
2201051430A	DO	5.28	mg/L
2201051430A	DTW	359.90	ft
2201051430A	ORP	269	mV
2201051430A	pH	6.86	NA
2201051430A	Temperature	22.10	ºC
2201051430A	Turbidity	1.39	NTU
2201051433A	Conductivity	1419	µS/cm
2201051433A	DO	5.10	mg/L
2201051433A	DTW	360.33	ft
2201051433A	ORP	269	mV
2201051433A	pH	6.85	NA
2201051433A	Temperature	22.18	ºC
2201051433A	Turbidity	1.33	NTU
2201051436A	Conductivity	1422	µS/cm
2201051436A	DO	5.00	mg/L
2201051436A	DTW	360.33	ft
2201051436A	ORP	269	mV
2201051436A	pH	6.83	NA
2201051436A	Temperature	22.24	ºC
2201051436A	Turbidity	1.14	NTU

Well ID **BLM-7-509** **Event Date** **12/6/2021**

Sample	Parameter	Result	Units
2112060945A	Conductivity	1009	µS/cm
2112060945A	DO	6.29	mg/L
2112060945A	DTW	492.80	ft
2112060945A	ORP	375	mV
2112060945A	pH	6.88	NA
2112060945A	Temperature	19.76	ºC
2112060945A	Turbidity	0.81	NTU
2112060947A	Conductivity	1005	µS/cm
2112060947A	DO	6.83	mg/L
2112060947A	DTW	492.85	ft
2112060947A	ORP	376	mV
2112060947A	pH	6.94	NA
2112060947A	Temperature	19.72	ºC
2112060947A	Turbidity	0.65	NTU
2112060949A	Conductivity	998	µS/cm
2112060949A	DO	6.43	mg/L
2112060949A	DTW	492.85	ft
2112060949A	ORP	376	mV
2112060949A	pH	6.90	NA
2112060949A	Temperature	19.78	ºC
2112060949A	Turbidity	0.55	NTU

Well ID	**BLM-8-418**	**Event Date**	**11/4/2021**
Sample	**Parameter**	**Result**	**Units**
2111041000B	Conductivity	1014	µS/cm
2111041000B	DO	7.15	mg/L
2111041000B	DTW	337.10	ft
2111041000B	ORP	90	mV
2111041000B	pH	7.12	NA
2111041000B	Temperature	20.50	ºC
2111041000B	Turbidity	0.40	NTU
2111041002B	Conductivity	1024	µS/cm
2111041002B	DO	7.22	mg/L
2111041002B	DTW	337.15	ft
2111041002B	ORP	91	mV
2111041002B	pH	7.18	NA
2111041002B	Temperature	20.47	ºC
2111041002B	Turbidity	0.32	NTU
2111041004B	Conductivity	1021	µS/cm
2111041004B	DO	7.09	mg/L
2111041004B	DTW	337.15	ft
2111041004B	ORP	91	mV
2111041004B	pH	7.17	NA
2111041004B	Temperature	20.54	ºC
2111041004B	Turbidity	0.51	NTU

Well ID	**BW-5-295**	**Event Date**	**11/4/2021**
Sample	**Parameter**	**Result**	**Units**
2111041400B	Conductivity	790	µS/cm
2111041400B	DO	6.63	mg/L
2111041400B	ORP	87	mV
2111041400B	pH	7.55	NA
2111041400B	Temperature	20.88	ºC
2111041400B	Turbidity	0.47	NTU
2111041402B	Conductivity	785	µS/cm
2111041402B	DO	6.75	mg/L
2111041402B	ORP	88	mV
2111041402B	pH	7.54	NA
2111041402B	Temperature	20.92	ºC
2111041402B	Turbidity	0.50	NTU
2111041404B	Conductivity	787	µS/cm
2111041404B	DO	6.54	mg/L
2111041404B	ORP	89	mV
2111041404B	pH	7.56	NA
2111041404B	Temperature	20.85	ºC
2111041404B	Turbidity	0.43	NTU

Well ID BW-7-211 Event Date 12/15/2021

Sample	Parameter	Result	Units
2112150830C	Conductivity	1250	µS/cm
2112150830C	DO	8.32	mg/L
2112150830C	ORP	292	mV
2112150830C	pH	7.05	NA
2112150830C	Temperature	21.15	ºC
2112150830C	Turbidity	0.62	NTU
2112150832C	Conductivity	1251	µS/cm
2112150832C	DO	8.29	mg/L
2112150832C	ORP	291	mV
2112150832C	pH	7.07	NA
2112150832C	Temperature	21.18	ºC
2112150832C	Turbidity	0.86	NTU
2112150834C	Conductivity	1250	µS/cm
2112150834C	DO	8.22	mg/L
2112150834C	ORP	291	mV
2112150834C	pH	7.04	NA
2112150834C	Temperature	21.5	ºC
2112150834C	Turbidity	0.79	NTU

Well ID JER-1-483 Event Date 1/6/2022

Sample	Parameter	Result	Units
2201061340B	Conductivity	1036	µS/cm
2201061340B	pH	8.17	NA
2201061340B	Temperature	20.4	ºC
2201061340B	Turbidity	0.69	NTU
2201061420B	Conductivity	1044	µS/cm
2201061420B	pH	8.11	NA
2201061420B	Temperature	19.8	ºC
2201061420B	Turbidity	0.57	NTU

Well ID JER-1-563 Event Date 1/6/2022

Sample	Parameter	Result	Units
2201061440B	Conductivity	1046	µS/cm
2201061440B	pH	8.08	NA
2201061440B	Temperature	19.8	ºC
2201061440B	Turbidity	0.85	NTU
2201061450B	Conductivity	1031	µS/cm
2201061450B	pH	8.13	NA
2201061450B	Temperature	19.2	ºC
2201061450B	Turbidity	0.54	NTU

Well ID	JER-1-683	Event Date	1/7/2022
Sample	**Parameter**	**Result**	**Units**
2201071332B	Conductivity	1103	µS/cm
2201071332B	pH	8.47	NA
2201071332B	Temperature	19.9	ºC
2201071332B	Turbidity	0.76	NTU
2201071341B	Conductivity	1095	µS/cm
2201071341B	pH	8.35	NA
2201071341B	Temperature	20.0	ºC
2201071341B	Turbidity	0.68	NTU

Well ID	JER-2-504	Event Date	1/5/2022
Sample	**Parameter**	**Result**	**Units**
2201051440B	Conductivity	1008	µS/cm
2201051440B	pH	8.47	NA
2201051440B	Temperature	18.4	ºC
2201051440B	Turbidity	0.58	NTU
2201051450B	Conductivity	1012	µS/cm
2201051450B	pH	8.49	NA
2201051450B	Temperature	18.9	ºC
2201051450B	Turbidity	0.52	NTU

Well ID	JER-2-584	Event Date	1/5/2022
Sample	**Parameter**	**Result**	**Units**
2201051458B	Conductivity	1043	µS/cm
2201051458B	pH	8.14	NA
2201051458B	Temperature	19.1	ºC
2201051458B	Turbidity	0.63	NTU
2201051510B	Conductivity	1034	µS/cm
2201051510B	pH	8.23	NA
2201051510B	Temperature	19.3	ºC
2201051510B	Turbidity	0.59	NTU

Well ID	JER-2-684	Event Date	1/5/2022
Sample	**Parameter**	**Result**	**Units**
2201051520B	Conductivity	1034	µS/cm
2201051520B	pH	8.24	NA
2201051520B	Temperature	19.1	ºC
2201051520B	Turbidity	1.11	NTU
2201051533B	Conductivity	1020	µS/cm
2201051533B	pH	8.30	NA
2201051533B	Temperature	19.3	ºC
2201051533B	Turbidity	0.98	NTU

Well ID JP-1-424 Event Date 1/4/2022

Sample	Parameter	Result	Units
2201040925A	Conductivity	1000	µS/cm
2201040925A	DO	5.55	mg/L
2201040925A	DTW	413.20	ft
2201040925A	ORP	251	mV
2201040925A	pH	6.76	NA
2201040925A	Temperature	18.22	ºC
2201040925A	Turbidity	0.55	NTU
2201040926A	Conductivity	1009	µS/cm
2201040926A	DO	5.46	mg/L
2201040926A	DTW	413.20	ft
2201040926A	ORP	251	mV
2201040926A	pH	6.77	NA
2201040926A	Temperature	18.25	ºC
2201040926A	Turbidity	0.67	NTU
2201040927A	Conductivity	1005	µS/cm
2201040927A	DO	5.48	mg/L
2201040927A	DTW	413.20	ft
2201040927A	ORP	251	mV
2201040927A	pH	6.78	NA
2201040927A	Temperature	18.20	ºC
2201040927A	Turbidity	0.45	NTU

Well ID JP-2-447 Event Date 1/4/2022

Sample	Parameter	Result	Units
2201041455A	Conductivity	1042	µS/cm
2201041455A	DO	6.48	mg/L
2201041455A	ORP	245	mV
2201041455A	pH	6.97	NA
2201041455A	Temperature	20.40	ºC
2201041455A	Turbidity	0.54	NTU
2201041456A	Conductivity	1039	µS/cm
2201041456A	DO	6.21	mg/L
2201041456A	ORP	245	mV
2201041456A	pH	6.98	NA
2201041456A	Temperature	20.50	ºC
2201041456A	Turbidity	0.48	NTU
2201041457A	Conductivity	1051	µS/cm
2201041457A	DO	6.33	mg/L
2201041457A	ORP	245	mV
2201041457A	pH	6.98	NA
2201041457A	Temperature	20.38	ºC
2201041457A	Turbidity	0.50	NTU

Well ID **JP-3-509** **Event Date** **12/9/2021**

Sample	Parameter	Result	Units
2112090955A	Conductivity	1007	µS/cm
2112090955A	DO	6.61	mg/L
2112090955A	ORP	344	mV
2112090955A	pH	7.74	NA
2112090955A	Temperature	20.85	ºC
2112090955A	Turbidity	0.66	NTU
2112090957A	Conductivity	1013	µS/cm
2112090957A	DO	6.69	mg/L
2112090957A	ORP	343	mV
2112090957A	pH	7.82	NA
2112090957A	Temperature	20.88	ºC
2112090957A	Turbidity	0.45	NTU
2112090959A	Conductivity	1006	µS/cm
2112090959A	DO	6.65	mg/L
2112090959A	ORP	346	mV
2112090959A	pH	7.80	NA
2112090959A	Temperature	20.82	ºC
2112090959A	Turbidity	0.79	NTU
2201060930C	Conductivity	1011	µS/cm
2201060930C	DO	6.33	mg/L
2201060930C	ORP	179	mV
2201060930C	pH	6.99	NA
2201060930C	Temperature	18.94	ºC
2201060930C	Turbidity	1.59	NTU
2201060933C	Conductivity	998	µS/cm
2201060933C	DO	6.13	mg/L
2201060933C	ORP	182	mV
2201060933C	pH	7.01	NA
2201060933C	Temperature	19.01	ºC
2201060933C	Turbidity	1.37	NTU
2201060936C	Conductivity	993	µS/cm
2201060936C	DO	5.84	mg/L
2201060936C	ORP	182	mV
2201060936C	pH	7.04	NA
2201060936C	Temperature	19.08	ºC
2201060936C	Turbidity	1.30	NTU

Well ID JP-3-689 Event Date 1/6/2022

Sample	Parameter	Result	Units
2201061400C	Conductivity	1025	µS/cm
2201061400C	DO	3.73	mg/L
2201061400C	ORP	262	mV
2201061400C	pH	7.68	NA
2201061400C	Temperature	20.17	ºC
2201061400C	Turbidity	0.98	NTU
2201061403C	Conductivity	1020	µS/cm
2201061403C	DO	3.89	mg/L
2201061403C	ORP	262	mV
2201061403C	pH	7.67	NA
2201061403C	Temperature	20.24	ºC
2201061403C	Turbidity	0.94	NTU
2201061406C	Conductivity	1047	µS/cm
2201061406C	DO	4.02	mg/L
2201061406C	ORP	259	mV
2201061406C	pH	7.67	NA
2201061406C	Temperature	20.27	ºC
2201061406C	Turbidity	0.93	NTU

Well ID NASA 6 Event Date 11/15/2021

Sample	Parameter	Result	Units
2111151100C	Conductivity	1579	µS/cm
2111151100C	DTW	133.00	ft
2111151100C	pH	7.80	NA
2111151100C	Temperature	22.2	ºC
2111151100C	Turbidity	16.5	NTU
2111151115C	Conductivity	1582	µS/cm
2111151115C	DTW	138.60	ft
2111151115C	pH	7.71	NA
2111151115C	Temperature	21.9	ºC
2111151115C	Turbidity	17.6	NTU

Well ID	PL-10-484	Event Date	1/11/2022
Sample	**Parameter**	**Result**	**Units**
2201111000Y	Atmospheric Pressure	12.66	psia
2201111000Y	Conductivity	1116	µS/cm
2201111000Y	DTW	464.02	ft
2201111000Y	Formation Pressure	22.54	psia
2201111000Y	pH	8.27	NA
2201111000Y	Temperature	18.7	ºC
2201111000Y	Turbidity	5.13	NTU
2201111105Y	Atmospheric Pressure	12.70	psia
2201111105Y	Conductivity	1127	µS/cm
2201111105Y	DTW	464.15	ft
2201111105Y	pH	8.36	NA
2201111105Y	Temperature	18.4	ºC
2201111105Y	Turbidity	3.33	NTU

Well ID	PL-10-592	Event Date	1/10/2022
Sample	**Parameter**	**Result**	**Units**
2201101015Y	Atmospheric Pressure	12.79	psia
2201101015Y	Conductivity	114	µS/cm
2201101015Y	DTW	463.88	ft
2201101015Y	Formation Pressure	69.42	psia
2201101015Y	pH	8.26	NA
2201101015Y	Temperature	20.0	ºC
2201101015Y	Turbidity	3.50	NTU
2201101347Y	Atmospheric Pressure	12.76	psia
2201101347Y	Conductivity	1127	µS/cm
2201101347Y	DTW	464.02	ft
2201101347Y	pH	8.18	NA
2201101347Y	Temperature	19.3	ºC
2201101347Y	Turbidity	2.89	NTU

Well ID	PL-11-470	Event Date	12/1/2021
Sample	**Parameter**	**Result**	**Units**
2112011425B	Conductivity	1260	µS/cm
2112011425B	pH	7.93	NA
2112011425B	Temperature	19.7	ºC
2112011425B	Turbidity	0.77	NTU
2112011436B	Conductivity	1258	µS/cm
2112011436B	pH	7.85	NA
2112011436B	Temperature	19.7	ºC
2112011436B	Turbidity	0.78	NTU

Well ID	PL-11-530	Event Date	12/1/2021
Sample	**Parameter**	**Result**	**Units**
2112011449B	Conductivity	1255	µS/cm
2112011449B	pH	7.57	NA
2112011449B	Temperature	19.2	ºC
2112011449B	Turbidity	1.24	NTU
2112011459B	Conductivity	1250	µS/cm
2112011459B	pH	7.51	NA
2112011459B	Temperature	19.3	ºC
2112011459B	Turbidity	0.94	NTU

Well ID	PL-11-710	Event Date	12/2/2021
Sample	**Parameter**	**Result**	**Units**
2112021504B	Conductivity	1260	µS/cm
2112021504B	pH	7.92	NA
2112021504B	Temperature	20.2	ºC
2112021504B	Turbidity	0.62	NTU
2112021514B	Conductivity	1264	µS/cm
2112021514B	pH	7.97	NA
2112021514B	Temperature	20.3	ºC
2112021514B	Turbidity	0.59	NTU

Well ID	PL-11-820	Event Date	12/2/2021
Sample	**Parameter**	**Result**	**Units**
2112021440B	Conductivity	1124	µS/cm
2112021440B	pH	7.87	NA
2112021440B	Temperature	20.5	ºC
2112021440B	Turbidity	0.31	NTU
2112021450B	Conductivity	1133	µS/cm
2112021450B	pH	7.94	NA
2112021450B	Temperature	20.7	ºC
2112021450B	Turbidity	0.34	NTU

Well ID	PL-11-980	Event Date	12/2/2021
Sample	**Parameter**	**Result**	**Units**
2112021454B	Conductivity	1110	µS/cm
2112021454B	pH	8.06	NA
2112021454B	Temperature	20.7	ºC
2112021454B	Turbidity	0.49	NTU
2112021500B	Conductivity	1108	µS/cm
2112021500B	pH	8.08	NA
2112021500B	Temperature	20.6	ºC
2112021500B	Turbidity	0.45	NTU

Well ID	**PL-12-570**	**Event Date**	**11/3/2021**

Sample	Parameter	Result	Units
2111031000C	Conductivity	1010	µS/cm
2111031000C	DO	5.99	mg/L
2111031000C	ORP	99	mV
2111031000C	pH	6.73	NA
2111031000C	Temperature	21.48	ºC
2111031000C	Turbidity	0.27	NTU
2111031001C	Conductivity	1017	µS/cm
2111031001C	DO	6.02	mg/L
2111031001C	ORP	98	mV
2111031001C	pH	6.76	NA
2111031001C	Temperature	21.53	ºC
2111031001C	Turbidity	0.25	NTU
2111031002C	Conductivity	1018	µS/cm
2111031002C	DO	6.00	mg/L
2111031002C	ORP	99	mV
2111031002C	pH	6.75	NA
2111031002C	Temperature	21.50	ºC
2111031002C	Turbidity	0.34	NTU

Well ID	**PL-12-800**	**Event Date**	**11/3/2021**

Sample	Parameter	Result	Units
2111031425C	Conductivity	1012	µS/cm
2111031425C	DO	5.93	mg/L
2111031425C	ORP	91	mV
2111031425C	pH	6.86	NA
2111031425C	Temperature	22.36	ºC
2111031425C	Turbidity	0.58	NTU
2111031426C	Conductivity	1025	µS/cm
2111031426C	DO	5.95	mg/L
2111031426C	ORP	91	mV
2111031426C	pH	6.86	NA
2111031426C	Temperature	22.25	ºC
2111031426C	Turbidity	0.47	NTU
2111031427C	Conductivity	1019	µS/cm
2111031427C	DO	5.95	mg/L
2111031427C	ORP	91	mV
2111031427C	pH	6.86	NA
2111031427C	Temperature	22.20	ºC
2111031427C	Turbidity	0.49	NTU

Well ID	PL-1-486	Event Date	1/10/2022
Sample	**Parameter**	**Result**	**Units**
2201100950A	Conductivity	1054	µS/cm
2201100950A	DO	7.22	mg/L
2201100950A	DTW	485.30	ft
2201100950A	ORP	234	mV
2201100950A	pH	7.09	NA
2201100950A	Temperature	18.58	ºC
2201100950A	Turbidity	0.61	NTU
2201100952A	Conductivity	1050	µS/cm
2201100952A	DO	6.98	mg/L
2201100952A	DTW	485.55	ft
2201100952A	ORP	233	mV
2201100952A	pH	7.12	NA
2201100952A	Temperature	18.61	ºC
2201100952A	Turbidity	0.53	NTU
2201100954A	Conductivity	1057	µS/cm
2201100954A	DO	7.07	mg/L
2201100954A	DTW	485.55	ft
2201100954A	ORP	232	mV
2201100954A	pH	7.10	NA
2201100954A	Temperature	18.60	ºC
2201100954A	Turbidity	0.39	NTU

Well ID	PL-2-504	Event Date	12/10/2021
Sample	**Parameter**	**Result**	**Units**
2112100945A	Conductivity	1079	µS/cm
2112100945A	DTW	477.72	ft
2112100945A	pH	7.21	NA
2112100945A	Temperature	19.3	ºC
2112100945A	Turbidity	0.64	NTU
2112100947A	Conductivity	1075	µS/cm
2112100947A	DTW	477.75	ft
2112100947A	pH	7.25	NA
2112100947A	Temperature	19.6	ºC
2112100947A	Turbidity	0.57	NTU
2112100949A	Conductivity	1072	µS/cm
2112100949A	DTW	477.75	ft
2112100949A	pH	7.27	NA
2112100949A	Temperature	19.2	ºC
2112100949A	Turbidity	0.52	NTU

Well ID PL-4-464 Event Date 12/15/2021

Sample	Parameter	Result	Units
2112151400A	Conductivity	1114	µS/cm
2112151400A	DTW	449.47	ft
2112151400A	pH	7.90	NA
2112151400A	Temperature	19.4	ºC
2112151400A	Turbidity	0.77	NTU
2112151403A	Conductivity	1113	µS/cm
2112151403A	DTW	449.65	ft
2112151403A	pH	7.92	NA
2112151403A	Temperature	19.4	ºC
2112151403A	Turbidity	0.73	NTU
2112151406A	Conductivity	1109	µS/cm
2112151406A	DTW	449.65	ft
2112151406A	pH	7.93	NA
2112151406A	Temperature	19.6	ºC
2112151406A	Turbidity	0.61	NTU

Well ID PL-6-1195 Event Date 1/12/2022

Sample	Parameter	Result	Units
2201121320Y	Atmospheric Pressure	12.77	psia
2201121320Y	Conductivity	1844	µS/cm
2201121320Y	Formation Pressure	337.00	psia
2201121320Y	pH	8.40	NA
2201121320Y	Temperature	21.5	ºC
2201121320Y	Turbidity	4.49	NTU
2201121508Y	Atmospheric Pressure	12.79	psia
2201121508Y	Conductivity	1822	µS/cm
2201121508Y	pH	8.46	NA
2201121508Y	Temperature	21.1	ºC
2201121508Y	Turbidity	3.88	NTU

Well ID PL-6-1335 Event Date 1/13/2022

Sample	Parameter	Result	Units
2201131040Y	Atmospheric Pressure	12.78	psia
2201131040Y	Conductivity	2030	µS/cm
2201131040Y	Formation Pressure	396.65	psia
2201131040Y	pH	8.38	NA
2201131040Y	Temperature	21.2	ºC
2201131040Y	Turbidity	3.65	NTU
2201131423Y	Atmospheric Pressure	12.79	psia
2201131423Y	Conductivity	2040	µS/cm
2201131423Y	pH	8.20	NA
2201131423Y	Temperature	20.8	ºC
2201131423Y	Turbidity	2.74	NTU

Well ID PL-6-545 Event Date 1/19/2022

Sample	Parameter	Result	Units
2201191325Y	Atmospheric Pressure	12.65	psia
2201191325Y	Conductivity	1097	µS/cm
2201191325Y	Formation Pressure	56.14	psia
2201191325Y	pH	7.20	NA
2201191325Y	Temperature	24.1	ºC
2201191325Y	Turbidity	0.62	NTU
2201191512Y	Atmospheric Pressure	12.67	psia
2201191512Y	Conductivity	1116	µS/cm
2201191512Y	pH	7.80	NA
2201191512Y	Temperature	21.2	ºC
2201191512Y	Turbidity	0.62	NTU

Well ID PL-6-725 Event Date 1/19/2022

Sample	Parameter	Result	Units
2201191005Y	Atmospheric Pressure	12.64	psia
2201191005Y	Conductivity	1051	µS/cm
2201191005Y	Formation Pressure	134.90	psia
2201191005Y	pH	8.32	NA
2201191005Y	Temperature	23.1	ºC
2201191005Y	Turbidity	0.32	NTU
2201191100Y	Atmospheric Pressure	12.71	psia
2201191100Y	Conductivity	1085	µS/cm
2201191100Y	DTW	NA	ft
2201191100Y	pH	7.92	NA
2201191100Y	Temperature	20.4	ºC
2201191100Y	Turbidity	0.24	NTU

Well ID PL-6-915 Event Date 1/18/2022

Sample	Parameter	Result	Units
2201181105Y	Atmospheric Pressure	12.64	psia
2201181105Y	Conductivity	952	µS/cm
2201181105Y	Formation Pressure	217.45	psia
2201181105Y	pH	8.41	NA
2201181105Y	Temperature	22.0	ºC
2201181105Y	Turbidity	1.51	NTU
2201181434Y	Atmospheric Pressure	12.61	psia
2201181434Y	Conductivity	967	µS/cm
2201181434Y	pH	8.50	NA
2201181434Y	Temperature	22.4	ºC
2201181434Y	Turbidity	1.23	NTU

Well ID **PL-7-480** **Event Date** **11/8/2021**

Sample	Parameter	Result	Units
2111081350Y	Atmospheric Pressure	12.56	psia
2111081350Y	Conductivity	955	µS/cm
2111081350Y	DTW	481.16	ft
2111081350Y	Formation Pressure	14.11	psia
2111081350Y	pH	8.26	NA
2111081350Y	Temperature	19.6	ºC
2111081350Y	Turbidity	1.05	NTU
2111091015Y	Atmospheric Pressure	12.54	psia
2111091015Y	Conductivity	971	µS/cm
2111091015Y	DTW	481.23	ft
2111091015Y	pH	8.08	NA
2111091015Y	Temperature	18.9	ºC
2111091015Y	Turbidity	0.95	NTU

Well ID **PL-7-560** **Event Date** **11/8/2021**

Sample	Parameter	Result	Units
2111080915Y	Atmospheric Pressure	12.53	psia
2111080915Y	Conductivity	918	µS/cm
2111080915Y	DTW	481.00	ft
2111080915Y	Formation Pressure	48.47	psia
2111080915Y	pH	8.61	NA
2111080915Y	Temperature	18.5	ºC
2111080915Y	Turbidity	0.62	NTU
2111080945Y	Atmospheric Pressure	12.53	psia
2111080945Y	Conductivity	931	µS/cm
2111080945Y	DTW	481.16	ft
2111080945Y	pH	8.50	NA
2111080945Y	Temperature	18.8	ºC
2111080945Y	Turbidity	0.54	NTU

Well ID PL-8-455 Event Date 12/8/2021

Sample	Parameter	Result	Units
2112081410Y	Atmospheric Pressure	12.64	psia
2112081410Y	Conductivity	1069	µS/cm
2112081410Y	DTW	438.67	ft
2112081410Y	Formation Pressure	23.15	psia
2112081410Y	pH	8.27	NA
2112081410Y	Temperature	22.5	ºC
2112081410Y	Turbidity	2.10	NTU
2112090836Y	Atmospheric Pressure	12.59	psia
2112090836Y	Conductivity	1081	µS/cm
2112090836Y	DTW	438.76	ft
2112090836Y	pH	8.13	NA
2112090836Y	Temperature	20.9	ºC
2112090836Y	Turbidity	1.77	NTU

Well ID PL-8-605 Event Date 12/8/2021

Sample	Parameter	Result	Units
2112080945Y	Atmospheric Pressure	12.65	psia
2112080945Y	Conductivity	970	µS/cm
2112080945Y	DTW	438.50	ft
2112080945Y	Formation Pressure	88.13	psia
2112080945Y	pH	8.37	NA
2112080945Y	Temperature	20.4	ºC
2112080945Y	Turbidity	2.25	NTU
2112081110Y	Atmospheric Pressure	12.63	psia
2112081110Y	Conductivity	983	µS/cm
2112081110Y	DTW	438.67	ft
2112081110Y	pH	8.31	NA
2112081110Y	Temperature	20.7	ºC
2112081110Y	Turbidity	1.63	NTU

Well ID **ST-1-473** **Event Date** **11/15/2021**

Sample	Parameter	Result	Units
2111151405A	Conductivity	1266	µS/cm
2111151405A	DO	10.81	mg/L
2111151405A	DTW	473.22	ft
2111151405A	ORP	85	mV
2111151405A	pH	7.04	NA
2111151405A	Temperature	24.60	ºC
2111151405A	Turbidity	2.94	NTU
2111151407A	Conductivity	1262	µS/cm
2111151407A	DO	10.76	mg/L
2111151407A	DTW	473.61	ft
2111151407A	ORP	83	mV
2111151407A	pH	7.01	NA
2111151407A	Temperature	24.63	ºC
2111151407A	Turbidity	2.89	NTU
2111151409A	Conductivity	1265	µS/cm
2111151409A	DO	10.80	mg/L
2111151409A	DTW	473.61	ft
2111151409A	ORP	83	mV
2111151409A	pH	7.02	NA
2111151409A	Temperature	24.62	ºC
2111151409A	Turbidity	2.92	NTU

Well ID **ST-1-541** **Event Date** **12/16/2021**

Sample	Parameter	Result	Units
2112160940A	Conductivity	1249	µS/cm
2112160940A	DTW	471.44	ft
2112160940A	pH	8.06	NA
2112160940A	Temperature	17.7	ºC
2112160940A	Turbidity	0.72	NTU
2112160943A	Conductivity	1251	µS/cm
2112160943A	DTW	471.63	ft
2112160943A	pH	8.04	NA
2112160943A	Temperature	17.6	ºC
2112160943A	Turbidity	0.59	NTU
2112160946A	Conductivity	1248	µS/cm
2112160946A	DTW	471.63	ft
2112160946A	pH	8.00	NA
2112160946A	Temperature	17.7	ºC
2112160946A	Turbidity	0.54	NTU

Well ID ST-1-630 Event Date 12/16/2021

Sample	Parameter	Result	Units
2112160950C	Conductivity	1057	µS/cm
2112160950C	DO	8.93	mg/L
2112160950C	ORP	349	mV
2112160950C	pH	6.89	NA
2112160950C	Temperature	19.45	ºC
2112160950C	Turbidity	1.88	NTU
2112160952C	Conductivity	1056	µS/cm
2112160952C	DO	8.90	mg/L
2112160952C	ORP	351	mV
2112160952C	pH	6.92	NA
2112160952C	Temperature	19.47	ºC
2112160952C	Turbidity	1.38	NTU
2112160954C	Conductivity	1059	µS/cm
2112160954C	DO	8.91	mg/L
2112160954C	ORP	350	mV
2112160954C	pH	6.91	NA
2112160954C	Temperature	19.44	ºC
2112160954C	Turbidity	1.41	NTU

Well ID ST-3-486 Event Date 12/9/2021

Sample	Parameter	Result	Units
2112090930C	Conductivity	1214	µS/cm
2112090930C	pH	7.83	NA
2112090930C	Temperature	18.6	ºC
2112090930C	Turbidity	5.10	NTU
2112090932C	Conductivity	1188	µS/cm
2112090932C	pH	7.31	NA
2112090932C	Temperature	18.3	ºC
2112090932C	Turbidity	6.37	NTU
2112090934C	Conductivity	1187	µS/cm
2112090934C	pH	7.24	NA
2112090934C	Temperature	19.6	ºC
2112090934C	Turbidity	5.76	NTU

Well ID	ST-3-586	Event Date	12/13/2021
Sample	**Parameter**	**Result**	**Units**
2112130928C	Conductivity	961	µS/cm
2112130928C	DO	6.61	mg/L
2112130928C	DTW	462.20	ft
2112130928C	ORP	338	mV
2112130928C	pH	6.95	NA
2112130928C	Temperature	19.66	ºC
2112130928C	Turbidity	1.58	NTU
2112130930C	Conductivity	966	µS/cm
2112130930C	DO	6.60	mg/L
2112130930C	ORP	339	mV
2112130930C	pH	6.92	NA
2112130930C	Temperature	19.64	ºC
2112130930C	Turbidity	0.80	NTU
2112130932C	Conductivity	962	µS/cm
2112130932C	DO	6.60	mg/L
2112130932C	ORP	338	mV
2112130932C	pH	6.96	NA
2112130932C	Temperature	19.65	ºC
2112130932C	Turbidity	0.92	NTU

Well ID	ST-3-666	Event Date	12/15/2021
Sample	**Parameter**	**Result**	**Units**
2112151400C	Conductivity	967	µS/cm
2112151400C	DO	7.41	mg/L
2112151400C	ORP	352	mV
2112151400C	pH	6.90	NA
2112151400C	Temperature	21.25	ºC
2112151400C	Turbidity	6.39	NTU
2112151402C	Conductivity	965	µS/cm
2112151402C	DO	7.38	mg/L
2112151402C	ORP	350	mV
2112151402C	pH	6.88	NA
2112151402C	Temperature	21.28	ºC
2112151402C	Turbidity	6.26	NTU
2112151404C	Conductivity	968	µS/cm
2112151404C	DO	7.40	mg/L
2112151404C	ORP	352	mV
2112151404C	pH	6.87	NA
2112151404C	Temperature	21.27	ºC
2112151404C	Turbidity	6.19	NTU

Well ID ST-3-735 Event Date 12/14/2021

Sample	Parameter	Result	Units
2112141245C	Conductivity	978	µS/cm
2112141245C	DO	6.00	mg/L
2112141245C	ORP	362	mV
2112141245C	pH	7.01	NA
2112141245C	Temperature	20.91	ºC
2112141245C	Turbidity	3.15	NTU
2112141247C	Conductivity	975	µS/cm
2112141247C	DO	5.97	mg/L
2112141247C	ORP	360	mV
2112141247C	pH	7.04	NA
2112141247C	Temperature	20.94	ºC
2112141247C	Turbidity	3.30	NTU
2112141249C	Conductivity	976	µS/cm
2112141249C	DO	5.99	mg/L
2112141249C	ORP	360	mV
2112141249C	pH	7.05	NA
2112141249C	Temperature	20.92	ºC
2112141249C	Turbidity	3.32	NTU

Well ID ST-4-481 Event Date 12/8/2021

Sample	Parameter	Result	Units
2112080950C	Conductivity	982	µS/cm
2112080950C	DO	6.13	mg/L
2112080950C	ORP	380	mV
2112080950C	pH	6.74	NA
2112080950C	Temperature	20.45	ºC
2112080950C	Turbidity	0.50	NTU
2112080952C	Conductivity	980	µS/cm
2112080952C	DO	6.12	mg/L
2112080952C	ORP	378	mV
2112080952C	pH	6.75	NA
2112080952C	Temperature	20.42	ºC
2112080952C	Turbidity	0.45	NTU
2112080954C	Conductivity	984	µS/cm
2112080954C	DO	6.13	mg/L
2112080954C	ORP	378	mV
2112080954C	pH	6.79	NA
2112080954C	Temperature	20.43	ºC
2112080954C	Turbidity	0.42	NTU

Well ID	ST-4-589	Event Date	11/2/2021
Sample	**Parameter**	**Result**	**Units**
2111021000C	Conductivity	735	µS/cm
2111021000C	DO	1.81	mg/L
2111021000C	ORP	88	mV
2111021000C	pH	7.56	NA
2111021000C	Temperature	21.35	ºC
2111021000C	Turbidity	0.21	NTU
2111021001C	Conductivity	739	µS/cm
2111021001C	DO	2.01	mg/L
2111021001C	ORP	88	mV
2111021001C	pH	7.51	NA
2111021001C	Temperature	21.28	ºC
2111021001C	Turbidity	0.38	NTU
2111021002C	Conductivity	738	µS/cm
2111021002C	DO	1.78	mg/L
2111021002C	ORP	88	mV
2111021002C	pH	7.57	NA
2111021002C	Temperature	21.30	ºC
2111021002C	Turbidity	0.31	NTU

Well ID	ST-4-690	Event Date	12/8/2021
Sample	**Parameter**	**Result**	**Units**
2112081500C	Conductivity	786	µS/cm
2112081500C	DO	3.43	mg/L
2112081500C	ORP	346	mV
2112081500C	pH	7.66	NA
2112081500C	Temperature	20.14	ºC
2112081500C	Turbidity	1.89	NTU
2112081502C	Conductivity	783	µS/cm
2112081502C	DO	3.42	mg/L
2112081502C	ORP	345	mV
2112081502C	pH	7.61	NA
2112081502C	Temperature	20.17	ºC
2112081502C	Turbidity	1.83	NTU
2112081504C	Conductivity	784	µS/cm
2112081504C	DO	3.41	mg/L
2112081504C	ORP	345	mV
2112081504C	pH	7.62	NA
2112081504C	Temperature	20.13	ºC
2112081504C	Turbidity	1.84	NTU

Well ID	ST-5-485	Event Date	11/1/2021
Sample	**Parameter**	**Result**	**Units**
2111011335Y	Atmospheric Pressure	12.59	psia
2111011335Y	Conductivity	902	µS/cm
2111011335Y	DTW	466.33	ft
2111011335Y	Formation Pressure	40.20	psia
2111011335Y	pH	7.95	NA
2111011335Y	Temperature	19.8	ºC
2111011335Y	Turbidity	3.84	NTU
2111011430Y	Atmospheric Pressure	12.61	psia
2111011430Y	Conductivity	894	µS/cm
2111011430Y	DTW	466.44	ft
2111011430Y	pH	7.99	NA
2111011430Y	Temperature	20.0	ºC
2111011430Y	Turbidity	2.26	NTU

Well ID	ST-5-655	Event Date	11/1/2021
Sample	**Parameter**	**Result**	**Units**
2111010945Y	Atmospheric Pressure	12.56	psia
2111010945Y	Conductivity	772	µS/cm
2111010945Y	DTW	466.20	ft
2111010945Y	Formation Pressure	113.83	psia
2111010945Y	pH	8.29	NA
2111010945Y	Temperature	18.6	ºC
2111010945Y	Turbidity	3.06	NTU
2111011017Y	Atmospheric Pressure	12.59	psia
2111011017Y	Conductivity	761	µS/cm
2111011017Y	DTW	466.33	ft
2111011017Y	pH	8.34	NA
2111011017Y	Temperature	18.9	ºC
2111011017Y	Turbidity	1.91	NTU

Well ID	ST-6-528	Event Date	12/6/2021
Sample	**Parameter**	**Result**	**Units**
2112061400B	Conductivity	1083	µS/cm
2112061400B	pH	8.79	NA
2112061400B	Temperature	14.9	ºC
2112061400B	Turbidity	0.59	NTU
2112061444B	Conductivity	1079	µS/cm
2112061444B	pH	8.71	NA
2112061444B	Temperature	14.9	ºC
2112061444B	Turbidity	0.59	NTU

Well ID ST-6-568 Event Date 12/6/2021

Sample	Parameter	Result	Units
2112061410B	Conductivity	1040	µS/cm
2112061410B	pH	8.73	NA
2112061410B	Temperature	12.7	ºC
2112061410B	Turbidity	0.73	NTU
2112061510B	Conductivity	1041	µS/cm
2112061510B	pH	8.69	NA
2112061510B	Temperature	12.8	ºC
2112061510B	Turbidity	0.77	NTU

Well ID ST-6-678 Event Date 12/7/2021

Sample	Parameter	Result	Units
2112071400B	Conductivity	1006	µS/cm
2112071400B	pH	8.67	NA
2112071400B	Temperature	16.4	ºC
2112071400B	Turbidity	1.12	NTU
2112071440B	Conductivity	1010	µS/cm
2112071440B	pH	8.62	NA
2112071440B	Temperature	16.5	ºC
2112071440B	Turbidity	0.98	NTU

Well ID ST-6-824 Event Date 12/7/2021

Sample	Parameter	Result	Units
2112071411B	Conductivity	916	µS/cm
2112071411B	pH	8.55	NA
2112071411B	Temperature	16.2	ºC
2112071411B	Turbidity	0.42	NTU
2112071456B	Conductivity	920	µS/cm
2112071456B	pH	8.44	NA
2112071456B	Temperature	16.2	ºC
2112071456B	Turbidity	0.51	NTU

Well ID ST-6-970 Event Date 12/7/2021

Sample	Parameter	Result	Units
2112071414B	Conductivity	997	µS/cm
2112071414B	pH	7.07	NA
2112071414B	Temperature	16.6	ºC
2112071414B	Turbidity	0.95	NTU
2112071510B	Conductivity	996	µS/cm
2112071510B	pH	7.10	NA
2112071510B	Temperature	16.6	ºC
2112071510B	Turbidity	0.89	NTU

Well ID ST-7-453 Event Date 1/3/2022

Sample	Parameter	Result	Units
2201031510B	Conductivity	1081	µS/cm
2201031510B	pH	8.25	NA
2201031510B	Temperature	17.9	ºC
2201031510B	Turbidity	1.60	NTU
2201031518B	Conductivity	1082	µS/cm
2201031518B	pH	8.20	NA
2201031518B	Temperature	17.9	ºC
2201031518B	Turbidity	1.55	NTU

Well ID ST-7-544 Event Date 1/3/2022

Sample	Parameter	Result	Units
2201031520B	Conductivity	1084	µS/cm
2201031520B	pH	8.42	NA
2201031520B	Temperature	15.6	ºC
2201031520B	Turbidity	1.60	NTU
2201031544B	Conductivity	1072	µS/cm
2201031544B	pH	8.40	NA
2201031544B	Temperature	15.8	ºC
2201031544B	Turbidity	1.56	NTU

Well ID ST-7-779 Event Date 1/4/2022

Sample	Parameter	Result	Units
2201041440B	Conductivity	936	µS/cm
2201041440B	pH	8.72	NA
2201041440B	Temperature	18.5	ºC
2201041440B	Turbidity	0.91	NTU
2201041454B	Conductivity	933	µS/cm
2201041454B	pH	8.75	NA
2201041454B	Temperature	18.5	ºC
2201041454B	Turbidity	0.87	NTU

Well ID ST-7-970 Event Date 1/4/2022

Sample	Parameter	Result	Units
2201041500B	Conductivity	871	µS/cm
2201041500B	pH	8.51	NA
2201041500B	Temperature	18.7	ºC
2201041500B	Turbidity	1.67	NTU
2201041515B	Conductivity	874	µS/cm
2201041515B	pH	8.47	NA
2201041515B	Temperature	18.7	ºC
2201041515B	Turbidity	1.59	NTU

Well ID	WW-1-452	Event Date	12/6/2021

Sample	Parameter	Result	Units
2112061415A	Conductivity	1005	µS/cm
2112061415A	DO	6.16	mg/L
2112061415A	DTW	422.35	ft
2112061415A	ORP	358	mV
2112061415A	pH	6.84	NA
2112061415A	Temperature	21.21	ºC
2112061415A	Turbidity	0.37	NTU
2112061417A	Conductivity	1012	µS/cm
2112061417A	DO	6.16	mg/L
2112061417A	DTW	422.85	ft
2112061417A	ORP	358	mV
2112061417A	pH	6.83	NA
2112061417A	Temperature	21.22	ºC
2112061417A	Turbidity	0.28	NTU
2112061419A	Conductivity	1010	µS/cm
2112061419A	DO	6.23	mg/L
2112061419A	DTW	422.85	ft
2112061419A	ORP	358	mV
2112061419A	pH	6.87	NA
2112061419A	Temperature	21.19	ºC
2112061419A	Turbidity	0.59	NTU

Well ID	WW-2-489	Event Date	12/14/2021

Sample	Parameter	Result	Units
2112140935A	Conductivity	967	µS/cm
2112140935A	pH	8.68	NA
2112140935A	Temperature	17.1	ºC
2112140935A	Transducer	20.26	ft
2112140935A	Turbidity	2.50	NTU
2112140938A	Conductivity	970	µS/cm
2112140938A	pH	8.64	NA
2112140938A	Temperature	17.4	ºC
2112140938A	Transducer	20.36	ft
2112140938A	Turbidity	2.24	NTU
2112140941A	Conductivity	968	µS/cm
2112140941A	pH	8.62	NA
2112140941A	Temperature	17.4	ºC
2112140941A	Transducer	20.31	ft
2112140941A	Turbidity	1.91	NTU

Well ID	WW-2-664	Event Date	12/14/2021
Sample	**Parameter**	**Result**	**Units**
2112141355A	Conductivity	970	µS/cm
2112141355A	pH	8.35	NA
2112141355A	Temperature	19.8	ºC
2112141355A	Transducer	20.41	ft
2112141355A	Turbidity	3.32	NTU
2112141358A	Conductivity	968	µS/cm
2112141358A	pH	8.37	NA
2112141358A	Temperature	19.8	ºC
2112141358A	Transducer	20.31	ft
2112141358A	Turbidity	3.16	NTU
2112141401A	Conductivity	964	µS/cm
2112141401A	pH	8.37	NA
2112141401A	Temperature	20.1	ºC
2112141401A	Transducer	20.27	ft
2112141401A	Turbidity	2.85	NTU

Well ID	WW-3-469	Event Date	12/7/2021
Sample	**Parameter**	**Result**	**Units**
2112071407Y	Atmospheric Pressure	12.49	psia
2112071407Y	Conductivity	1132	µS/cm
2112071407Y	DTW	410.02	ft
2112071407Y	Formation Pressure	38.84	psia
2112071407Y	pH	8.04	NA
2112071407Y	Temperature	22.8	ºC
2112071407Y	Turbidity	3.96	NTU
2112071432Y	Atmospheric Pressure	12.51	psia
2112071432Y	Conductivity	1117	µS/cm
2112071432Y	DTW	410.11	ft
2112071432Y	pH	7.98	NA
2112071432Y	Temperature	22.5	ºC
2112071432Y	Turbidity	3.11	NTU

Well ID	WW-3-569	Event Date	12/7/2021
Sample	**Parameter**	**Result**	**Units**
2112071030Y	Atmospheric Pressure	12.54	psia
2112071030Y	Conductivity	1094	µS/cm
2112071030Y	DTW	409.88	ft
2112071030Y	Formation Pressure	82.16	psia
2112071030Y	pH	8.29	NA
2112071030Y	Temperature	21.5	ºC
2112071030Y	Turbidity	2.57	NTU
2112071103Y	Atmospheric Pressure	12.56	psia
2112071103Y	Conductivity	1105	µS/cm
2112071103Y	DTW	410.02	ft
2112071103Y	pH	8.34	NA
2112071103Y	Temperature	21.3	ºC
2112071103Y	Turbidity	1.82	NTU

Well ID	WW-5-459	Event Date	1/10/2022
Sample	**Parameter**	**Result**	**Units**
2201101340B	Conductivity	1076	µS/cm
2201101340B	pH	7.38	NA
2201101340B	Temperature	16.3	ºC
2201101340B	Turbidity	0.79	NTU
2201101354B	Conductivity	1080	µS/cm
2201101354B	pH	7.45	NA
2201101354B	Temperature	16.5	ºC
2201101354B	Turbidity	0.73	NTU

Well ID	WW-5-579	Event Date	1/10/2022
Sample	**Parameter**	**Result**	**Units**
2201101403B	Conductivity	1018	µS/cm
2201101403B	pH	8.04	NA
2201101403B	Temperature	18.6	ºC
2201101403B	Turbidity	0.57	NTU
2201101420B	Conductivity	1021	µS/cm
2201101420B	pH	8.07	NA
2201101420B	Temperature	18.5	ºC
2201101420B	Turbidity	0.63	NTU

Well ID	WW-5-809	Event Date 1/11/2022	
Sample	**Parameter**	**Result**	**Units**
2201111410B	Conductivity	936	µS/cm
2201111410B	pH	8.17	NA
2201111410B	Temperature	19.3	ºC
2201111410B	Turbidity	1.04	NTU
2201111415B	Conductivity	931	µS/cm
2201111415B	pH	8.13	NA
2201111415B	Temperature	19.2	ºC
2201111415B	Turbidity	1.01	NTU

Well ID	WW-5-909	Event Date 1/11/2022	
Sample	**Parameter**	**Result**	**Units**
2201111430B	Conductivity	1260	µS/cm
2201111430B	pH	7.91	NA
2201111430B	Temperature	19.5	ºC
2201111430B	Turbidity	1.04	NTU
2201111445B	Conductivity	1261	µS/cm
2201111445B	pH	7.93	NA
2201111445B	Temperature	19.4	ºC
2201111445B	Turbidity	1.02	NTU

Appendix A.2
Monitor Well Analytical Data

Detections for Monitoring Well Sampling Events in this Reporting Period

Analytical Results for Sampling Events at 100-D-176

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/11/2021	8260	2111111006A	Silane, fluorotrimethyl-	12	ug/L	NA	NA		TIC
11/11/2021	8260	2111111006A	Silane, methoxytrimethyl-	5.3	ug/L	NA	NA		TIC
11/11/2021	8260	2111111006A	Trichloroethene (TCE)	3	ug/L	1	0.2		
11/11/2021	8260	2111111006A	1,1,2-Trichloro-1,2,2-Trifluoroethane	23	ug/L	1	0.2		
11/11/2021	8260	2111111006A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.42	ug/L	1	0.2		J
11/11/2021	607	2111111008A	Bromacil	0.34	µg/L	0.0094	0.0047	102	
11/11/2021	8270	2111111009A	Dichloromethane (Methylene Chloride)	6.8	ug/L	NA	NA		TIC
11/11/2021	8270	2111111009A	Unknown	7.1	ug/L	NA	NA		TIC
11/11/2021	8270	2111111009A	Unknown	7.8	ug/L	NA	NA		TIC RB
11/11/2021	8270	2111111009A	1H-Benzotriazole, 4-methyl-	19	ug/L	NA	NA		TIC
11/11/2021	METALS	2111111012A	Strontium, Total	8.19	mg/L	0.1	0.002		
11/11/2021	METALS	2111111012A	Arsenic, Total	0.0011	mg/L	0.001	0.0004		
11/11/2021	METALS	2111111012A	Iron, Total	0.82	mg/L	0.1	0.07		
11/11/2021	METALS	2111111012A	Chromium, Total	0.106	mg/L	0.01	0.002		
11/11/2021	METALS	2111111012A	Calcium, Total	180	mg/L	1	0.3		
11/11/2021	METALS	2111111012A	Boron, Total	1.75	mg/L	0.2	0.02		
11/11/2021	METALS	2111111012A	Barium, Total	0.043	mg/L	0.02	0.003		
11/11/2021	METALS	2111111012A	Magnesium, Total	143	mg/L	1	0.03		
11/11/2021	METALS	2111111012A	Sodium, Total	272	mg/L	10	2		
11/11/2021	METALS	2111111012A	Potassium, Total	5.9	mg/L	2	0.4		
11/11/2021	METALS	2111111012A	Nickel, Total	0.321	mg/L	0.04	0.003		
11/11/2021	METALS	2111111012A	Molybdenum, Total	0.073	mg/L	0.025	0.003		
11/11/2021	METALS	2111111012A	Manganese, Total	0.018	mg/L	0.01	0.004		
11/11/2021	METALS	2111111012A	Vanadium, Total	0.003	mg/L	0.05	0.0007		J
11/11/2021	METALS	2111111012A	Antimony, Total	0.0003	mg/L	0.001	0.0002		J
11/11/2021	ANIONS	2111111013A	Alkalinity, Total as CaCO3	219	mg/L	2	1.8		
11/11/2021	ANIONS	2111111013A	Sulfate	793	mg/L	20	4		
11/11/2021	ANIONS	2111111013A	Chloride	386	mg/L	8	1.7		
11/11/2021	ANIONS	2111111013A	Fluoride, undistilled	1.13	mg/L	0.1	0.01		
11/11/2021	SM2540C	2111111014A	Total Dissolved Solids (TDS)	1930	mg/L	29	27		
11/11/2021	353.2	2111111016A	Nitrate+Nitrite as Nitrogen	8.72	mg/L	0.5	0.02		

Analytical Results for Sampling Events at 100-F-358

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/18/2022	8290	2201180937C	OCDD	0.732	pg/L	23.6	0.0943		J
1/18/2022	8270	2201180940C	Benzo(k)fluoranthene	0.081	ug/L	0.19	0.07		J
1/18/2022	8270	2201180940C	Unknown	5.8	ug/L	NA	NA		TIC RB
1/18/2022	8270	2201180940C	Unknown	9.9	ug/L	NA	NA		TIC RB
1/18/2022	8270	2201180940C	Benzo(b)fluoranthene	0.083	ug/L	0.19	0.065		J
1/18/2022	8270	2201180940C	Benz(a)anthracene	0.1	ug/L	0.19	0.087		J
1/18/2022	8270	2201180940C	Unknown	5.5	ug/L	NA	NA		TIC
1/18/2022	METALS	2201180943C	Barium, Total	0.031	mg/L	0.02	0.003		
1/18/2022	METALS	2201180943C	Manganese, Total	0.033	mg/L	0.01	0.004		
1/18/2022	METALS	2201180943C	Magnesium, Total	72	mg/L	1	0.03		
1/18/2022	METALS	2201180943C	Cobalt, Total	0.001	mg/L	0.05	0.0009		J
1/18/2022	METALS	2201180943C	Boron, Total	0.07	mg/L	0.2	0.02		J
1/18/2022	METALS	2201180943C	Arsenic, Total	0.0015	mg/L	0.001	0.0004		
1/18/2022	METALS	2201180943C	Strontium, Total	6.64	mg/L	0.1	0.002		
1/18/2022	METALS	2201180943C	Sodium, Total	42	mg/L	1	0.2		
1/18/2022	METALS	2201180943C	Potassium, Total	3.4	mg/L	2	0.4		
1/18/2022	METALS	2201180943C	Molybdenum, Total	0.013	mg/L	0.025	0.003		J
1/18/2022	METALS	2201180943C	Calcium, Total	160	mg/L	1	0.3		
1/18/2022	ANIONS	2201180945C	Sulfate	475	mg/L	20	4		
1/18/2022	ANIONS	2201180945C	Alkalinity, Total as CaCO3	224	mg/L	2	1.8		
1/18/2022	ANIONS	2201180945C	Chloride	33.6	mg/L	2	0.5		
1/18/2022	ANIONS	2201180945C	Fluoride, undistilled	1.25	mg/L	0.1	0.01		
1/18/2022	SM2540C	2201180946C	Total Dissolved Solids (TDS)	997	mg/L	10	9		
1/18/2022	6850	2201180947C	Perchlorate	0.0296	ug/L	0.1	0.025		J
1/18/2022	353.2	2201180948C	Nitrate+Nitrite as Nitrogen	0.007	mg/L	0.05	0.002		J

Analytical Results for Sampling Events at 100-G-223

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/18/2022	8270	2201181439C	Unknown	4.2	ug/L	NA	NA		TIC
1/18/2022	8270	2201181439C	Unknown	4.3	ug/L	NA	NA		TIC
1/18/2022	8270	2201181439C	Cyclopentasiloxane, decamethyl-	5.1	ug/L	NA	NA		TIC RB
1/18/2022	METALS	2201181442C	Boron, Total	0.07	mg/L	0.2	0.02		J
1/18/2022	METALS	2201181442C	Strontium, Total	3.88	mg/L	0.1	0.002		
1/18/2022	METALS	2201181442C	Sodium, Total	41.4	mg/L	1	0.2		
1/18/2022	METALS	2201181442C	Potassium, Total	2.7	mg/L	2	0.4		
1/18/2022	METALS	2201181442C	Molybdenum, Total	0.011	mg/L	0.025	0.003		J
1/18/2022	METALS	2201181442C	Calcium, Total	127	mg/L	1	0.3		
1/18/2022	METALS	2201181442C	Barium, Total	0.023	mg/L	0.02	0.003		
1/18/2022	METALS	2201181442C	Arsenic, Total	0.0004	mg/L	0.001	0.0004		J
1/18/2022	METALS	2201181442C	Zinc, Total	0.003	mg/L	0.02	0.003		J
1/18/2022	METALS	2201181442C	Magnesium, Total	68.2	mg/L	1	0.03		
1/18/2022	ANIONS	2201181443C	Sulfate	339	mg/L	8	1.6		
1/18/2022	ANIONS	2201181443C	Fluoride, undistilled	1.18	mg/L	0.1	0.01		
1/18/2022	ANIONS	2201181443C	Alkalinity, Total as CaCO3	269	mg/L	2	1.8		
1/18/2022	ANIONS	2201181443C	Chloride	37.8	mg/L	2	0.5		
1/18/2022	SM2540C	2201181444C	Total Dissolved Solids (TDS)	817	mg/L	10	9		
1/18/2022	353.2	2201181446C	Nitrate+Nitrite as Nitrogen	0.098	mg/L	0.05	0.002		

Analytical Results for Sampling Events at 200-G-175

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/6/2021	8260	2112061030Y	1,1,2-Trichloro-1,2,2-Trifluoroethane	2.1	ug/L	1	0.2		QD
12/6/2021	8260	2112061030Y	Trichloroethene (TCE)	1.4	ug/L	1	0.2		
12/6/2021	8260	2112061030Y	Trichlorofluoromethane (CFC 11)	3.1	ug/L	1	0.24		QD
12/6/2021	8260	2112061031Y	1,1,2-Trichloro-1,2,2-Trifluoroethane	3.1	ug/L	1	0.2		QD
12/6/2021	8260	2112061031Y	Trichloroethene (TCE)	2.1	ug/L	1	0.2		
12/6/2021	8260	2112061031Y	Trichlorofluoromethane (CFC 11)	4.6	ug/L	1	0.24		QD
12/6/2021	607	2112061032Y	Bromacil	0.41	µg/L	0.0095	0.0048	75	RB
12/6/2021	METALS	2112061110Y	Potassium, Total	13.4	mg/L	2	0.4		
12/6/2021	METALS	2112061110Y	Boron, Total	0.14	mg/L	0.2	0.02		J
12/6/2021	METALS	2112061110Y	Zinc, Total	0.017	mg/L	0.02	0.003		J
12/6/2021	METALS	2112061110Y	Thallium, Total	0.0002	mg/L	0.001	0.00004		J
12/6/2021	METALS	2112061110Y	Strontium, Total	1.91	mg/L	0.1	0.002		
12/6/2021	METALS	2112061110Y	Sodium, Total	50.2	mg/L	1	0.2		
12/6/2021	METALS	2112061110Y	Molybdenum, Total	0.01	mg/L	0.025	0.003		J
12/6/2021	METALS	2112061110Y	Calcium, Total	130	mg/L	1	0.3		
12/6/2021	METALS	2112061110Y	Barium, Total	0.027	mg/L	0.02	0.003		
12/6/2021	METALS	2112061110Y	Arsenic, Total	0.0009	mg/L	0.001	0.0004		J
12/6/2021	METALS	2112061110Y	Magnesium, Total	68	mg/L	1	0.03		

Analytical Results for Sampling Events at 200-G-220

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/2/2021	8260	2112021320Y	Trichlorofluoromethane (CFC 11)	0.56	ug/L	1	0.24		J
12/2/2021	607	2112021321Y	Bromacil	0.019	µg/L	0.0095	0.0048	75	RB *
12/2/2021	METALS	2112021350Y	Molybdenum, Total	0.004	mg/L	0.025	0.003		J
12/2/2021	METALS	2112021350Y	Sodium, Total	31.3	mg/L	1	0.2		
12/2/2021	METALS	2112021350Y	Strontium, Total	15.1	mg/L	1	0.02		
12/2/2021	METALS	2112021350Y	Zinc, Total	0.013	mg/L	0.02	0.003		J
12/2/2021	METALS	2112021350Y	Potassium, Total	2.6	mg/L	2	0.4		
12/2/2021	METALS	2112021350Y	Magnesium, Total	98.8	mg/L	1	0.03		
12/2/2021	METALS	2112021350Y	Cobalt, Total	0.001	mg/L	0.05	0.0009		J
12/2/2021	METALS	2112021350Y	Calcium, Total	202	mg/L	1	0.3		
12/2/2021	METALS	2112021350Y	Boron, Total	0.07	mg/L	0.2	0.02		J
12/2/2021	METALS	2112021350Y	Barium, Total	0.027	mg/L	0.02	0.003		
12/2/2021	METALS	2112021350Y	Manganese, Total	0.06	mg/L	0.01	0.004		
12/2/2021	METALS	2112021350Y	Thallium, Total	0.0001	mg/L	0.001	0.00004		J

Analytical Results for Sampling Events at 200-G-340

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/2/2021	607	2112020848Y	Bromacil	0.024	µg/L	0.0095	0.0048	75	RB
12/2/2021	METALS	2112020920Y	Boron, Total	0.06	mg/L	0.2	0.02		J
12/2/2021	METALS	2112020920Y	Strontium, Total	13	mg/L	1	0.02		
12/2/2021	METALS	2112020920Y	Sodium, Total	36	mg/L	1	0.2		
12/2/2021	METALS	2112020920Y	Potassium, Total	2.5	mg/L	2	0.4		
12/2/2021	METALS	2112020920Y	Molybdenum, Total	0.004	mg/L	0.025	0.003		J EB
12/2/2021	METALS	2112020920Y	Manganese, Total	0.009	mg/L	0.01	0.004		J
12/2/2021	METALS	2112020920Y	Magnesium, Total	118	mg/L	1	0.03		
12/2/2021	METALS	2112020920Y	Calcium, Total	246	mg/L	1	0.3		
12/2/2021	METALS	2112020920Y	Zinc, Total	0.012	mg/L	0.02	0.003		J EB
12/2/2021	METALS	2112020920Y	Barium, Total	0.021	mg/L	0.02	0.003		
12/2/2021	METALS	2112020920Y	Iron, Total	0.4	mg/L	0.1	0.07		
12/2/2021	ANIONS	2112020921Y	Sulfate	855	mg/L	20	4		
12/2/2021	ANIONS	2112020921Y	Fluoride, undistilled	1.02	mg/L	0.1	0.01		
12/2/2021	ANIONS	2112020921Y	Alkalinity, Total as CaCO3	243	mg/L	2	1.8		
12/2/2021	ANIONS	2112020921Y	Chloride	33.9	mg/L	2	0.5		
12/2/2021	SM2540C	2112020922Y	Total Dissolved Solids (TDS)	1530	mg/L	13	12		

Analytical Results for Sampling Events at 200-G-420

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/1/2021	607	2112011421Y	Bromacil	0.05	µg/L	0.0095	0.0048	75	RB
12/1/2021	METALS	2112011445Y	Calcium, Total	406	mg/L	10	3		
12/1/2021	METALS	2112011445Y	Zinc, Total	0.011	mg/L	0.02	0.003		J
12/1/2021	METALS	2112011445Y	Strontium, Total	14.4	mg/L	1	0.02		
12/1/2021	METALS	2112011445Y	Sodium, Total	34.2	mg/L	1	0.2		
12/1/2021	METALS	2112011445Y	Potassium, Total	2.4	mg/L	2	0.4		
12/1/2021	METALS	2112011445Y	Manganese, Total	0.013	mg/L	0.01	0.004		
12/1/2021	METALS	2112011445Y	Iron, Total	0.22	mg/L	0.1	0.07		
12/1/2021	METALS	2112011445Y	Boron, Total	0.08	mg/L	0.2	0.02		J
12/1/2021	METALS	2112011445Y	Barium, Total	0.01	mg/L	0.02	0.003		J
12/1/2021	METALS	2112011445Y	Arsenic, Total	0.0004	mg/L	0.001	0.0004		J
12/1/2021	METALS	2112011445Y	Magnesium, Total	147	mg/L	1	0.03		

Analytical Results for Sampling Events at 200-G-495

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/1/2021	8260	2112011030Y	Sulfur Dioxide	16	ug/L	NA	NA		TIC RB
12/1/2021	8260	2112011030Y	Carbon Disulfide	0.58	ug/L	1	0.42		J
12/1/2021	607	2112011031Y	Bromacil	0.13	µg/L	0.0096	0.0048	75	RB
12/1/2021	METALS	2112011100Y	Barium, Total	0.011	mg/L	0.02	0.003		J
12/1/2021	METALS	2112011100Y	Boron, Total	0.08	mg/L	0.2	0.02		J
12/1/2021	METALS	2112011100Y	Calcium, Total	503	mg/L	10	3		
12/1/2021	METALS	2112011100Y	Magnesium, Total	147	mg/L	1	0.03		
12/1/2021	METALS	2112011100Y	Manganese, Total	0.011	mg/L	0.01	0.004		
12/1/2021	METALS	2112011100Y	Potassium, Total	2.4	mg/L	2	0.4		
12/1/2021	METALS	2112011100Y	Sodium, Total	34	mg/L	1	0.2		
12/1/2021	METALS	2112011100Y	Strontium, Total	14.1	mg/L	1	0.02		
12/1/2021	METALS	2112011100Y	Zinc, Total	0.013	mg/L	0.02	0.003		J

Analytical Results for Sampling Events at 200-I-185

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/10/2021	8260	2111101020Y	1,1,2-Trichloro-1,2,2-Trifluoroethane	6.2	ug/L	1	0.2		
11/10/2021	8260	2111101020Y	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.1	ug/L	1	0.2		
11/10/2021	8260	2111101020Y	Tetrachloroethene (PCE)	0.54	ug/L	1	0.21		J
11/10/2021	8260	2111101020Y	Trichloroethene (TCE)	13	ug/L	1	0.2		
11/10/2021	607	2111101021Y	Bromacil	2.6	µg/L	0.0095	0.0048	102	
11/10/2021	METALS	2111110820Y	Nickel, Total	0.007	mg/L	0.04	0.003		J
11/10/2021	METALS	2111110820Y	Magnesium, Total	99.9	mg/L	1	0.03		
11/10/2021	METALS	2111110820Y	Zinc, Total	0.041	mg/L	0.02	0.003		
11/10/2021	METALS	2111110820Y	Thallium, Total	0.0001	mg/L	0.001	0.00004		J
11/10/2021	METALS	2111110820Y	Strontium, Total	3	mg/L	0.1	0.002		
11/10/2021	METALS	2111110820Y	Sodium, Total	197	mg/L	1	0.2		
11/10/2021	METALS	2111110820Y	Potassium, Total	51.2	mg/L	2	0.4		
11/10/2021	METALS	2111110820Y	Manganese, Total	0.005	mg/L	0.01	0.004		J
11/10/2021	METALS	2111110820Y	Arsenic, Total	0.0004	mg/L	0.001	0.0004		J
11/10/2021	METALS	2111110820Y	Calcium, Total	152	mg/L	1	0.3		
11/10/2021	METALS	2111110820Y	Boron, Total	1.13	mg/L	0.2	0.02		
11/10/2021	METALS	2111110820Y	Barium, Total	0.059	mg/L	0.02	0.003		
11/10/2021	METALS	2111110820Y	Molybdenum, Total	0.014	mg/L	0.025	0.003		J
11/10/2021	ANIONS	2111110915Y	Fluoride, undistilled	1.73	mg/L	0.1	0.01		
11/10/2021	ANIONS	2111110915Y	Sulfate	500	mg/L	20	4		
11/10/2021	ANIONS	2111110915Y	Chloride	338	mg/L	8	1.7		
11/10/2021	ANIONS	2111110915Y	Alkalinity, Total as CaCO3	321	mg/L	2	1.8		
11/10/2021	6850	2111111010Y	Perchlorate	0.1	ug/L	0.2	0.06		J
11/10/2021	SM2540C	2111111105Y	Total Dissolved Solids (TDS)	1550	mg/L	13	12		
11/10/2021	353.2	2111111245Y	Nitrate+Nitrite as Nitrogen	2.72	mg/L	0.25	0.008		

Analytical Results for Sampling Events at 200-I-300

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/16/2021	8260	2111161400Y	Trichlorofluoromethane (CFC 11)	0.24	ug/L	1	0.24		J
11/16/2021	8260	2111161400Y	Benzene	0.42	ug/L	1	0.2		J
11/16/2021	8260	2111161400Y	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	26	ug/L	1	0.2		
11/16/2021	8260	2111161400Y	cis-1,2-Dichloroethene	0.55	ug/L	1	0.23		J
11/16/2021	8260	2111161400Y	Vinyl Chloride	0.24	ug/L	1	0.2		J
11/16/2021	8260	2111161400Y	Tetrahydrofuran (THF)	29	ug/L	5	1.7		
11/16/2021	8260	2111161400Y	1,1,2-Trichloro-1,2,2-Trifluoroethane	20	ug/L	1	0.2		
11/16/2021	8260	2111161400Y	Dichlorofluoromethane (CFC 21)	5.7	ug/L	1	0.2		
11/16/2021	8260	2111161400Y	Tetrachloroethene (PCE)	0.52	ug/L	1	0.21		J
11/16/2021	8260	2111161400Y	Trichloroethene (TCE)	29	ug/L	1	0.2		
11/16/2021	8260	2111161401Y	Trichloroethene (TCE)	28	ug/L	1	0.2		
11/16/2021	8260	2111161401Y	Unknown	7.5	ug/L	NA	NA		TIC
11/16/2021	8260	2111161401Y	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	25	ug/L	1	0.2		
11/16/2021	8260	2111161401Y	Trichlorofluoromethane (CFC 11)	0.27	ug/L	1	0.24		J
11/16/2021	8260	2111161401Y	Tetrahydrofuran (THF)	33	ug/L	5	1.7		
11/16/2021	8260	2111161401Y	Tetrachloroethene (PCE)	0.55	ug/L	1	0.21		J
11/16/2021	8260	2111161401Y	Dichlorofluoromethane (CFC 21)	5	ug/L	1	0.2		
11/16/2021	8260	2111161401Y	Benzene	0.42	ug/L	1	0.2		J
11/16/2021	8260	2111161401Y	1,1,2-Trichloro-1,2,2-Trifluoroethane	18	ug/L	1	0.2		
11/16/2021	8260	2111161401Y	cis-1,2-Dichloroethene	0.66	ug/L	1	0.23		J
11/16/2021	607	2111161402Y	Bromacil	0.018	µg/L	0.0095	0.0048	115	
11/16/2021	METALS	2111161425Y	Aluminum, Total	0.03	mg/L	0.1	0.03		J
11/16/2021	METALS	2111161425Y	Molybdenum, Total	0.004	mg/L	0.025	0.003		J
11/16/2021	METALS	2111161425Y	Strontium, Total	2.78	mg/L	0.1	0.002		
11/16/2021	METALS	2111161425Y	Zinc, Total	0.008	mg/L	0.02	0.003		J EB
11/16/2021	METALS	2111161425Y	Sodium, Total	20.3	mg/L	1	0.2		
11/16/2021	METALS	2111161425Y	Potassium, Total	3.5	mg/L	2	0.4		
11/16/2021	METALS	2111161425Y	Manganese, Total	0.005	mg/L	0.01	0.004		J
11/16/2021	METALS	2111161425Y	Magnesium, Total	52.2	mg/L	1	0.03		
11/16/2021	METALS	2111161425Y	Iron, Total	0.44	mg/L	0.1	0.07		
11/16/2021	METALS	2111161425Y	Calcium, Total	87.8	mg/L	1	0.3		
11/16/2021	METALS	2111161425Y	Barium, Total	0.038	mg/L	0.02	0.003		
11/16/2021	METALS	2111161425Y	Boron, Total	0.1	mg/L	0.2	0.02		J

Analytical Results for Sampling Events at 200-I-375

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/16/2021	METALS	2111161010Y	Sodium, Total	22.6	mg/L	1	0.2		
11/16/2021	METALS	2111161010Y	Iron, Total	0.32	mg/L	0.1	0.07		
11/16/2021	METALS	2111161010Y	Molybdenum, Total	0.017	mg/L	0.025	0.003		J
11/16/2021	METALS	2111161010Y	Potassium, Total	3.2	mg/L	2	0.4		
11/16/2021	METALS	2111161010Y	Manganese, Total	0.007	mg/L	0.01	0.004		J
11/16/2021	METALS	2111161010Y	Magnesium, Total	59.8	mg/L	1	0.03		
11/16/2021	METALS	2111161010Y	Boron, Total	0.09	mg/L	0.2	0.02		J
11/16/2021	METALS	2111161010Y	Barium, Total	0.027	mg/L	0.02	0.003		
11/16/2021	METALS	2111161010Y	Arsenic, Total	0.0008	mg/L	0.001	0.0004		J
11/16/2021	METALS	2111161010Y	Strontium, Total	11.9	mg/L	1	0.02		
11/16/2021	METALS	2111161010Y	Calcium, Total	112	mg/L	1	0.3		
11/16/2021	METALS	2111161010Y	Zinc, Total	0.014	mg/L	0.02	0.003		J

Analytical Results for Sampling Events at 200-I-490

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/15/2021	8260	2111151405Y	Benzene	0.47	ug/L	1	0.2		J
11/15/2021	8260	2111151405Y	Tetrahydrofuran (THF)	7.9	ug/L	5	1.7		
11/15/2021	607	2111151406Y	Bromacil	0.073	µg/L	0.0095	0.0048	115	
11/15/2021	METALS	2111151407Y	Molybdenum, Total	0.031	mg/L	0.025	0.003		
11/15/2021	METALS	2111151407Y	Zinc, Total	0.011	mg/L	0.02	0.003		J
11/15/2021	METALS	2111151407Y	Strontium, Total	25.4	mg/L	1	0.02		
11/15/2021	METALS	2111151407Y	Potassium, Total	3.2	mg/L	2	0.4		
11/15/2021	METALS	2111151407Y	Manganese, Total	0.005	mg/L	0.01	0.004		J
11/15/2021	METALS	2111151407Y	Iron, Total	0.42	mg/L	0.1	0.07		
11/15/2021	METALS	2111151407Y	Sodium, Total	22	mg/L	1	0.2		
11/15/2021	METALS	2111151407Y	Calcium, Total	113	mg/L	1	0.3		
11/15/2021	METALS	2111151407Y	Boron, Total	0.08	mg/L	0.2	0.02		J
11/15/2021	METALS	2111151407Y	Barium, Total	0.029	mg/L	0.02	0.003		
11/15/2021	METALS	2111151407Y	Arsenic, Total	0.0082	mg/L	0.001	0.0004		
11/15/2021	METALS	2111151407Y	Magnesium, Total	59.1	mg/L	1	0.03		
11/15/2021	ANIONS	2111151435Y	Fluoride, undistilled	1.97	mg/L	0.1	0.01		
11/15/2021	ANIONS	2111151435Y	Sulfate	257	mg/L	8	1.6		
11/15/2021	ANIONS	2111151435Y	Chloride	41.2	mg/L	2	0.5		
11/15/2021	ANIONS	2111151435Y	Alkalinity, Total as CaCO3	271	mg/L	2	1.8		
11/15/2021	SM2540C	2111151436Y	Total Dissolved Solids (TDS)	739	mg/L	10	9		

Analytical Results for Sampling Events at 200-I-675

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/15/2021	8260	2111151025Y	Tetrahydrofuran (THF)	38	ug/L	5	1.7		
11/15/2021	607	2111151026Y	Bromacil	0.014	µg/L	0.0095	0.0048	115	
11/15/2021	METALS	2111151100Y	Calcium, Total	229	mg/L	1	0.3		
11/15/2021	METALS	2111151100Y	Strontium, Total	25.1	mg/L	1	0.02		
11/15/2021	METALS	2111151100Y	Sodium, Total	26	mg/L	1	0.2		
11/15/2021	METALS	2111151100Y	Potassium, Total	3.8	mg/L	2	0.4		
11/15/2021	METALS	2111151100Y	Zinc, Total	0.017	mg/L	0.02	0.003		J EB
11/15/2021	METALS	2111151100Y	Manganese, Total	0.023	mg/L	0.01	0.004		
11/15/2021	METALS	2111151100Y	Boron, Total	0.09	mg/L	0.2	0.02		J
11/15/2021	METALS	2111151100Y	Barium, Total	0.018	mg/L	0.02	0.003		J
11/15/2021	METALS	2111151100Y	Arsenic, Total	0.0024	mg/L	0.001	0.0004		
11/15/2021	METALS	2111151100Y	Iron, Total	0.79	mg/L	0.1	0.07		
11/15/2021	METALS	2111151100Y	Magnesium, Total	95.9	mg/L	1	0.03		

Analytical Results for Sampling Events at 200-I-795

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/12/2021	8260	2111120935Y	Styrene	0.26	ug/L	1	0.2		J
11/12/2021	8260	2111120935Y	Tetrahydrofuran (THF)	120	ug/L	5	1.7		
11/12/2021	8260	2111120935Y	Propionitrile	3.3	ug/L	5	3		J
11/12/2021	8260	2111120935Y	2-Propanol	5	ug/L	50	3.4		J
11/12/2021	8260	2111120935Y	Unknown	26	ug/L	NA	NA		TIC
11/12/2021	607	2111120936Y	Bromacil	0.068	µg/L	0.0095	0.0048	102	
11/12/2021	METALS	2111121010Y	Calcium, Total	382	mg/L	10	3		
11/12/2021	METALS	2111121010Y	Strontium, Total	18.3	mg/L	1	0.02		
11/12/2021	METALS	2111121010Y	Sodium, Total	31	mg/L	1	0.2		
11/12/2021	METALS	2111121010Y	Potassium, Total	4.4	mg/L	2	0.4		
11/12/2021	METALS	2111121010Y	Zinc, Total	0.025	mg/L	0.02	0.003		
11/12/2021	METALS	2111121010Y	Manganese, Total	0.019	mg/L	0.01	0.004		
11/12/2021	METALS	2111121010Y	Iron, Total	1.96	mg/L	0.1	0.07		
11/12/2021	METALS	2111121010Y	Boron, Total	0.13	mg/L	0.2	0.02		J
11/12/2021	METALS	2111121010Y	Beryllium, Total	0.0002	mg/L	0.003	0.0002		J
11/12/2021	METALS	2111121010Y	Barium, Total	0.021	mg/L	0.02	0.003		
11/12/2021	METALS	2111121010Y	Magnesium, Total	104	mg/L	1	0.03		

Analytical Results for Sampling Events at 300-F-175

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/19/2022	8290	2201190936C	1,2,3,4,6,7,8-HpCDD	0.279	pg/L	11.8	0.0812		J
1/19/2022	8290	2201190936C	Total Hepta-Dioxins	0.279	pg/L	NA	NA		J
1/19/2022	8270	2201190938C	1,4-Dioxane	0.038	ug/L	0.04	0.027		J
1/19/2022	8270	2201190939C	Cyclopentasiloxane, decamethyl-	7.1	ug/L	NA	NA		TIC RB
1/19/2022	METALS	2201190942C	Potassium, Total	2.1	mg/L	2	0.4		
1/19/2022	METALS	2201190942C	Molybdenum, Total	0.006	mg/L	0.025	0.003		J
1/19/2022	METALS	2201190942C	Zinc, Total	0.007	mg/L	0.02	0.003		J
1/19/2022	METALS	2201190942C	Vanadium, Total	0.0008	mg/L	0.05	0.0007		J
1/19/2022	METALS	2201190942C	Strontium, Total	8.21	mg/L	0.1	0.002		
1/19/2022	METALS	2201190942C	Antimony, Total	0.0005	mg/L	0.001	0.0002		J
1/19/2022	METALS	2201190942C	Calcium, Total	105	mg/L	1	0.3		
1/19/2022	METALS	2201190942C	Sodium, Total	71.4	mg/L	1	0.2		
1/19/2022	METALS	2201190942C	Boron, Total	0.1	mg/L	0.2	0.02		J
1/19/2022	METALS	2201190942C	Barium, Total	0.035	mg/L	0.02	0.003		
1/19/2022	METALS	2201190942C	Arsenic, Total	0.0012	mg/L	0.001	0.0004		
1/19/2022	METALS	2201190942C	Magnesium, Total	77.1	mg/L	1	0.03		
1/19/2022	ANIONS	2201190943C	Alkalinity, Total as CaCO3	257	mg/L	2	1.8		
1/19/2022	ANIONS	2201190943C	Sulfate	388	mg/L	10	2		
1/19/2022	ANIONS	2201190943C	Chloride	53.3	mg/L	2	0.5		
1/19/2022	ANIONS	2201190943C	Fluoride, undistilled	0.77	mg/L	0.1	0.01		
1/19/2022	SM2540C	2201190944C	Total Dissolved Solids (TDS)	913	mg/L	10	9		
1/19/2022	6850	2201190945C	Perchlorate	0.121	ug/L	0.1	0.025		
1/19/2022	353.2	2201190946C	Nitrate+Nitrite as Nitrogen	0.287	mg/L	0.05	0.002		

Analytical Results for Sampling Events at 400-A-151

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/5/2022	8260	2201051000A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	4.5	ug/L	1	0.2		
1/5/2022	8260	2201051000A	Dichlorofluoromethane (CFC 21)	6.3	ug/L	1	0.2		
1/5/2022	8260	2201051000A	1,1,2-Trichloro-1,2,2-Trifluoroethane	87	ug/L	1	0.2		
1/5/2022	8260	2201051000A	Trichloroethene (TCE)	0.9	ug/L	1	0.2		J
1/5/2022	8260	2201051000A	Trichlorofluoromethane (CFC 11)	230	ug/L	5	1.2		
1/5/2022	607	2201051006A	N-Nitrosodimethylamine	5.9	µg/L	0.0095	0.0048	45	
1/5/2022	607	2201051006A	N-Nitrodimethylamine	3.2	µg/L	0.0095	0.0048	75	
1/5/2022	607	2201051006A	Bromacil	2.6	µg/L	0.0095	0.0048	103	
1/5/2022	METALS	2201051010A	Sodium, Total	96.7	mg/L	1	0.2		
1/5/2022	METALS	2201051010A	Arsenic, Total	0.0006	mg/L	0.001	0.0004		J
1/5/2022	METALS	2201051010A	Barium, Total	0.027	mg/L	0.02	0.003		
1/5/2022	METALS	2201051010A	Boron, Total	0.24	mg/L	0.2	0.02		
1/5/2022	METALS	2201051010A	Calcium, Total	98.2	mg/L	1	0.3		
1/5/2022	METALS	2201051010A	Potassium, Total	3.2	mg/L	2	0.4		
1/5/2022	METALS	2201051010A	Strontium, Total	3.06	mg/L	0.1	0.002		
1/5/2022	METALS	2201051010A	Magnesium, Total	70.8	mg/L	1	0.03		
1/5/2022	353.2	2201051013A	Nitrate+Nitrite as Nitrogen	6.79	mg/L	0.5	0.02		

Analytical Results for Sampling Events at 400-C-143

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/17/2021	8260	2111171100C	Trichlorofluoromethane (CFC 11)	200	ug/L	2	0.48		
11/17/2021	8260	2111171100C	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.4	ug/L	1	0.2		
11/17/2021	8260	2111171100C	1,1,2-Trichloro-1,2,2-Trifluoroethane	87	ug/L	1	0.2		
11/17/2021	8260	2111171100C	Dichlorofluoromethane (CFC 21)	1.7	ug/L	1	0.2		
11/17/2021	8260	2111171100C	Trichloroethene (TCE)	1.4	ug/L	1	0.2		
11/17/2021	8260	2111171101C	Dichlorofluoromethane (CFC 21)	1.5	ug/L	1	0.2		
11/17/2021	8260	2111171101C	Trichloroethene (TCE)	1.3	ug/L	1	0.2		
11/17/2021	8260	2111171101C	Trichlorofluoromethane (CFC 11)	200	ug/L	2	0.48		
11/17/2021	8260	2111171101C	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.3	ug/L	1	0.2		
11/17/2021	8260	2111171101C	1,1,2-Trichloro-1,2,2-Trifluoroethane	83	ug/L	1	0.2		
11/17/2021	607	2111171103C	N-Nitrodimethylamine	4	µg/L	0.0095	0.0048	92	
11/17/2021	607	2111171103C	Bromacil	4.9	µg/L	0.0095	0.0048	115	
11/17/2021	607	2111171103C	N-Nitrosodimethylamine	3.4	µg/L	0.0095	0.0048	54	
11/17/2021	METALS	2111171104C	Cobalt, Total	0.002	mg/L	0.05	0.0009		J
11/17/2021	METALS	2111171104C	Thallium, Total	0.00005	mg/L	0.001	0.00004		J
11/17/2021	METALS	2111171104C	Strontium, Total	3.23	mg/L	0.1	0.002		
11/17/2021	METALS	2111171104C	Sodium, Total	89.3	mg/L	1	0.2		
11/17/2021	METALS	2111171104C	Potassium, Total	3.6	mg/L	2	0.4		
11/17/2021	METALS	2111171104C	Nickel, Total	0.008	mg/L	0.04	0.003		J
11/17/2021	METALS	2111171104C	Zinc, Total	0.007	mg/L	0.02	0.003		J
11/17/2021	METALS	2111171104C	Molybdenum, Total	0.007	mg/L	0.025	0.003		J
11/17/2021	METALS	2111171104C	Vanadium, Total	0.003	mg/L	0.05	0.0007		J
11/17/2021	METALS	2111171104C	Aluminum, Total	0.24	mg/L	0.1	0.03		
11/17/2021	METALS	2111171104C	Iron, Total	0.65	mg/L	0.1	0.07		
11/17/2021	METALS	2111171104C	Chromium, Total	0.052	mg/L	0.01	0.002		
11/17/2021	METALS	2111171104C	Calcium, Total	110	mg/L	1	0.3		
11/17/2021	METALS	2111171104C	Boron, Total	0.3	mg/L	0.2	0.02		
11/17/2021	METALS	2111171104C	Barium, Total	0.045	mg/L	0.02	0.003		
11/17/2021	METALS	2111171104C	Arsenic, Total	0.0012	mg/L	0.001	0.0004		
11/17/2021	METALS	2111171104C	Manganese, Total	0.232	mg/L	0.01	0.004		
11/17/2021	METALS	2111171104C	Magnesium, Total	79.5	mg/L	1	0.03		
11/17/2021	353.2	2111171105C	Nitrate+Nitrite as Nitrogen	8.5	mg/L	1	0.03		

Analytical Results for Sampling Events at 400-EV-131

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/1/2021	8260	2111010950C	1,1,2-Trichloro-1,2,2-Trifluoroethane	130	ug/L	1	0.2		
11/1/2021	8260	2111010950C	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.21	ug/L	1	0.2		J
11/1/2021	8260	2111010950C	Trichlorofluoromethane (CFC 11)	440	ug/L	5	1.2		
11/1/2021	8260	2111010950C	Trichloroethene (TCE)	2.1	ug/L	1	0.2		
11/1/2021	8260	2111010950C	Dichlorofluoromethane (CFC 21)	0.61	ug/L	1	0.2		J

Analytical Results for Sampling Events at 400-FV-131

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/18/2022	8260	2201181350A	Dichlorofluoromethane (CFC 21)	8	ug/L	1	0.2		
1/18/2022	8260	2201181350A	1,1,2-Trichloro-1,2,2-Trifluoroethane	46	ug/L	1	0.2		
1/18/2022	8260	2201181350A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	7.7	ug/L	1	0.2		
1/18/2022	8260	2201181350A	Trichlorofluoromethane (CFC 11)	130	ug/L	1	0.24		
1/18/2022	8260	2201181350A	Trichloroethene (TCE)	0.86	ug/L	1	0.2		J

Analytical Results for Sampling Events at 400-GV-125

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/2/2021	8260	2111020949B	1,1,2-Trichloro-1,2,2-Trifluoroethane	66	ug/L	1	0.2		
11/2/2021	8260	2111020949B	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	4.8	ug/L	1	0.2		
11/2/2021	8260	2111020949B	Trichlorofluoromethane (CFC 11)	180	ug/L	2	0.48		
11/2/2021	8260	2111020949B	Trichloroethene (TCE)	1.4	ug/L	1	0.2		
11/2/2021	8260	2111020949B	Dichlorofluoromethane (CFC 21)	4.7	ug/L	1	0.2		

Analytical Results for Sampling Events at 400-HV-147

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/18/2022	8260	2201180920A	1,1,2-Trichloro-1,2,2-Trifluoroethane	79	ug/L	1	0.2		
1/18/2022	8260	2201180920A	Chloroform	0.8	ug/L	1	0.24		J
1/18/2022	8260	2201180920A	Dichlorofluoromethane (CFC 21)	4.4	ug/L	1	0.2		
1/18/2022	8260	2201180920A	Trichloroethene (TCE)	0.58	ug/L	1	0.2		J
1/18/2022	8260	2201180920A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.3	ug/L	1	0.2		
1/18/2022	8260	2201180920A	Trichlorofluoromethane (CFC 11)	180	ug/L	1	0.24		

Analytical Results for Sampling Events at 400-JV-150

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/1/2021	8260	2111011440C	Trichlorofluoromethane (CFC 11)	590	ug/L	5	1.2		
11/1/2021	8260	2111011440C	Trichloroethene (TCE)	0.95	ug/L	1	0.2		J
11/1/2021	8260	2111011440C	Dichlorofluoromethane (CFC 21)	1.5	ug/L	1	0.2		
11/1/2021	8260	2111011440C	1,1,2-Trichloro-1,2,2-Trifluoroethane	180	ug/L	1	0.2		
11/1/2021	8260	2111011440C	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.58	ug/L	1	0.2		J

Analytical Results for Sampling Events at 600-G-138

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/19/2022	8260	2201191101A	1,1,2-Trichloro-1,2,2-Trifluoroethane	31	ug/L	1	0.2		
1/19/2022	8260	2201191101A	Chloroform	0.27	ug/L	1	0.24		J
1/19/2022	8260	2201191101A	Trichloroethene (TCE)	31	ug/L	1	0.2		
1/19/2022	8260	2201191101A	Trichlorofluoromethane (CFC 11)	0.61	ug/L	1	0.24		J
1/19/2022	8260	2201191101A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.72	ug/L	1	0.2		J
1/19/2022	8260	2201191102A	1,1,2-Trichloro-1,2,2-Trifluoroethane	32	ug/L	1	0.2		
1/19/2022	8260	2201191102A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.66	ug/L	1	0.2		J
1/19/2022	8260	2201191102A	Trichlorofluoromethane (CFC 11)	0.76	ug/L	1	0.24		J
1/19/2022	8260	2201191102A	Chloroform	0.28	ug/L	1	0.24		J
1/19/2022	8260	2201191102A	Trichloroethene (TCE)	32	ug/L	1	0.2		
1/19/2022	METALS	2201191104A	Magnesium, Total	91	mg/L	1	0.03		
1/19/2022	METALS	2201191104A	Vanadium, Total	0.001	mg/L	0.05	0.0007		J
1/19/2022	METALS	2201191104A	Strontium, Total	5.03	mg/L	0.1	0.002		
1/19/2022	METALS	2201191104A	Sodium, Total	134	mg/L	1	0.2		
1/19/2022	METALS	2201191104A	Zinc, Total	0.012	mg/L	0.02	0.003		J
1/19/2022	METALS	2201191104A	Molybdenum, Total	0.014	mg/L	0.025	0.003		J
1/19/2022	METALS	2201191104A	Chromium, Total	0.008	mg/L	0.01	0.002		J
1/19/2022	METALS	2201191104A	Calcium, Total	134	mg/L	1	0.3		
1/19/2022	METALS	2201191104A	Boron, Total	0.68	mg/L	0.2	0.02		
1/19/2022	METALS	2201191104A	Barium, Total	0.049	mg/L	0.02	0.003		
1/19/2022	METALS	2201191104A	Arsenic, Total	0.0015	mg/L	0.001	0.0004		
1/19/2022	METALS	2201191104A	Aluminum, Total	0.05	mg/L	0.1	0.03		J
1/19/2022	METALS	2201191104A	Iron, Total	0.1	mg/L	0.1	0.07		
1/19/2022	METALS	2201191104A	Potassium, Total	4.4	mg/L	2	0.4		
1/19/2022	300.0	2201191105A	Chloride	166	mg/L	8	1.7		
1/19/2022	353.2	2201191106A	Nitrate+Nitrite as Nitrogen	11.2	mg/L	1	0.03		

Analytical Results for Sampling Events at 700-B-510

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/9/2021	607	2112091422A	Bromacil	0.019	µg/L	0.0095	0.0048	93	
12/9/2021	METALS	2112091423A	Molybdenum, Total	0.008	mg/L	0.025	0.003		J
12/9/2021	METALS	2112091423A	Sodium, Total	92.9	mg/L	1	0.2		
12/9/2021	METALS	2112091423A	Selenium, Total	0.007	mg/L	0.01	0.007		J
12/9/2021	METALS	2112091423A	Potassium, Total	1.4	mg/L	2	0.4		J
12/9/2021	METALS	2112091423A	Vanadium, Total	0.008	mg/L	0.05	0.0007		J
12/9/2021	METALS	2112091423A	Calcium, Total	23.3	mg/L	1	0.3		
12/9/2021	METALS	2112091423A	Boron, Total	0.14	mg/L	0.2	0.02		J
12/9/2021	METALS	2112091423A	Barium, Total	0.021	mg/L	0.02	0.003		
12/9/2021	METALS	2112091423A	Arsenic, Total	0.0021	mg/L	0.001	0.0004		
12/9/2021	METALS	2112091423A	Strontium, Total	0.91	mg/L	0.1	0.002		
12/9/2021	METALS	2112091423A	Magnesium, Total	7.8	mg/L	1	0.03		
12/9/2021	METALS	2112091424A	Magnesium, Total	7.8	mg/L	1	0.03		
12/9/2021	METALS	2112091424A	Vanadium, Total	0.008	mg/L	0.05	0.0007		J
12/9/2021	METALS	2112091424A	Strontium, Total	0.92	mg/L	0.1	0.002		
12/9/2021	METALS	2112091424A	Sodium, Total	93.5	mg/L	1	0.2		
12/9/2021	METALS	2112091424A	Molybdenum, Total	0.008	mg/L	0.025	0.003		J
12/9/2021	METALS	2112091424A	Calcium, Total	23.4	mg/L	1	0.3		
12/9/2021	METALS	2112091424A	Boron, Total	0.14	mg/L	0.2	0.02		J
12/9/2021	METALS	2112091424A	Barium, Total	0.021	mg/L	0.02	0.003		
12/9/2021	METALS	2112091424A	Arsenic, Total	0.002	mg/L	0.001	0.0004		
12/9/2021	METALS	2112091424A	Potassium, Total	1.4	mg/L	2	0.4		J

Analytical Results for Sampling Events at BLM-10-517

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/3/2022	8260_LL	2201031045A	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.47	ug/L	0.5	0.2		J
1/3/2022	METALS	2201031050A	Potassium, Total	3.8	mg/L	2	0.4		
1/3/2022	METALS	2201031050A	Vanadium, Total	0.003	mg/L	0.05	0.0007		J
1/3/2022	METALS	2201031050A	Barium, Total	0.019	mg/L	0.02	0.003		J
1/3/2022	METALS	2201031050A	Strontium, Total	2.2	mg/L	0.1	0.002		
1/3/2022	METALS	2201031050A	Zinc, Total	0.003	mg/L	0.02	0.003		J
1/3/2022	METALS	2201031050A	Sodium, Total	39.5	mg/L	1	0.2		
1/3/2022	METALS	2201031050A	Magnesium, Total	62.3	mg/L	1	0.03		
1/3/2022	METALS	2201031050A	Boron, Total	0.06	mg/L	0.2	0.02		J
1/3/2022	METALS	2201031050A	Arsenic, Total	0.0006	mg/L	0.001	0.0004		J
1/3/2022	METALS	2201031050A	Calcium, Total	97.4	mg/L	1	0.3		
1/3/2022	METALS	2201031050A	Molybdenum, Total	0.004	mg/L	0.025	0.003		J
1/3/2022	ANIONS	2201031052A	Fluoride, undistilled	0.87	mg/L	0.1	0.01		
1/3/2022	ANIONS	2201031052A	Sulfate	341	mg/L	8	1.6		
1/3/2022	ANIONS	2201031052A	Chloride	43.8	mg/L	2	0.5		
1/3/2022	ANIONS	2201031052A	Alkalinity, Total as CaCO3	200	mg/L	2	1.8		
1/3/2022	SM2540C	2201031053A	Total Dissolved Solids (TDS)	774	mg/L	10	9		
1/3/2022	6850	2201031054A	Perchlorate	0.32	ug/L	0.1	0.025		
1/3/2022	353.2	2201031055A	Nitrate+Nitrite as Nitrogen	1.19	mg/L	0.05	0.002		

Analytical Results for Sampling Events at BLM-15-305

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/12/2022	8260	2201121415C	Bromodichloromethane	2.3	ug/L	1	0.2		
1/12/2022	8260	2201121415C	Trichloroethene (TCE)	1.4	ug/L	1	0.2		
1/12/2022	8260	2201121415C	Silane, methoxytrimethyl-	5.1	ug/L	NA	NA		TIC
1/12/2022	8260	2201121415C	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	2.4	ug/L	1	0.2		
1/12/2022	8260	2201121415C	Trichlorofluoromethane (CFC 11)	110	ug/L	1	0.24		
1/12/2022	8260	2201121415C	Dichlorofluoromethane (CFC 21)	3.4	ug/L	1	0.2		
1/12/2022	8260	2201121415C	Dibromochloromethane	5.2	ug/L	1	0.2		
1/12/2022	8260	2201121415C	Bromoform	6	ug/L	1	0.25		
1/12/2022	8260	2201121415C	1,1,2-Trichloro-1,2,2-Trifluoroethane	42	ug/L	1	0.2		
1/12/2022	8260	2201121415C	Chloroform	2.4	ug/L	1	0.24		
1/12/2022	607	2201121417C	N-Nitrosodimethylamine	9	µg/L	0.0096	0.0048	46	
1/12/2022	607	2201121417C	N-Nitrodimethylamine	4	µg/L	0.0096	0.0048	74	
1/12/2022	607	2201121417C	Bromacil	0.84	µg/L	0.0096	0.0048	111	
1/12/2022	METALS	2201121418C	Manganese, Total	0.009	mg/L	0.01	0.004		J
1/12/2022	METALS	2201121418C	Potassium, Total	3.5	mg/L	2	0.4		
1/12/2022	METALS	2201121418C	Sodium, Total	93.1	mg/L	1	0.2		
1/12/2022	METALS	2201121418C	Molybdenum, Total	0.012	mg/L	0.025	0.003		J
1/12/2022	METALS	2201121418C	Calcium, Total	99.6	mg/L	1	0.3		
1/12/2022	METALS	2201121418C	Boron, Total	0.23	mg/L	0.2	0.02		
1/12/2022	METALS	2201121418C	Strontium, Total	2.42	mg/L	0.1	0.002		
1/12/2022	METALS	2201121418C	Barium, Total	0.045	mg/L	0.02	0.003		
1/12/2022	METALS	2201121418C	Arsenic, Total	0.007	mg/L	0.01	0.004		J
1/12/2022	METALS	2201121418C	Magnesium, Total	62	mg/L	1	0.03		
1/12/2022	353.2	2201121419C	Nitrate+Nitrite as Nitrogen	6.97	mg/L	0.5	0.02		

Analytical Results for Sampling Events at BLM-17-493

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/3/2021	8260	2111030950B	Tetrachloroethene (PCE)	2.2	ug/L	1	0.21		
11/3/2021	8260	2111030950B	Trichloroethene (TCE)	58	ug/L	1	0.2		
11/3/2021	8260	2111030950B	Dichlorofluoromethane (CFC 21)	0.36	ug/L	1	0.2		J
11/3/2021	8260	2111030950B	1,1,2-Trichloro-1,2,2-Trifluoroethane	84	ug/L	1	0.2		
11/3/2021	8260	2111030950B	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.71	ug/L	1	0.2		J
11/3/2021	8260	2111030950B	Trichlorofluoromethane (CFC 11)	45	ug/L	1	0.24		
11/3/2021	607	2111030952B	N-Nitrosodimethylamine	0.86	µg/L	0.0094	0.0047	53	
11/3/2021	607	2111030952B	N-Nitrodimethylamine	0.71	µg/L	0.0094	0.0047	94	
11/3/2021	607	2111030952B	Bromacil	0.61	µg/L	0.0094	0.0047	109	
11/3/2021	METALS	2111030953B	Boron, Total	0.07	mg/L	0.2	0.02		J
11/3/2021	METALS	2111030953B	Strontium, Total	3.16	mg/L	0.1	0.002		
11/3/2021	METALS	2111030953B	Magnesium, Total	69.2	mg/L	1	0.03		
11/3/2021	METALS	2111030953B	Zinc, Total	0.01	mg/L	0.02	0.003		J
11/3/2021	METALS	2111030953B	Vanadium, Total	0.001	mg/L	0.05	0.0007		J
11/3/2021	METALS	2111030953B	Molybdenum, Total	0.009	mg/L	0.025	0.003		J
11/3/2021	METALS	2111030953B	Potassium, Total	3.6	mg/L	2	0.4		
11/3/2021	METALS	2111030953B	Calcium, Total	121	mg/L	1	0.3		
11/3/2021	METALS	2111030953B	Barium, Total	0.029	mg/L	0.02	0.003		
11/3/2021	METALS	2111030953B	Arsenic, Total	0.001	mg/L	0.001	0.0004		
11/3/2021	METALS	2111030953B	Nickel, Total	0.03	mg/L	0.04	0.003		J
11/3/2021	METALS	2111030953B	Sodium, Total	40.8	mg/L	1	0.2		
11/3/2021	ANIONS	2111030954B	Chloride	70.4	mg/L	2	0.5		
11/3/2021	ANIONS	2111030954B	Fluoride, undistilled	0.86	mg/L	0.1	0.01		
11/3/2021	ANIONS	2111030954B	Alkalinity, Total as CaCO3	195	mg/L	2	1.8		
11/3/2021	ANIONS	2111030954B	Sulfate	370	mg/L	8	1.6		
11/3/2021	SM2540C	2111030955B	Total Dissolved Solids (TDS)	893	mg/L	10	9		
11/3/2021	6850	2111030956B	Perchlorate	0.51	ug/L	0.2	0.06		
11/3/2021	353.2	2111030957B	Nitrate+Nitrite as Nitrogen	2.83	mg/L	0.25	0.008		

Analytical Results for Sampling Events at BLM-17-550

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/3/2022	8260	2201031430A	Trichloroethene (TCE)	85	ug/L	1	0.2		
1/3/2022	8260	2201031430A	Sulfur Dioxide	10	ug/L	NA	NA		TIC FB
1/3/2022	8260	2201031430A	Trichlorofluoromethane (CFC 11)	98	ug/L	1	0.24		
1/3/2022	8260	2201031430A	Dichlorofluoromethane (CFC 21)	0.53	ug/L	1	0.2		J
1/3/2022	8260	2201031430A	1,1,2-Trichloro-1,2,2-Trifluoroethane	170	ug/L	2	0.4		
1/3/2022	8260	2201031430A	Tetrachloroethene (PCE)	3.6	ug/L	1	0.21		
1/3/2022	8260	2201031430A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.1	ug/L	1	0.2		
1/3/2022	607	2201031432A	N-Nitrosodimethylamine	0.63	µg/L	0.0094	0.0047	45	
1/3/2022	607	2201031432A	N-Nitrodimethylamine	0.48	µg/L	0.0094	0.0047	75	
1/3/2022	607	2201031432A	Bromacil	0.42	µg/L	0.0094	0.0047	103	
1/3/2022	607	2201031433A	N-Nitrosodimethylamine	0.66	µg/L	0.0094	0.0047	45	
1/3/2022	607	2201031433A	N-Nitrodimethylamine	0.48	µg/L	0.0094	0.0047	75	
1/3/2022	607	2201031433A	Bromacil	0.42	µg/L	0.0094	0.0047	103	
1/3/2022	METALS	2201031434A	Molybdenum, Total	0.006	mg/L	0.025	0.003		J
1/3/2022	METALS	2201031434A	Vanadium, Total	0.002	mg/L	0.05	0.0007		J
1/3/2022	METALS	2201031434A	Strontium, Total	3.2	mg/L	0.1	0.002		
1/3/2022	METALS	2201031434A	Sodium, Total	49.4	mg/L	1	0.2		
1/3/2022	METALS	2201031434A	Potassium, Total	4.2	mg/L	2	0.4		
1/3/2022	METALS	2201031434A	Manganese, Total	0.007	mg/L	0.01	0.004		J
1/3/2022	METALS	2201031434A	Nickel, Total	0.044	mg/L	0.04	0.003		
1/3/2022	METALS	2201031434A	Iron, Total	0.4	mg/L	0.1	0.07		
1/3/2022	METALS	2201031434A	Chromium, Total	0.058	mg/L	0.01	0.002		
1/3/2022	METALS	2201031434A	Calcium, Total	129	mg/L	1	0.3		
1/3/2022	METALS	2201031434A	Boron, Total	0.08	mg/L	0.2	0.02		J
1/3/2022	METALS	2201031434A	Barium, Total	0.032	mg/L	0.02	0.003		
1/3/2022	METALS	2201031434A	Arsenic, Total	0.0011	mg/L	0.001	0.0004		
1/3/2022	METALS	2201031434A	Magnesium, Total	65.9	mg/L	1	0.03		

Analytical Results for Sampling Events at BLM-18-430

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/13/2022	8260	2201131005C	Trichloroethene (TCE)	9.9	ug/L	1	0.2		
1/13/2022	8260	2201131005C	Trichlorofluoromethane (CFC 11)	17	ug/L	1	0.24		Q
1/13/2022	8260	2201131005C	1,1,2-Trichloro-1,2,2-Trifluoroethane	5.6	ug/L	1	0.2		
1/13/2022	8260	2201131005C	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.26	ug/L	1	0.2		J
1/13/2022	607	2201131007C	N-Nitrosodimethylamine	0.014	µg/L	0.0097	0.0049	33	
1/13/2022	607	2201131007C	Bromacil	0.018	µg/L	0.0097	0.0049	104	RB
1/13/2022	METALS	2201131008C	Calcium, Total	102	mg/L	1	0.3		
1/13/2022	METALS	2201131008C	Vanadium, Total	0.003	mg/L	0.05	0.0007		J
1/13/2022	METALS	2201131008C	Strontium, Total	2.59	mg/L	0.1	0.002		
1/13/2022	METALS	2201131008C	Sodium, Total	50.6	mg/L	1	0.2		
1/13/2022	METALS	2201131008C	Potassium, Total	7	mg/L	2	0.4		
1/13/2022	METALS	2201131008C	Zinc, Total	0.01	mg/L	0.02	0.003		J RB
1/13/2022	METALS	2201131008C	Molybdenum, Total	0.009	mg/L	0.025	0.003		J
1/13/2022	METALS	2201131008C	Boron, Total	0.12	mg/L	0.2	0.02		J
1/13/2022	METALS	2201131008C	Barium, Total	0.028	mg/L	0.02	0.003		
1/13/2022	METALS	2201131008C	Arsenic, Total	0.0016	mg/L	0.001	0.0004		
1/13/2022	METALS	2201131008C	Aluminum, Total	0.03	mg/L	0.1	0.03		J
1/13/2022	METALS	2201131008C	Magnesium, Total	57.5	mg/L	1	0.03		
1/13/2022	METALS	2201131008C	Iron, Total	0.12	mg/L	0.1	0.07		

Analytical Results for Sampling Events at BLM-24-565

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/2/2021	8260	2111021431C	Chloromethane	0.29	ug/L	2	0.28		J TB A
11/2/2021	8260	2111021431C	Silane, fluorotrimethyl-	11	ug/L	NA	NA		TIC
11/2/2021	8260	2111021431C	2-Propanol	5.8	ug/L	50	3.4		J FB
11/2/2021	8260	2111021431C	1,2-Dichloroethane	3	ug/L	1	0.2		
11/2/2021	8260	2111021431C	Silane, methoxytrimethyl-	7	ug/L	NA	NA		TIC TB

Analytical Results for Sampling Events at BLM-2-630

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/9/2021	METALS	2111091427C	Chromium, Total	0.325	mg/L	0.01	0.002		
11/9/2021	METALS	2111091427C	Manganese, Total	0.01	mg/L	0.01	0.004		J
11/9/2021	METALS	2111091427C	Strontium, Total	2.62	mg/L	0.1	0.002		
11/9/2021	METALS	2111091427C	Sodium, Total	51.1	mg/L	1	0.2		
11/9/2021	METALS	2111091427C	Potassium, Total	8.5	mg/L	2	0.4		
11/9/2021	METALS	2111091427C	Nickel, Total	0.058	mg/L	0.04	0.003		
11/9/2021	METALS	2111091427C	Molybdenum, Total	0.049	mg/L	0.025	0.003		
11/9/2021	METALS	2111091427C	Vanadium, Total	0.01	mg/L	0.05	0.0007		J
11/9/2021	METALS	2111091427C	Magnesium, Total	49.5	mg/L	1	0.03		
11/9/2021	METALS	2111091427C	Iron, Total	2.05	mg/L	0.1	0.07		
11/9/2021	METALS	2111091427C	Cobalt, Total	0.002	mg/L	0.05	0.0009		J
11/9/2021	METALS	2111091427C	Calcium, Total	81.3	mg/L	1	0.3		
11/9/2021	METALS	2111091427C	Boron, Total	0.09	mg/L	0.2	0.02		J
11/9/2021	METALS	2111091427C	Barium, Total	0.028	mg/L	0.02	0.003		
11/9/2021	METALS	2111091427C	Arsenic, Total	0.0011	mg/L	0.001	0.0004		
11/9/2021	METALS	2111091427C	Copper, Total	0.006	mg/L	0.02	0.004		J
11/9/2021	ANIONS	2111091428C	Alkalinity, Total as CaCO3	174	mg/L	2	1.8		
11/9/2021	ANIONS	2111091428C	Chloride	40.5	mg/L	2	0.5		
11/9/2021	ANIONS	2111091428C	Fluoride, undistilled	0.71	mg/L	0.1	0.01		
11/9/2021	ANIONS	2111091428C	Sulfate	281	mg/L	8	1.6		
11/9/2021	SM2540C	2111091429C	Total Dissolved Solids (TDS)	709	mg/L	10	9		
11/9/2021	6850	2111091430C	Perchlorate	0.25	ug/L	0.2	0.06		
11/9/2021	353.2	2111091431C	Nitrate+Nitrite as Nitrogen	0.775	mg/L	0.05	0.002		

Analytical Results for Sampling Events at BLM-26-404

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/3/2021	8260	2111031455B	1,1,2-Trichloro-1,2,2-Trifluoroethane	51	ug/L	1	0.2		
11/3/2021	8260	2111031455B	Dichlorofluoromethane (CFC 21)	0.31	ug/L	1	0.2		J
11/3/2021	8260	2111031455B	Tetrachloroethene (PCE)	0.61	ug/L	1	0.21		J
11/3/2021	8260	2111031455B	Trichloroethene (TCE)	20	ug/L	1	0.2		
11/3/2021	8260	2111031455B	Trichlorofluoromethane (CFC 11)	55	ug/L	1	0.24		
11/3/2021	8260	2111031455B	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.4	ug/L	1	0.2		J
11/3/2021	607	2111031457B	N-Nitrodimethylamine	0.072	µg/L	0.0095	0.0048	94	
11/3/2021	607	2111031457B	Bromacil	0.042	µg/L	0.0095	0.0048	109	
11/3/2021	607	2111031457B	N-Nitrosodimethylamine	0.17	µg/L	0.0095	0.0048	53	

Analytical Results for Sampling Events at BLM-27-270

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/15/2021	8260	2112150930A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	6.1	ug/L	1	0.2		
12/15/2021	8260	2112150930A	Chloromethane	0.37	ug/L	2	0.28		J
12/15/2021	8260	2112150930A	Dichlorofluoromethane (CFC 21)	5.6	ug/L	1	0.2		
12/15/2021	8260	2112150930A	Trichloroethene (TCE)	0.93	ug/L	1	0.2		J
12/15/2021	8260	2112150930A	Trichlorofluoromethane (CFC 11)	410	ug/L	5	1.2		
12/15/2021	8260	2112150930A	1,1,2-Trichloro-1,2,2-Trifluoroethane	180	ug/L	1	0.2		
12/15/2021	8260	2112150931A	Trichlorofluoromethane (CFC 11)	430	ug/L	5	1.2		
12/15/2021	8260	2112150931A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	5.2	ug/L	1	0.2		
12/15/2021	8260	2112150931A	Trichloroethene (TCE)	1.1	ug/L	1	0.2		
12/15/2021	8260	2112150931A	1,1,2-Trichloro-1,2,2-Trifluoroethane	170	ug/L	1	0.2		
12/15/2021	8260	2112150931A	Dichlorofluoromethane (CFC 21)	5.4	ug/L	1	0.2		
12/15/2021	607	2112150933A	N-Nitrosodimethylamine	2.5	µg/L	0.0094	0.0047	50	
12/15/2021	607	2112150933A	N-Nitrodimethylamine	1.2	µg/L	0.0094	0.0047	85	
12/15/2021	607	2112150933A	Bromacil	0.46	µg/L	0.0094	0.0047	82	QD
12/15/2021	607	2112150934A	N-Nitrosodimethylamine	2.6	µg/L	0.0095	0.0048	50	
12/15/2021	607	2112150934A	N-Nitrodimethylamine	1.2	µg/L	0.0095	0.0048	85	
12/15/2021	607	2112150934A	Bromacil	0.19	µg/L	0.0095	0.0048	82	QD
12/15/2021	METALS	2112150935A	Molybdenum, Total	0.006	mg/L	0.025	0.003		J
12/15/2021	METALS	2112150935A	Zinc, Total	0.018	mg/L	0.02	0.003		J
12/15/2021	METALS	2112150935A	Vanadium, Total	0.004	mg/L	0.05	0.0007		J
12/15/2021	METALS	2112150935A	Potassium, Total	3.2	mg/L	2	0.4		
12/15/2021	METALS	2112150935A	Sodium, Total	113	mg/L	1	0.2		
12/15/2021	METALS	2112150935A	Chromium, Total	0.006	mg/L	0.01	0.002		J
12/15/2021	METALS	2112150935A	Magnesium, Total	19	mg/L	1	0.03		
12/15/2021	METALS	2112150935A	Calcium, Total	45.6	mg/L	1	0.3		
12/15/2021	METALS	2112150935A	Boron, Total	0.08	mg/L	0.2	0.02		J
12/15/2021	METALS	2112150935A	Barium, Total	0.047	mg/L	0.02	0.003		
12/15/2021	METALS	2112150935A	Arsenic, Total	0.0012	mg/L	0.001	0.0004		
12/15/2021	METALS	2112150935A	Strontium, Total	1.77	mg/L	0.1	0.002		

Analytical Results for Sampling Events at BLM-3-182

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/2/2021	8260	2111021342B	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	3.1	ug/L	1	0.2		
11/2/2021	8260	2111021342B	1,1,2-Trichloro-1,2,2-Trifluoroethane	50	ug/L	1	0.2		
11/2/2021	8260	2111021342B	Trichloroethene (TCE)	3.3	ug/L	1	0.2		
11/2/2021	607	2111021344B	Bromacil	0.33	µg/L	0.0094	0.0047	109	
11/2/2021	8270	2111021345B	Unknown	4.9	ug/L	NA	NA		TIC RB
11/2/2021	8290	2111021348B	OCDD	1.1	pg/L	24.3	0.099		J RB
11/2/2021	METALS	2111021351B	Iron, Total	0.27	mg/L	0.1	0.07		
11/2/2021	METALS	2111021351B	Potassium, Total	8.3	mg/L	2	0.4		
11/2/2021	METALS	2111021351B	Nickel, Total	0.516	mg/L	0.04	0.003		
11/2/2021	METALS	2111021351B	Molybdenum, Total	0.025	mg/L	0.025	0.003		J
11/2/2021	METALS	2111021351B	Manganese, Total	0.006	mg/L	0.01	0.004		J
11/2/2021	METALS	2111021351B	Magnesium, Total	361	mg/L	1	0.03		
11/2/2021	METALS	2111021351B	Selenium, Total	0.061	mg/L	0.01	0.007		
11/2/2021	METALS	2111021351B	Zinc, Total	0.003	mg/L	0.02	0.003		J
11/2/2021	METALS	2111021351B	Chromium, Total	0.039	mg/L	0.01	0.002		
11/2/2021	METALS	2111021351B	Calcium, Total	611	mg/L	10	3		
11/2/2021	METALS	2111021351B	Boron, Total	0.26	mg/L	0.2	0.02		
11/2/2021	METALS	2111021351B	Barium, Total	0.02	mg/L	0.02	0.003		
11/2/2021	METALS	2111021351B	Arsenic, Total	0.0026	mg/L	0.001	0.0004		
11/2/2021	METALS	2111021351B	Strontium, Total	20.4	mg/L	1	0.02		
11/2/2021	METALS	2111021351B	Sodium, Total	233	mg/L	10	2		
11/2/2021	353.2	2111021352B	Nitrate+Nitrite as Nitrogen	7.33	mg/L	0.5	0.02		

Analytical Results for Sampling Events at BLM-32-543

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/1/2021	607	2111011449B	Bromacil	0.054	µg/L	0.0097	0.0049	109	
11/1/2021	NDMA_LL	2111011527B	N-Nitrosodimethylamine	1.8	ng/L	0.49	0.41		
11/1/2021	8270	2111011529B	Benzenesulfonamide, N-butyl-	2100	ug/L	NA	NA		TIC
11/1/2021	ANIONS	2111011555B	Alkalinity, Total as CaCO3	187	mg/L	2	1.8		
11/1/2021	ANIONS	2111011555B	Chloride	47.8	mg/L	2	0.5		
11/1/2021	ANIONS	2111011555B	Fluoride, undistilled	0.68	mg/L	0.1	0.01		
11/1/2021	ANIONS	2111011555B	Sulfate	323	mg/L	8	1.6		
11/1/2021	SM2540C	2111011556B	Total Dissolved Solids (TDS)	689	mg/L	10	9		
11/1/2021	6850	2111011557B	Perchlorate	0.45	ug/L	0.2	0.06		
11/1/2021	353.2	2111011558B	Nitrate+Nitrite as Nitrogen	1.36	mg/L	0.05	0.002		

Analytical Results for Sampling Events at BLM-32-571

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/1/2021	NDMA_LL	2111011504B	N-Nitrosodimethylamine	0.88	ng/L	0.47	0.4		FB

Analytical Results for Sampling Events at BLM-32-632

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/1/2021	NDMA_LL	2111011523B	N-Nitrosodimethylamine	0.51	ng/L	0.47	0.4		FB

Analytical Results for Sampling Events at BLM-36-350

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/3/2021	8260	2111031350Y	cis-1,2-Dichloroethene	0.37	ug/L	1	0.23		J
11/3/2021	8260	2111031350Y	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	6.6	ug/L	1	0.2		
11/3/2021	8260	2111031350Y	Trichlorofluoromethane (CFC 11)	36	ug/L	1	0.24		
11/3/2021	8260	2111031350Y	Trichloroethene (TCE)	65	ug/L	1	0.2		
11/3/2021	8260	2111031350Y	Tetrachloroethene (PCE)	2.9	ug/L	1	0.21		
11/3/2021	8260	2111031350Y	Dichlorofluoromethane (CFC 21)	7.9	ug/L	1	0.2		
11/3/2021	8260	2111031350Y	1,1,2-Trichloro-1,2,2-Trifluoroethane	85	ug/L	1	0.2		
11/3/2021	8260	2111031351Y	Dichlorofluoromethane (CFC 21)	8	ug/L	1	0.2		
11/3/2021	8260	2111031351Y	Tetrachloroethene (PCE)	3.2	ug/L	1	0.21		
11/3/2021	8260	2111031351Y	Trichloroethene (TCE)	66	ug/L	1	0.2		
11/3/2021	8260	2111031351Y	Trichlorofluoromethane (CFC 11)	35	ug/L	1	0.24		
11/3/2021	8260	2111031351Y	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	6.5	ug/L	1	0.2		
11/3/2021	8260	2111031351Y	1,1,2-Trichloro-1,2,2-Trifluoroethane	81	ug/L	1	0.2		
11/3/2021	607	2111031352Y	N-Nitrodimethylamine	0.5	µg/L	0.0096	0.0048	94	
11/3/2021	607	2111031352Y	Bromacil	0.87	µg/L	0.0096	0.0048	109	
11/3/2021	607	2111031352Y	N-Nitrosodimethylamine	0.62	µg/L	0.0096	0.0048	53	
11/3/2021	607	2111031420Y	N-Nitrodimethylamine	0.45	µg/L	0.0095	0.0048	94	
11/3/2021	607	2111031420Y	Bromacil	0.9	µg/L	0.0095	0.0048	109	
11/3/2021	607	2111031420Y	N-Nitrosodimethylamine	0.56	µg/L	0.0095	0.0048	53	

Analytical Results for Sampling Events at BLM-36-800

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/3/2021	607	2111031031Y	Bromacil	0.025	µg/L	0.0095	0.0048	109	

Analytical Results for Sampling Events at BLM-38-480

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/4/2021	NDMA_LL	2111041456Y	N-Nitrosodimethylamine	0.97	ng/L	0.47	0.4		EB

Analytical Results for Sampling Events at BLM-38-620

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/4/2021	8260_LL	2111041310Y	Styrene	0.25	ug/L	0.5	0.2		J
11/4/2021	8260_LL	2111041310Y	Silane, methoxytrimethyl-	5.1	ug/L	NA	NA		TIC
11/4/2021	8260_LL	2111041310Y	2-Propanol	5.1	ug/L	40	3.4		J
11/4/2021	NDMA_LL	2111041311Y	N-Nitrodimethylamine	0.31	ng/L	0.5	0.21		J EB
11/4/2021	NDMA_LL	2111041311Y	N-Nitrosodimethylamine	2.05	ng/L	0.5	0.42		EB

Analytical Results for Sampling Events at BLM-42-709

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/13/2021	NDMA_LL	2112131417A	N-Nitrosodimethylamine	0.51	ng/L	0.48	0.4		

Analytical Results for Sampling Events at BLM-6-488

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/5/2022	8260	2201051440A	Chloromethane	0.28	ug/L	2	0.28		J RB A
1/5/2022	8260	2201051440A	Trichloroethene (TCE)	0.53	ug/L	1	0.2		J
1/5/2022	8260	2201051440A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.25	ug/L	1	0.2		J
1/5/2022	8260	2201051441A	Silane, methoxytrimethyl-	5.4	ug/L	NA	NA		TIC
1/5/2022	8260	2201051441A	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.24	ug/L	1	0.2		J
1/5/2022	8260	2201051441A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.22	ug/L	1	0.2		J
1/5/2022	8260	2201051441A	Trichloroethene (TCE)	0.57	ug/L	1	0.2		J
1/5/2022	8260	2201051441A	Unknown	12	ug/L	NA	NA		TIC
1/5/2022	607	2201051444A	Bromacil	0.92	µg/L	0.0094	0.0047	103	
1/5/2022	607	2201051445A	Bromacil	0.93	µg/L	0.0094	0.0047	103	
1/5/2022	8270	2201051448A	Cyclopentasiloxane, decamethyl-	7.4	ug/L	NA	NA		TIC RB
1/5/2022	METALS	2201051450A	Potassium, Total	5	mg/L	2	0.4		
1/5/2022	METALS	2201051450A	Zinc, Total	0.013	mg/L	0.02	0.003		J
1/5/2022	METALS	2201051450A	Sodium, Total	76.4	mg/L	1	0.2		
1/5/2022	METALS	2201051450A	Nickel, Total	0.572	mg/L	0.04	0.003		
1/5/2022	METALS	2201051450A	Molybdenum, Total	0.015	mg/L	0.025	0.003		J
1/5/2022	METALS	2201051450A	Manganese, Total	0.01	mg/L	0.01	0.004		
1/5/2022	METALS	2201051450A	Magnesium, Total	70.5	mg/L	1	0.03		
1/5/2022	METALS	2201051450A	Chromium, Total	0.036	mg/L	0.01	0.002		
1/5/2022	METALS	2201051450A	Calcium, Total	143	mg/L	1	0.3		
1/5/2022	METALS	2201051450A	Boron, Total	0.11	mg/L	0.2	0.02		J
1/5/2022	METALS	2201051450A	Barium, Total	0.039	mg/L	0.02	0.003		
1/5/2022	METALS	2201051450A	Arsenic, Total	0.0009	mg/L	0.001	0.0004		J
1/5/2022	METALS	2201051450A	Antimony, Total	0.0003	mg/L	0.001	0.0002		J
1/5/2022	METALS	2201051450A	Iron, Total	0.31	mg/L	0.1	0.07		
1/5/2022	METALS	2201051450A	Strontium, Total	5.81	mg/L	0.1	0.002		

Analytical Results for Sampling Events at BLM-7-509

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/6/2021	8260_LL	2112060955A	Chloromethane	0.3	ug/L	0.5	0.28		J RB

Analytical Results for Sampling Events at BLM-8-418

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/4/2021	8260_LL	2111041010B	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.36	ug/L	0.5	0.2		J
11/4/2021	8260_LL	2111041010B	Trichlorofluoromethane (CFC 11)	0.25	ug/L	0.5	0.24		J
11/4/2021	NDMA_LL	2111041012B	N-Nitrosodimethylamine	0.44	ng/L	0.48	0.4		J

Analytical Results for Sampling Events at BW-5-295

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/4/2021	8260	2111041410B	Unknown	6.3	ug/L	NA	NA		TIC RB FB
11/4/2021	8260	2111041410B	Silane, fluorotrimethyl-	7.9	ug/L	NA	NA		TIC
11/4/2021	8260	2111041410B	Trichlorofluoromethane (CFC 11)	84	ug/L	1	0.24		
11/4/2021	8260	2111041410B	Trichloroethene (TCE)	0.46	ug/L	1	0.2		J
11/4/2021	8260	2111041410B	1,1,2-Trichloro-1,2,2-Trifluoroethane	6.2	ug/L	1	0.2		
11/4/2021	8260	2111041410B	Dichlorofluoromethane (CFC 21)	0.35	ug/L	1	0.2		J
11/4/2021	8260	2111041411B	1,1,2-Trichloro-1,2,2-Trifluoroethane	6.8	ug/L	1	0.2		
11/4/2021	8260	2111041411B	Dichlorofluoromethane (CFC 21)	0.38	ug/L	1	0.2		J
11/4/2021	8260	2111041411B	Trichloroethene (TCE)	0.38	ug/L	1	0.2		J
11/4/2021	8260	2111041411B	Trichlorofluoromethane (CFC 11)	86	ug/L	1	0.24		
11/4/2021	8260	2111041411B	Unknown	6.6	ug/L	NA	NA		TIC RB FB
11/4/2021	607	2111041413B	Bromacil	0.084	µg/L	0.0096	0.0048	108	QD
11/4/2021	607	2111041413B	N-Nitrosodimethylamine	0.49	µg/L	0.0096	0.0048	52	
11/4/2021	607	2111041413B	N-Nitrodimethylamine	1.9	µg/L	0.0096	0.0048	90	
11/4/2021	607	2111041414B	N-Nitrosodimethylamine	0.54	µg/L	0.0095	0.0048	52	
11/4/2021	607	2111041414B	N-Nitrodimethylamine	2	µg/L	0.0095	0.0048	90	
11/4/2021	607	2111041414B	Bromacil	0.063	µg/L	0.0095	0.0048	108	QD
11/4/2021	METALS	2111041415B	Magnesium, Total	20.7	mg/L	1	0.03		
11/4/2021	METALS	2111041415B	Molybdenum, Total	0.033	mg/L	0.025	0.003		
11/4/2021	METALS	2111041415B	Zinc, Total	0.013	mg/L	0.02	0.003		J
11/4/2021	METALS	2111041415B	Vanadium, Total	0.007	mg/L	0.05	0.0007		J
11/4/2021	METALS	2111041415B	Strontium, Total	1.17	mg/L	0.1	0.002		
11/4/2021	METALS	2111041415B	Chromium, Total	0.009	mg/L	0.01	0.002		J
11/4/2021	METALS	2111041415B	Calcium, Total	33.3	mg/L	1	0.3		
11/4/2021	METALS	2111041415B	Boron, Total	0.55	mg/L	0.2	0.02		
11/4/2021	METALS	2111041415B	Arsenic, Total	0.001	mg/L	0.001	0.0004		J
11/4/2021	METALS	2111041415B	Barium, Total	0.013	mg/L	0.02	0.003		J
11/4/2021	METALS	2111041415B	Potassium, Total	1.3	mg/L	2	0.4		J
11/4/2021	METALS	2111041415B	Sodium, Total	118	mg/L	1	0.2		

Analytical Results for Sampling Events at BW-7-211

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/15/2021	8260	2112150838C	1,1,2-Trichloro-1,2,2-Trifluoroethane	7.9	ug/L	1	0.2		Q
12/15/2021	8260	2112150838C	Dichlorofluoromethane (CFC 21)	0.34	ug/L	1	0.2		J
12/15/2021	8260	2112150838C	Trichlorofluoromethane (CFC 11)	130	ug/L	1	0.24		Q
12/15/2021	8260	2112150838C	Trichloroethene (TCE)	1	ug/L	1	0.2		Q
12/15/2021	607	2112150840C	N-Nitrodimethylamine	4.3	µg/L	0.0095	0.0048	85	
12/15/2021	607	2112150840C	Bromacil	3	µg/L	0.0095	0.0048	82	
12/15/2021	607	2112150840C	N-Nitrosodimethylamine	1.2	µg/L	0.0095	0.0048	50	
12/15/2021	METALS	2112150841C	Magnesium, Total	56.4	mg/L	1	0.03		
12/15/2021	METALS	2112150841C	Sodium, Total	73.4	mg/L	1	0.2		
12/15/2021	METALS	2112150841C	Zinc, Total	0.015	mg/L	0.02	0.003		J
12/15/2021	METALS	2112150841C	Strontium, Total	2.41	mg/L	0.1	0.002		
12/15/2021	METALS	2112150841C	Potassium, Total	3.4	mg/L	2	0.4		
12/15/2021	METALS	2112150841C	Molybdenum, Total	0.009	mg/L	0.025	0.003		J
12/15/2021	METALS	2112150841C	Calcium, Total	78.5	mg/L	1	0.3		
12/15/2021	METALS	2112150841C	Boron, Total	0.21	mg/L	0.2	0.02		
12/15/2021	METALS	2112150841C	Antimony, Total	0.0002	mg/L	0.001	0.0002		J
12/15/2021	METALS	2112150841C	Barium, Total	0.039	mg/L	0.02	0.003		
12/15/2021	METALS	2112150841C	Vanadium, Total	0.002	mg/L	0.05	0.0007		J
12/15/2021	METALS	2112150841C	Arsenic, Total	0.0009	mg/L	0.001	0.0004		J
12/15/2021	METALS	2112150841C	Chromium, Total	0.005	mg/L	0.01	0.002		J

Analytical Results for Sampling Events at JER-1-483

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/6/2022	8260_LL	2201061410B	Toluene	4.6	ug/L	0.5	0.2		
1/6/2022	8270	2201061415B	1,4-Dioxane	0.93	ug/L	0.04	0.027		

Analytical Results for Sampling Events at JER-1-563

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/6/2022	8260_LL	2201061442B	Unknown	7.1	ug/L	NA	NA		TIC
1/6/2022	8260_LL	2201061442B	Toluene	0.53	ug/L	0.5	0.2		
1/6/2022	8260_LL	2201061442B	Vinyl Chloride	0.36	ug/L	0.5	0.2		J
1/6/2022	NDMA_LL	2201061444B	N-Nitrosodimethylamine	1.3	ng/L	0.48	0.4		
1/6/2022	NDMA_LL	2201061444B	N-Nitrodimethylamine	0.91	ng/L	0.48	0.2		
1/6/2022	8270	2201061446B	1,4-Dioxane	2.9	ug/L	0.04	0.027		QD
1/6/2022	8270	2201061447B	1,4-Dioxane	4.1	ug/L	0.04	0.027		QD

Analytical Results for Sampling Events at JER-1-683

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/7/2022	8260_LL	2201071335B	Toluene	0.36	ug/L	0.5	0.2		J
1/7/2022	8260_LL	2201071335B	Sulfur Dioxide	7.5	ug/L	NA	NA		TIC RB
1/7/2022	NDMA_LL	2201071337B	N-Nitrosodimethylamine	1.43	ng/L	0.5	0.42		
1/7/2022	NDMA_LL	2201071337B	N-Nitrodimethylamine	0.7	ng/L	0.5	0.21		*
1/7/2022	8270	2201071339B	1,4-Dioxane	1.5	ug/L	0.04	0.027		

Analytical Results for Sampling Events at JER-2-504

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/5/2022	8260_LL	2201051442B	Toluene	0.35	ug/L	0.5	0.2		J
1/5/2022	NDMA_LL	2201051444B	N-Nitrosodimethylamine	0.76	ng/L	0.48	0.4		
1/5/2022	8270	2201051446B	1,4-Dioxane	2	ug/L	0.04	0.027		

Analytical Results for Sampling Events at JER-2-584

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/5/2022	8260_LL	2201051500B	Toluene	0.3	ug/L	0.5	0.2		J
1/5/2022	NDMA_LL	2201051502B	N-Nitrosodimethylamine	1.34	ng/L	0.48	0.4		
1/5/2022	NDMA_LL	2201051502B	N-Nitrodimethylamine	0.22	ng/L	0.48	0.2		J
1/5/2022	8270	2201051504B	1,4-Dioxane	2.8	ug/L	0.04	0.027		

Analytical Results for Sampling Events at JER-2-684

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/5/2022	8260_LL	2201051525B	Toluene	0.52	ug/L	0.5	0.2		
1/5/2022	NDMA_LL	2201051527B	N-Nitrosodimethylamine	1.75	ng/L	0.47	0.4		
1/5/2022	8270	2201051529B	1,4-Dioxane	1.4	ug/L	0.04	0.027		

Analytical Results for Sampling Events at JP-3-509

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/6/2022	8260_LL	2201060940C	Sulfur Dioxide	8.1	ug/L	NA	NA		TIC RB FB
1/6/2022	8260_LL	2201060940C	1-Propene, 2-methyl-	11	ug/L	NA	NA		TIC
1/6/2022	METALS	2201060944C	Potassium, Total	3.2	mg/L	2	0.4		
1/6/2022	METALS	2201060944C	Zinc, Total	0.009	mg/L	0.02	0.003		J
1/6/2022	METALS	2201060944C	Vanadium, Total	0.003	mg/L	0.05	0.0007		J
1/6/2022	METALS	2201060944C	Strontium, Total	2.32	mg/L	0.1	0.002		
1/6/2022	METALS	2201060944C	Nickel, Total	0.011	mg/L	0.04	0.003		J
1/6/2022	METALS	2201060944C	Sodium, Total	40.1	mg/L	1	0.2		
1/6/2022	METALS	2201060944C	Magnesium, Total	65.9	mg/L	1	0.03		
1/6/2022	METALS	2201060944C	Calcium, Total	99.2	mg/L	1	0.3		
1/6/2022	METALS	2201060944C	Boron, Total	0.06	mg/L	0.2	0.02		J
1/6/2022	METALS	2201060944C	Barium, Total	0.024	mg/L	0.02	0.003		
1/6/2022	METALS	2201060944C	Arsenic, Total	0.0007	mg/L	0.001	0.0004		J
1/6/2022	METALS	2201060944C	Molybdenum, Total	0.004	mg/L	0.025	0.003		J
1/6/2022	METALS	2201060945C	Strontium, Total	2.36	mg/L	0.1	0.002		
1/6/2022	METALS	2201060945C	Vanadium, Total	0.003	mg/L	0.05	0.0007		J
1/6/2022	METALS	2201060945C	Sodium, Total	40.1	mg/L	1	0.2		
1/6/2022	METALS	2201060945C	Potassium, Total	3.2	mg/L	2	0.4		
1/6/2022	METALS	2201060945C	Nickel, Total	0.01	mg/L	0.04	0.003		J
1/6/2022	METALS	2201060945C	Magnesium, Total	67.1	mg/L	1	0.03		
1/6/2022	METALS	2201060945C	Calcium, Total	101	mg/L	1	0.3		
1/6/2022	METALS	2201060945C	Boron, Total	0.06	mg/L	0.2	0.02		J
1/6/2022	METALS	2201060945C	Barium, Total	0.024	mg/L	0.02	0.003		
1/6/2022	METALS	2201060945C	Arsenic, Total	0.0009	mg/L	0.001	0.0004		J
1/6/2022	METALS	2201060945C	Molybdenum, Total	0.005	mg/L	0.025	0.003		J
1/6/2022	METALS	2201060945C	Zinc, Total	0.009	mg/L	0.02	0.003		J

Analytical Results for Sampling Events at JP-3-689

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/6/2022	8260_LL	2201061410C	Unknown	5.2	ug/L	NA	NA		TIC
1/6/2022	METALS	2201061415C	Boron, Total	0.06	mg/L	0.2	0.02		J
1/6/2022	METALS	2201061415C	Zinc, Total	0.009	mg/L	0.02	0.003		J
1/6/2022	METALS	2201061415C	Vanadium, Total	0.003	mg/L	0.05	0.0007		J
1/6/2022	METALS	2201061415C	Strontium, Total	2.37	mg/L	0.1	0.002		
1/6/2022	METALS	2201061415C	Sodium, Total	40.2	mg/L	1	0.2		
1/6/2022	METALS	2201061415C	Potassium, Total	3.2	mg/L	2	0.4		
1/6/2022	METALS	2201061415C	Nickel, Total	0.01	mg/L	0.04	0.003		J
1/6/2022	METALS	2201061415C	Molybdenum, Total	0.006	mg/L	0.025	0.003		J
1/6/2022	METALS	2201061415C	Calcium, Total	101	mg/L	1	0.3		
1/6/2022	METALS	2201061415C	Barium, Total	0.024	mg/L	0.02	0.003		
1/6/2022	METALS	2201061415C	Arsenic, Total	0.0007	mg/L	0.001	0.0004		J
1/6/2022	METALS	2201061415C	Magnesium, Total	67.2	mg/L	1	0.03		

Analytical Results for Sampling Events at NASA 6

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/15/2021	8260	2111151105C	Trichlorofluoromethane (CFC 11)	150	ug/L	1	0.24		
11/15/2021	8260	2111151105C	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	7	ug/L	1	0.2		
11/15/2021	8260	2111151105C	Dichlorofluoromethane (CFC 21)	10	ug/L	1	0.2		
11/15/2021	8260	2111151105C	1,1,2-Trichloro-1,2,2-Trifluoroethane	59	ug/L	1	0.2		
11/15/2021	8260	2111151105C	Trichloroethene (TCE)	0.31	ug/L	1	0.2		J
11/15/2021	607	2111151107C	N-Nitrosodimethylamine	15	µg/L	0.19	0.094	54	D
11/15/2021	607	2111151107C	N-Nitrodimethylamine	11	µg/L	0.19	0.094	92	D
11/15/2021	607	2111151107C	Bromacil	1.3	µg/L	0.0094	0.0047	115	
11/15/2021	607	2111151108C	N-Nitrodimethylamine	10	µg/L	0.19	0.097	92	D
11/15/2021	607	2111151108C	Bromacil	1.3	µg/L	0.0097	0.0049	115	
11/15/2021	607	2111151108C	N-Nitrosodimethylamine	15	µg/L	0.19	0.097	54	D
11/15/2021	METALS	2111151109C	Magnesium, Total	74.1	mg/L	1	0.03		
11/15/2021	METALS	2111151109C	Molybdenum, Total	0.012	mg/L	0.025	0.003		J
11/15/2021	METALS	2111151109C	Nickel, Total	0.049	mg/L	0.04	0.003		
11/15/2021	METALS	2111151109C	Potassium, Total	3.9	mg/L	2	0.4		
11/15/2021	METALS	2111151109C	Sodium, Total	131	mg/L	1	0.2		
11/15/2021	METALS	2111151109C	Strontium, Total	2.62	mg/L	0.1	0.002		
11/15/2021	METALS	2111151109C	Vanadium, Total	0.006	mg/L	0.05	0.0007		J
11/15/2021	METALS	2111151109C	Iron, Total	1.09	mg/L	0.1	0.07		
11/15/2021	METALS	2111151109C	Zinc, Total	0.005	mg/L	0.02	0.003		J
11/15/2021	METALS	2111151109C	Thallium, Total	0.0001	mg/L	0.001	0.00004		J
11/15/2021	METALS	2111151109C	Cobalt, Total	0.002	mg/L	0.05	0.0009		J
11/15/2021	METALS	2111151109C	Chromium, Total	0.208	mg/L	0.01	0.002		
11/15/2021	METALS	2111151109C	Calcium, Total	95	mg/L	1	0.3		
11/15/2021	METALS	2111151109C	Boron, Total	0.42	mg/L	0.2	0.02		
11/15/2021	METALS	2111151109C	Barium, Total	0.115	mg/L	0.02	0.003		
11/15/2021	METALS	2111151109C	Arsenic, Total	0.0013	mg/L	0.001	0.0004		
11/15/2021	METALS	2111151109C	Antimony, Total	0.0002	mg/L	0.001	0.0002		J
11/15/2021	METALS	2111151109C	Aluminum, Total	0.07	mg/L	0.1	0.03		J
11/15/2021	METALS	2111151109C	Copper, Total	0.004	mg/L	0.02	0.004		J
11/15/2021	METALS	2111151109C	Manganese, Total	0.065	mg/L	0.01	0.004		
11/15/2021	METALS	2111151110C	Manganese, Total	0.063	mg/L	0.01	0.004		
11/15/2021	METALS	2111151110C	Molybdenum, Total	0.013	mg/L	0.025	0.003		J
11/15/2021	METALS	2111151110C	Calcium, Total	95.2	mg/L	1	0.3		
11/15/2021	METALS	2111151110C	Nickel, Total	0.049	mg/L	0.04	0.003		
11/15/2021	METALS	2111151110C	Potassium, Total	3.9	mg/L	2	0.4		
11/15/2021	METALS	2111151110C	Sodium, Total	131	mg/L	1	0.2		
11/15/2021	METALS	2111151110C	Strontium, Total	2.62	mg/L	0.1	0.002		

Analytical Results for Sampling Events at NASA 6

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/15/2021	METALS	2111151110C	Thallium, Total	0.0001	mg/L	0.001	0.00004		J
11/15/2021	METALS	2111151110C	Zinc, Total	0.005	mg/L	0.02	0.003		J
11/15/2021	METALS	2111151110C	Vanadium, Total	0.006	mg/L	0.05	0.0007		J
11/15/2021	METALS	2111151110C	Aluminum, Total	0.06	mg/L	0.1	0.03		J
11/15/2021	METALS	2111151110C	Iron, Total	1.09	mg/L	0.1	0.07		
11/15/2021	METALS	2111151110C	Copper, Total	0.004	mg/L	0.02	0.004		J
11/15/2021	METALS	2111151110C	Chromium, Total	0.21	mg/L	0.01	0.002		
11/15/2021	METALS	2111151110C	Cobalt, Total	0.002	mg/L	0.05	0.0009		J
11/15/2021	METALS	2111151110C	Boron, Total	0.42	mg/L	0.2	0.02		
11/15/2021	METALS	2111151110C	Barium, Total	0.11	mg/L	0.02	0.003		
11/15/2021	METALS	2111151110C	Arsenic, Total	0.0014	mg/L	0.001	0.0004		
11/15/2021	METALS	2111151110C	Antimony, Total	0.0002	mg/L	0.001	0.0002		J
11/15/2021	METALS	2111151110C	Magnesium, Total	74.2	mg/L	1	0.03		
11/15/2021	353.2	2111151111C	Nitrate+Nitrite as Nitrogen	15.7	mg/L	2.5	0.08		

Analytical Results for Sampling Events at PL-10-484

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/11/2022	8260_LL	2201111030Y	Chloromethane	0.36	ug/L	0.5	0.28		J RB A EB
1/11/2022	NDMA_LL	2201111031Y	N-Nitrosodimethylamine	0.95	ng/L	0.48	0.4		
1/11/2022	NDMA_LL	2201111031Y	N-Nitrodimethylamine	0.46	ng/L	0.48	0.2		J EB
1/11/2022	8270	2201111032Y	1,4-Dioxane	0.041	ug/L	0.04	0.027		

Analytical Results for Sampling Events at PL-10-592

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/10/2022	8260_LL	2201101045Y	Chloromethane	0.43	ug/L	0.5	0.28		J RB A EB
1/10/2022	NDMA_LL	2201101046Y	N-Nitrosodimethylamine	0.45	ng/L	0.48	0.4		J
1/10/2022	NDMA_LL	2201101047Y	N-Nitrosodimethylamine	0.79	ng/L	0.47	0.4		
1/10/2022	NDMA_LL	2201101047Y	N-Nitrodimethylamine	0.3	ng/L	0.47	0.2		J
1/10/2022	8270	2201101345Y	1,4-Dioxane	0.037	ug/L	0.04	0.027		J FB

Analytical Results for Sampling Events at PL-11-470

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/1/2021	8260_LL	2112011430B	Toluene	0.99	ug/L	0.5	0.2		
12/1/2021	8260_LL	2112011430B	Sulfur Dioxide	6.9	ug/L	NA	NA		TIC RB TB FB
12/1/2021	NDMA_LL	2112011432B	N-Nitrosodimethylamine	5.13	ng/L	0.48	0.4		
12/1/2021	NDMA_LL	2112011432B	N-Nitrodimethylamine	0.7	ng/L	0.48	0.2		
12/1/2021	8270	2112011434B	1,4-Dioxane	1.7	ug/L	0.04	0.027		QD
12/1/2021	8270	2112011435B	1,4-Dioxane	1.3	ug/L	0.04	0.027		QD

Analytical Results for Sampling Events at PL-11-530

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/1/2021	8260_LL	2112011450B	Toluene	0.2	ug/L	0.5	0.2		J
12/1/2021	8260_LL	2112011450B	Sulfur Dioxide	5.3	ug/L	NA	NA		TIC RB
12/1/2021	NDMA_LL	2112011452B	N-Nitrodimethylamine	0.77	ng/L	0.48	0.2		
12/1/2021	NDMA_LL	2112011452B	N-Nitrosodimethylamine	2.14	ng/L	0.48	0.4		
12/1/2021	8270	2112011454B	1,4-Dioxane	1.7	ug/L	0.04	0.027		

Analytical Results for Sampling Events at PL-11-710

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/2/2021	8260_LL	2112021505B	Toluene	0.2	ug/L	0.5	0.2		J
12/2/2021	NDMA_LL	2112021507B	N-Nitrosodimethylamine	0.78	ng/L	0.48	0.4		
12/2/2021	NDMA_LL	2112021507B	N-Nitrodimethylamine	0.51	ng/L	0.48	0.2		
12/2/2021	NDMA_LL	2112021508B	N-Nitrosodimethylamine	0.68	ng/L	0.49	0.41		
12/2/2021	8270	2112021510B	1,4-Dioxane	0.51	ug/L	0.04	0.027		

Analytical Results for Sampling Events at PL-11-820

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/2/2021	8260_LL	2112021441B	Toluene	0.24	ug/L	0.5	0.2		J
12/2/2021	NDMA_LL	2112021443B	N-Nitrosodimethylamine	0.67	ng/L	0.48	0.4		

Analytical Results for Sampling Events at PL-11-980

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/2/2021	8260_LL	2112021455B	Toluene	0.28	ug/L	0.5	0.2		J

Analytical Results for Sampling Events at PL-12-570

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/3/2021	8260	2111031003C	1,1,2-Trichloro-1,2,2-Trifluoroethane	3.3	ug/L	1	0.2		
11/3/2021	8260	2111031003C	Trichlorofluoromethane (CFC 11)	5.1	ug/L	1	0.24		
11/3/2021	8260	2111031003C	Trichloroethene (TCE)	7.5	ug/L	1	0.2		
11/3/2021	8260	2111031005C	1,1,2-Trichloro-1,2,2-Trifluoroethane	3.7	ug/L	1	0.2		
11/3/2021	8260	2111031005C	Trichloroethene (TCE)	7.1	ug/L	1	0.2		
11/3/2021	8260	2111031005C	Trichlorofluoromethane (CFC 11)	5.3	ug/L	1	0.24		
11/3/2021	NDMA_LL	2111031006C	N-Nitrosodimethylamine	1.4	ng/L	0.48	0.4		
11/3/2021	NDMA_LL	2111031006C	N-Nitrodimethylamine	0.29	ng/L	0.48	0.2		J

Analytical Results for Sampling Events at PL-12-800

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/3/2021	8260	2111031430C	Trichloroethene (TCE)	13	ug/L	1	0.2		
11/3/2021	8260	2111031430C	Trichlorofluoromethane (CFC 11)	8.9	ug/L	1	0.24		
11/3/2021	8260	2111031430C	Dichlorofluoromethane (CFC 21)	0.25	ug/L	1	0.2		J
11/3/2021	8260	2111031430C	1,1,2-Trichloro-1,2,2-Trifluoroethane	4.2	ug/L	1	0.2		
11/3/2021	NDMA_LL	2111031432C	N-Nitrodimethylamine	0.67	ng/L	0.51	0.21		
11/3/2021	NDMA_LL	2111031432C	N-Nitrosodimethylamine	3.5	ng/L	0.51	0.43		
11/3/2021	NDMA_LL	2111031434C	N-Nitrosodimethylamine	3.5	ng/L	0.51	0.42		
11/3/2021	NDMA_LL	2111031434C	N-Nitrodimethylamine	0.64	ng/L	0.51	0.21		

Analytical Results for Sampling Events at PL-1-486

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/10/2022	8260_LL	2201101000A	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.81	ug/L	0.5	0.2		
1/10/2022	8260_LL	2201101000A	Chloromethane	0.33	ug/L	0.5	0.28		J RB A FB

Analytical Results for Sampling Events at PL-2-504

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/10/2021	8260	2112100950A	Trichloroethene (TCE)	66	ug/L	1	0.2		
12/10/2021	8260	2112100950A	1,1,2-Trichloro-1,2,2-Trifluoroethane	45	ug/L	1	0.2		
12/10/2021	8260	2112100950A	Tetrachloroethene (PCE)	1.3	ug/L	1	0.21		
12/10/2021	8260	2112100950A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.49	ug/L	1	0.2		J
12/10/2021	8260	2112100950A	Dichlorofluoromethane (CFC 21)	1.5	ug/L	1	0.2		
12/10/2021	8260	2112100950A	Trichlorofluoromethane (CFC 11)	43	ug/L	1	0.24		
12/10/2021	607	2112100952A	N-Nitrosodimethylamine	0.16	µg/L	0.0095	0.0048	51	
12/10/2021	607	2112100952A	N-Nitrodimethylamine	0.11	µg/L	0.0095	0.0048	88	
12/10/2021	607	2112100952A	Bromacil	0.058	µg/L	0.0095	0.0048	93	
12/10/2021	607	2112100953A	N-Nitrosodimethylamine	0.14	µg/L	0.0094	0.0047	51	
12/10/2021	607	2112100953A	N-Nitrodimethylamine	0.1	µg/L	0.0094	0.0047	88	
12/10/2021	607	2112100953A	Bromacil	0.066	µg/L	0.0094	0.0047	93	

Analytical Results for Sampling Events at PL-4-464

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/15/2021	8260	2112151410A	Trichlorofluoromethane (CFC 11)	0.3	ug/L	1	0.24		J

Analytical Results for Sampling Events at PL-6-1195

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/12/2022	NDMA_LL	2201121430Y	N-Nitrosodimethylamine	0.58	ng/L	0.48	0.4		
1/12/2022	NDMA_LL	2201121430Y	N-Nitrodimethylamine	0.25	ng/L	0.48	0.2		J
1/12/2022	METALS	2201121431Y	Molybdenum, Total	0.014	mg/L	0.025	0.003		J
1/12/2022	METALS	2201121431Y	Chromium, Total	0.017	mg/L	0.01	0.002		
1/12/2022	METALS	2201121431Y	Zinc, Total	0.025	mg/L	0.02	0.003		
1/12/2022	METALS	2201121431Y	Vanadium, Total	0.015	mg/L	0.05	0.0007		J
1/12/2022	METALS	2201121431Y	Thallium, Total	0.00007	mg/L	0.001	0.00004		J
1/12/2022	METALS	2201121431Y	Strontium, Total	2.18	mg/L	0.1	0.002		
1/12/2022	METALS	2201121431Y	Sodium, Total	241	mg/L	10	2		
1/12/2022	METALS	2201121431Y	Potassium, Total	7.6	mg/L	2	0.4		
1/12/2022	METALS	2201121431Y	Nickel, Total	0.008	mg/L	0.04	0.003		J
1/12/2022	METALS	2201121431Y	Arsenic, Total	0.0026	mg/L	0.001	0.0004		
1/12/2022	METALS	2201121431Y	Aluminum, Total	0.38	mg/L	0.1	0.03		
1/12/2022	METALS	2201121431Y	Barium, Total	0.018	mg/L	0.02	0.003		J
1/12/2022	METALS	2201121431Y	Boron, Total	0.33	mg/L	0.2	0.02		
1/12/2022	METALS	2201121431Y	Calcium, Total	104	mg/L	1	0.3		
1/12/2022	METALS	2201121431Y	Manganese, Total	0.018	mg/L	0.01	0.004		
1/12/2022	METALS	2201121431Y	Iron, Total	0.69	mg/L	0.1	0.07		
1/12/2022	METALS	2201121431Y	Magnesium, Total	40.5	mg/L	1	0.03		

Analytical Results for Sampling Events at PL-6-1335

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/13/2022	8260_LL	2201131305Y	Chloromethane	0.36	ug/L	0.5	0.28		J
1/13/2022	607	2201131306Y	Bromacil	0.026	µg/L	0.0095	0.0048	104	RB EB
1/13/2022	NDMA_LL	2201131307Y	N-Nitrodimethylamine	0.28	ng/L	0.48	0.2		J EB
1/13/2022	NDMA_LL	2201131307Y	N-Nitrosodimethylamine	0.6	ng/L	0.48	0.4		TB
1/13/2022	METALS	2201131345Y	Strontium, Total	2.48	mg/L	0.1	0.002		
1/13/2022	METALS	2201131345Y	Thallium, Total	0.0002	mg/L	0.001	0.00004		J
1/13/2022	METALS	2201131345Y	Sodium, Total	321	mg/L	10	2		
1/13/2022	METALS	2201131345Y	Potassium, Total	9.5	mg/L	2	0.4		
1/13/2022	METALS	2201131345Y	Zinc, Total	0.01	mg/L	0.02	0.003		J RB
1/13/2022	METALS	2201131345Y	Arsenic, Total	0.0039	mg/L	0.001	0.0004		
1/13/2022	METALS	2201131345Y	Barium, Total	0.018	mg/L	0.02	0.003		J
1/13/2022	METALS	2201131345Y	Molybdenum, Total	0.043	mg/L	0.025	0.003		
1/13/2022	METALS	2201131345Y	Boron, Total	0.43	mg/L	0.2	0.02		
1/13/2022	METALS	2201131345Y	Manganese, Total	0.18	mg/L	0.01	0.004		
1/13/2022	METALS	2201131345Y	Calcium, Total	94.5	mg/L	1	0.3		
1/13/2022	METALS	2201131345Y	Vanadium, Total	0.017	mg/L	0.05	0.0007		J
1/13/2022	METALS	2201131345Y	Magnesium, Total	23.8	mg/L	1	0.03		
1/13/2022	METALS	2201131345Y	Antimony, Total	0.0003	mg/L	0.001	0.0002		J
1/13/2022	ANIONS	2201131346Y	Fluoride, undistilled	0.42	mg/L	0.1	0.01		
1/13/2022	ANIONS	2201131346Y	Sulfate	745	mg/L	20	4		
1/13/2022	ANIONS	2201131346Y	Chloride	142	mg/L	8	1.7		
1/13/2022	ANIONS	2201131346Y	Alkalinity, Total as CaCO3	68.7	mg/L	2	1.8		
1/13/2022	SM2540C	2201131420Y	Total Dissolved Solids (TDS)	1470	mg/L	13	12		
1/13/2022	353.2	2201131422Y	Nitrate+Nitrite as Nitrogen	3.82	mg/L	0.25	0.008		

Analytical Results for Sampling Events at PL-6-545

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/19/2022	NDMA_LL	2201191351Y	N-Nitrosodimethylamine	0.45	ng/L	0.48	0.4		J

Analytical Results for Sampling Events at PL-6-915

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/18/2022	NDMA_LL	2201181327Y	N-Nitrosodimethylamine	0.42	ng/L	0.48	0.4		J
1/18/2022	METALS	2201181400Y	Zinc, Total	0.01	mg/L	0.02	0.003		J EB
1/18/2022	METALS	2201181400Y	Arsenic, Total	0.0024	mg/L	0.001	0.0004		
1/18/2022	METALS	2201181400Y	Barium, Total	0.011	mg/L	0.02	0.003		J
1/18/2022	METALS	2201181400Y	Boron, Total	0.19	mg/L	0.2	0.02		J
1/18/2022	METALS	2201181400Y	Magnesium, Total	30.2	mg/L	1	0.03		
1/18/2022	METALS	2201181400Y	Calcium, Total	47.1	mg/L	1	0.3		
1/18/2022	METALS	2201181400Y	Sodium, Total	134	mg/L	1	0.2		
1/18/2022	METALS	2201181400Y	Chromium, Total	0.004	mg/L	0.01	0.002		J
1/18/2022	METALS	2201181400Y	Potassium, Total	4.6	mg/L	2	0.4		
1/18/2022	METALS	2201181400Y	Silver, Total	0.007	mg/L	0.01	0.0006		J
1/18/2022	METALS	2201181400Y	Strontium, Total	2.3	mg/L	0.1	0.002		
1/18/2022	METALS	2201181400Y	Tin, Total	0.24	mg/L	0.5	0.008		J
1/18/2022	METALS	2201181400Y	Vanadium, Total	0.014	mg/L	0.05	0.0007		J
1/18/2022	METALS	2201181400Y	Selenium, Total	0.008	mg/L	0.01	0.007		J
1/18/2022	METALS	2201181400Y	Molybdenum, Total	0.017	mg/L	0.025	0.003		J
1/18/2022	ANIONS	2201181430Y	Sulfate	301	mg/L	8	1.6		
1/18/2022	ANIONS	2201181430Y	Alkalinity, Total as CaCO3	162	mg/L	2	1.8		
1/18/2022	ANIONS	2201181430Y	Chloride	41.7	mg/L	2	0.5		
1/18/2022	ANIONS	2201181430Y	Fluoride, undistilled	0.49	mg/L	0.1	0.01		
1/18/2022	SM2540C	2201181431Y	Total Dissolved Solids (TDS)	700	mg/L	10	9		
1/18/2022	6850	2201181432Y	Perchlorate	0.253	ug/L	0.1	0.025		
1/18/2022	353.2	2201181433Y	Nitrate+Nitrite as Nitrogen	0.994	mg/L	0.05	0.002		

Analytical Results for Sampling Events at PL-7-480

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/8/2021	8260_LL	2111081445Y	2-Propanol	7.3	ug/L	40	3.4		J EB
11/8/2021	8260_LL	2111081445Y	Silane, fluorotrimethyl-	7.2	ug/L	NA	NA		TIC
11/8/2021	8260_LL	2111081445Y	Silane, methoxytrimethyl-	6.4	ug/L	NA	NA		TIC
11/8/2021	8260_LL	2111081445Y	Silanol, trimethyl-	5.4	ug/L	NA	NA		TIC
11/8/2021	NDMA_LL	2111081446Y	N-Nitrosodimethylamine	2.87	ng/L	0.48	0.4		*
11/8/2021	NDMA_LL	2111081446Y	N-Nitrodimethylamine	0.58	ng/L	0.48	0.2		

Analytical Results for Sampling Events at PL-7-560

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/8/2021	NDMA_LL	2111080941Y	N-Nitrodimethylamine	0.35	ng/L	0.48	0.2		J EB
11/8/2021	NDMA_LL	2111080941Y	N-Nitrosodimethylamine	1.69	ng/L	0.48	0.4		* TB EB

Analytical Results for Sampling Events at PL-8-455

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/8/2021	NDMA_LL	2112081441Y	N-Nitrodimethylamine	0.66	ng/L	0.48	0.2		
12/8/2021	NDMA_LL	2112081441Y	N-Nitrosodimethylamine	2.75	ng/L	0.48	0.4		EB
12/8/2021	8270	2112090835Y	1,4-Dioxane	0.035	ug/L	0.04	0.027		J

Analytical Results for Sampling Events at PL-8-605

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/8/2021	NDMA_LL	2112081009Y	N-Nitrosodimethylamine	0.89	ng/L	0.47	0.4		QD
12/8/2021	NDMA_LL	2112081035Y	N-Nitrosodimethylamine	1.77	ng/L	0.47	0.4		QD

Analytical Results for Sampling Events at ST-1-473

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/15/2021	8260	2111151415A	1,1,2-Trichloro-1,2,2-Trifluoroethane	190	ug/L	1	0.2		
11/15/2021	8260	2111151415A	2,2-Dichloro-1,1,1-trifluoroethane (CFC 123)	0.21	ug/L	1	0.2		J
11/15/2021	8260	2111151415A	Dichlorofluoromethane (CFC 21)	0.56	ug/L	1	0.2		J
11/15/2021	8260	2111151415A	Tetrachloroethene (PCE)	6.8	ug/L	1	0.21		
11/15/2021	8260	2111151415A	Trichloroethene (TCE)	230	ug/L	2.5	0.5		
11/15/2021	8260	2111151415A	Trichlorofluoromethane (CFC 11)	170	ug/L	1	0.24		
11/15/2021	8260	2111151415A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.86	ug/L	1	0.2		J
11/15/2021	607	2111151417A	N-Nitrodimethylamine	0.11	µg/L	0.0094	0.0047	92	
11/15/2021	607	2111151417A	Bromacil	0.031	µg/L	0.0094	0.0047	115	QD
11/15/2021	607	2111151417A	N-Nitrosodimethylamine	0.28	µg/L	0.0094	0.0047	54	
11/15/2021	607	2111151418A	N-Nitrosodimethylamine	0.33	µg/L	0.0098	0.0049	54	
11/15/2021	607	2111151418A	Bromacil	0.019	µg/L	0.0098	0.0049	115	QD
11/15/2021	607	2111151418A	N-Nitrodimethylamine	0.13	µg/L	0.0098	0.0049	92	

Analytical Results for Sampling Events at ST-1-541

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/16/2021	8260	2112160950A	Tetrachloroethene (PCE)	6.5	ug/L	1	0.21		
12/16/2021	8260	2112160950A	1,1,2-Trichloro-1,2,2-Trifluoroethane	350	ug/L	2.5	0.5		
12/16/2021	8260	2112160950A	Dichlorofluoromethane (CFC 21)	1.3	ug/L	1	0.2		
12/16/2021	8260	2112160950A	Trichloroethene (TCE)	150	ug/L	1	0.2		
12/16/2021	8260	2112160950A	Trichlorofluoromethane (CFC 11)	160	ug/L	1	0.24		
12/16/2021	8260	2112160950A	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.7	ug/L	1	0.2		
12/16/2021	8260	2112160950A	Sulfur Dioxide	33	ug/L	NA	NA		TIC RB
12/16/2021	8260	2112160950A	2,2-Dichloro-1,1,1-trifluoroethane (CFC 123)	0.21	ug/L	1	0.2		J
12/16/2021	607	2112160952A	N-Nitrosodimethylamine	1.7	µg/L	0.0095	0.0048	50	
12/16/2021	607	2112160952A	N-Nitrodimethylamine	1.1	µg/L	0.0095	0.0048	85	
12/16/2021	607	2112160952A	Bromacil	0.23	µg/L	0.0095	0.0048	82	
12/16/2021	METALS	2112160953A	Molybdenum, Total	0.005	mg/L	0.025	0.003		J
12/16/2021	METALS	2112160953A	Vanadium, Total	0.002	mg/L	0.05	0.0007		J
12/16/2021	METALS	2112160953A	Strontium, Total	2.75	mg/L	0.1	0.002		
12/16/2021	METALS	2112160953A	Potassium, Total	4	mg/L	2	0.4		
12/16/2021	METALS	2112160953A	Magnesium, Total	72.2	mg/L	1	0.03		
12/16/2021	METALS	2112160953A	Calcium, Total	117	mg/L	1	0.3		
12/16/2021	METALS	2112160953A	Boron, Total	0.06	mg/L	0.2	0.02		J
12/16/2021	METALS	2112160953A	Barium, Total	0.029	mg/L	0.02	0.003		
12/16/2021	METALS	2112160953A	Arsenic, Total	0.0006	mg/L	0.001	0.0004		J
12/16/2021	METALS	2112160953A	Sodium, Total	40	mg/L	1	0.2		
12/16/2021	ANIONS	2112160954A	Alkalinity, Total as CaCO3	229	mg/L	2	1.8		
12/16/2021	ANIONS	2112160954A	Sulfate	349	mg/L	8	1.6		
12/16/2021	ANIONS	2112160954A	Chloride	65.2	mg/L	2	0.5		
12/16/2021	ANIONS	2112160954A	Fluoride, undistilled	0.77	mg/L	0.1	0.01		
12/16/2021	SM2540C	2112160955A	Total Dissolved Solids (TDS)	859	mg/L	10	9		
12/16/2021	6850	2112160956A	Perchlorate	0.52	ug/L	0.2	0.06		
12/16/2021	353.2	2112160957A	Nitrate+Nitrite as Nitrogen	3.03	mg/L	0.25	0.008		

Analytical Results for Sampling Events at ST-1-630

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/16/2021	8260	2112161000C	Tetrachloroethene (PCE)	8.4	ug/L	1	0.21		
12/16/2021	8260	2112161000C	Trichloroethene (TCE)	260	ug/L	2.5	0.5		
12/16/2021	8260	2112161000C	Trichlorofluoromethane (CFC 11)	210	ug/L	2.5	0.6		
12/16/2021	8260	2112161000C	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.1	ug/L	1	0.2		
12/16/2021	8260	2112161000C	1,1,2-Trichloro-1,2,2-Trifluoroethane	240	ug/L	2.5	0.5		
12/16/2021	8260	2112161000C	Dichlorofluoromethane (CFC 21)	0.57	ug/L	1	0.2		J
12/16/2021	607	2112161002C	Bromacil	0.069	µg/L	0.0094	0.0047	82	
12/16/2021	607	2112161002C	N-Nitrosodimethylamine	0.22	µg/L	0.0094	0.0047	50	
12/16/2021	607	2112161002C	N-Nitrodimethylamine	0.13	µg/L	0.0094	0.0047	85	

Analytical Results for Sampling Events at ST-3-486

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/9/2021	8260	2112090940C	1,1,2-Trichloro-1,2,2-Trifluoroethane	5.2	ug/L	1	0.2		
12/9/2021	8260	2112090940C	Tetrachloroethene (PCE)	0.35	ug/L	1	0.21		J
12/9/2021	8260	2112090940C	Trichloroethene (TCE)	3.8	ug/L	1	0.2		
12/9/2021	8260	2112090940C	Trichlorofluoromethane (CFC 11)	2.5	ug/L	1	0.24		
12/9/2021	607	2112090942C	N-Nitrosodimethylamine	0.09	µg/L	0.0095	0.0048	51	
12/9/2021	607	2112090942C	N-Nitrodimethylamine	0.078	µg/L	0.0095	0.0048	88	
12/9/2021	607	2112090942C	Bromacil	0.069	µg/L	0.0095	0.0048	93	

Analytical Results for Sampling Events at ST-3-586

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/13/2021	8260	2112130940C	1,1,2-Trichloro-1,2,2-Trifluoroethane	2	ug/L	1	0.2		
12/13/2021	8260	2112130940C	Trichloroethene (TCE)	0.78	ug/L	1	0.2		J
12/13/2021	8260	2112130940C	Trichlorofluoromethane (CFC 11)	0.5	ug/L	1	0.24		J
12/13/2021	8260	2112130941C	Trichlorofluoromethane (CFC 11)	0.64	ug/L	1	0.24		J
12/13/2021	8260	2112130941C	Trichloroethene (TCE)	0.82	ug/L	1	0.2		J
12/13/2021	8260	2112130941C	1,1,2-Trichloro-1,2,2-Trifluoroethane	2	ug/L	1	0.2		
12/13/2021	607	2112130943C	Bromacil	0.016	µg/L	0.0094	0.0047	93	
12/13/2021	607	2112130943C	N-Nitrodimethylamine	0.0057	µg/L	0.0094	0.0047	88	J
12/13/2021	607	2112130943C	N-Nitrosodimethylamine	0.0066	µg/L	0.0094	0.0047	51	J

Analytical Results for Sampling Events at ST-3-666

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/15/2021	8260	2112151410C	Trichlorofluoromethane (CFC 11)	2.7	ug/L	1	0.24		
12/15/2021	8260	2112151410C	1,1,2-Trichloro-1,2,2-Trifluoroethane	5	ug/L	1	0.2		
12/15/2021	8260	2112151410C	Tetrachloroethene (PCE)	0.28	ug/L	1	0.21		J
12/15/2021	8260	2112151410C	Trichloroethene (TCE)	4.2	ug/L	1	0.2		
12/15/2021	607	2112151412C	N-Nitrodimethylamine	0.033	µg/L	0.0095	0.0048	85	
12/15/2021	607	2112151412C	Bromacil	0.25	µg/L	0.0095	0.0048	82	
12/15/2021	607	2112151412C	N-Nitrosodimethylamine	0.046	µg/L	0.0095	0.0048	50	

Analytical Results for Sampling Events at ST-3-735

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/14/2021	8260	2112141251C	Tetrachloroethene (PCE)	0.96	ug/L	1	0.21		J
12/14/2021	8260	2112141251C	Trichloroethene (TCE)	25	ug/L	1	0.2		
12/14/2021	8260	2112141251C	Trichlorofluoromethane (CFC 11)	13	ug/L	1	0.24		
12/14/2021	8260	2112141251C	1,1,2-Trichloro-1,2,2-Trifluoroethane	15	ug/L	1	0.2		
12/14/2021	607	2112141253C	N-Nitrosodimethylamine	0.45	µg/L	0.01	0.005	50	
12/14/2021	607	2112141253C	N-Nitrodimethylamine	0.26	µg/L	0.01	0.005	85	
12/14/2021	607	2112141253C	Bromacil	0.096	µg/L	0.01	0.005	82	QD
12/14/2021	607	2112141254C	Bromacil	0.035	µg/L	0.0095	0.0048	82	QD
12/14/2021	607	2112141254C	N-Nitrosodimethylamine	0.47	µg/L	0.0095	0.0048	50	
12/14/2021	607	2112141254C	N-Nitrodimethylamine	0.27	µg/L	0.0095	0.0048	85	

Analytical Results for Sampling Events at ST-4-690

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/8/2021	NDMA_LL	2112081508C	N-Nitrosodimethylamine	0.43	ng/L	0.48	0.4		J

Analytical Results for Sampling Events at ST-5-485

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/1/2021	NDMA_LL	2111011406Y	N-Nitrosodimethylamine	1.1	ng/L	0.48	0.4		EB

Analytical Results for Sampling Events at ST-5-655

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/1/2021	NDMA_LL	2111011016Y	N-Nitrosodimethylamine	0.82	ng/L	0.48	0.4		EB

Analytical Results for Sampling Events at ST-6-528

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/6/2021	NDMA_LL	2112061432B	N-Nitrosodimethylamine	0.85	ng/L	0.49	0.41		
12/6/2021	8270	2112061434B	1,4-Dioxane	1.6	ug/L	0.04	0.027		
12/6/2021	8270	2112061435B	1,4-Dioxane	1.6	ug/L	0.04	0.027		

Analytical Results for Sampling Events at ST-6-568

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/6/2021	8260_LL	2112061448B	Toluene	0.26	ug/L	0.5	0.2		J
12/6/2021	8260_LL	2112061448B	Trichloroethene (TCE)	0.73	ug/L	0.5	0.2		
12/6/2021	8260_LL	2112061448B	Trichlorofluoromethane (CFC 11)	0.62	ug/L	0.5	0.24		
12/6/2021	NDMA_LL	2112061450B	N-Nitrosodimethylamine	0.85	ng/L	0.48	0.4		FB
12/6/2021	NDMA_LL	2112061450B	N-Nitrodimethylamine	0.61	ng/L	0.48	0.2		
12/6/2021	NDMA_LL	2112061451B	N-Nitrosodimethylamine	0.63	ng/L	0.48	0.4		FB
12/6/2021	8270	2112061453B	1,4-Dioxane	1.1	ug/L	0.04	0.027		
12/6/2021	8270	2112061454B	1,4-Dioxane	1.2	ug/L	0.04	0.027		

Analytical Results for Sampling Events at ST-6-678

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/7/2021	8260_LL	2112071430B	Toluene	0.49	ug/L	0.5	0.2		J
12/7/2021	8270	2112071434B	1,4-Dioxane	0.66	ug/L	0.04	0.027		

Analytical Results for Sampling Events at ST-6-824

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/7/2021	8260_LL	2112071448B	Toluene	0.33	ug/L	0.5	0.2		J
12/7/2021	NDMA_LL	2112071450B	N-Nitrosodimethylamine	0.77	ng/L	0.48	0.4		

Analytical Results for Sampling Events at ST-6-970

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/7/2021	8260_LL	2112071502B	Toluene	0.21	ug/L	0.5	0.2		J
12/7/2021	NDMA_LL	2112071504B	N-Nitrosodimethylamine	1	ng/L	0.48	0.4		

Analytical Results for Sampling Events at ST-7-453

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/3/2022	NDMA_LL	2201031514B	N-Nitrodimethylamine	0.54	ng/L	0.47	0.2		
1/3/2022	NDMA_LL	2201031514B	N-Nitrosodimethylamine	0.55	ng/L	0.47	0.4		

Analytical Results for Sampling Events at ST-7-544

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/3/2022	8260_LL	2201031522B	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.83	ug/L	0.5	0.2		
1/3/2022	8260_LL	2201031522B	Trichloroethene (TCE)	1.4	ug/L	0.5	0.2		
1/3/2022	8260_LL	2201031522B	Trichlorofluoromethane (CFC 11)	1.5	ug/L	0.5	0.24		

Analytical Results for Sampling Events at WW-1-452

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/6/2021	NDMA_LL	2112061427A	N-Nitrosodimethylamine	1	ng/L	0.48	0.4		FB

Analytical Results for Sampling Events at WW-3-469

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/7/2021	NDMA_LL	2112071431Y	N-Nitrosodimethylamine	2.16	ng/L	0.48	0.4		

Analytical Results for Sampling Events at WW-5-459

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/10/2022	8260_LL	2201101345B	Toluene	1.2	ug/L	0.5	0.2		
1/10/2022	NDMA_LL	2201101347B	N-Nitrodimethylamine	0.3	ng/L	0.48	0.2		J
1/10/2022	NDMA_LL	2201101347B	N-Nitrosodimethylamine	0.57	ng/L	0.48	0.4		

Analytical Results for Sampling Events at WW-5-579

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/10/2022	8260_LL	2201101408B	Chloromethane	0.48	ug/L	0.5	0.28		J RB A
1/10/2022	8260_LL	2201101408B	Toluene	1.8	ug/L	0.5	0.2		
1/10/2022	NDMA_LL	2201101410B	N-Nitrosodimethylamine	0.52	ng/L	0.48	0.4		

Analytical Results for Sampling Events at WW-5-809

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/11/2022	8260_LL	2201111405B	Toluene	1.7	ug/L	0.5	0.2		
1/11/2022	NDMA_LL	2201111407B	N-Nitrosodimethylamine	1.82	ng/L	0.48	0.4		QD
1/11/2022	NDMA_LL	2201111407B	N-Nitrodimethylamine	0.49	ng/L	0.48	0.2		
1/11/2022	NDMA_LL	2201111408B	N-Nitrodimethylamine	0.33	ng/L	0.48	0.2		J
1/11/2022	NDMA_LL	2201111408B	N-Nitrosodimethylamine	0.59	ng/L	0.48	0.4		QD

Analytical Results for Sampling Events at WW-5-909

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/11/2022	8260_LL	2201111435B	Unknown	5.7	ug/L	NA	NA		TIC
1/11/2022	8260_LL	2201111435B	Toluene	3.7	ug/L	0.5	0.2		
1/11/2022	NDMA_LL	2201111437B	N-Nitrodimethylamine	0.51	ng/L	0.47	0.2		
1/11/2022	NDMA_LL	2201111437B	N-Nitrosodimethylamine	2.31	ng/L	0.47	0.4		

Appendix A.3
PFTS Indicator Parameters

Summary of Water Quality Parameters
for the Plume Front Sampling Events in this Reporting Period

Well ID B650-EFF-1 **Event Date** 11/2/2021

Sample	Parameter	Result	Units
2111021345	Conductivity	900	µS/cm
2111021345	pH	7.00	NA
2111021345	Temperature	25.7	ºC
2111021345	Turbidity	0.21	NTU

Well ID B650-EFF-1 **Event Date** 12/6/2021

Sample	Parameter	Result	Units
2112061253	Conductivity	1109	µS/cm
2112061253	pH	8.24	NA
2112061253	Temperature	25.1	ºC
2112061253	Turbidity	0.45	NTU

Well ID B650-EFF-1 **Event Date** 1/6/2022

Sample	Parameter	Result	Units
2201061000	Conductivity	1183	µS/cm
2201061000	pH	8.25	NA
2201061000	Temperature	24.7	ºC
2201061000	Turbidity	0.23	NTU

Well ID B650-INF-1 **Event Date** 11/2/2021

Sample	Parameter	Result	Units
2111021420	Conductivity	896	µS/cm
2111021420	pH	7.05	NA
2111021420	Temperature	25.2	ºC
2111021420	Turbidity	0.19	NTU

Well ID B650-INF-1 **Event Date** 12/6/2021

Sample	Parameter	Result	Units
2112061310	Conductivity	1097	µS/cm
2112061310	pH	7.31	NA
2112061310	Temperature	24.9	ºC
2112061310	Turbidity	0.96	NTU

Well ID B650-INF-1 **Event Date** 1/6/2022

Sample	Parameter	Result	Units
2201061015	Conductivity	1201	µS/cm
2201061015	pH	7.07	NA
2201061015	Temperature	25.1	ºC
2201061015	Turbidity	0.31	NTU

Well ID PFE-2 Event Date 1/12/2022

Sample	Parameter	Result	Units
2201121251	Conductivity	1211	µS/cm
2201121251	pH	7.24	NA
2201121251	Temperature	24.5	ºC
2201121251	Turbidity	0.14	NTU

Well ID PFE-4A Event Date 1/11/2022

Sample	Parameter	Result	Units
2201111229	Conductivity	1186	µS/cm
2201111229	pH	7.29	NA
2201111229	Temperature	23.5	ºC
2201111229	Turbidity	1.15	NTU

Well ID PFE-5 Event Date 1/11/2022

Sample	Parameter	Result	Units
2201111250	Conductivity	1046	µS/cm
2201111250	pH	7.82	NA
2201111250	Temperature	23.6	ºC
2201111250	Turbidity	0.53	NTU

Well ID PFE-7 Event Date 1/12/2022

Sample	Parameter	Result	Units
2201121310	Conductivity	1175	µS/cm
2201121310	pH	7.14	NA
2201121310	Temperature	23.6	ºC
2201121310	Turbidity	0.21	NTU

Appendix A.4
PFTS Analytical Data

Detections for Plume Front Treatment System Sampling Events in this Reporting Period

Analytical Results for Sampling Events at B650-EFF-1

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
12/6/2021	8260_LL	2112061258	Chloromethane	0.46	ug/L	0.5	0.28		J RB FB
12/6/2021	607	2112061300	Bromacil	0.039	µg/L	0.01	0.005	75	RB
12/6/2021	NDMA_LL	2112061301	N-Nitrosodimethylamine	0.74	ng/L	0.52	0.43		FB
12/6/2021	NDMA_LL	2112061301	N-Nitrodimethylamine	0.39	ng/L	0.52	0.22		J
1/6/2022	8260_LL	2201061005	Chloromethane	0.4	ug/L	0.5	0.28		J

Analytical Results for Sampling Events at B650-INF-1

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/2/2021	8260	2111021425	Tetrachloroethene (PCE)	0.97	ug/L	1	0.21		J
11/2/2021	8260	2111021425	Trichloroethene (TCE)	25	ug/L	1	0.2		
11/2/2021	8260	2111021425	Trichlorofluoromethane (CFC 11)	19	ug/L	1	0.24		
11/2/2021	8260	2111021425	1,1,2-Trichloro-1,2,2-Trifluoroethane	38	ug/L	1	0.2		
11/2/2021	8260	2111021426	1,1,2-Trichloro-1,2,2-Trifluoroethane	37	ug/L	1	0.2		
11/2/2021	8260	2111021426	Tetrachloroethene (PCE)	1	ug/L	1	0.21		
11/2/2021	8260	2111021426	Trichloroethene (TCE)	25	ug/L	1	0.2		
11/2/2021	8260	2111021426	Trichlorofluoromethane (CFC 11)	18	ug/L	1	0.24		
11/2/2021	607	2111021428	Bromacil	0.013	µg/L	0.0094	0.0047	109	
11/2/2021	607	2111021428	N-Nitrodimethylamine	0.044	µg/L	0.0094	0.0047	94	
11/2/2021	607	2111021428	N-Nitrosodimethylamine	0.075	µg/L	0.0094	0.0047	53	
12/6/2021	8260	2112061315	1,1,2-Trichloro-1,2,2-Trifluoroethane	27	ug/L	1	0.2		
12/6/2021	8260	2112061315	Trichlorofluoromethane (CFC 11)	16	ug/L	1	0.24		
12/6/2021	8260	2112061315	Trichloroethene (TCE)	18	ug/L	1	0.2		
12/6/2021	8260	2112061315	Tetrachloroethene (PCE)	0.82	ug/L	1	0.21		J
12/6/2021	607	2112061317	N-Nitrodimethylamine	0.051	µg/L	0.0095	0.0048	98	
12/6/2021	607	2112061317	Bromacil	0.02	µg/L	0.0095	0.0048	75	RB
12/6/2021	607	2112061317	N-Nitrosodimethylamine	0.099	µg/L	0.0095	0.0048	59	
1/6/2022	8260	2201061021	Tetrachloroethene (PCE)	1	ug/L	1	0.21		
1/6/2022	8260	2201061021	1,1,2-Trichloro-1,2,2-Trifluoroethane	42	ug/L	1	0.2		
1/6/2022	8260	2201061021	Trichloroethene (TCE)	26	ug/L	1	0.2		
1/6/2022	8260	2201061021	Trichlorofluoromethane (CFC 11)	25	ug/L	1	0.24		
1/6/2022	607	2201061023	Bromacil	0.012	µg/L	0.0096	0.0048	99	
1/6/2022	607	2201061023	N-Nitrodimethylamine	0.04	µg/L	0.0096	0.0048	72	
1/6/2022	607	2201061023	N-Nitrosodimethylamine	0.08	µg/L	0.0096	0.0048	43	

Analytical Results for Sampling Events at PFE-2

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/12/2022	8260	2201121256	Trichloroethene (TCE)	55	ug/L	1	0.2		
1/12/2022	8260	2201121256	Trichlorofluoromethane (CFC 11)	58	ug/L	1	0.24		
1/12/2022	8260	2201121256	Dichlorofluoromethane (CFC 21)	0.24	ug/L	1	0.2		J
1/12/2022	8260	2201121256	1,1,2-Trichloro-1,2,2-Trifluoroethane	96	ug/L	1	0.2		
1/12/2022	8260	2201121256	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.34	ug/L	1	0.2		J
1/12/2022	8260	2201121256	Tetrachloroethene (PCE)	2.1	ug/L	1	0.21		
1/12/2022	607	2201121258	N-Nitrosodimethylamine	0.15	µg/L	0.0098	0.0049	46	
1/12/2022	607	2201121258	Bromacil	0.021	µg/L	0.0098	0.0049	111	
1/12/2022	607	2201121258	N-Nitrodimethylamine	0.076	µg/L	0.0098	0.0049	74	
1/12/2022	607	2201121259	N-Nitrosodimethylamine	0.15	µg/L	0.0095	0.0048	46	
1/12/2022	607	2201121259	Bromacil	0.015	µg/L	0.0095	0.0048	111	
1/12/2022	607	2201121259	N-Nitrodimethylamine	0.077	µg/L	0.0095	0.0048	74	

Analytical Results for Sampling Events at PFE-4A

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/11/2022	8260	2201111235	Trichlorofluoromethane (CFC 11)	1.1	ug/L	1	0.24		
1/11/2022	8260	2201111235	Trichloroethene (TCE)	1.1	ug/L	1	0.2		
1/11/2022	8260	2201111235	1,1,2-Trichloro-1,2,2-Trifluoroethane	2.9	ug/L	1	0.2		
1/11/2022	607	2201111237	N-Nitrosodimethylamine	0.0067	µg/L	0.0096	0.0048	46	J
1/11/2022	607	2201111237	Bromacil	0.043	µg/L	0.0096	0.0048	111	

Analytical Results for Sampling Events at PFE-5

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/11/2022	8260	2201111256	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.22	ug/L	1	0.2		J
1/11/2022	8260	2201111256	Tetrachloroethene (PCE)	1.6	ug/L	1	0.21		
1/11/2022	8260	2201111256	1,1,2-Trichloro-1,2,2-Trifluoroethane	13	ug/L	1	0.2		
1/11/2022	8260	2201111256	Trichloroethene (TCE)	41	ug/L	1	0.2		
1/11/2022	8260	2201111256	Trichlorofluoromethane (CFC 11)	18	ug/L	1	0.24		
1/11/2022	8260	2201111256	Dichlorofluoromethane (CFC 21)	0.31	ug/L	1	0.2		J
1/11/2022	607	2201111258	N-Nitrosodimethylamine	0.32	µg/L	0.0099	0.005	46	
1/11/2022	607	2201111258	N-Nitrodimethylamine	0.15	µg/L	0.0099	0.005	74	
1/11/2022	607	2201111258	Bromacil	0.048	µg/L	0.0099	0.005	111	

Analytical Results for Sampling Events at PFE-7

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/12/2022	8260	2201121315	Trichloroethene (TCE)	4.1	ug/L	1	0.2		
1/12/2022	8260	2201121315	Trichlorofluoromethane (CFC 11)	4	ug/L	1	0.24		
1/12/2022	8260	2201121315	1,1,2-Trichloro-1,2,2-Trifluoroethane	4.1	ug/L	1	0.2		
1/12/2022	8260	2201121316	1,1,2-Trichloro-1,2,2-Trifluoroethane	3.5	ug/L	1	0.2		
1/12/2022	8260	2201121316	Silane, methoxytrimethyl-	6.3	ug/L	NA	NA		TIC
1/12/2022	8260	2201121316	Trichlorofluoromethane (CFC 11)	3.9	ug/L	1	0.24		
1/12/2022	8260	2201121316	Trichloroethene (TCE)	3.9	ug/L	1	0.2		
1/12/2022	NDMA_LL	2201121319	N-Nitrodimethylamine	0.54	ng/L	0.5	0.21		
1/12/2022	NDMA_LL	2201121319	N-Nitrosodimethylamine	1.18	ng/L	0.5	0.42		

Appendix A.5
MPITS Indicator Parameters

Summary of Water Quality Parameters
for the Mid-plume Sampling Events in this Reporting Period

Well ID **B655-EFF-2** **Event Date** **11/2/2021**

Sample	Parameter	Result	Units
2111021131	Conductivity	1157	µS/cm
2111021131	pH	8.40	NA
2111021131	Temperature	24.4	ºC
2111021131	Turbidity	0.30	NTU

Well ID **B655-EFF-2** **Event Date** **12/6/2021**

Sample	Parameter	Result	Units
2112061355	Conductivity	1148	µS/cm
2112061355	pH	8.21	NA
2112061355	Temperature	22.9	ºC
2112061355	Turbidity	0.74	NTU

Well ID **B655-EFF-2** **Event Date** **1/7/2022**

Sample	Parameter	Result	Units
2201070505	Conductivity	1134	µS/cm
2201070505	pH	8.11	NA
2201070505	Temperature	21.5	ºC
2201070505	Turbidity	0.25	NTU

Well ID **B655-INF-2** **Event Date** **11/2/2021**

Sample	Parameter	Result	Units
2111021156	Conductivity	1165	µS/cm
2111021156	pH	7.11	NA
2111021156	Temperature	24.8	ºC
2111021156	Turbidity	0.46	NTU

Well ID **B655-INF-2** **Event Date** **12/6/2021**

Sample	Parameter	Result	Units
2112061410	Conductivity	1131	µS/cm
2112061410	pH	7.08	NA
2112061410	Temperature	23.5	ºC
2112061410	Turbidity	0.32	NTU

Well ID **B655-INF-2** **Event Date** **1/7/2022**

Sample	Parameter	Result	Units
2201070557	Conductivity	1197	µS/cm
2201070557	pH	7.05	NA
2201070557	Temperature	22.3	ºC
2201070557	Turbidity	0.14	NTU

Well ID MPE-1 Event Date 11/4/2021

Sample	Parameter	Result	Units
2111040915	Conductivity	1264	µS/cm
2111040915	pH	7.34	NA
2111040915	Temperature	26.2	ºC
2111040915	Turbidity	0.38	NTU

Well ID MPE-10 Event Date 11/4/2021

Sample	Parameter	Result	Units
2111040940	Conductivity	1238	µS/cm
2111040940	pH	7.28	NA
2111040940	Temperature	25.6	ºC
2111040940	Turbidity	0.76	NTU

Well ID MPE-11 Event Date 11/4/2021

Sample	Parameter	Result	Units
2111040900	Conductivity	952	µS/cm
2111040900	pH	7.50	NA
2111040900	Temperature	26.2	ºC
2111040900	Turbidity	0.78	NTU

Well ID MPE-8 Event Date 11/4/2021

Sample	Parameter	Result	Units
2111040930	Conductivity	1248	µS/cm
2111040930	pH	7.20	NA
2111040930	Temperature	26.4	ºC
2111040930	Turbidity	0.58	NTU

Appendix A.6
MPITS Analytical Data

Detections for MPITS Sampling Events in this Reporting Period

Analytical Results for Sampling Events at B655-EFF-2

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/2/2021	607	2111021137	Bromacil	0.037	µg/L	0.0095	0.0048	109	
12/6/2021	8260_LL	2112061400	Chloromethane	0.35	ug/L	0.5	0.28		J RB
12/6/2021	607	2112061402	Bromacil	0.081	µg/L	0.0096	0.0048	75	RB
12/6/2021	NDMA_LL	2112061403	N-Nitrosodimethylamine	1.14	ng/L	0.48	0.4		FB
1/7/2022	607	2201070512	Bromacil	0.0077	µg/L	0.0096	0.0048	99	J
1/7/2022	METALS	2201070515	Strontium, Total	2.58	mg/L	0.1	0.002		
1/7/2022	METALS	2201070515	Boron, Total	0.1	mg/L	0.2	0.02		J
1/7/2022	METALS	2201070515	Barium, Total	0.038	mg/L	0.02	0.003		
1/7/2022	METALS	2201070515	Arsenic, Total	0.001	mg/L	0.001	0.0004		
1/7/2022	METALS	2201070515	Thallium, Total	0.00004	mg/L	0.001	0.00004		J
1/7/2022	METALS	2201070515	Calcium, Total	115	mg/L	1	0.3		
1/7/2022	METALS	2201070515	Sodium, Total	49.2	mg/L	1	0.2		
1/7/2022	METALS	2201070515	Potassium, Total	5.6	mg/L	2	0.4		
1/7/2022	METALS	2201070515	Molybdenum, Total	0.006	mg/L	0.025	0.003		J
1/7/2022	METALS	2201070515	Magnesium, Total	57.2	mg/L	1	0.03		
1/7/2022	METALS	2201070515	Vanadium, Total	0.003	mg/L	0.05	0.0007		J
1/7/2022	METALS	2201070516	Potassium, Total	5.4	mg/L	2	0.4		
1/7/2022	METALS	2201070516	Vanadium, Total	0.003	mg/L	0.05	0.0007		J
1/7/2022	METALS	2201070516	Thallium, Total	0.00004	mg/L	0.001	0.00004		J
1/7/2022	METALS	2201070516	Strontium, Total	2.53	mg/L	0.1	0.002		
1/7/2022	METALS	2201070516	Sodium, Total	48.1	mg/L	1	0.2		
1/7/2022	METALS	2201070516	Molybdenum, Total	0.006	mg/L	0.025	0.003		J
1/7/2022	METALS	2201070516	Magnesium, Total	55.9	mg/L	1	0.03		
1/7/2022	METALS	2201070516	Calcium, Total	112	mg/L	1	0.3		
1/7/2022	METALS	2201070516	Boron, Total	0.1	mg/L	0.2	0.02		J
1/7/2022	METALS	2201070516	Arsenic, Total	0.0011	mg/L	0.001	0.0004		
1/7/2022	METALS	2201070516	Barium, Total	0.037	mg/L	0.02	0.003		
1/7/2022	ANIONS	2201070517	Alkalinity, Total as CaCO3	245	mg/L	2	1.8		
1/7/2022	ANIONS	2201070517	Chloride	49.6	mg/L	2	0.5		
1/7/2022	ANIONS	2201070517	Fluoride, undistilled	0.73	mg/L	0.1	0.01		
1/7/2022	ANIONS	2201070517	Sulfate	313	mg/L	8	1.6		

Analytical Results for Sampling Events at B655-EFF-2

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/7/2022	SM2540C	2201070518	Total Dissolved Solids (TDS)	804	mg/L	10	9		
1/7/2022	6850	2201070519	Perchlorate	0.319	ug/L	0.1	0.025		
1/7/2022	353.2	2201070520	Nitrate+Nitrite as Nitrogen	2.62	mg/L	0.25	0.008		

Analytical Results for Sampling Events at B655-INF-2

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/2/2021	8260	2111021201	1,1,2-Trichloro-1,2,2-Trifluoroethane	190	ug/L	1	0.2		
11/2/2021	8260	2111021201	Dichlorofluoromethane (CFC 21)	1.1	ug/L	1	0.2		
11/2/2021	8260	2111021201	Tetrachloroethene (PCE)	2.6	ug/L	1	0.21		
11/2/2021	8260	2111021201	Trichloroethene (TCE)	49	ug/L	1	0.2		
11/2/2021	8260	2111021201	Trichlorofluoromethane (CFC 11)	80	ug/L	1	0.24		
11/2/2021	8260	2111021201	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.3	ug/L	1	0.2		
11/2/2021	607	2111021203	N-Nitrosodimethylamine	1.8	µg/L	0.0094	0.0047	53	
11/2/2021	607	2111021203	N-Nitrodimethylamine	0.97	µg/L	0.0094	0.0047	94	
11/2/2021	607	2111021203	Bromacil	0.28	µg/L	0.0094	0.0047	109	
12/6/2021	8260	2112061416	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.2	ug/L	1	0.2		
12/6/2021	8260	2112061416	1,1,2-Trichloro-1,2,2-Trifluoroethane	170	ug/L	1	0.2		
12/6/2021	8260	2112061416	Trichlorofluoromethane (CFC 11)	78	ug/L	1	0.24		
12/6/2021	8260	2112061416	Tetrachloroethene (PCE)	1.8	ug/L	1	0.21		
12/6/2021	8260	2112061416	Dichlorofluoromethane (CFC 21)	1.2	ug/L	1	0.2		
12/6/2021	8260	2112061416	Trichloroethene (TCE)	39	ug/L	1	0.2		
12/6/2021	8260	2112061417	1,1,2-Trichloro-1,2,2-Trifluoroethane	160	ug/L	1	0.2		
12/6/2021	8260	2112061417	Tetrachloroethene (PCE)	1.9	ug/L	1	0.21		
12/6/2021	8260	2112061417	Trichloroethene (TCE)	37	ug/L	1	0.2		
12/6/2021	8260	2112061417	Trichlorofluoromethane (CFC 11)	76	ug/L	1	0.24		
12/6/2021	8260	2112061417	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.3	ug/L	1	0.2		
12/6/2021	8260	2112061417	Dichlorofluoromethane (CFC 21)	1.1	ug/L	1	0.2		
12/6/2021	607	2112061419	Bromacil	0.17	µg/L	0.0095	0.0048	75	RB
12/6/2021	607	2112061419	N-Nitrosodimethylamine	1.6	µg/L	0.0095	0.0048	59	
12/6/2021	607	2112061419	N-Nitrodimethylamine	0.81	µg/L	0.0095	0.0048	98	
1/7/2022	8260	2201070604	1,1,2-Trichloro-1,2,2-Trifluoroethane	190	ug/L	2	0.4		
1/7/2022	8260	2201070604	Dichlorofluoromethane (CFC 21)	1.5	ug/L	1	0.2		
1/7/2022	8260	2201070604	Tetrachloroethene (PCE)	2.8	ug/L	1	0.21		
1/7/2022	8260	2201070604	Trichloroethene (TCE)	51	ug/L	1	0.2		
1/7/2022	8260	2201070604	Trichlorofluoromethane (CFC 11)	110	ug/L	1	0.24		
1/7/2022	8260	2201070604	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.7	ug/L	1	0.2		
1/7/2022	8260	2201070605	Tetrachloroethene (PCE)	2.6	ug/L	1	0.21		
1/7/2022	8260	2201070605	Dichlorofluoromethane (CFC 21)	1.6	ug/L	1	0.2		
1/7/2022	8260	2201070605	Trichloroethene (TCE)	49	ug/L	1	0.2		
1/7/2022	8260	2201070605	Trichlorofluoromethane (CFC 11)	110	ug/L	1	0.24		
1/7/2022	8260	2201070605	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.6	ug/L	1	0.2		

Analytical Results for Sampling Events at B655-INF-2

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
1/7/2022	8260	2201070605	1,1,2-Trichloro-1,2,2-Trifluoroethane	190	ug/L	2	0.4		
1/7/2022	607	2201070607	N-Nitrosodimethylamine	1.9	µg/L	0.0094	0.0047	43	
1/7/2022	607	2201070607	N-Nitrodimethylamine	0.91	µg/L	0.0094	0.0047	72	
1/7/2022	607	2201070607	Bromacil	0.29	µg/L	0.0094	0.0047	99	
1/7/2022	METALS	2201070608	Barium, Total	0.036	mg/L	0.02	0.003		
1/7/2022	METALS	2201070608	Boron, Total	0.1	mg/L	0.2	0.02		J
1/7/2022	METALS	2201070608	Arsenic, Total	0.0011	mg/L	0.001	0.0004		
1/7/2022	METALS	2201070608	Antimony, Total	0.0004	mg/L	0.001	0.0002		J
1/7/2022	METALS	2201070608	Vanadium, Total	0.003	mg/L	0.05	0.0007		J
1/7/2022	METALS	2201070608	Sodium, Total	46.8	mg/L	1	0.2		
1/7/2022	METALS	2201070608	Potassium, Total	5.3	mg/L	2	0.4		
1/7/2022	METALS	2201070608	Calcium, Total	113	mg/L	1	0.3		
1/7/2022	METALS	2201070608	Molybdenum, Total	0.005	mg/L	0.025	0.003		J
1/7/2022	METALS	2201070608	Magnesium, Total	56.6	mg/L	1	0.03		
1/7/2022	METALS	2201070608	Strontium, Total	2.56	mg/L	0.1	0.002		
1/7/2022	ANIONS	2201070609	Sulfate	297	mg/L	8	1.6		
1/7/2022	ANIONS	2201070609	Alkalinity, Total as CaCO3	244	mg/L	2	1.8		
1/7/2022	ANIONS	2201070609	Chloride	50.3	mg/L	2	0.5		
1/7/2022	ANIONS	2201070609	Fluoride, undistilled	0.74	mg/L	0.1	0.01		
1/7/2022	SM2540C	2201070610	Total Dissolved Solids (TDS)	820	mg/L	10	9		
1/7/2022	6850	2201070611	Perchlorate	0.32	ug/L	0.1	0.025		
1/7/2022	353.2	2201070612	Nitrate+Nitrite as Nitrogen	2.7	mg/L	0.25	0.008		

Analytical Results for Sampling Events at MPE-1

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/4/2021	8260	2111040916	1,1,2-Trichloro-1,2,2-Trifluoroethane	280	ug/L	2.5	0.5		
11/4/2021	8260	2111040916	Dichlorofluoromethane (CFC 21)	1.2	ug/L	1	0.2		
11/4/2021	8260	2111040916	Tetrachloroethene (PCE)	4.8	ug/L	1	0.21		
11/4/2021	8260	2111040916	Trichloroethene (TCE)	86	ug/L	1	0.2		
11/4/2021	8260	2111040916	Trichlorofluoromethane (CFC 11)	150	ug/L	1	0.24		
11/4/2021	8260	2111040916	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	2.2	ug/L	1	0.2		
11/4/2021	8260	2111040916	Unknown	6.9	ug/L	NA	NA		TIC RB FB
11/4/2021	607	2111040918	Bromacil	0.64	µg/L	0.0095	0.0048	108	
11/4/2021	607	2111040918	N-Nitrodimethylamine	2	µg/L	0.0095	0.0048	90	
11/4/2021	607	2111040918	N-Nitrosodimethylamine	3.8	µg/L	0.0095	0.0048	52	

Analytical Results for Sampling Events at MPE-10

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/4/2021	8260	2111040941	Tetrachloroethene (PCE)	3.3	ug/L	1	0.21		
11/4/2021	8260	2111040941	Trichloroethene (TCE)	70	ug/L	1	0.2		
11/4/2021	8260	2111040941	Trichlorofluoromethane (CFC 11)	87	ug/L	1	0.24		
11/4/2021	8260	2111040941	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	1.6	ug/L	1	0.2		
11/4/2021	8260	2111040941	Unknown	6.1	ug/L	NA	NA		TIC RB
11/4/2021	8260	2111040941	1,1,2-Trichloro-1,2,2-Trifluoroethane	140	ug/L	1	0.2		
11/4/2021	8260	2111040941	Dichlorofluoromethane (CFC 21)	1.5	ug/L	1	0.2		
11/4/2021	607	2111040943	N-Nitrosodimethylamine	3.5	µg/L	0.0095	0.0048	52	
11/4/2021	607	2111040943	N-Nitrodimethylamine	1.7	µg/L	0.0095	0.0048	90	
11/4/2021	607	2111040943	Bromacil	0.39	µg/L	0.0095	0.0048	108	

Analytical Results for Sampling Events at MPE-11

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/4/2021	8260	2111040901	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.7	ug/L	1	0.2		J
11/4/2021	8260	2111040901	Dichlorofluoromethane (CFC 21)	0.57	ug/L	1	0.2		J
11/4/2021	8260	2111040901	Unknown	6.6	ug/L	NA	NA		TIC RB FB
11/4/2021	8260	2111040901	Trichloroethene (TCE)	5.3	ug/L	1	0.2		
11/4/2021	8260	2111040901	Tetrachloroethene (PCE)	0.32	ug/L	1	0.21		J
11/4/2021	8260	2111040901	Trichlorofluoromethane (CFC 11)	12	ug/L	1	0.24		
11/4/2021	8260	2111040901	1,1,2-Trichloro-1,2,2-Trifluoroethane	14	ug/L	1	0.2		
11/4/2021	607	2111040903	N-Nitrosodimethylamine	0.14	µg/L	0.0095	0.0048	52	
11/4/2021	607	2111040903	N-Nitrodimethylamine	0.066	µg/L	0.0095	0.0048	90	
11/4/2021	607	2111040903	Bromacil	0.0086	µg/L	0.0095	0.0048	108	J

Analytical Results for Sampling Events at MPE-8

Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
11/4/2021	8260	2111040931	1,1,2-Trichloro-1,2,2-Trifluoroethane	360	ug/L	5	1		
11/4/2021	8260	2111040931	Unknown	6.2	ug/L	NA	NA		TIC RB FB
11/4/2021	8260	2111040931	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	2.1	ug/L	1	0.2		
11/4/2021	8260	2111040931	Trichlorofluoromethane (CFC 11)	180	ug/L	1	0.24		
11/4/2021	8260	2111040931	Trichloroethene (TCE)	88	ug/L	1	0.2		
11/4/2021	8260	2111040931	Dichlorofluoromethane (CFC 21)	1.1	ug/L	1	0.2		
11/4/2021	8260	2111040931	Tetrachloroethene (PCE)	4.2	ug/L	1	0.21		
11/4/2021	607	2111040933	Bromacil	0.41	µg/L	0.0095	0.0048	108	
11/4/2021	607	2111040933	N-Nitrosodimethylamine	2.7	µg/L	0.0095	0.0048	52	
11/4/2021	607	2111040933	N-Nitrodimethylamine	1.4	µg/L	0.0095	0.0048	90	

Appendix B
Sampling Event Logbook Entries and Internal CoC Forms

ROJECT 100-D-176 ENV-0053

Notebook No. D32 #123(A)
Continued from page ____

Dan Halvorsen & Robert Burrows present. Weather is clear and cold. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a new Teflon discharge hose. Water quality parameters will be monitored using a QED MP 20 flowcell and water analyzer. Carboy G in use.

Calibrations:

DO sensor: In saturated air @ 643 mm/Hg.

pH sensor: using a 3pt. (4, 7, 10) buffer method.

Conductivity: using a 1413 uS/cm STD. solution.

Turbidity meter #8 STD = 53.0 RDG = 53.2 LOT # = 200415 Exp = 11/21

Initial DTW = 183.82 ft.
Final " = 184.80
EDW = 2 3/4 gal.

Parameters (Time)	Temp	Cond	DO	PH	ORP	Turb	DTW (ft)
211111/1000 A	25.25	319	6.21	7.05	41	13.1	184.21
—1002 A	25.22	321	6.17	7.06	44	13.2	184.21
—1004 A	25.24	321	6.18	7.09	41	12.9	184.21

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	Lab
211111/1006 A	VOC by 8260	Ice/HCL	(3) 40 ml Vial	2596	ALS
—1007 A	" " (FB)	"		"	"
—1008 A	NOMAIDMN Bromacil by 607	Ice	(1) 1L Amber	103501	SRI
—1009 A	SVOA by 8270 D	"	(2) "	N/A	ALS
—1010 A	GRO by 8015 D	Ice/HCL	(3) 40 ml Vial	2596	"
—1011 A	DRO by 8015 D	Ice	(1) 1L Amber	N/A	"
—1012 A	Total Metals	Ice/HNO3	(2) 125 ml Poly	210121	"
—1013 A	Anions/Alk	Ice	(2) "	N/A	"
—1014 A	TDS by SM2540C	"	(1) "	"	"
—1015 A	TKN	Ice/H2SO4	(1) 250 ml Poly	21-04-03	"
—1016 A	NO2/NO3 by 353.2	Ice/H2SO4	(1) "	"	"
—1017 A	Chloride	Ice	(1) "	N/A	"

Blind Controls

Sample #	Analysis	Preserve	Container	Lot	Lab
211111/1021 A	VOC by 8260	Ice/HCL	(3) 40 ml Vial		ALS
—1022 A	NOMAIDMN Bromacil by 607	Ice	(1) 1L Amber		SRI
—1023 A	Total Metals	Ice/HNO3	(2) 125 ml Poly		ALS

GRAB
COMPOSITE
DATE/TIME
PRESERVATIVE
COLL. BY Cr
PRESERVATIVE

11-11-2021
Date

Read and Understood By

Signed

11-12-21
Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-11-2021 Page 1 of 1

Sample Location: 100-D-176

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOA	607	8270D	680	DRO	Metals		Charge Number XGMD
2111111006A /1021A (BC)	3	A	X							
—— 1007A FB	3		X							
—— 1008A /1022A (BC)	1			X						
—— 1009A	2				X					
—— 1010A	3					X				
—— 1011A	1						X			
—— 1012A /1023A (BC	2							X		

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Anions/alk	TDS	TKN	NO2/NO3	Chloride			Charge Number
211111013A	2	A	X							
—— 1014A	1			X						X002
— — 1015A	1				X					"
— — 1016A	1					X				"
— — 1017A	1						X			"

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11-11-2021 1110		[signature]	11-12-21 / 0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________________

PROJECT 200-I-185 WJI ENV-0020

Notebook No. D64#128 (Y)

Continued from page ______

Bob Tufts & Craig Del Ferraro present. Weather is clear & cool. This zone will be sampled using 5 steam cleaned & triple rinsed, stainless steel sample tubes. Gen. in use. Probe #2213. Surface checks performed on probe prior to sampling. DP-392 event.

30 Min Equipment Blanks - Carboy G5

Sample	Analysis	Preservative	Container	Lot	Lab
2111100825Y	VOA by 8260	ice/HCL	(3) 40ml vials	2596	ALS

Initial Parameters
Time - 2111100925Y
PH - 8.10
Temp - 16.6°c
Cond - 1942 us/cm
Turb - 0.82 NTU's
pH pre - 7.14/10.11 (16.3°c)
pH post - 7.14/10.10
DTW - 214.40ft.
Atmos - 12.43psia

Final
Time - 2111111431Y
PH - 7.96
Temp - 17.5°C
Cond - 1967 us/cm
Turb - 0.78 NTU's
pH pre - 7.05/10.08 (21.6°c)
pH post - 7.04/10.09
DTW - 214.42ft.
Atmos - 12.47psia
IDW - 1/2 gal.

Meter ID
pH/cond - 60
Turb - 7
" std - 44.27
" rdg - 44.6
" lot - 200445
" Exp - 11/30/21

Buffers	Lot	Exp
7	2108G56	2/23
10	4103G81	9/22

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2111101020Y	VOA by 8260	ice/HCL	(3) 40ml vials	2596	ALS
—1021Y	607/Bromacil	ice	(1) 1L Amber	02004016	SEI
2111110820Y	Total Metals	ice/HNO_3	(2) 125ml polys	21-09-10	ALS
—0915Y	Anions/Alk.	ice	"	N/A	"
—~~0911~~1010Y	Perchlorate by 6850	"	(1) 125ml poly	"	"
—1105Y	TDS by SM2540C	"	"	"	"
—1106Y	TKN	ice/H_2SO_4	(1) 250ml poly	21-04-30	"
—1245Y	NO_2/NO_3 by 353.2	"	"	"	"
—1430Y	Chloride	ice	(1) 125ml poly	N/A	"

Runs	1)	2)	3)	4)	5)	6)
	12.47	12.47	12.43	12.46	12.47	12.48
	13.19	13.22	13.08	13.07	13.09	13.06
	13.18	13.18	13.11	13.04	13.05	13.06
	12.46	12.44	12.48	12.51	12.46	12.61

Continued ~~from~~ on page 61

Craig Del Ferraro
Signed

11/11/21
Date

Read and Understood By

[signature]
Signed

11-12-21
Date

PROJECT 200-I-185 WJI ENV-0020

7)	8)	9)	10)	11)	12)
12.55	12.54	12.60	12.58	12.57	12.58
13.07	13.02	13.01	12.99	~~13.1~~	12.91
13.04	12.99	12.97	13.01	12.92	12.85
12.54	12.61	12.61	12.59	12.88	12.57
				12.57	

13)
12.54
12.85
12.83
12.56

Continued from page

Craig Del Ferro 11/11/21
Signed Date

Read and Understood By
Lori Wyman 11-12-21
Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/10/21 Page 1 of 2

Sample Location: 200-I-185

Sample Number	# of Containers	Sample Matrix*	8260	607						Charge Number
21111008254 (EB)	3	A	✓							XGMD
——— 1020Y	3	A	✓							"
——— 1021Y	1	A		✓						"

Pertinent Notes (if any):

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number

Pertinent Notes (if any):

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Fierro	11/10/21 1535hrs.		[signature]	11-11-21 / 0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/11/21 | Page 2 of 2

Sample Location: 200-I-185

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Total Metals	Anions/Alk.	Perchlorate	TDS	TKN	NO_2/NO_3	Chloride	Charge Number
21111110820Y	2	A	✓							XGMD
0915Y	2	A		✓						"
1010Y	1	A			✓					"
1105Y	1	A				✓				X002
1106Y	1	A					✓			"
1245Y	1	A						✓		"
1430Y	1	A							✓	"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
Craig Del Ferro	11/11/21 1530 hrs.	[signature]	11-12-21 / 0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT 200-I-300 WJI ENV-0020

Notebook No. D64 #128(Y)

Continued from page

Bob Tufts & Craig DelFerraro present. Weather is clear & warm. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe #2213. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G5

Sample	Analysis	Preservative	Container	Lot	Lab
211116 1300Y	VOA by 8260	ice / HCL	(3) 40ml vials	2583	ALS
— 1301Y	Total Metals	ice / HNO_3	(2) 125ml poly's	21-09-10	"

Initial Parameters	Final	Meter ID
Time - 211116 1335Y	Time - 211116 1426Y	pH/Cond - 60
PH - 7.97	PH - 7.86	Turb - 7
Temp - 18.7°C	Temp - 18.6°C	" Std - 44.27
Cond - 701 us/cm	Cond - 714 us/cm	" rdg - 44.7
Turb - 1.59 NTU's	Turb - 1.30 NTU's	" lot - 200445
pH pre - 7.04 / 10.01 (26.2°C)	pH pre - 7.04 / 9.97 (27.1°C)	" Exp - 11/30/21
pH post - 7.05 / 10.02	pH post - 7.05 / 9.99	
DTW - 215.00 ft.	DTW - 215.11 ft.	
Atmos - 12.37 psia	Atmos - 12.39 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	2108G56	2/23
10	4103G81	9/22

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
211116 1400Y	VOA by 8260	ice / HCL	(3) 40ml vials	2583	ALS
— 1401Y	" (Dupl.)	"	"	"	"
— 1402Y	607/Bromacil	ice	(1) 1L Amber	02004016	SPI
— 1425Y	Total Metals	ice / HNO_3	(2) 125ml poly's	21-09-10	ALS

Runs

1)	2)	3)
52.81	52.80	52.76
63.39	63.37	63.34
63.31	63.30	63.35
52.84	52.83	52.75

Continued from page

Read and Understood By

Craig DelFerraro
Signed 11/16/21
Date

[signature]
Signed 11-17-21
Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/16/21

Sample Location: 200-I-300

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	607	Total Metals					Charge Number
2111161300Y (EB)	3	A	✓							XGMD
1301Y (EB)	2	A			✓					"
1400Y	3	A	✓							"
1401Y (Dupl.)	3	A	✓							"
1402Y	1	A		✓						"
1425Y	2	A			✓					"

Sample Location:

Analytical Requirement

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Fierro	11/16/21 1520 hrs.		[signature]	11-17-21 1010

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

ROJECT 200-I-375 WJI ENV-0020

3ob Tufts & Craig Del Ferraro present. Weather is clear & cool. This zone will be ampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe #2213. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G5

Sample	Analysis	Preservative	Container	Lot	Lab
2111160830Y	VOA by 8260	ice / HCL	(3) 40ml vials	2596	ALS
—— 0831Y	607/Bromacil	ice	(1) 1L Amber	0200401G	SRI

Initial Parameters	Final	Meter ID
Time - 2111160910Y	Time - 2111161011Y	PH/Cond - 60
PH - 8.08	PH - 8.01	Turb - 7
Temp - 17.7°C	Temp - 18.2°C	" std - 44.27
Cond - 989 us/cm	Cond - 1003 us/cm	" rdg - 44.7
Turb - 1.35 NTU's	Turb - 1.13 NTU's	" lot - 200445
pH pre - 7.13/10.17 (14.0°C)	pH pre - 7.09/10.10 (18.6°C)	" Exp - 11/30/21
pH post - 7.11/10.14	pH post - 7.06/10.11	
DTW - 214.87 ft.	DTW - 215.00 ft.	
Atmos - 12.41 psia	Atmos - 12.38 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	2108G56	2/23
10	4103G81	9/22

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2111160940Y	VOA by 8260	ice / HCL	(3) 40ml vials	2583	ALS
—— 0941Y	607/Bromacil	ice	(1) 1L Amber	0200401G	SRI
—— 1010Y	Total Metals	ice / HNO_3	(2) 125ml poly's	21-09-10	ALS

Runs	1)	2)	3)
	85.73	85.72	85.63
	98.20	98.13	98.16
	98.16	98.06	98.13
	85.72	85.70	85.65

Continued from page

Read and Understood By

Craig Del Ferraro 11/16/21 [signature] 11-17-21
Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/16/21 Page 1 of 1

Sample Location: 200-I-375

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260	607	Total Metals					Charge Number
211116 0830Y (EB)	3	A	✓							XGMD
— 0831Y (EB)	1	A		✓						"
— 0940Y	3	A	✓							"
— 0941Y	1	A		✓						"
— 1010Y	2	A			✓					"

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Fierro	11/16/21 1115hrs.		[signature]	11-17-21 /1010

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

ROJECT 200-I-490 WJI ENV-0020

Notebook No. D64#128(Y)

Continued from page

3ob Tufts & Craig Del Ferraro present. Weather is clear & warm. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe # 2213. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G5

Sample	Analysis	Preservative	Container	Lot	Lab
211115 1300Y	VOA by 8260	ice / HCL	(3) 40ml vials	2583	ALS

Initial Parameters	Final	Meter ID
Time - 2111151340Y	Time - 2111151439Y	pH/Cond - 60
pH - 7.99	pH - 7.88	Turb - 7
Temp - 18.6 °C	Temp - 19.0 °C	" Std - 44.27
Cond - 1026 us/cm	Cond - 1017 us/cm	" rdg - 44.60
Turb - 0.75 NTU's	Turb - 0.70 NTU's	" lot - 200445
pH pre - 7.04/10.07 (25.1 °C)	pH pre - 6.98/10.03 (27.7 °C)	" Exp - 11/30/21
pH post - 7.01/10.06	pH post - 7.01/10.03	
DTW - 214.72 ft.	DTW - 214.87 ft.	
Atmos - 12.46 psia	Atmos - 12.44 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	2108G56	2/23
10	4103G81	9/22

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2111151405Y	VOA by 8260	ice / HCL	(3) 40ml vials	2583	ALS
——— 1406Y	607/Bromacil	ice	(1) 1L Amber	02004016	SRI
——— 1407Y	Total Metals	ice / HNO_3	(2) 125ml poly's	21-09-10	ALS
——— 1435Y	Anions/Alk.	ice	"	N/A	"
——— 1436Y	TDS by SM2540C	"	(1) 125ml poly	"	"
——— 1437Y	Perchlorate by 6850	"	"	"	"
——— 1438Y	NO_2/NO_3 by 353.2	ice / H_2SO_4	(1) 250ml poly	43071605	"

* Samples were a bit aerated.

Runs	1)	2)	3)
	135.69	135.68	135.60
	174.94	174.96	174.95
	174.90	174.93	174.91
	135.71	135.62	135.57

Continued from page

Read and Understood By

Craig Del Ferraro 11/15/21

Signed Date

[signature] 11-16-21

Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/15/21 Page 1 of 1

Sample Location: 200-I-490

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	607	Total Metals	Anions/Alk	TDS	Perchlorate		Charge Number
211115 1300Y (EB)	3	A	✓							XGMD
——— 1405Y	3	A	✓							"
——— 1406Y	1	A		✓						"
——— 1407Y	2	A			✓					"
——— 1435Y	2	A				✓				"
——— 1436Y	1	A					✓			"
——— 1437Y	1	A						✓		"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NO_2/NO_3							Charge Number
2111151438Y	1	A	✓							XGMD

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
Craig [signature]	11/15/21 1510hrs.	[signature]	11-16-21 / 0910

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT 200-I-675 WJI ENV-0020

Bob Tufts & Craig Del Ferraro present. Weather is clear & cool. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes, Gen. in use. Probe #2213. Surface checks performed on probe prior to sampling.

~~30~~ 00 Trip Blanks - Water Purification System

Sample	Analysis	Preservative	Container	Lot	Lab
211115 0800Y	VOA by 8260	ice/HCL	(3) 40ml vials	2583	ALS

30 Min. Equipment Blanks - Carboy G5

Sample	Analysis	Preservative	Container	Lot	Lab
211115 0845Y	VOA by 8260	ice/HCL	(3) 40ml vials	2583	ALS
—— 0846Y	Total Metals	ice/HNO_3	(2) 125ml poly	21-09-10	"

Initial Parameters	Final	Meter ID
Time - 211115 0950Y	Time - 211115 1101Y	pH/Cond - 60
PH - 7.98	PH - 8.05	Turb - 7
Temp - 18.3°C	Temp - 18.6°C	" Std - 44.27
Cond - 1450 us/cm	Cond - 1433 us/cm	" rdg - 44.60
Turb - 0.72 NTU's	Turb - 0.65 NTU's	" lot - 200445
pH pre - 7.15/10.18 (13.6°C)	pH pre - 7.09/10.14 (17.0°C)	" Exp - 11/30/21
pH post - 7.15/10.17	pH post - 7.07/10.14	
DTW - 214.58 ft.	DTW - 214.72 ft.	Buffers Lot Exp
Atmos - 12.41 psia	Atmos - 12.43 psia	7 2108G56 2/23
	IDW - 1/2 gal.	10 4103G81 9/22

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
211115 1025Y	VOA by 8260	ice/HCL	(3) 40ml vials	2583	ALS
—— 1026Y	607/Bromacil	ice	(1) 1L Amber	02004016	SRI
—— 1100Y	Total Metals	ice/HNO_3	(2) 125ml poly's	21-09-10	ALS

*Samples were very aerated.

Runs	1)	1)	2)	3)
	~~214.07~~ CO	215.55	215.46	215.43
	~~274.~~ CO	254.24	254.20	254.22
		254.20	254.17	254.17
		215.53	215.49	215.40

Continued from page

Read and Understood By

Craig Del Ferraro 11/15/21 Signed Date

Lori [signature] 11-16-21 Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/15/21 Page 1 of 1

Sample Location: 200-I-675

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	607	Total Metals					Charge Number
2111150800Y (TB)	3	A	✓							XGMD
——0845Y (EB)	3	A	✓							"
——0846Y (EB)	2	A			✓					"
——1025Y	3	A	✓							"
——1026Y	1	A		✓						"
——1100Y	2	A			✓					"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[illegible]	11/15/21 1125hrs.		[illegible]	11-16-21 / 0910

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

WSTF 381C (05/2016)

PROJECT 200-I-795 WJI ENV-0020

Notebook No. D64#128(Y)

Continued from page

Bob Tufts & Craig Del Ferraro present. Weather is clear & cool. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe #2215. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G5

Sample	Analysis	Preservative	Container	Lot	Lab
2111120815Y	VOA by 8260	ice/HCL	(3) 40ml vials	2596	ALS

Initial Parameters	Final	Meter ID
Time - 2111120900Y	Time - 2111121011Y	pH/cond - 60
PH - 8.00	PH - 7.86	Turb - 7
Temp - 16.7°c	Temp - 16.9°c	" std - 44.27
Cond - 1994us/cm	Cond - 1982us/cm	" rdg - 44.7
Turb - 0.57 NTU's	Turb - 0.54 NTU's	" lot - 200415
pHpre - 7.15/10.17	pHpre - 7.11/10.15 (13.8°c)	" Exp - 11/30/21
pHpost - 7.14/10.17 (12.3°c)	pHpost - 7.12/10.16	
DTW - 214.42ft.	DTW - 214.58ft.	
Atmos - 12.42psia	Atmos - 12.44 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	2108G56	2/23
10	4103G81	9/22

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2111120935Y	VOA by 8260	ice/HCL	(3) 40ml vials	2596	ALS
——0936Y	607/Bromacil	ice	(1) 1L Amber	020040IG	SRI
——1010Y	Total Metals	ice/HNO$_3$	(2) 125ml poly's	21-09-10	ALS

Runs	1)	2)	3)
	~~268.83~~ CD 267.25	267.22	267.11
	~~332.~~ CD 305.55	305.55	305.49
	305.54	305.51	305.42
	267.21	267.13	267.07

Continued from page

Read and Understood By

Craig Del Ferraro 11/12/21 Signed Date

Lori W Munck 11-12-21 Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/12/21 Page 1 of 1

Sample Location: 200-I-795

Sample Number	# of Containers	Sample Matrix*	8260	607	Total Metals				Charge Number
2111120815Y (EB)	3	A	✓						XGMD
——0935Y	3	A	✓						"
——0936Y	1	A		✓					"
——1010Y	2	A			✓				"

Pertinent Notes (if any)

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelFerro	11/12/21 1050hrs.		[illegible signature]	11-15-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

Notebook No. D32 # 124 (c) 1

PROJECT 400-C-143 WJI ENV-0053

Continued from page ________

Bob Tufts & Craig Del Ferraro present. Weather is clear & warm. This well will be purged using a dedicated bladder pump. Samples will be collected using a teflon discharge hose. Water quality parameters will be monitored using a QED MP-20 flow cell and water analyzer. Carboy G1.

Calibrations

DO - calibrated in saturated air @ 642 mm/Hg.
Conductivity - calibrated using 1413 us/cm std. solution.
PH - calibrated using Oakton buffers (7-10).
Turbidity meter # 21 std - 12.13 rdg - 12.24 lot - 200445 Exp - 11/30/21

Parameters (time)	temp (°C)	cond (ms/cm)	DO	ORP	PH	Turb (NTU's)	DTW (ft.)
1) 211117 1045C	20.43	1.317	7.04	83	6.91	4.81	143.86
2) ——— 1048C	20.50	1.310	6.81	78	6.94	4.14	143.86
3) ——— 1051C	20.56	1.306	6.62	76	6.95	3.93	143.86

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
211117 1100C	VOA by 8260	ice/HCL	(3) 40ml vials	2621	ALS
——— 1101C	" (Dupl.)	"	"	"	"
——— 1102C	" (FB)	"	"	"	"
——— 1103C	607/Bromacil	ice	(1) 1L Amber	02004019	SRI
——— 1104C	Total Metals	ice/HNO_3	(2) 125ml poly's	21-09-10	ALS
——— 1105C	NO_2/NO_3 by 353.2	ice/H_2SO_4	(1) 250ml poly	43071605	"

Initial DTW - 143.65 ft. Total gallons purged - 1

Continued from page

Read and Understood By

Craig Del Ferraro Signed 11/17/21 Date

[signature] Signed 11-17-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/17/21 Page 1 of 1

Sample Location: 400-C-143

Sample Number	# of Containers	Sample Matrix*	8260	607	Total Metals	NO_2/NO_3				Charge Number
2111171100C &	3	A	✓							XGMD
——1101C (Dupl.)	3	A	✓							"
——1102C (FB)	3	A	✓							"
——1103C	1	A		✓						"
——1104C	2	A			✓					"
——1105C	1	A				✓				"

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number

Analytical Requirement

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	11/17/21 1130hrs.		[signature]	11-17-21 / 1110

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

PROJECT 400·EU·131 WI-ENU·0053

Notebook No. D32#121C
Continued from page NA

Al Montes & Tony Torrez present. Weather is warm & sunny. This well will be sample using a dedicated bladder pump. Samples will be collected from a dedicated Tygon tube. Water parameters will be monitored w/ a QED MP-20 flowcell. Carboy G.1

CALIBRATIONS

DO SENSOR : SAT A.R @ 643 mm/Hg
PH : 3PT 4,7,10 BUFFERS
COND : w/ 1413 uS/cm STD
TURB MTR : 88 STD: 53.0 RDG: 53.8 LOT#: 200475 EXP: 11-30-21

INITIAL DTW = 141.
FINAL : 141.84
DW = 1gal

PARAMETERS	TEMP	COND	DO	PH	ORP	TURB	DTW(ft)
211010930c	20.50	1.370	7.68	6.79	99	0.79 NTU	141.84
— 0935c	20.48	1.364	6.59	6.78	99	0.88 NTU	"
— 0940c	20.51	1.362	6.50	6.40	99	0.72 NTU	"

SAMPLES

SAMPLE #	ANALYSIS	PRESERV	CONTAINER	LOT #	LAB
211010950c	VOA 8260	ICE HCL	3·40mL Vials	259C	ALS
— 0952c	" (FB)	"	"	"	"

Continued from page NA

Signed [signature] Date 11·1·21

Read and Understood By

Signed [signature] Date 11-2-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11·1·21 Page 1 of 1

Sample Location: 400·EV·131

Sample Number	# of Containers	Sample Matrix*	VOA 8260							Charge Number
2111010950c	3	A	x							
——— 0952c (FB)	3	A	x							

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number

Pertinent Notes (if any)

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	11·1·21 1040	[signature]	11-2-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

ROJECT 400- GV-125 ENV-0053

Notebook No. D32 #122(B)

Continued from page

..n Halvorsen + Robert Burrows present. Weather is clear and cool. This well
..ill be purged and sampled using a dedicated bladder pump. Samples will be
..ollected using a dedicated Tygon hose. Water quality Parameters will be monitored
..sing a QED MP 20 flowcell and Water analyzer. Carboy G2 in use.

..alibrations:
..o Sensor: In saturated air @ 643 mmHg
..H Sensor: using a 3pt (4,7,10) Buffer method.
..onductivity: using a 1413 uS/cm STD Solution.
..rbidity meter: #20 STD: 4.62 RDG: 4.66 Lot #: 9107 Exp: 11/21

..rameters (Time)	Temp	Cond	Do	pH	ORP	Turb.	DTW (ft.)
211102 0943 B	20.2	1502	N/A	7.43	N/A	0.39	
— 0945 B	20.1	1506	"	7.40	"	0.41	
— 0947 B	20.2	15.01	"	7.44	"	0.38	

SAMPLES

..ample #	Analysis	Preserve	Container	Lot	Lab
211102 0949 B	VOA by 8260	Ice/HCl	(3) 40 ml vial	2795	ALS
— 0950 B	" " (FB)	"	"	"	"

IDW: 3/4 gal.

Continued from page

Read and Understood By

Signed	Date	Signed	Date
[signature]	11-2-2021	[signature]	11-3-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-2-2021 Page 1 of 1

Sample Location: 400-GV-125

Sample Number	# of Containers	Sample Matrix*	VOA							Charge Number
Pertinent Notes (if any)										XGMA
21110209490	3	A	X							
0950B FB	3	A	X							

Sample Location:

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number
Pertinent Notes (if any)										

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11-2-2021 1010		[signature]	11-3-21 / 0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

Notebook No. D32#121C

PROJECT 400.JU.150 WJI-ENV.0053

Continued from page NA

Al Montes & Tony Torrez present. Weather is warm & sunny. This well will be sampled using a dedicated bladder pump. Samples will be collected from a dedicated Tygon tube. Water parameters will be monitored w/ a QED MP20 flowcell. Carboy G-1

CALIBRATIONS

INITIAL DTW = 145.59 FT
1 DW = 1.5 gal

DO - SAT AIR @ 643 mm/hg
PH - 3 PT. (4,7,10) BUFFERS
COND - w/ 1413 us/cm STD
TURB MTR: 8 STD = 53.0 RDG = 53.0 LOT# = 20044S EXP = 11.30.21

PARAMETERS	TEMP	COND	DO	PH	ORP	TURB	DTW
211101 1425C	21.77	~~3.55~~ 1.76	3.55	6.65	91	0.63 NTU	146.90 FT
— 1430C	21.71	~~3.60~~ 1.76	3.60	6.65	91	0.59 NTU	146.90 FT
— 1435C	21.70	~~3.~~ 1.77	3.65	6.65	91	0.55 NTU	146.90 FT

SAMPLES

SAMPLE#	ANALYSIS	PRESERV	CONTAINER	LOT#	LAB
211101 1440C	VOA 8260	ICE. HCL	3.40 mL VIALS	2596	ALS
— 1442C	VOA 8260 (FB)	"	"	"	"

Continued from page NA

Signed: [signature] Date: 11.1.21

Read and Understood By

Signed: [signature] Date: 11-2-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11·1·21 Page 1 of 1

Sample Location: 400·JV·150

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOA 8260							Charge Number
211101 1442C	3	A	x							
— 1442C (FB)	3	A	x							
—										

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11·1·21 / 305		[signature]	11-2-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT BLM-3-182 ENV-0053

Continued from page

Dan Halvorsen & Robert Burrows ~~Tony Tovar~~ present. Weather is Cloudy and warm. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a new Teflon discharge hose. Water quality parameters will be monitored using a QED MP20 flowcell and water analyzer. Carboy G2 in use.

Calibrations:

DO Sensor: In saturated air @ 643 mm Hg. Initial DTW = 179.70

PH Sensor: Using a 3pt. (4,7,10) Buffer method.

Conductivity = Using a 1413 us/cm STD. Solution.

Turbidity meter = # 20 STD. 4.62 RDG = 4.66 Lot # = 91017 Exp = 11/21

Parameters (Time)	Temp	Cond	DO	pH	ORP	Turb	DTW (ft)
211102 1336 B	22.2	530	N/A	7.25	N/A	7.41	180.50
—— 1338 B	22.1	5.37	"	7.27	"	7.34	180.50
—— 1340 B	22.1	5.32	"	7.24	"	7.30	180.50

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	Lab
211102 1342 B	VOA by 8260	Ice / HCl	(3) 40 ml Vial	2795	ALS
—— 1343 B	" " (FB)	"	"	"	"
—— 1344 B	NDMA/DMN Bromacil by 607	Ice	(1) 1L amber	103501	SRL
—— 1345 B	SVOA by 8270 D	"	(2) "	N/A	ALS
—— 1346 B	Pesticides by 8081 B	"	(1) "	"	"
—— 1347 B	Herbicides by 8151 A	"	(1) "	"	"
—— 1348 B	Dioxins/Furans by 8290	"	(1) "	103501	SRL
—— 1349 B	PCB's by 8082 A	"	(1) "	N/A	ALS
—— 1350 B	Phenolics by 9066	Ice / H2SO4	(1) 250 ml amber	"	"
—— 1351 B	Total metals	Ice / HNO3	(2) 125 ml Poly	"	"
—— 1352 B	NO2/NO3 by 353.2	Ice / H2SO4	(1) 250 ml Poly	"	"
—— 1353 B	Cyanide by 9012 B	Ice / NaOH	(1) 125 ml Poly	"	"
—— 1354 B	Sulfide by 9030	Ice / NaOH Zinc Acetate	(1) 500 ml Poly	"	"

Continued from page

Read and Understood By

Signed: [signature] Date: 11-2-2021

Signed: [signature] Date: 11-3-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11.2.2021 Page 1 of ____

Sample Location: BLN-3-182			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOA	607	8270	Pesticides	Herbicides	Dioxins/Furans		XGMO / Charge Number
2111021342 B	3	A	✓							
1343 B FB	3		✓							
1344 B	1			✓						
1345 B	2				✓					
1346 B	1					✓				
1347 B	1						✓			
1348 B	1							✓		

Sample Location:			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	PCBs	Phenolics	metals	NO2/NO3	Cyanide	Sulfide		Charge Number
2111021349 B	1	A	✓							
1350 B	1			✓						
1351 B	2				✓					
1352 B	1					✓				
1353 B	1						✓			
1354 B	1							✓		

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11.2.2021 1530		[signature]	11-3-21 / 0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

Notebook No. 032 # 122(B)

Continued from page ______

PROJECT BIM-8-418

[ ]rcus Analysis & Dan Halvorsen present. Weather is clear & cool. This well will be [pur]ged & sampled using a dedicated bladder pump. Samples will be collected using a [ne]w teflon discharge hose. Water quality parameters will be monitored using a [Q]ED MP-20 flow cell & water analyzer. Carboy G-2

[Ca]librations
[D.O.] Cal in saturated air @ 643 mm/Hg.
[pH] Cal using Oakton Buffers (4,7,10)
[Con]ductivity - Cal using 1413 us/cm STD solution.
[T]urbidity, Meter - H2O STD - 4.62 NTU RDG - 5.94 lot - 200445 Exp. 11/31

Trip Blanks

[S]ample #	Analysis	Preserve	Container	lot	lab
[ ]11046730B	VOA by 8260LL	HCl/Ice	(3) 40ml vials	2621	ALS
— 0731B	Low Level NDMA	Ice	(1) 1L Amber	103501	SRI

[Pa]rameters (time)	Temp (°C)	Cond (mS/cm)	DO	pH	ORP	Turb (NTU)	DTW (ft)
211104 1000B	20.50	1.014	7.15	7.12	90	0.46	337.15
— 1002B	20.47	1.024	7.22	7.18	91	0.32	"
— 1004B	20.54	1.021	7.09	7.17	91	0.51	"

Samples

[S]ample #	Analysis	Preserve	Container	lot	lab
[ ]11041010B	VOA by 8260 LL	HCl/Ice	(3) 40 ml vials	2621	ALS
— 1011B	" (FB)	"	"	"	"
— 1012B	Low Level NDMA	Ice	(1) 1L Amber	103501	SRI
— 1013B	" (FB)	"	"	"	"

Initial DTW - 337.10'

IOW - 2 gal

Continued from page

Read and Understood By

[signature] 11/4/21 Signed Date

[signature] 11-8-21 Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/4/21 Page ______ of ______

Sample Location: BLM. 8. 418

Analytical Requirement

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260LL	LLNDMA						Charge Number
2111040730B (TB)	3	A	X							YGMD
— 0731B (TB)	1			X						
— 1010B	3		X							
— 1011B (FB)	3		X							
— 1012B	1			X						
— 1013B (FB)	1			X						

Sample Location:

Analytical Requirement

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11/4/21 @ 1115		[signature]	11-8-21 / 0915

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________________

WSTF 381C (05/2016)

PROJECT BIM · 17 · 443

Notebook No. D32 # 122 (B)

Continued from page

Marcus Avalos & Dan Halvorsen present. Weather is clear & cool. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new Teflon discharge hose. Water quality parameters will be monitored using a ~~QED MP 20 flow cell & water analyzer~~. Carboy G. 2

Oakton PH/cond meter. No ORP or DO

Calibrations

~~DO - Cal in saturated air @ 643 mm/Hg~~

PH - Cal using Oakton Buffers (4, 7, 10)

Conductivity - Cal using 1413 uS/cm STD solution.

Turbidity Meter · #28 STD - 4.62 NTU RDG - 5.54 NTU Lot - ~~41017~~ 200445 Exp · 11/21

Parameters (time)	Temp (°C)	Cond ( )	DO	PH	ORP	Turb (NTU)	DTW (ft)
1) 211103 0945 B	17.9	1227	N/A	7.66	N/A	1.00	500.95
2) — 0947 B	18.4	1243	"	7.54	"	1.17	"
3) — 0949 B	18.7	1176	"	7.57	"	0.98	"

Samples

Sample #	Analysis	Preserve	Container	lot	lab
211103 0950 B	VOA by 8260	HCl / Ice	(3) 40ml vials	2795	ALS
— 0951 B	" (FB)	"	"	"	"
— 0952 B	607 / Bromacil	Ice	(1) 1L Amber	103501	SRI
— 0953 B	Total Metals	HNO3 / Ice	(2) 125ml poly	210121	ALS
— 0954 B	Anions / Alk	Ice / Zero HS	"	N/A	"
— 0955 B	TDS by SM2540C	Ice	(1) "	"	"
— 0956 B	Perchlorate 6850	Ice / 1/3 HS	"	"	"
— 0957 B	NO2, NO3 353.2	H2SO4 / Ice	(1) 250ml poly		"

Initial DTW - 500.20

IOW - 2 gal

Continued from page

Read and Understood By

Signed [signature] Date 11/3/21 Signed [signature] Date 11-4-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/3/21 Page 1 of 1

Sample Location: BM·17·443

Sample Number	# of Containers	Sample Matrix*	8260	607/Rcb	T. Metals	Anions/Alk	TOS	Perchlorate		Charge Number
21110309501B	3	A	X							XGMD
09511B (FB)	3		X							
09521B	1			X						
09531B	2				X					
09541B	2					X				
09551B	1						X			
09561B	1							X		

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*	NO2 NO3							Charge Number
21110309571B	1	A	X							XGMD

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11/3/21 @ 1110		[signature]	11-4-21 / 0910

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

PROJECT BM · 22 · 570 WJI ENV · 0053

Notebook No. D32 # 122 (B)

Continued from page

Marcus Avalos + Robert Burrows present. Weather is breezy & cool. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge hose. Water quality parameters will be monitored using a Oakton PH/Conductivity meter. No ORP or DO. Carboy G-7

Calibrations
PH - Cal using Oakton Buffers (7 + 10)
Conductivity - Cal using 1413 uS/cm STD solution.
Turbidity Meter · #8 STD · 53.0 NTU RDG · 54.3 NTU Lot 200445 Exp · 11/30/21

Parameters (time)	Temp (°C)	Cond (uS/cm)	PH	Turb (NTU)	DTW
1) 211110 1430 B	22.9°C	1323	7.95	0.43	N/A
2) —— 1432 B	22.5°C	1337	7.90	0.21	"
3) —— 1434 B	21.7°C	1324	7.83	0.24	"

Trip Blanks

Sample #	Analysis	Preserve	Container	Lot	lab
211110 1250 B	VOA by 8260LL	HCl/Ice	(3) 40ml vials	2621	ALS
—— 1251 B	Low Level NDMA	Ice	(1) 1L Amber	103501	SRI

Samples

Sample #	Analysis	Preserve	Container	Lot	lab
211110 1440 B	VOA by 8260LL	HCl/Ice	(3) 40ml vials	2621	ALS
—— 1441 B	" (FB)	"	"	"	"
—— 1442 B	Low Level NDMA	Ice	(1) 1L Amber	103501	SRI
—— 1443 B	" (FB)	"	"	"	"

FOW · 2.5 gal

Continued from page

Read and Understood By

Signed 11/10/21 Date

Signed 11-11-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/10/21 Page 1 of 1

Sample Location: BLM·22·570

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA					Charge Number
211110 1250B (TB)	3	A	X						XGMD
— 1251B (TB)	1			X					
— 1440B	3		X						
— 1441B (FB)	3		X						
— 1442B	1			X					
— 1443B (FB)	1			X					

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11/10/21 @ 1530		[signature]	11-11-21 / 0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT Blm-24.565

Continued from page

Al Montes & Tony Torrez present. The weather is Hazy & Warm. This well will be modified sampled using a Dedicated Teflon bladder pump. Samples collected from a Teflon discharge Tube. Carboy 6.3.

	Initial	Final
	211102 1430c	211102 1445c
pH	10.53	10.48
Cond	1304	1310
Temp	22.3°c	22.5°c
Turb	0.37	0.27
pH pre	7.01/10.04 (21.8)	7.03/10.01 (23.0°c)
pH post	7.03/9.98	7.00/10.00
DTW	N/A	N/A

Meter ID's
pH/cond # 601
Turb # 8
" Std = 53.0
" Rdg = 53.2
" Lot# = 200445
" Exp = 11-30-21

Samples

Sample#	Analysis	Preserv	Lot#	Cont	Lab
211102 1431c	8260	Ice/Hcl	2586	(3) 40ml vials	Als
— 1432c	" (FB)	"	"	"	"
— 1433c	6007	Ice	030105016	(1) 1L Amber	SRI
— 1434c	LLNDMA	"	"	"	"
— 1435c	" (FB)	"	"	"	"

Trip Blanks

Sample#	Analysis	Preserv	Lot#	Cont	Lab
211102 1300c	8260	Ice/Hcl	2586	(3) 40ml vials	Als
— 1301c	LLNDMA	Ice	0301050l	(1) 1L Amber	SRI

Continued from page

Signed T. [signature] Date 11-2-21

Read and Understood By

Signed [signature] Date 11-3-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-2-21 Page ____ of ____

Sample Location: BLM-24-965

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260	607	ClNM4				Charge Number: XGMD
211102 1300C (TB)			X						
1301C (TB)					X				
1431C			X						
1432C (FB)			X						
1433C				X					
1434C					X				
1435C (FB)					X				

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
T. [signature]	11-2-21/1530		[signature]	11-3-21 /0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT BIM·26·404

Continued from page

Marcus Auglos & Dan Halvorsen present. Weather is breezy & warm. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge hose. Water quality parameters will be monitored using a Oakton PH/conductivity Meter. Carboy Co. 2
No ORP or DO will be taken.

Calibrations
PH: Cal using Oakton Buffers (4,7,10)
Conductivity: Cal using 1413 uS/cm STD solution.
Turbidity Meter: #20 STD: 4.62 NTU RDG: 5.54 NTU Lot: 200445 Exp: 11/21

Parameters (time)	Temp (°C)	Cond (uS/cm)	pH	Turb (NTU)	DTW (ft)
1) 2111031445B	22.0	1105	7.78	1.77	310.90'
2) —— 1447B	22.7	1097	7.69	1.36	=
3) —— 1449B	21.8	1041	7.41	1.64	=

Samples

Sample #	Analysis	Preserve	Container	lot	lab
2111031455B	VOA by 8260	HCl/Ice	(3) 40 ml vials	2795	Als
—— 1456B	= (FB)	=	=	=	=
—— 1457B	607/Bromacil	Ice	(1) 1L Amber	103501	SRI
—— 1458B	= (FB)	=	=	=	=

Initial DTW: 310.65'

IDW - 2 gal

Continued from page

Read and Understood By

[signature] Signed 11-3-21 Date

[signature] Signed 11-4-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/3/21 Page 1 of 1

Sample Location: BIM.26.404			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260	605/Brc						Charge Number
21110311455 B	3	A	X							YGMD
1456 B (FB)	3		X							
1457 B	1			X						
1458 B (FB)	1			X						

Sample Location:			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	11/3/21 @ 1535	[signature]	11-4-21 / 0920

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT BLM-32-543 ENV-0020

Continued from page

Dan Halvorsen & Robert Burrows present. Weather is clear and cool. This zone will be purged and sampled using a FLUTe system. Purge pressure will be set at 281 psi, sample pressure at 252 psi. Bubbler set at 3psi, stable at 8psi. a minimum of 4 gallons will be purged or parameter stabilization prior to sampling. 15-20 minute recovery between purges. Carboy 62 in use.

Preliminary Parameters

PH	= 8.22	8.25
Temp	= 21.5	21.6
Cond	= 1021	1024
TurB	~ 0.36	0.41

Initial Parameters		Final Parameters	Meter ID	
Time	= 211101 1445 B	211101/1559 B	PH/Cond	= 11
PH	= 8.37	8.42	TurB	= 20
Temp	= 23.2	23.1	STD	= 4.62
Cond	= 1010 us/cm	1011	RDG	= 4.55
TurB	= 0.69 ntu's	0.27 (ntu's)	LOT	= 91017
PH Pre	= 7.02-10.03 (29.2°C)	6.86-9.37	Exp	= 11/21
PH Post	=	6.91-9.92		

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	LAB
211101 1447 B	VOC by 8260	Ice/HCl	(3) 40 ml Vial	2795	ALS
— 1448 B	" " (FB)	"	"	"	"
— 1449 B	NDMA/DMN Bromacil by 607	Ice	(1) 1L Amber	103521	SRI
— 1527 B	NDMA LL	"	"	"	"
— 1528 B	" " (FB)	"	(1) "	"	"
— 1529 B	SVOC by 8270 D	"	(2) "	N/A	ALS
— 1555 B	Anions/ALK	"	(2) 125 ml Poly	"	"
— 1556 B	TDS by SM2540C	"	(1) "	"	"
— 1557 B	Perchlorate by 6850	"	(1) "	"	"
— 1558 B	NO2/NO3 by 353.2	Ice/H2SO4	(1) 250 ml Poly	"	"

IDW = 5 gal.

Continued from page

Read and Understood By

Signed 11-1-2021 Date

Signed 11-2-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-1-2021 Page 1 of 1

Sample Location: RLM-32-543

Pertinent Notes (if any)

Sample Number		# of Containers	Sample Matrix*	VOA	607	NDMA LL	SVOC	Anions/Alk			Charge Number
											XGMD
211101 1447B		3	A	X							
1448B	FB	3		X							
1449B		1			X						
1527B		1				X					
1528B	FB	1				X					
1529B		2					X				
1555B		2						X			

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	TDS	Perchlorate	NO2/NO3					Charge Number
211101 1556B	1	A	X							
1557B	1			X						
1558B	1				X					

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11-1-2021 1625		[signature]	11-2-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

PROJECT BLM-32-571 ENV-0020

Notebook No. D32 #122(B)

Continued from page

Dan Halvorsen & Robert Burrows present. Weather is clear and cool. This zone will be purged and sampled using a FLUTe system. Purge pressure set at 281 psi, sample pressure set at 252 psi. Bubbler set at 3 psi, and stable at 8 psi. a minimum of 4 gallons will be purged and parameters stabilize prior to sampling. 15-20 recovery between purges. Carboy G-2 in use.

Preliminary Parameters

pH	= 8.21	8.18
Temp	= 21.7	21.8
Cond	= 985	979
Turb	= 0.53	0.49

Initial Parameters		Final Parameters	Meter ID	
Time	= 211011500B	211011512B	pH/Cond	= 11
pH	= 7.95	7.97	Turb	= 20
Temp	= 21.9 °C	21.8	"SD	= 4.62
Cond	= 990 us/cm	986	"RDG	= 4.55
Turb	= 0.36 NTU's	0.41	"LOT	= 91017
Sample	= 7.01-10.02	7.02-10.03	"Exp	= 11/21
Post	= 7.02-10.03	7.01-10.02		

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	Lab
11101502B	VOA by 8260	Ice/HCl	(3) 40 ml vial	2795	ALS
— 1503B	" " (FB)	"	"	"	"
— 1504B	NDMA LL	Ice	(1) 1L Amber	103501	SRJ
— 1505B	" " (FB)	"	"	"	"

IOW - 5 gal

Continued from page

Signed [signature] Date 11-1-2021

Read and Understood By

Signed [signature] Date 11-2-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-1-2021 Page 1 of 1

Sample Location: BLM.32-571

Sample Number	# of Containers	Sample Matrix*	VOA	LDMA LL					Charge Number
Pertinent Notes (if any)									XGAD
211101/1502B	3	A	X						
1503B	3		X						
1504B	1			X					
1505B	1			X					

Sample Location:

Sample Number	# of Containers	Sample Matrix*							Charge Number
Pertinent Notes (if any)									

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11-1-2021 1625		[signature]	11-2-21 /0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT Bcm-32-632 ENV-0020

Continued from page

Dan Halvorsen & Robert Burrows present. Weather is clear and cool. This zone will be purged and sampled using a FLUTe system. Purge pressure set at 281 psi, Sample pressure set at 252 psi. Bubbler set at 3 psi and stable at 8 psi. A minimum of 4 gallons will be purged and parameters are stable prior to sampling. 15-20 minute recovery between purges. Carboy G2 in use.

Preliminary Parameters

Temp	= 21.9	21.8
pH	= 8.34	8.40
Cond	= 994	998
Turb	= 0.49	0.52

Initial Parameters		Final Parameters	Meter ID	
Time	= 211101519B	211101538B	pH/Cond	= 11
pH	= 8.43	8.51	TurB	= 20
Temp	= 21.9°C	21.8	STD	= 4.62
Cond	= 998 us/cm	1002	RDG	= 4.55
TurB	= 0.18 ntu's	0.24	Lot	= 91017
pH Pre	= 7.00 - 10.01 (27.6°C)	6.95 - 9.93	Exp	= 11/17
pH Post	= 7.01 - 10.00	6.99 - 9.97		

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	LAB
211101521B	VOA by 8260	Ice/HCl	(3) 40 ml Vial	2795	ALS
—— 1522B	" " (FB)	"	"	"	"
—— 1523B	NDMA LL	Ice	(1) 1L Amber	103501	SGL
—— 1524B	" " (FB)	"	"	"	"

IDW = 5 gal

Continued from page

Read and Understood By

Signed [signature] Date 11-1-2021

Signed [signature] Date 11-2-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-1-2021 Page 1 of 1

Sample Location: BLm. 32-L32

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOC	NDMA LL					Charge Number: XGMD
21110115 21B	3	A	X						
1522B	3	A	X						
1523B	1	A		X					
1524B	1	A		X					

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement						Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11-1-2021 1625		[signature]	11-2-21 /0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

PROJECT BLM-36-350 WJI ENV-0020

Bob Tufts & Craig Del Ferraro present. Weather is clear & warm. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe #2213. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy 65

Sample	Analysis	Preservative	Container	Lot	Lab
211103 1255Y	VOA by 8260	ice/HCL	(3) 40ml vials	2596	ALS

Initial Parameters	Final	Meter ID		
Time - 211103 1325Y	Time - 211103 1450Y	pH/cond	- 60	
PH - 7.83	PH - 7.75	Turb	- 7	
Temp - 21.9°C	Temp - 22.4°C	" std	- 44.27	
Cond - 1203 us/cm	Cond - 1191 us/cm	" rdg	- 44.8	
Turb - 0.50 NTU's	Turb - 0.44 NTU's	" lot	- 200445	
pH pre - 7.02/10.04 (28.0°C)	pH pre - 6.97/10.02 (29.2°)	" Exp	- 11/30/21	
pH post - 7.03/10.07	pH post - 6.98/10.02			
DTW - N/A - probe sticks to casing	DTW - N/A	Buffers	Lot	Exp
Atmos - 12.51 psia	Atmos - 12.53 psia	7	2108656	2/23
	IDW - 1/2 gal.	10	4103681	9/22

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
211103 1350Y	VOA by 8260	ice/HCL	(3) 40ml vials	2596	ALS
—— 1351Y	" (Dupl.)	"	"	"	"
—— 1352Y	607/Bromacil	ice	(1) 1L Amber	0200401G	SRF
—— 1420Y	" (Dupl.)	"	"	"	"

Runs	1)	2)	3)	4)
	12.57	12.64	12.64	12.65
	32.71	32.78	32.64	32.68
	32.72	32.76	32.57	32.64
	12.65	12.63	12.62	12.63

Continued from page

Craig Del Ferraro 11/3/21
Signed Date

Read and Understood By
[signature] 11-4-21
Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/3/21 Page 1 of 1

Sample Location: BLM-36-350			Analytical Requirement							
Pertinent Notes (if any)										
Sample Number	# of Containers	Sample Matrix*	8260	607						Charge Number
2111031255Y (EB)	3	A	✓							XGMD
—— 1350Y	3	A	✓							"
—— 1351Y (Dupl.)	3	A	✓							"
—— 1352Y	1	A		✓						"
—— 1420Y (Dupl.)	1	A		✓						"

Sample Location:			Analytical Requirement							
Pertinent Notes (if any)										
Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig [signature]	11/3/21 1525hrs.		[signature]	11-4-21 / 0910

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

WSTF 381C (05/2016)

D
ROJECT BLM-36-610 WJI ENV-0020

Notebook No. D64 #128(Y)
Continued from page

ob Tufts & Craig Del Ferraro present. Weather is cloudy & cool. This zone will be ampled using 5 steam cleaned & triple rinsed, stainless steel sample tubes. Gen. use. Probe # 2243. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G5

ample	Analysis	Preservative	Container	Lot	Lab
211102 0900Y	VOA by 8260	ice/HCL	(3) 40ml vials	2596	ALS

Initial Parameters	Final	Meter ID
Time - 211102 0932Y	Time - 211102 1036Y	pH/cond - 60
H - 8.40	PH - 8.26	Turb - 7
emp - 20.0°c	Temp - 19.8°c	" std - 44.27
ond - 1026 us/cm	Cond - 1036 us/cm	" rdg - 45.7
urb - 2.48 NTU's	Turb - 1.77 NTU's	" lot - 200445
H pre - 7.13/10.09 (16.5°c)	pH pre - 7.11/10.07 (17.8°c)	" Exp - 11/30/21
H post - 7.10/10.08	pH post - 7.12/10.07	
TW - N/A - probe sticks to casing	DTW - N/A	
tmos - 12.50 psia	Atmos - 12.48 psia	
	IDW - 1/2 gals.	

Buffers	Lot	Exp
7	2108G56	2/23
10	4103G81	9/22

Samples

ample	Analysis	Preservative	Container	Lot	Lab
211102 1000Y	VOA by 8260	ice/HCL	(3) 40ml vials	2596	ALS
—— 1001Y	607/Bromacil	ice	(1) 1L Amber	02004016	SRI
—— 1035Y	* " (M.S.) *	"	"	"	"

* Samples were very aerated.

Runs	1)	2)	3)
	33.71	33.60	33.53
	100.28	100.22	100.24
	100.24	100.18	100.17
	33.69	33.52	33.47

Continued from page

Craig Del Ferraro 11/2/21
Signed Date

Read and Understood By
[signature] 11-3-21
Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/2/21 — Page 1 of 1

Sample Location: BLM-36-610

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	607						Charge Number
2111020900Y (EB)	3	A	✓							XGMD
—— 1000Y	3	A	✓							"
—— 1001Y	1	A		✓						"
—— 1035Y (MS)	1	A		✓						"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	11/2/21 1115hrs		[signature]	11-3-21 /0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

Notebook No. D64#128(y)

Continued from page ______

JECT BLM-36-800 WJI ENV-0020

b Tufts & Craig Del Ferraro present. Weather is clear & cool. This zone will be
npled using 5 triple rinsed, stainless steel sample tubes. Gen. in use.
be #2213. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G5

mple	Analysis	Preservative	Container	Lot	Lab
11030900Y	VOA by 8260	ice/HCL	(3)40ml vials	2596	ALS

itial Parameters	Final	Meter ID
ime - 2111030950Y	Time - 2111031032Y	pH/cond - 60
ł - 8.35	PH - 8.17	Turb - 7
mp - 19.9°c	Temp - 20.3°c	" Std - 44.27
nd - 1060 us/cm	Cond - 1070 us/cm	" rdg - 44.8
urb - 1.25 NTU's	Turb - 1.13 NTU's	" lot - 200445
ł pre - 7.14/10.11 (14.7°c)	pH pre - 7.08/10.05 (18.9°c)	" Exp - 11/30/21
ł post - 7.12/10.13	pH post - 7.08/10.07	
TW - N/A - probe sticks to casing.	DTW - N/A	
tmos - 12.45 psia	Atmos - 12.47 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	2108G56	2/23
10	4103G81	9/22

Samples

ample	Analysis	Preservative	Container	Lot	Lab
11103 1030Y	VOA by 8260	ice/HCL	(3)40ml vials	2596	ALS
——— 1031Y	607/Bromacil	ice	(1)1L Amber	02004016	SRI

Runs 1) 116.38 2) 116.27
176.43 176.11
176.41 176.10
116.35 116.32

Continued from page

Read and Understood By

Craig Del Ferraro 11/3/21 Date

[signature] Signed 11-4-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/3/21 Page 1 of 1

Sample Location: BLM-36-800

Sample Number	# of Containers	Sample Matrix*	8260	607						Charge Number
2111030900Y (EB)	3	A	✓							XGMD
1030Y	3	A	✓							"
1031Y	1	A		✓						"

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number

Pertinent Notes (if any)

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
Craig Del Ferro	11/3/21 1115hrs	[signature]	11-4-21 / 0910

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

Bob Tufts & Craig Del Ferraro present. Weather is cloudy & cool. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe # 2213. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy 65

Sample	Analysis	Preservative	Container	Lot	Lab
2111021320Y	VOA by 8260	ice / HCL	(3) 40ml vials	2596	ALS

Initial Parameters	Final	Meter ID
Time - 2111021410Y	Time - 2111021442Y	pH/Cond - 60
PH - 8.04	PH - 7.89	Turb - 7
Temp - 22.9°c	Temp - 23.0°c	" std - 44.27
Cond - 988 us/cm	Cond - 985 us/cm	" rdg - 45.7
Turb - 8.86 NTU's	Turb - 3.13 NTU's	" lot - 200445
pH pre - 7.04 / 10.06 (24.1°c)	pH pre - 7.01 / 10.05 (25.3°c)	" Exp - 11/30/21
pH post - 7.03 / 10.07	pH post - 7.03 / 10.06	
DTW - N/A - probe sticks to casing.	DTW - N/A	
Atmos - 12.47 psia	Atmos - 12.49 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	2108G56	2/23
10	4103G81	9/22

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2111021440Y	VOA by 8260	ice / HCL	(3) 40ml vials	2596	ALS
——— 1441Y	607/Bromacil	ice	(1) 1L Amber	020040IG	SRI

Runs 1) 142.37 2) 142.34
138.54 138.54
138.50 138.51
142.30 142.23

Read and Understood By

Craig Del Ferraro 11/2/21 Signed Date
[signature] 11-3-21 Signed Date

PROJECT BLM-38-480 WJI ENV-0020

Bob Tufts & Craig Del Ferraro present. Weather is clear & warm. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe #2213. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G5

Sample	Analysis	Preservative	Container	Lot	Lab
211104 1400Y	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2596	ALS
—— 1401Y	Low Level NDMA	ice	(1) 1L Amber	0200401G	SRI

Initial Parameters	Final	Meter ID
Time - 2111041432Y	Time - 2111041515Y	pH/Cond - 60
PH - 7.91	PH - 7.85	Turb - 7
Temp - 19.7°c	Temp - 19.8°C	" std - 44.27
Cond - 892us/cm	Cond - 869us/cm	" rdg - 44.60
Turb - 0.44NTU's	Turb - 0.41NTU's	" lot - 200445
pH pre - 7.01/9.99 (26.5°c)	pH pre - 7.03/9.98 (27.1°c)	" Exp - 11/30/21
pH post - 7.02/9.97	pH post - 7.01/9.98	
DTW - 402.12ft.	DTW - 402.26ft.	
Atmos - 12.51 psia	Atmos - 12.48 psia	
	IDW - ½ gal.	

Buffers	Lot	Exp
7	2108G56	2/23
10	4103G81	9/22

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
211104 1455Y	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2596	ALS
—— 1456Y	Low Level NDMA	ice	(1) 1L Amber	0200401G	SRI

Runs	1)	2)	3)
	50.61	50.56	50.51
	40.05	39.94	39.86
	40.03	39.88	39.80
	50.58	50.55	50.53

Read and Understood By

Craig Del Ferraro 11/4/21 ______ 11-8-21
Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/4/21 Page 1 of 1

Sample Location: BLM-38-480

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
21110414004 (EB)	3	A	✓							XGMD
14014 (EB)	1	A		✓						"
14554	3	A	✓							"
14564	1	A		✓						"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Femo	11/4/21 1540hrs		[signature]	11-8-21 / 0915

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ________________

WSTF 381C (05/2016)

PROJECT BLM-38-620 WJI ENV-0020

Notebook No. D64#128(Y)

Continued from page

Bob Tufts & Craig Del Ferraro present. Weather is clear & cool. This zone will be sampled using 5 steam cleaned & triple rinsed, stainless steel sample tubes. Gen. in use. Probe #2213. Surface checks performed on probe prior to samplings.

30 Min Equipment Blanks - Carboy G5

Sample	Analysis	Preservative	Container	Lot	Lab
11104 1015Y	VOA by 8260 LL	ice / HCL	(3) 40ml vials	2596	ALS
—— 1016Y	Low Level NDMA	ice	(1) 1L Amber	0200401G	SRI

Initial Parameters	Final	Meter ID
Time - 211104 1055Y	Time - 211104 1312Y	pH/cond - 60
pH - 8.05	PH - 8.13	Turb - 7
Temp - 18.5°C	Temp - 18.9°C	" std - 44.27
Cond - 970 us/cm	Cond - 978 us/cm	" rdg - 44.60
Turb - ~~18.5~~ CD 0.43 NTU's	Turb - 0.39 NTU's	" lot - 200445
pH pre - 7.10 / 10.07 (15.0°c)	pH pre - 7.03 / 10.01 (25.3°c)	" Exp - 11/30/21
pH post - 7.12 / 10.08	pH post - 7.04 / 10.00	
DTW - 401.96 ft.	DTW - 402.12 ft.	
Atmos - 12.59 psia	Atmos - 12.62 psia	
	IOW - 1/2 gal.	

Buffers	Lot	Exp
7	2108665	2/23
10	4103681	9/22

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
11104 1310Y	VOA by 8260 LL	ice / HCL	(3) 40ml vials	2596	ALS
—— 1311Y	Low Level NDMA	ice	(1) 1L Amber	0200401G	SRI

Runs	1)	2)
	111.80	111.75
	87.34	87.26
	87.30	87.21
	111.77	111.76

Continued from page

Craig Del Ferraro Signed 11/4/21 Date

Read and Understood By [signature] Signed 11-8-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/4/21 Page 1 of 1

Sample Location: BLM-38-620

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
2111041015Y (EB)	3	A	✓							XGMD
——1016Y (EB)	1	A		✓						"
——1310Y	3	A	✓							"
——1311Y	1	A		✓						"

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	11/4/21 1540hrs.		[signature]	11-8-21 /0915

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT BW.5:295

Marcus Avalos & Dan Halvorsen present. Weather is clear & cool. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge hose. Water quality parameters will be monitored using a QED No. 20 flow cell & water analyzer. Carboy G.2

Calibrations
DO. Cal in saturated air @ 643 mm/Hg.
PH- Cal using Oakton Buffers (4,7,10)
Conductivity: Cal using 1413 us/cm STD solution.
Turbidity Meter. #20 STD. 4.62 NTU RDG. 5.94 NTU lot. 220445 Exp. 11/31

Parameters (time)	Temp (°C)	Cond (mS/cm)	DO	PH	ORP	Turb (NTU)	DTW (ft)
1) 211104 1400B	20.88	0.790	6.63	7.55	87	0.47	
2) — 1402B	20.92	0.785	6.75	7.54	88	0.50	
3) — 1404B	20.85	0.787	6.54	7.56	89	0.43	

Samples

Sample #	Analysis	Preserve	Container	lot	lab
211104 1410B	VOA by 8260	HCl/Ice	(3) 40 ml vials	2621	Als
— 1411B	= (Dup)	=	=	=	=
— 1412B	= (FB)	=	=	=	=
— 1413B	607/Bromacil	Ice	(1) 1L Amber	103501	SEI
— 1414B	= (Dup)	=	=	=	=
— 1415B	Total Metals	HNO3/Ice	(2) 125 ml poly		Als
— 1416B	= (FB)	=	=	=	=

IDW. 2 gal

Continued from page

Read and Understood By

[signature] Signed 11/4/21 Date [signature] Signed 11-8-21 Date

PROJECT PL-7-480 WJI ENV-0020

Continued from page

Bob Tufts & Craig Del Ferraro present. Weather is cloudy & warm. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe #2213. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G5

Sample	Analysis	Preservative	Container	Lot	Lab
2111081250Y	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2593	ALS
——— 1251Y	Low Level NDMA	ice	(1) 1L Amber	0200401G	SRI

Initial Parameters	Final	Meter ID
Time - 2111081350Y	Time - 2111091015Y	pH/cond - 60
PH - 8.26	PH - 8.08	Turb - 7
Temp - 19.6°C	Temp - 18.9°C	" Std - 44.27
Cond - 955 us/cm	Cond - 971 us/cm	" rdg - 44.8
Turb - 1.05 NTU's	Turb - 0.95 NTU's	" lot - 200445
pH pre - 7.06/10.02 (21.1°C)	pH pre - 7.09/10.13 (16.4°C)	" Exp - 11/30/21
pH post - 7.04/10.02	pH post - 7.11/10.12	
DTW - 481.16 ft.	DTW - 481.23 ft.	
Atmos - 12.56 psia	Atmos - 12.54 psia	
	IDW - Ø	

Buffers	Lot	Exp
7	2108G56	2/23
10	4103G81	9/22

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2111081445Y	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2593	ALS
——— 1446Y	Low Level NDMA	ice	(1) 1L Amber	0200401G	SRI

Runs	1)	2)	3)	4)	5)	6)
	16.45	16.50	16.51	16.54	16.53	16.51
	14.11	14.15	14.14	14.21	14.19	14.18
	14.12	14.14	14.17	14.18	14.17	14.16
	16.52	16.47	16.52	16.48	16.50	16.48

Continued from page

Read and Understood By

Craig Del Ferraro 11/9/21 — Signed / Date

[signature] 11-10-21 — Signed / Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/8/21 Page 1 of 2

Sample Location: PL-7-480

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
2111081250Y (EB)	3	A	✓							XGMD
——1251Y (EB)	1	A		✓						"
——1445Y	3	A	✓							"
——1446Y	1	A		✓						"

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelFerro	11/8/21 1545 hrs.		[signature]	11-9-21 / 0909

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ________

WSTF 381C (05/2016)

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/9/21 Page 2 of 2

Sample Location: PL-7-480

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	LL NDMA							Charge Number
2111081446Y	1	A	✓							XGMD

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	11/9/21 1100hrs.		[signature]	11-10-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

WSTF 381C (05/2016)

Notebook No. D64 #128(Y)
Continued from page ______

Bob Tufts & Craig Del Ferraro present. Weather is cloudy & cool. This zone will be sampled using 5 steam cleaned & triple rinsed, stainless steel sample tubes. Gen. in use. Probe #2213. Surface checks performed on probe prior to sampling.

Trip Blanks - Water Purification System

Sample	Analysis	Preservative	Container	Lot	Lab
211108 0740Y	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2596	ALS
——— 0741Y	Low Level NDMA	ice	(1) 1L Amber	0200401G	SRI

30 Min. Equipment Blanks - Carboy G5

Sample	Analysis	Preservative	Container	Lot	Lab
211108 0825Y	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2596	ALS
——— 0826Y	Low Level NDMA	ice	(1) 1L Amber	0200401G	SRI

Initial Parameters	Final	Meter ID
Time - 211108 0915Y	Time - 211108	pH/Cond - 60
pH - 8.61	pH - 8.50	Turb - 7
Temp - 18.5°c	Temp - 18.8°c	" Std - 44.27
Cond - 918 us/cm	Cond - 931 us/cm	" rdg - 44.8
Turb - 0.62 NTU's	Turb - 0.54 NTU's	" lot - 200445
pH pre - 7.13/10.09 (18.4°c)	pH pre - 7.12/10.04 (20.0°c)	" Exp - 11/30/21
pH post - 7.12/10.06	pH post - 7.10/10.05 (~~20.0°c~~) CD	
DTW - 481.00 ft.	DTW - ~~7.08/10.06~~ CD 481.16 ft.	
Atmos - 12.53 psia	Atmos - 12.53 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	2108G56	2/23
10	4103G81	9/22

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
211108 0940Y	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2596	ALS
——— 0941Y	Low Level NDMA	ice	(1) 1L Amber	0200401G	SRI

Runs	1)	2)	3)
	51.44	51.33	51.31
	48.47	48.41	48.44
	48.44	48.42	48.45
	51.38	51.27	51.26

Continued from page

Craig Del Ferraro 11/8/21
Signed Date

Read and Understood By
Lori [illegible] 11-9-21
Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/8/21 Page 1 of 1

Sample Location: PL-7-560

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
2111080740Y (TB)	3	A	✓							XGMD
——0741Y (TB)	1	A		✓						"
——0825Y (EB)	3	A	✓							"
——0826Y (EB)	1	A		✓						"
——0940Y	3	A	✓							"
——0941Y	1	A		✓						"

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number

Pertinent Notes (if any)

Analytical Requirement

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
Craig DelFerro	11/8/21 1120hrs.	[signature]	11-9-21 /0905

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ________

WSTF 381C (05/2016)

PROJECT PC-12.570 WBI 0053

Notebook No. DJZ#121 (c)

Continued from page

AL MONTES & TONY TORREZ PRESENT. THE WEATHER IS CLEAR & COOL. THE WELL WILL BE SAMPLED USING A DEDICATED TEFLON BLADDER PUMP. SAMPLES COLLECTED USING A TEFLON DISCHARGE TUBE. PARAM'S COLLECTED USING A QED MP.20 FLOWCELL. CARBOY 6.3 PACKER PRESSURE 35 PSI

CALIBRATIONS
DO SENSOR CAL'D IN 643 mm/Hg
COND SENSOR CAL'D IN 1413 µs/cm
pH SENSOR 3 POINT CAL W/ 4,7,10 BUFFERS
TURB METER # 8 STD = 53.0 RDG = 52.7 LOT# 2004451 EXP = 11-30-21

TRIP BLANKS

SAMPLE #		ANALYSIS	PRESERV	LOT #	CONT	LAB
211103	0700C	8260	ICE/HCl		(3) 40ml VIALS	A/S
—	0701C	LLNDMA	ICE		(1) 1LT AMBER	SRI

	PARAM'S		TEMP	COND	DO	PH	ORP	TURB	DTW
1	211103	1000C	21.48	1.010	5.99	6.73	99	0.27	N/A
2	—	1001C	21.53	1.017	6.02	6.76	98	0.25	"
3	—	1002C	21.50	1.018	6.00	6.75	99	0.34	"

SAMPLES

SAMPLE #		ANALYSIS	PRESERV	LOT #	CONT	LAB
211103	1003C	8260	ICE/HCl	2594	(3) 40ml VIALS	A/S
—	1004C	" (FB)	"	"	"	"
—	1005C	" (DUP)	"	"	"	"
—	1006C	LLNDMA	ICE	0303 5616	(1) 1LT AMBER	SRI
—	1007C	" (FB)	"	"	"	

Continued from page

Read and Understood By

Signed: J. [signature] Date: 11.3.21

Signed: [signature] Date: 11-4-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-3-21 Page 1 of 1

Sample Location: PL-12-570

Sample Number	# of Containers	Sample Matrix*	8260	LLN0MA						Charge Number
Pertinent Notes (if any)										XGMD
211103 0700C (TB)	3	A	X							
— 0701C (TB)	1	A		X						
— 1003C	3		X							
— 1004C (FB)	3		X							
— 1005C (Dup)	3		X							
— 1006C	1			X						
— 1007C (FB)	1			X						

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number
Pertinent Notes (if any)										

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
T. D.	11-3-21 / 1100		[signature]	11-4-21 / 0910

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

Al Montes & Tony Torres present. The weather is clear & warm. This zone will be purged & sampled using a dedicated Teflon bladder pump. Samples collected using a Teflon discharge tube. Param's collected using a QED MP-20 Flowcell. Packer pressure 35psi, Carboy 6-3.

CALIBRATIONS
DO sensor cal'd in 643 mm/Hg
Cond sensor cal'd in 1413 µs/cm
pH sensor cal'd in 4,7,10 buffers.
Turb meter #8 STD: 53.0 Rdg = 52.7 Lot# 2004 Exp = 11-30-21

	Calibrations	Temp	Cond	DO	pH	ORP	Turb	DTW
1	211103 1425c	22.36	1.012	5.93	6.86	91	0.58	N/A
2	— 1426c	22.25	1.025	5.95	6.86	91	0.47	"
3	— 1427c	22.20	1.019	5.95	6.86	91	0.49	"

SAMPLES

Sample#	Analysis	Preserv.	Lot#	Cont	Lab
211103 1430c	8260	ice / Hcl	2596	(3) 40ml vials	ALS
— 1431c	" (FB)	"	"	"	"
— 1432c	LLNDMA	ice	030/5016	(1) 1L amber	SRI
— 1433c	" (FB)	"	"	"	"
— 1434c	" (Dup)	"	"	"	"

* Airline is leaking and needs to be fixed. R. Walker & JR notified.

Continued from page

Read and Understood By

T. [signature] Signed 11-3-21 Date [signature] Signed 11-4-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-3-21 Page 1 of 1

Sample Location: PL-12-800			Analytical Requirement							
Pertinent Notes (if any)	# of Containers	Sample Matrix*	8260	11537						XGMD
Sample Number										Charge Number
211103 1430C	3	A	X							
— 1431C (FB)	3	|	X							
— 1432C	1	|		X						
— 1433C (FB)	1	|		X						
— 1434C (Dup)	1	—		X						

Sample Location:			Analytical Requirement							
Pertinent Notes (if any)	# of Containers	Sample Matrix*								
Sample Number										Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
T-[signature]	11-3-21 / 1530		[signature]	11-4-21 / 0920

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________________

WSTF 381C (05/2016)

Dan Halvorsen present. With Marcus Avalos. Weather is Clear and Warm. This Well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a new Teflon discharge hose. Water quality parameters will be monitored using a QED MP 20 Flowcell and Water analyzer. Carboy G2 in use.

Calibrations: Initial DTW = 473.22 ft.
DO Sensor: in Saturated air @ 643 mmHg. Final DTW = 473.61
pH Sensor: Using a 3 pt. (4,7,10) Buffer method. TPV = 2 gal
Conductivity: Using a 1413 uS/cm STD. Solution.
Turbidity meter #: STD: RDG = Lot # 200445 Exp = 11/21

Parameters (Time)	Temp	Cond	DO	pH	ORP	Turb	DTW (ft)
211115 1405 A	24.60	1266	10.81	7.04	85	2.94	473.61
— 1407 A	24.63	1262	10.76	7.01	83	2.89	473.61
— 1409 A	24.62	1265	10.80	7.02	83	2.92	473.61

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	LAB
211115 1415 A	VOC by 8260	Ice / HCl	(3) 40 ml Vial	2596	ALS
— 1416 A	" " (FB)	"	"	"	"
— 1417 A	NDMA / DMU / Bromacil by 607	Ice	(1) 1L Amber	20946	SRI
— 1418 A	" " (Dup)	"	"	"	"

Read and Understood By

Signed [signature] Date 11-15-2021 Signed [signature] Date 11-16-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11-15-2021 Page 1 of 1

Sample Location: ST-1-473

Sample Number	# of Containers	Sample Matrix*	VOS	607						Charge Number XGMD
211115 1415 A	3	A	X							
1416 A (FB)	3		X							
1417 A	1			X						
1418 A	1			X						

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	11-15-2021 1530		[signature]	11-16-21 / 0910

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

Bob Tufts & Craig Del Ferraro present. Weather is clear & warm. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe #2213. Surface checks performed on probe prior to sampling

30 Min. Equipment Blanks - Carboy G5

Sample	Analysis	Preservative	Container	Lot	Lab
211101 1300Y	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2596	ALS
—— 1301Y	Low Level NDMA	ice	(1) 1L Amber	0200401G	SRI

Initial Parameters	Final	Meter ID
Time - 2111011335Y	Time - 2111011430Y	pH/cond - 60
PH - 7.95	PH - 7.99	Turb - 7
Temp - 19.8°C	Temp - 20.0°C	" std - 44.27
Cond - 902 us/cm	Cond - 894 us/cm	" rdg - 45.3
Turb - 3.84 NTU's	Turb - 2.26 NTU's	" lot - 200445
pH pre - 7.04/10.02 (24.9°C)	pH pre - 7.03/9.99 (26.3°C)	" Exp - 11/30/21
pH post - 7.03/10.03	pH post - 7.04/9.98	
DTW - 466.33 ft.	DTW - 466.44 ft.	
Atmos - 12.59 psia	Atmos - 12.61 psia	
	IDW - ½ gal.	

Buffers	Lot	Exp
7	2108A56	2/23
10	4103G81	9/22

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
211101 1405Y	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2596	ALS
—— 1406Y	Low Level NDMA	ice	(1) 1L Amber	0200401G	SRI

Runs

1)	2)	3)
21.74	21.74	21.67
40.20	40.23	40.21
40.24	40.24	40.22
21.72	21.75	21.69

Continued from page

Craig Del Ferraro 11/1/21
Signed Date

Read and Understood By
[signature] 11-2-21
Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/1/21 Page 1 of 1

Sample Location: ST-5-485

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
21110113004 (EB)	3	A	✓							XGMD
——— 1301Y (EB)	1	A		✓						"
——— 1405Y	3	A	✓							"
——— 1406Y	1	A		✓						"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	11/1/21 1520 hrs.		[signature]	11-2-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT ST-5-655 WJI ENV-0020

Notebook No. D64#128(Y)
Continued from page ____

Bob Tufts & Craig Del Ferraro present. Weather is clear & cool. This zone will be sampled using 5' steam cleaned & triple rinsed, stainless steel sample tubes. Gen. in use. Probe# 2213. Surface checks performed on probe prior to sampling.

Trip Blanks - Water Purification System

Sample	Analysis	Preservative	Container	Lot	Lab
211101 0745Y	VOA by 8260 LL	ice / HCL	(3) 40ml vials	2596	ALS
—— 0746Y	Low Level NDMA	ice	(1) 1L Amber	02004010	SRI

30 Min. Equipment Blanks - Carboy G5

Samples	Analysis	Preservative	Container	Lot	Lab
211101 0905Y	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2596	ALS
—— 0906Y	Low Level NDMA	ice	(1) 1L Amber	02004010	SRI

Initial Parameters
Time - 2111010945Y
PH - 8.29
Temp - 18.6°C
Cond - 772 us/cm
Turb - 3.06 NTU's
pH pre - 7.14/10.10 (16.3°C)
pH post - 7.16/10.08
DTW - 466.20 ft.
Atmos - 12.56 psia

Final
Time - 2111011017Y
PH - 8.34
Temp - 18.9°C
Cond - 761 us/cm
Turb - 1.91 NTU's
pH pre - 7.10/10.07 (18.5°C)
pH post - 7.11/10.07
DTW - 466.33 ft.
Atmos - 12.59 psia
IDW - 1/2 gal.

Meter ID
PH/Cond - 60
Turb - 7
" Std - 44.27
" rdg - 45.3
" lot - 200445
" Exp - 11/30/21

Buffers	Lot	Exp
7	2108656	2/23
10	4103681	9/22

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
211101 1015Y	VOA by 8260 LL	ice / HCL	(3) 40ml vials	2596	ALS
—— 1016Y	Low Level NDMA	ice	(1) 1L Amber	02004010	SRI

Runs 1) 96.10 2) 95.98
113.83 113.76
113.80 113.76
96.02 95.94

Continued from page ____

Craig Del Ferraro 11/1/21
Signed Date

Read and Understood By
[signature] 11-2-21
Signed

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 11/1/21 Page 1 of 1

Sample Location: ST-5-655			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
211101 0745Y (TB)	3	A	✓							XGMD
——— 0746Y (TB)	1	A		✓						"
——— 0905Y (EB)	3	A	✓							"
——— 0906Y (EB)	1	A		✓						"
——— 1015Y	3	A	✓							"
——— 1016Y	1	A		✓						"

Sample Location:			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	11/1/21 1120 hrs.		[signature]	11-2-21 /0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT 200-G-175 WJI ENV-0020

Bob Tufts & Craig Del Ferraro present. Weather is clear & cool. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Probe #4955. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G3

Sample	Analysis	Preservative	Container	Lot	Lab
2112060925Y	VOA by 8260	ice/HCL	(3) 40ml vials	2621	ALS

Initial Parameters	Final	Meter ID
Time - 2112061000Y	Time - 2112061330Y	pH/Cond - 11
PH - 8.58	PH - 8.45	Turb - 2
Temp - 19.8°C	Temp - 20.1°C	" std - 28.2
Cond - 1075 us/cm	Cond - 1088 us/cm	" rdg - 30.6
Turb - 1.53 NTU's	Turb - 1.34 NTU's	" lot - 200445
pH pre - 7.12/10.09 (16.5°C)	pH pre - 7.06/10.04 (20.1°C)	" Exp - 12/31/21
pH post - 7.13/10.09	pH post - 7.08/10.03	
DTW - 173.13 ft.	DTW - 173.19 ft.	
Atmos - 12.55 psia	Atmos - 12.52 psia	
	IDW - ½ gal.	

Buffers	Lot	Exp
7	2108G56	2/23
10	4103G81	9/22

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2112061030Y	VOA by 8260	ice/HCL	(3) 40ml vials	2621	ALS
——— 1031Y	" (Dupl.)	"	"	"	"
——— 1032Y	607/Bromacil	ice	(1) 1L Amber	0200401G	SRI
——— 1110Y	Total Metals	ice/HNO₃	(2) 125ml poly's	21-09-10	ALS

Runs	1)	2)	3)	4)
	12.57	12.63	12.66	12.65
	23.27	23.28	23.26	23.24
	23.25	23.28	23.27	23.26
	12.62	12.60	12.63	12.61

Continued from page

Read and Understood By

Craig Del Ferraro 12/6/21
Signed Date

[signature] 12-7-21
Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/6/21

Sample Location: 200-G-175

Sample Number	# of Containers	Sample Matrix*	8260	607	Total Metals				Charge Number
21120609254 (EB)	3	A	✓						XGMD
——— 1030Y	3	A	✓						"
——— 1031Y (Dupl.)	3	A	✓						"
——— 1032Y	1	A		✓					"
——— 1110Y	2	A			✓				"

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*							Charge Number

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	12/6/21 1410hrs.		[signature]	12-7-21 /0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT 200-G-220 WJI ENV-0020

Notebook No. D64 #128(Y)
Continued from page

Bob Tufts & Craig Del Ferraro present. Weather is clear & cool. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Probe #4955. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G3

Sample	Analysis	Preservative	Container	Lot	Lab
2112021025Y	VOA by 8260	ice/HCL	(3)40ml vials	2621	ALS

Initial Parameters	Final	Meter ID
Time - 2112021100Y	Time - 2112021351Y	pH/cond - 11
PH - 7.51	PH - 7.63	Turb - 2
Temp - 22.8°C	Temp - 23.0°C	" Std - 28.23
Cond - 1531 us/cm	Cond - 1514 us/cm	" rdg - 28.60
Turb - 2.05 NTU's	Turb - 1.74 NTU's	" lot - 200445
pH pre - 7.04/10.09 (19.0°C)	pH pre - 7.00/10.05 (24.2°C)	" Exp - 12/31/21
pH post - 7.03/10.11	pH post - 7.02/10.05	
DTW - 173.01 ft.	DTW - 173.13 ft.	
Atmos - 12.54 psia	Atmos - 12.53 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	2108G56	2/23
10	4103G81	9/22

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2112021320Y	VOA by 8260	ice/HCL	(3)40ml vials	2621	ALS
——1321Y	607/Bromacil	ice	(1)1L Amber	02004016	SRI
——1350Y	Total Metals	ice/HNO_3	(2)125ml poly's	21-09-10	ALS

Runs	1)	2)	3)
	17.62	17.60	17.62
	42.85	42.80	42.74
	42.81	42.79	42.76
	17.65	17.57	17.55

Continued from page

Read and Understood By

Craig Del Ferraro 12/2/21 — Signed, Date

[signature] 12-6-21 — Signed, Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12\2\21 Page 1 of 1

Sample Location: 200-G-220

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	607	Total Metals					Charge Number
2112021025Y (EB)	3	A	✓							XGMD
——1320Y	3	A	✓							"
——1321Y	1	A		✓						"
——1350Y	2	A			✓					"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Fierro	12/2/21 1420hrs.		[signature]	12-6-21 /0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT 200-G-340 WS# ENV-0020

Craig Del Ferraro & Bob Tubbs present. Weather is partly cloudy & cool. This zone will be sampled using 5 triple rinsed stainless steel sample tubes. Probe # 455. Seatrace checks performed on probe prior to sampling.

30min Equipment blanks - Cooling - 6.3

Sample	Analysis	Preservation	Container	Lot	Lab
2112020730y	VOA 8260	ICE	3 40mil vials	2621	ALS
—0731y	Total Metals	ICE · HNO_3	2 125 ml poly	21-04-10	ALS

Initial Parameters	Final	Meter ID
Time - 2112020809y	Time - 2112020925y	PH/COND - 11
PH - 8.10	PH - 8.14	TURB - 2
TEMP - 21.2°C	TEMP - 20.9°C	" STD - 28.23
Cond - 2.38 ms/cm	Cond - 2.40 ms/cm	" rdg - 28.60
Turb - 3.88 NTU	Turb - 2.95 NTU's	" LOT - 200448
PH Pre - 7.07/10.09 (18.1°C)	PH Pre - 7.09/10.10 (19.4°C)	" EXP 12-31-21
PH Post - 7.11/10.05	PH Post - 7.07/10.11	
DTW - 172.88'	DTW - 173.01 ft.	
ATMOS - 12.56 psia	ATMOS - 12.56 psia	
	IDW - 1/2 gal.	

Bottles	Lot	EXP
7	2108656	2-23
10	4103681	9-22

Samples

Sample	Analysis	Preservative	Container	LOT	Lab
2112020847y	VOA 8260	ICE · HCL	3 40mil vials	2621	ALS
—0848y	607/Bromacil	ICE	1 1L amber	02004016	SRL
—0920y	Total Metals	ICE · HNO_3	2 125 poly	21-04-10	ALS
—0921y	Anions/Alk	ICE	2 125 poly	N/A	ALS
—0922y	TDS SM2540C	ICE	1 125 poly	↓	ALS
—0923y	Perchlorate 6850	ICE	1 125 poly	↓	ALS
—0924y	NO_2 NO_3 353.2	ICE · H_2SO_4	1 250 ml poly	↓	ALS

Runs		
1) 70.05	2) 70.05	3) 70.04
122.66	122.43	122.50
120.57	120.50	120.55
69.98	70.01	69.99

Continued from page

Read and Understood By

Craig Del Ferraro 12/2/21 — Signed, Date

Lori [signature] 12-2-21 — Signed, Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/2/21 Page 1 of 1

Sample Location: 200-G-340

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	607	Total Metals	Anions/Alk	TDS			Charge Number
2112020730Y (EB)	3	A	✓							XGMD
0731Y (EB)	2	A			✓					"
0847Y	3	A	✓							"
0848Y	1	A		✓						"
0920Y	2	A			✓	~~✓~~ CO				"
0921Y	2	A				✓	~~✓~~ CO			"
0922Y	1	A					✓			"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Perchlorate	NO_2/NO_3						Charge Number
2112020923Y	1	A	✓							XGMD
0924Y	1	A		✓						"

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
Craig Del Ferro	12/2/21 1120 hrs.	[signature]	12-6-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

PROJECT 200-G-420 WJI ENV-0020

Notebook No. D64#128(Y)

Continued from page

Bob Tufts & Craig Del Ferraro present. Weather is cloudy & warm. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Probe #4955. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G3

Sample	Analysis	Preservative	Container	Lot	Lab
2112011325Y	VOA by 8260	ice/HCL	(3) 40ml vials	2621	ALS

Initial Parameters	Final	Meter ID
Time - 2112011355Y	Time - 2112011446Y	pH/Cond - 11
PH - 7.96	PH - 8.05	Turb - 2
Temp - 22.6°C	Temp - 23.0°C	" std - 28.23
Cond - 2.40 ms/cm	Cond - 2.42 ms/cm	" rdg - 28.10
Turb - 4.71 NTU's	Turb - 3.88 NTU's	" lot - 200445
pH pre - 7.03/10.08 (24.4°C)	pH pre - 7.02/10.06 (25.2°C)	" Exp - 12/31/21
pH post - 7.05/10.07	pH post - 7.03/10.06	
DTW - 172.76 ft.	DTW - 172.88 ft.	
Atmos - 12.57 psia	Atmos - 12.59 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	2108G56	2/23
10	4103G81	9/22

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2112011420Y	VOA by 8260	ice/HCL	(3) 40ml vials	2621	ALS
—— 1421Y	607/Bromacil	ice	(1) 1L Amber	0200401G	SRI
—— 1445Y	Total Metals	ice/HNO_3	(2) 125ml poly's	21-09-10	ALS

Runs

1)	2)	3)
104.79	104.80	104.75
185.30	185.31	185.31
185.25	185.33	185.27
104.82	104.81	104.74

Continued from page

Craig Del Ferraro — Signed — 12/1/21 — Date

Read and Understood By

[signature] — Signed — 12-2-21 — Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12\1\21 Page 1 of 1

Sample Location: 200-G-420			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260	607	Total Metals					Charge Number
2112011325Y (EB)	3	A	✓							XGMD
——— 1420Y	3	A	✓							"
——— 1421Y	1	A		✓						"
——— 1445Y	2	A			✓					"

Sample Location:			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Fierro	12/1/21 1510hrs.		[signature]	12-2-21 / 0836

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

Bob Tufts & Craig Del Ferraro present. Weather is clear & cool. This zone will be sampled using 5 steam cleaned & triple rinsed, stainless steel sample tubes. Probe #4955. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G3

Sample	Analysis	Preservative	Container	Lot	Lab
2112010930Y	VOA by 8260	ice/HCL	(3) 40ml vials	2583	ALS

Initial Parameters	Final	Meter ID
Time - 2112011010Y	Time - 2112011101Y	pH/Cond - 11
PH - 8.55	PH - 8.37	Turb - 2
Temp - 20.7°c	Temp - 20.4°c	" std - 28.23
Cond - 2.46 ms/cm	Cond - 2.44 ms/cm	" rdg - 28.10
Turb - 4.43 NTU's	Turb - 3.49 NTU's	" lot - 200415
pH pre - 7.10/10.13 (18.1°c)	pH pre - 7.08/10.13 (18.8°c)	" Exp - 12/31/21
pH post - 7.12/10.09	pH post - 7.09/10.13	
DTW - 172.68 Ft.	DTW - 172.76 ft.	Buffers Lot Exp
Atmos - 12.54 psia	Atmos - 12.52 psia	7 2108G56 2/23
	IDW - 1/2 gal.	10 4103G81 9/22

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2112011030Y	VOA by 8260	ice/HCL	(3) 40ml vials	2583	ALS
—— 1031Y	607/Bromacil	ice	(1) 1L Amber	02004016	SRI
—— 1100Y	Total Metals	ice/HNO_3	(2) 125ml poly's	21-09-10	ALS

Runs 1)	2)	3)
~~139.46~~ CD	137.55	137.53
137.61	217.69	217.73
217.68	217.70	217.74
217.70	137.61	137.51
137.59		

Continued from page

Craig Del Ferraro 12/1/21
Signed Date

Read and Understood By
[signature] 12-2-21
Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/1/21 Page 1 of 1

Sample Location: 200-G-495

Sample Number	# of Containers	Sample Matrix*	8260	607	Total Metals				Charge Number
2112010930Y (EB)	3	A	✓						XGMD
—— 1030Y	3	A	✓						"
—— 1031Y	1	A		✓					"
—— 1100Y	2	A			✓				"

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	12/1/21 1120 hrs.		[signature]	12-2-21 / 0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

PROJECT 700 · B · 510 WJI ENV · 0053

Marcus Avalos & Robert Burrows present. Weather is breezy & cool. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge hose. Water quality parameters will be monitored using a QED MP·20 flow cell & water analyzer. Carboy Gr.

Calibrations
DO· Cal in saturated air @ 642 mm/Hg.
PH· Cal using Oakton Buffers (4,7,10)
Conductivity· Cal using 1413 µs/cm STD solution.
Turbidity Meter #7 STD · 44.7 NTU RDG · 45.6 NTU Lot · 200445 Exp · 12/31/21

Parameters (time)	Temp (°C)	Cond (mS/cm)	DO	PH	ORP	Turb (NTU)	DTW (ft)
1) 2112091410A	21.34	0.578	3.66	7.90	247	0.63	465.70'
2) —— 1412A	21.40	0.574	3.49	7.88	246	0.34	=
3) —— 1414A	21.44	0.575	3.11	7.83	245	0.44	=

Samples

Sample #	Analysis	Preserve	Container	lot	lab
2112091420A	VOA by 8260	HCl/Ice	(3) 40 ml vials	2621	ALS
—— 1421A	= (FB)	=	=	=	=
—— 1422A	607/Bromacil	Ice	(1) 1L Amber	02004016	SRI
—— 1423A	Total Metals	HNO3/Ice	(2) 125 ml poly	210121	ALS
—— 1424A	= (Dup)	=	=	=	=

Initial DTW - ~~464.80~~ MA 464.80'

IDW -

Read and Understood By

[signature] 12/9/21 [signature] 12-10-21
Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/9/21 Page 1 of 1

Sample Location: 700 · B · 510

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260	607/Bro	T. Metals				Charge Number
211209 1420A	3	A	X						XGMD
1421A (FB)	3		X						
1422A	1			X					
1423A	2				X				
1424A (Dup)	2				X				

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12/9/21 @ 1530		[signature]	12-10-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT BIM-7-509

Notebook No. D32 # 123 (A)

Continued from page

Marcus Avalos & Robert Burrows present. Weather is breezy & cool. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge hose. Water quality parameters will be monitored using a QED MP20 flow cell & water analyzer. Carboy G-1

Calibrations
DO - Cal in saturated air @ 642 mm/Hg
PH - Cal using Oakton Buffers (4,7,10)
Conductivity - Cal using 1413 uS/cm STD solution.
Turbidity Meter - # #8 STD - 54.1 NTU RDG - 55.2 NTU Lot - 200445 Exp - 12/31/21

Trip Blanks

Sample #	Analysis	Preserve	Container	lot	lab
2112060800 A	VOA by 8260LL	HCl/Ice	(3) 40ml vials	2621	ALS
—— 0801 A	Low Level NDMA	Ice	(1) 1L Amber	02004016	SRI

Parameters (time)	Temp (°C)	Cond (mS/cm)	DO	PH	ORP	Turb (NTU)	DTW (ft)
1) 2112060945 A	19.76	1.009	6.29	6.88	375	0.81	492.85'
2) —— 0947 A	19.72	1.005	6.83	6.94	376	0.65	=
3) —— 0949 A	19.78	0.998	6.43	6.90	376	0.55	=

Samples

Sample #	Analysis	Preserve	Container	lot	lab
2112060955 A	VOA by 8260LL	HCl/Ice	(3) 40ml vials	2621	ALS
—— 0956 A	= (FB)	=	=	=	=
—— 0957 A	Low Level NDMA	Ice	(1) 1L Amber	02004016	SRI
—— 0958 A	= (FB)	=	=	=	=

Initial DTW - 492.80'

Final DTW - 492.85'

IDW - 1.5 gal

Continued from page

Read and Understood By

Signed 12/6/21 12-7-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/6/21 Page 1 of 1

Sample Location: BIM-7-509

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
2112060800A (TB)	3	A	X							XGMD
— 0801A (TB)	1			X						
— 0955A	3		X							
— 0956A (FB)	3		X							
— 0957A	1			X						
— 0958A (FB)	1			X						

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12/6/21 @ 1100		[signature]	12-7-21 / 0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT BLM-27-270 WJI ENV-0053

Notebook No. D32 # 123(A) 31

Continued from page

Bob Tufts & Craig Del Ferraro present. Weather is clear, cool, & breezy. This well will be purged using a dedicated bladder pump. Samples will be collected using a teflon discharge hose. Parameters will be monitored using a standard PH/Cond. meter. No QED flow cell available — DO and ORP will not be monitored. Carboy G3 in use.

Meter ID	Buffers	Lot	Exp	
PH/Cond - 12	7	2108656	2/23	PH/precal - 7.16/10.19(12.1°)
Turb - 21	10	4103681	9/22	PH/postcal - 7.15/10.17
" std - 11.4 NTU's				
" rdg - 12.6 NTU's				
" lot - 200445				
" Exp - 12/31/21				

Parameters (time)	temp (°c)	cond (us/cm)	PH	Turb (NTU's)	DTW (ft)
1) 211215 0920A	19.5	912	8.43	0.82	234.15
2) —— 0923A	19.4	920	8.45	0.75	234.15
3) —— 0926A	19.4	923	8.51	0.73	234.15

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
211215 0930A	VOA by 8260	ice/HCL	(3) 40ml vials	2621	ALS
—— 0931A	" (Dupl)	"	"	"	"
—— 0932A	" (FB)	"	"	"	"
—— 0933A	607/Bromacil	ice	(1) 1L Amber	0200401a	SRI
—— 0934A	" (Dupl)	"	"	"	"
—— 0935A	Total Metals	ice/HNO_3	(2) 125ml poly's	21-09-10	ALS

~~Runs: 1~~ CD

Initial DTW - 233.91ft.   Total gallons purged - 1.5

Continued from page

Read and Understood By

Craig Del Ferraro 12/15/21   [signature] 12-16-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/15/21 Page 1 of 1

Sample Location: BLM-27-270

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	607	Total Metals				Charge Number
211215 0930A	3	A	✓						XGMD
0931A (Dupl.)	3	A	✓						"
0932A (FB)	3	A	✓						"
0933A	1	A		✓					"
0934A (Dupl.)	1	A		✓					"
0935A	2	A			✓				"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferne	12/15/21 1110hrs.		[signature]	12-16-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

Bob Tufts & Craig Del Ferraro present. Weather is clear & cold. This well will be purged using a dedicated bladder pump. Samples will be collected using a teflon discharge hose. Parameters will be collected using a standard PH/cond. meter. No QED flow cell available - ORP & DO will not be collected. Carboy G3 in use. Packer pressure holding @ 31psi.

PH/Cond meter - 12
Turb meter #21
std - 11.4 NTU's
rdg - 12.8 NTU's
lot - 200445
Exp - 12/31/21

pH/pre cal - 7.14/10.10 (16.9°c)

pH/post cal - 7.11/10.08

Trip Blanks - Water Purification System

Sample	Analysis	Preservative	Container	Lot	Lab
211213 0800A	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2621	ALS
—— 0801A	Low Level NDMA	ice	(1) 1L Amber	0200401G	SRI

Parameters (time)	temp (°c)	cond (us/cm)	PH	Turb (NTU's)	DTW (ft.)
1) 211213 1000A	18.7	~~8.~~ 654 CO	8.53	2.29	14.01 ~~N/A~~ CO
2) —— 1003A	18.9	661	8.50	1.88	14.01 ~~14.01~~
3) —— 1006A	18.9	667	8.46	1.74	14.01 ~~14.01~~ (transducer)

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
211213 1010A	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2621	ALS
—— 1011A	" (FB)	"	"	"	"
—— 1012A	Low Level NDMA	ice	(1) 1L Amber	0200401G	SRI
—— 1013A	" (FB)	"	"	"	"

Total gallons purged - 2

Initial DTW - 14.01 ft. (transducer reading)

* Final packer pressure - 31psi. *

Continued from page

Craig Del Ferraro 12/13/21

Read and Understood By

[signature] 12-14-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/13/21 — Page 1 of 1

Sample Location: BLM-42-569

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
2112130800A (TB)	3	A	✓							XGMD
0801A (TB)	1	A		✓						"
1010A	3	A	✓							"
1011A (FB)	3	A	✓							"
1012A	1	A		✓						"
1013A (FB)	1	A		✓						"

Pertinent Notes (if any)

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
Craig Del Ferro	12/13/21 1115 hrs.	[signature]	12-14-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

PROJECT BLM-42-709 WJI ENV-0053

Notebook No. D32 #123(A)

Continued from page

Bob Tufts & Craig Del Ferraro present. Weather is clear & cool. This well will be purged using a dedicated bladder pump. Samples will be collected using a teflon discharge hose. Parameters will be collected using a standard PH/Cond. meter. No QED flow cell available – no ORP and DO will be monitored. Carboy G3 in use. Initial packer pressure – 31 psi.

PH/Cond. meter – 12
Turb. meter #21
std – 11.4 NTU's
rdg – 12.8 NTU's
lot – 200445
Exp – 12/31/21

pH/pre cal – 7.05/10.08 (22.2°c)

pH/post cal – 7.07/10.04

Parameters (time)	Temp (°c)	cond (us/cm)	PH	Turb (NTU's)	DTW (ft)
1) 211213 1405A	19.0	626	8.12	0.77	14.01
2) ——— 1408A	19.4	630	8.09	0.79	14.01
3) ——— 1411A	19.5	635	8.07	0.67	14.01 (transducer)

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
211213 1415A	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2621	ALS
——— 1416A	" (FB)	"	"	"	"
——— 1417A	Low Level/NDMA	ice	(1) 1L Amber	0200401G	SPI
——— 1418A	* " (M.S.) *	"	"	"	"
——— 1419A	* " (MSD) *	"	"	"	"
——— 1420A	" (FB)	"	"	"	"

Total gallons purged – 2.5

Initial DTW – 14.01 ft.
(transducer reading)

Final packer pressure – 31 psi.

Continued from page

Read and Understood By

Craig Del Ferraro
Signed

12/13/21
Date

Lore W Munch
Signed

12-14-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/13/21 Page 1 of 1

Sample Location: BLM-42-709

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
211213 1415A	3	A	✓							XGMD
—— 1416A (FB)	3	A	✓							"
—— 1417A	1	A		✓						"
—— 1418A (MS)	1	A		✓						"
—— 1419A (MSD)	1	A		✓						"
—— 1420A (FB)	1	A		✓						"

Pertinent Notes (if any)

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	12/13/21 1500hrs.		[signature]	12-14-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT BW-7-211 ENV-0053

Continued from page

Dan Halvorsen & Robert Burrows present. Weather is partly cloudy; cold and windy. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a new Teflon discharge hose. Water quality parameters will be monitored using a QED MP-20 flowcell and water analyzer. Cartag 61 in use.

Calibrations:

DO Sensor: In saturated air @ 643 mm/Hg.

PH Sensor: Using a 3 pt. (4,7,10) Buffer method.

Conductivity = Using a 1413 uS/cm STD. Solution.

Turbidity meter # STD= RDG: LOT #: 200445 Exp = 12/21

Parameters (time)	Temp	Cond	DO	PH	ORP	Turb.	DTW (ft)
21121508 30 c	21.15	1250	8.32	7.05	292	0.62	
——— 0832 c	21.18	1251	8.29	7.07	291	0.86	
——— 0834 c	21.5	1250	8.22	7.04	291	0.79	

SAMPLES

Sample #	Analysis	Preserve	Container	LOT	LAB
2112150838 c	VOA by 8260	Ice/HCl	(3) 40 ml vial	2621	ALS
——— 0839 c	" " (FB)	"	"	"	"
——— 0840 c	NDMA/DMN Bromacil by 607	Ice	(1) 1L Amber	103501	SRI
——— 0841 c	Total metals	Ice/HNO3	(2) 125 ml Poly	21-09-10	ALS

Blind Controls

Sample #	Analysis	Preserve	Container	LOT	LAB
2112151030 c	VOA by 8260	Ice/HCl	(3) 40 ml vial	21 mm/34 A	ALS
——— 1031 c	NDMA/DMN Bromacil by 607	Ice	(1) 1L Amber	" B	SRI
——— 1032 c	Total metals	Ice/HNO3	(2) 125 ml Poly	" C	ALS

IDW: 2 gal.

Continued from page

Read and Understood By

[signature] 12-15-2021 Signed Date

[signature] 12-16-21 Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-15-2021 | Page 1 of 1

Sample Location: BW-7-211			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	voa	607	metals					Charge Number: XGMD
2112150838C	3	A	✓							
— 0839C FB	3		✓							
— 1030C BC	3		✓							
— 0840C	1			✓						
— 1031C BC	1			✓						
— 0841C	2				✓					
— 1032C BC	2				✓					

Sample Location:			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12-15-2021 1100		[signature]	12-16-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT JP · 3 · 509 WJI ENV · 0053

Notebook No. 032 # 123(A)

Continued from page ________

Marcus Avalos & Robert Burrows present. Weather is clear & cool. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge hose. Water quality parameters will be monitored using a QED MP 20 flow cell & water analyzer. Carboy G-

Calibrations
DO · Cal in saturated air @ 642 mm/Hg.
PH · Cal using Oakton Buffers (4, 7, 10)
Conductivity · Cal using 1413 uS/cm STD solution.
Turbidity Meter · # #7 STD - 44.7 NTU RDG - 45.6 NTU Lot · 200445 Exp - 12/31/21

Trip Blanks

Sample #	Analysis	Preserve	Container	lot	lab
2112090730A	VOA by 8260LL	HCl/Ice	(3) 40 ml vials	2621	Als
——— 0731A	Low Level NDMA	Ice	(1) 1L Amber	02004016	SEI

Parameters (time)	Temp (°C)	Cond (mS/cm)	DO	PH	ORP	Turb (NTU)	DTW (ft)
1) 2112090955A	20.85	1.007	6.61	7.74	344	0.66	N/A
2) ——— 0957A	20.88	1.013	6.64	7.82	343	0.45	=
3) ——— 0959A	20.82	1.006	6.65	7.80	346	0.79	=

Samples

Sample #	Analysis	Preserve	Container	lot	lab
2112091005A	VOA by 8260LL	HCl/Ice	(3) 40 ml vials	2621	Als
——— 1006A	= (FB)	=	=	=	=
——— 1007A	Low Level NDMA	Ice	(1) 1L Amber	02004016	SEI
——— 1008A	= (FB)	=	=	=	=

IDW - 2.8 gal

* Packer was @ 0 psi when we arrived. Pressurized to 25 psi for sample event. During purge packer dropped to 10 psi. We re inflated to 25 psi

Continued from page

Read and Understood By

[signature] Signed 12/9/21 Date [signature] Signed 12-10-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/9/21 Page 1 of 1

Sample Location: JP.3.509

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
2112090730A (TB)	3	A	X							XGMD
0731A (TB)	1	↓		X						↓
1005A	3	↓	X							↓
1006A (FB)	3	↓	X							↓
1007A	1	↓		X						↓
1008A (FB)	1	↓		X						↓

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Pertinent Notes (if any)

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	12/9/21 @ 1125	[signature]	12-10-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

PROJECT P1.2.504 WSI ENV.0053

Notebook No. D32 # 123(A)

Continued from page

Marcus Avalos & Robert Burrows present. Weather is windy & cloudy. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge hose. Water quality parameters will be monitored using a QED MP20 flow cell & water analyzer. Carboy G-2

Calibrations

DO- Cal in saturated air @ 642 mm/Hg.

PH- Cal using Oakton Buffers (4,7,10)

Conductivity- Cal using 1413 uS/cm STD solution.

Turbidity Meter- #7 STD- 44.7 NTU RDG- ~~44.7~~ 44.6 NTU Lot- 200445 Exp- 12/31/2

Parameters (time)	Temp (°C)	Cond (uS/cm)	DO	PH	ORP	Turb (NTU)	DTW
1) 21121600945A	19.3°C	1079	N/A	7.21	N/A	0.64	477.75
2) 0947A	19.6	1075	=	7.25	"	0.57	=
3) 0949A	19.2	1072	=	7.27	"	0.52	=

Samples

Sample #	Analysis	Preserve	Container	Lot	Lab
21121600950A	VOA by 8260	HCl/Ice	(3) 40ml vials	2621	ALS
0951A	= (FB)	=	=	=	=
0952A	607/Bromacil	Ice	(1) 1L Amber	02004016	SPI
0953A	= (Dup)	=	=	=	=

Initial DTW - 477.72'

IOW - 2 gal

* Flow cell stopped working during sample event. NO DO or ORP.

Continued from page

Signed 12/10/21 Date

Read and Understood By 12-13-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/10/11 Page 1 of 1

Sample Location: Pl·2·504			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260	607						Charge Number
2112100950A	3	A	X							XGMD
0951A (FB	3	↓	X							↓
0952A	1			X						
0953A (Dup)	1			X						

Sample Location:			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12/10/21 @ 1110		[signature]	12-13-21 / 0920

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

WSTF 381C (05/2016)

Bob Tufts & Craig Del Ferraro present. Weather is clear, cool, & windy. This well will be purged using a dedicated bladder pump. Samples will be collected using teflon discharge hose. Parameters will be monitored using a standard PH/Cond. meter. No QED flow cell available — DO and ORP will not be monitored. Carboy G3 in use.

Meter ID	Buffers	Lot	Exp	
PH/Cond - 12	7	2108656	2/23	PH/precal — 7.08/10.13 (183
Turb - 21	10	4103681	9/22	PH/postcal — 7.04/10.11
" std - 11.4 NTU's				
" rdg - 12.6 NTU's				
" lot - 200445				
" Exp - 12/31/21				

Parameters (time)	temp (°c)	cond (us/cm)	PH	Turb. (NTU's)	DTW (ft.)
) 211215 1400A	19.4	1114	7.90	0.77	449.65
) —— 1403A	19.4	1113	7.92	0.73	449.65
) —— 1406A	19.6	1109	7.93	0.61	449.65

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
211215 1410A	VOA by 8260	ice/HCL	(3) 40ml vials	2621	ALS
—— 1411A	" (FB)	"	"	"	"
—— 1412A	Low Level NDMA	ice	(1) 1L Amber	02004016	SRI
—— 1413A	" (FB)	"	"	"	"

Initial DTW - 449.47 ft. Total gallons purged - 1.5

Continued from page

Read and Understood By

Craig Del Ferraro 12/15/21 Ron W [illegible] 12-16-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/15/21 Page 1 of 1

Sample Location: PL-4-464

Sample Number	# of Containers	Sample Matrix*	8260	LL NDMA						Charge Number
211215 1410A	3	A	✓							XGMD
—— 1411A (FB)	3	A	✓							"
—— 1412A	1	A		✓						"
—— 1413A (FB)	1	A		✓						"
										"

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelFerro	12/15/21 1500hrs.		[signature]	12-16-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

Bob Tufts & Craig Del Ferraro present. Weather is cloudy & warm. This well will be sampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe #4955. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G3

Sample	Analysis	Preservative	Container	Lot	Lab
2112081335Y	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2621	ALS
——— 1336Y	Low Level NDMA	ice	(1) 1L Amber	0200401G	SRI

Initial Parameters	Final	Meter ID
Time - 2112081410Y	Time - 2112090836Y	pH/cond - 11
PH - 8.27	PH - 8.13	Turb - 2
Temp - 22.5°c	Temp - 20.9°c	" std - 28.2
Cond - 1069us/cm	Cond - 1081 us/cm	" rdg - 30.2
Turb - 2.10 NTU's	Turb - 1.77 NTU's	" lot - 200415
pH pre - 7.05/10.08 (23.3°c)	pH pre - 7.17/10.13 (12.2°c)	" Exp - 12/31/21
pH post - 7.06/10.07	pH post - 7.19/10.13	
DTW - 438.67ft.	DTW - 438.76ft.	
Atmos - 12.64psia	Atmos - 12.59 psia	
	IDW - 1/4 gal.	

Buffers	Lot	Exp
7	2108G56	2/23
10	4103981	9/22

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2112081440Y	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2621	ALS
——— 1441Y	Low Level NDMA	ice	(1) 1L Amber	0200401G	SRI
——— ~~CO~~ 2112090835Y	1,4 Dioxane by 8270D	"	(1) 250ml amber	032320-1BMC	ALS

Runs	1)	2)	3)	4)
	23.89	23.88	23.83	23.75
	23.15	23.17	23.13	23.16
	23.14	23.18	23.14	23.15
	23.89	23.90	23.81	23.78

Continued from page

Read and Understood By

Craig Del Ferraro 12/9/21 | Lori [signature] 12-9-21

Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/8/21

Sample Location: PL-8-455

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
2112081335Y (EB)	3	A	✓							XGMD
—— 1336Y (EB)	1	A		✓						"
—— 1440Y	3	A	✓							"
—— 1441Y	1	A		✓						"

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	12/8/21 1530 hrs.		[signature]	12-9-21 /0910

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/9/21

Sample Location: PL-8-455

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Dioxane							Charge Number
~~2~~112090835Y	1	A	✓							XGMD

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelFerro	12/9/21 1100hrs.		[signature]	12-9-21 /0940

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT PL-8-605 WJI ENV-0020

Notebook No. D64#128(Y)

Continued from page

Bob Tufts & Craig Del Ferraro present. Weather is clear & cool. This zone wi be sampled using 5 steam cleaned & triple rinsed, stainless steel sample tu hen. in use. Probe # 4955. Surface checks performed on probe prior to sampling.

30 Min Equipment Blanks - Carboy G3

Sample	Analysis	Preservative	Container	Lot	Lab
2112080905Y	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2621	ALS
——— 0906Y	Low Level NDMA	ice	(1) 1L Amber	02004016	SRI

Initial Parameters
- Time - 2112080945Y
- PH - 8.37
- Temp - 20.4°c
- Cond - 970 us/cm
- Turb - 2.25 NTU's
- pH pre - 7.16/10.12 (14.4°c)
- pH post - 7.17/10.10
- DTW - 438.50 ft.
- Atmos - 12.65 psia

Final
- Time - 2112081110Y
- PH - 8.31
- Temp - 20.7°c
- Cond - 983 us/cm
- Turb - 1.63 NTU's
- pH pre - 7.11/10.06 (18.0°c)
- pH post - 7.12/10.06
- DTW - 438.67 ft.
- Atmos - 12.63 psia
- IDW - 1/2 gal.

Meter ID
- pH/Cond - 11
- Turb - 2
- " std - 28.2
- " rdg - 30.2
- " lot - 200445
- " Exp - 12/31/21

Buffers	Lot	Exp
7	2108G56	2/2
10	4103G81	9/2

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2112081008Y	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2621	ALS
——— 1009Y	Low Level NDMA	ice	(1) 1L Amber	02004016	SRI
——— 1035Y	" (Dupl.)	"	"	"	"
——— 1036Y	1,4 Dioxane by 8270D	"	(1) 250ml amber	032320-18mc	ALS

Runs

1)	2)	3)	4)
89.42	89.38	89.34	89.36
88.13	88.16	88.17	88.15
88.14	88.17	88.15	88.16
89.42	89.38	89.31	89.32

Continued from page

Read and Understood By

Craig Del Ferraro — Signed — 12/8/21 — Date

[signature] — Signed — 12-9-21 — Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/8/21 Page 1 of 1

Sample Location: PL-8-605

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA	Dioxane					Charge Number
2112080905Y (EB)	3	A	✓							XGMD
—— 0906Y (EB)	1	A		✓						"
—— 1008Y	3	A	✓							"
—— 1009Y	1	A		✓						"
—— 1035Y (Dupl.)	1	A		✓						"
—— 1036Y	1	A			✓					"

Pertinent Notes (if any):

Sample Location:

Pertinent Notes (if any):

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	12/8/21 1130hrs.		[signature]	12-9-21 / 0910

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT PC-11-470

Marcus Avalos & Tony Torrez present. The weather is clear & warm. This well will be purged & sampled with a Flute sampling system. Purge pressure set @ 227 psi & sample pressure set @ 205 psi. 15 mins recovery time between purges. Min of 4 gallons or Param stabilization prior to sampling. The first 350mls will be discarded of sample purge. Bubbler set @ 3psi & stable @ 7psi

Param's pre

pH	7.92	7.87
Temp	20.4°c	20.4°c
Cond	1269	1264 µs/cm
Turb	0.83	0.81

	Initial	Final
	211201 1425B	211201 1436B
pH	7.93	7.85
Temp	19.7°c	19.7
Cond	1260 µs/cm	1258
Turb	0.77	0.78
pH pre	7.00/10.00(22.5)	7.00/10.00(21.8)
pH post	7.01/10.00	7.01/10.00

Meter ID's
pH/cond # 61
Turb # 8
" std = 54.1 NTU's
" rdg = 53.1
" Lot# = 200445
" Exp = 12/31/21

Trip Blanks

Sample#	Analysis	Preserv	Lot#	Cont	Lab
211201 0700B	8260ll	Ice/Hcl	2621	(3) 40ml vials	ALS
— 0701B	LLNDMA	Ice	103501	(1) 1L amber	SRT

Samples

Sample#	Analysis	Preserv	Lot#	Cont	Lab
211201 1430B	8260ll	Ice/Hcl	2621	(3) 40ml vials	ALS
— 1431B	" (FB)	"	"	"	"
— 1432B	LLNDMA	Ice	103501	(1) 1L amber	SRT
— 1433B	" (FB)	"	"	"	"
— 1434B	SVOA-Sim	"	N/A	(1) 250ml amber	ALS
— 1435B	" (Dup)	"	N/A	"	"

Read and Understood By

T-[signature] Signed 12-1-21 Date [signature] Signed 12-2-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-1-21 Page 1 of 1

Sample Location: PL-11-470

Sample Number	# of Containers	Sample Matrix*	8260LL	LLNDMA						Charge Number
Pertinent Notes (if any)										X6mD
2112010700B (TB)	3		X							
— 0701B (TB)	1			X						
— 1430B	3		X							
— 1431B (FB)	1		X							
— 1432B	1			X						
— 1433B (FB)	1			X						
—										

Sample Location:

Sample Number	# of Containers	Sample Matrix*	SIMS/SVOA							Charge Number
Pertinent Notes (if any)										
— 1434B	1	A	X							
— 1435B (Dup)	1	A	X							

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
T. [signature]	12-1-21 / 1530		[signature]	12-2-21 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT PI-11-530

Notebook No. D32#122(B)

Continued from page

MARCUS AVALOS & TONY TORREZ PRESENT. THE WEATHER IS CLEAR & WARM. THIS ZONE WILL BE PURGED & SAMPLED USING A FLUTE SAMPLING SYSTEM. PURGE PRESSURE SET @ 227 psi & ~~purge~~ SAMPLE PRESSURE SET @ 205 psi. 15 MIN RECOVERY TIME BETWEEN PURGES. A MIN OF 4 gallons OR PARAMS STABILIZATION PRIOR TO SAMPLING. THE FIRST 330mls OF SAMPLE PURGE WILL BE DISCARDED. BUBBLER SET @ 3psi & STABLE @ 7psi.

	PARAM'S	PRE
pH	7.59	7.56
TEMP	21.6°c	21.2°c
COND	1244	1251 µs/cm
TURB	4.30	2.18

	INITIAL	FINAL
	211201 1449B	211201 1459B
pH	7.57	7.51
TEMP	19.2°c	19.3
COND	1255	1250 µs/cm
TURB	1.24 NTU's	0.91 NTU's
pH PRE	7.01/10.00 (21.9)	7.00/10.00 (21.9)
pH POST	7.00/10.01	7.00/10.00

METER ID'S

pH/COND #	61
TURB #	8
" STD	54.1 NTU's
" RDG	53.1 NTU's
" LOT#	200445
" EXP.	12-31-21

SAMPLES

SAMPLE#	ANALYSIS	PRESERV	LOT#	CONT	LAB
211201 1450B	8260LL	ICE / HCl	2621	(3) 40ml VOAs	ALS
— 1451B	" (FB)	"	"	"	"
— 1452B	LLNDMA	ICE	103501	(1) 1L AMBER	SGI
— 1453B	" (FB)	"	"	"	"
— 1454B	SVOA-SIM	"	N/A	(1) 250ml AMBER	ALS

Continued from page

Read and Understood By

T. [signature] Signed 12-1-21 Date

[signature] Signed 12-2-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-1-21 Page 1 of 1

Sample Location: PL-11-530

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: B2coli	LLNDMA	SVOA Sim					Charge Number: XGMA
211201 1450B	3	A	X							
— 1451B (FB)	3		X							
— 1452B	1			X						
— 1453B (FB)	1			X						
— 1454B	1				X					

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
T-[signature]	12-1-21 / 1530		[signature]	12-2-21 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT P1.11.710

Continued from page

Marcus Avalos & Dan Halvorsen present. Weather is clear & cool. This zone will be purged & sampled using a flute sampling system. Purge pressure set @ 227 psi & sample pressure set @ 205 psi. 15 min recovery time between purges. A min of 4 gallons or parameter stabilization prior to sampling. The first 350 mls of sample purge will be discarded. Bubbler set @ 3psi & stable @ 7 psi. Cal by G-1

Parameters Prior to Sampling

PH - 7.94	7.87
Temp - 20.3°C	20.1
Cond - 1258 us/cm	1272 us/cm
Turb - 0.70 NTU	0.65

Meter ID

PH/Cond - #G1
Turb - # 8
" STD - 54.1 NTU
" RDG - 53.7 NTU
" LOT - 200445
" Exp - 12/31/21

Trip Blanks

Sample #	Analysis	Preserve	Container	lot	lab
211202 0730 B	VOA by 8260 LL	HCl / Ice	(3) 40 ml vials	2621	Als
— 0731 B	Low Level NDMA	Ice	(1) 1L Amber	103501	SRI

Initial Parameters		Final
Time	211202 1504 B	211202 1514 B
PH	7.92	7.97
Temp	20.2°C	20.3°C
Cond	1260 us/cm	1264 us/cm
Turb	0.62 NTU	0.59 NTU
PH pre	7.01 / 10.00 (21.5°)	7.02 / 10.01 (21.5°C)
PH post	7.03 / 10.04	7.01 / 10.03

Samples

Sample #	Analysis	Preserve	Container	lot	lab
211202 1505 B	VOA by 8260 LL	HCl / Ice	(3) 40 ml vials	2621	Als
— 1506 B	" (FB)	"	"	"	"
— 1507 B	Low Level NDMA	Ice	(1) 1L Amber	103501	SRI
— 1508 B	" (Dup)	"	"	"	"
— 1509 B	" (FB)	"	"	"	"
— 1510 B	1,4-Dioxane 8270D	"	(1) 250 ml Amber	N/A	Als

Continued from page

Read and Understood By

[signature] 12/2/21 — Signed, Date

[signature] 12-6-21 — Signed, Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/2/21 Page 1 of 1

Sample Location: Pl. 11. 716

Pertinent Notes (if any)

Sample Number		# of Containers	Sample Matrix*	8260 LL	LL NDMA	1,4-Dioxane 8270					Charge Number
21120207301B	(TB)	3	A	X							XGMD
—— 0731B	(TB)	1			X						
—— 1505B		3		X							
—— 1506B	(FB)	3		X							
—— 1507B		1			X						
—— 1508B	(Dup)	1			X						
—— 1509B	(FB)	1			X						

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	1,4-Dioxane 8270						Charge Number
2112021510B	1	A	X						XGMD

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12/2/21 @1530		[signature]	12-6-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

PROJECT Pl. 11. 820

Notebook No. D32 # 122 (B)

Continued from page

Marcus Avalos & Dan Halvorsen present. Weather is clear & cool. This zone will be purged & sampled using a fluke system. Purge pressure set @ 227 psi & sample pressure set @ 205 psi. 15 min Recovery time between purges. A min of 4 gallons or params stabilization prior to sampling. The first 350 ml of sample purge will be discarded. Bubbler set @ 3 psi & stable @ 7 psi. Carboy G.1

Params Prior to Sampling

PH	7.90	7.95
Temp	20.9°C	20.6°C
Cond	1130 us/cm	1118 us/cm
Turb	0.52 NTU	0.36 NTU

Meter ID

PH/Cond	61
Turb #	8
" STD	54.1 NTU
" RDG	53.7 NTU
" LOT	200445
" Exp	12/31/21

	Initial Parameters	Final
Time	211202144013	211202145013
PH	7.87	7.94
Temp	20.5°C	20.7°C
Cond	1124 us/cm	1133 us/cm
Turb	0.31 NTU	0.34 NTU
PH pre	7.01/10.05 (21.7°)	7.03 / 10.06 (21.5°C)
PH post	7.02/10.04	7.04 / 10.05

Samples

Sample #	Analysis	Preserve	Container	Lot	lab
211202 ~~1440~~13 1441B	VOA by 8260C	HCl / Ice	(3) 40 ml vials	2621	ALS
—— 1442B	" (FB)	"	"	"	"
—— 1443B	Low Level NDMA	Ice	(1) 1L Amber	103501	SRI
—— 1444B	" (FB)	"	"	"	"

Continued from page

Read and Understood By

Signed	Date	Signed	Date
[signature]	12/2/21	[signature]	12-6-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/2/21 Page 1 of 1

Sample Location: 91.11.820

Sample Number	# of Containers	Sample Matrix*	8260LL	LL NDMA						Charge Number
211202 1441B	3	A	X							XGMD
1442B (FB)	3		X							
1443B	1			X						
1444B (FB)	1			X						

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12/2/21 @ 1530		[signature]	12-6-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

PROJECT P1 · 11 · 980

Marcus Avalos & Dan Halvorsen present. Weather is clear & cool. This zone will be purged & sampled using a flute system. Purge pressure set @ 227 psi & Sample pressure set @ 205 psi. 15 min recovery time between purges. A min of 4 gallons or parameter stabilization prior to sampling. The first 350 ml of sample purge will be discarded. Bubbler set @ 3 psi & stable @ 7 psi. Carboy G-1

Params	Prior to Sampling	
PH -	8.02	8.07
Temp -	20.8 °C	20.5
Cond -	1095 us/cm	1100 us/cm
Turb -	0.51 NTU	0.52 us/cm

Meter ID	
PH/Cond -	61
Turb # -	8
STD -	54.1 NTU
Read -	53.7 NTU
LOT -	200445
Exp -	12/31/21

Initial Parameters		Final
Time	211202 1454 B	211202 1500 B
PH	8.06	8.08
Temp	20.7 °C	20.6 °C
Cond	1110 us/cm	1108 us/cm
Turb	0.49 NTU	0.45 NTU
PH pre	7.00 / 10.06 (21.1)	7.04 / 10.00 (21.6 °C)
PH post	7.03 / 10.04	6.99 / 10.04

Samples

Sample #	Analysis	Preserve	Container	Lot	Lab
211202 1455 B	VOA by 8260 LL	HCl/Ice	(3) 40 ml vials	2621	ALS
—— 1456 B	= (FB)	"	"	"	"
—— 1457 B	Low Level NDMA	Ice	(1) 1L Amber	103501	SGI
—— 1458 B	= (FB)	"	"	"	"

Read and Understood By

Signed: MA [signature] Date: 12/2/21

Signed: [signature] Date: 12-6-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/2/21 Page 1 of 1

Sample Location: P1.11.986

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
21120214553	3	A	X							XGMD
1456B (FB)	3		X							
1457B	1			X						
1458B (FB)	1			X						

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12/2/21 @ 1530		[signature]	12-6-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

Notebook No. D32 #123(A) 33

PROJECT ST-1-541 WJI ENV-0053

Continued from page

Bob Tufts & Craig Del Ferraro present. Weather is clear & cold. This well will be purged using a dedicated bladder pump. Samples will be collected using a teflon discharge hose. Parameters will be monitored using a standard PH/Cond. meter. No QED flow cell available — DO and ORP will not be monitored. Carboy G3 in use.

Meter ID		Buffers	Lot	Exp	
PH/Cond	-12	7	2108G56	2/23	PH/precal - 7.16/10.20 (11.7°c)
Turb	-21	10	4103G81	9/22	pH/post - 7.13/10.21
"	std - 11.4 NTU's				
"	rdg - 12.9 NTU's				
"	lot - 200445				
"	Exp - 12/31/21				

Parameters (time)	Temp (°c)	Cond (µs/cm)	PH	Turb (NTU's)	DTW (ft)
1) 211216 0940A	17.7	1249	8.06	0.72	471.63
2) —— 0943A	17.6	1251	8.04	0.59	471.63
3) —— 0946A	17.7	1248	8.00	0.54	471.63

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
211216 0950A	VOA by 8260	ice/HCL	(3) 40ml vials	2621	ALS
—— 0951A	" (FB)	"	"	"	"
—— 0952A	607/Bromacil	ice	(1) 1L Amber	02004019	SRI
—— 0953A	Total Metals	ice/HNO_3	(2) 125ml poly's	21-09-10	ALS
—— 0954A	Anions/Alk.	ice	"	N/A	"
—— 0955A	TDS by SM2540C	"	(1) 125ml poly	"	"
—— 0956A	Perchlorate by 6850	"	"	"	"
—— 0957A	NO_2/NO_3 by 353.2	ice/H_2SO_4	(1) 250ml poly	21-09-20	"

Initial DTW - 471.44 ft.   Total gallons purged = 1.5

Continued from page

Read and Understood By

Craig Del Ferraro 12/16/21   [signature] 12-16-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/16/21 Page 1 of 1

Sample Location: ST-1-541

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	607	Total Metals	Anions/Alk	TDS	Perchlorate		Charge Number
2112160950A	3	A	✓							XGMD
——— 0951A (FB)	3	A	✓							″
——— 0952A	1	A		✓						″
——— 0953A	2	A			✓					″
——— 0954A	2	A				✓				″
——— 0955A	1	A					✓			″
——— 0956A	1	A						✓		″

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	NO_2/NO_3							Charge Number
2112160957A	1	A	✓							XGMD

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Dell Fones	12/16/21 1010hrs.		[signature]	12-16-21 / 1010

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT ST-1-630 ENV-0053

Dan Halvorsen & Tony Torrez present. Weather is clear and cold. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a new Teflon discharge hose. Water quality parameters will be monitored using a QED MP-20 flowcell and water analyzer. Carboy G1 in use

Calibrations:

DO sensor: In saturated air @ 642 mm/Hg.

pH sensor: using a 3pt. (4,7,10) Buffer method.

Conductivity: using a 1413 us/cm STD. Solution.

Turbidity meter #8 STD = 54.1 RDG = 54.4 LOT # = 200415 Exp = 12/21

Parameters (Time)	Temp	Cond	DO	pH	ORP	Turb	DTW (ft.)
2112160950C	19.45	1057	8.93	6.89	349	1.88	
—— 0952C	19.47	1056	8.90	6.92	351	1.38	
—— 0954C	19.44	1059	8.91	6.91	350	1.41	

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	Lab
2112161000C	VOA by 8260	Ice/HCl	(3) 40 ml vial	2621	ALS
—— 1001C	" " (FB)	"	"	"	"
—— 1002C	NDMA/DMN Bromacil by 607	Ice	(1) 1L Amber	103501	SRI

Continued from page

Read and Understood By

Signed 12-16-2021 Date

Signed 12-16-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-16-2021 | Page 1 of 1

Sample Location: ST-1. 630

Sample Number	# of Containers	Sample Matrix*	U02	607						Charge Number
Pertinent Notes (if any)										XGND
211216 1000C	3	A	X							
— 1001C	3	/	X							
— 1002C FB	1	/		X						

Sample Location:

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number
Pertinent Notes (if any)										

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12-16-2021 1030		[signature]	12-16-21 /1045

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

Notebook No. D32 # 124(c)

Continued from page

OJECT ST-3-486 ENV-0053

n Halvorsen & Tony Torrez present. Weather is clear and cool. This well will be rged and sampled using a dedicated bladder pump. Samples will be collected sing a new Teflon discharge hose. Carboy G1 in use.

rameters

me	=2112090930c	2112090932c	2112090934c
	=7.83	7.31	7.24
mp	= 18.6°c	18.3	19.6
nD	=1214 us/cm	1188	1187
rB	= 5.10 ntu's	6.37	5.76
Pre	=6.89-9.77 (16.6°c)	6.91-9.80	6.90-9.83
Post	=6.91-9.32	6.92-9.84	6.93-9.88

SAMPLES

mple #	Analysis	Preserve	Container	LoT	LAB
2112090940c	Voa by 8260	Ice/HCl	(3) 40 ml Vial	2621	ALS
— 0941c	" " (FB)	"	"	"	"
— 0942c	NonHalogen Bromacil by 607	Ice	(1) 1L Amber	103501	SRI

IDW = 3.5 gal.

Meter ID

PH/COND = 61

TURB = 8

STD = 54.1

RDG = 54.4

LoT = 200415

Exp = 12/21

Continued from page

Read and Understood By

12-9-2021

12-10-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-9-2021 | Page 1 of 1

Sample Location: ST-3-486

Sample Number	# of Containers	Sample Matrix*	VOA	607						Charge Number
Pertinent Notes (if any)										XGMD
21120909 40C	3	A	✓							
— 0941C FB	3	|	✓							
— 0942C	1	|		✓						

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number
Pertinent Notes (if any)										

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12-9-2021 1045		[signature]	12-10-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ________________

WSTF 381C (05/2016)

PROJECT SJ-3-~~[illegible]~~ 586 DH ENV-0053

Notebook No. D32 # 124 c

Continued from page ______

Dan Halvorsen & Tony Torrez present. Weather is partly cloudy and cool, windy. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a new Teflon discharge hose. Carboy G1 in use.

Parameters

211210/130928c	211210/130930c	211210/130932c	Meter ID
pH = 6.95	6.92	6.96	pH/COND = 61
TEMP = 19.66 °C	19.64	19.65	TURB = 8
COND = 961 uS/cm	966	962	DO = 54.1
TURB = 1.58 NTU's	0.80	0.92	RDG = 54.8
~~pH Pre~~ DH			LOT = 200445
~~pH Post~~ DH			Exp = 12/21
DO = 661	660	660	
ORP = 338	339	338	

SAMPLES

Sample #	Analysis	Preserve	Container	LoT	LAB
211210/130940c	VOA by 8260	Ice/HCl	(3) 40 ml Vial	2621	ALS
0942c	" " (FB)	"	"	"	"
0943c	NOMA 10 MIN Bromacil by 607	Ice	(1) 1L Amber	103501	SRI
0941c	VOC by 8260 (Dup)	Ice/HCl	(3) 40 ml Vial	2621	ALS

NOTES: 90-110 refill
25 discharge

Initial DTW = 462.20 ft.

Continued from page

Read and Understood By

[signature] 12-13-2021 [signature] 12-14-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-13-2021 | Page 1 of 1

Sample Location: ST-3-586

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOC	LOD						Charge Number XGMD
2112130940 C	3	A	X							
0941 C	3		X							
0942 C FB	3		X							
0943 C	1			X						

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12-13-2021 1130		[signature]	12-14-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ________

PROJECT SJ-3-666 ENV-0053

Notebook No. D32 #124C

Continued from page

Dan Halvorsen & Tony Torrez present. Weather is Clear, Cool and windy. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a new Teflon discharge hose. Water quality parameters will be monitored using a QED MP-20 flowcell and water analyzer. Carboy 6L in use.

Calibrations:

DO Sensor: In Saturated air @ 643 mm/Hg.

pH Sensor: using a 3pH (4,7,10) Buffer method.

Conductivity: using a 1413 us/cm STD Solution.

Turbidity meter # STD: RDG: LOT # = 200445 Exp = 12/21

Parameters (Time)	Temp	Cond	DO	pH	ORP	Turb	DTW (ft)
2112151400C	21.25	967	7.41	6.90	352	6.39	
—— 1402C	21.28	965	7.38	6.88	350	6.26	
—— 1404C	21.27	968	7.40	6.87	352	6.19	

SAMPLES

Sample #	Analysis	Preserv.	Container	LOT	LAB
21121514 10C	VOA by 8260	Ice/HCl	(3) 40 ml Vial	2621	ALS
—— 1411C	" " (FB)	"	"	"	"
—— 1412C	NDMA/DMN Bromacil by 607	Ice	(1) 1L Amber	103501	SRL

Continued from page

Signed 12-15-2021 Date

Read and Understood By

Signed 12-16-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-15-2021 Page 1 of 1

Sample Location: ST-3-666

Sample Number / Pertinent Notes (if any)	# of Containers	Sample Matrix*	UOG	LOG						Charge Number
										XGMD
2112151410C	3	A	X							
1411C FB	3		X	~~X~~						
1412C	1			X						

Sample Location:

Sample Number / Pertinent Notes (if any)	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	12-15-2021 1530	[signature]	12-16-21 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

PROJECT ST 3-735 ENV-0053

Notebook No. D32 #124 C
Continued from page

Dan Halvorsen & Tony Torrez present. Weather is Clear and Warm. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a new Teflon discharge hose. Water quality Parameters will be monitored using a QED MP 20 Flowcell and water analyzer. Carboy G1 in use.

Calibrations:
DO Sensor: In Saturated air @ 643 mmHg.
PH Sensor: Using a 3 pt (4,7,10) Buffer method.
Conductivity: Using a 1413 us/cm STD. Solution.
Turbidity meter #: STD: RDG: LOT # 200415 Exp: 12/21

Parameters (Time)	Temp	Cond	DO	PH	ORP	Turb	DTW (ft)
211273[14] / 1245 c	20.91	978	6.00	7.01	362	3.15	
—— 1247 c	20.94	975	5.97	7.04	360	3.30	
—— 1249 c	20.92	976	5.99	7.05	360	3.32	

SAMPLES

Sample #	Analysis	Preserve	Container	LOT	LAB
211273[14] 1251 c	VOA by 8260	Ice/HCl	(3) 40 ml Vial	2621	ALS
—— 1252 c	" " (FB)	"	"	"	"
—— 1253 c	NDMA/DMN Bromacil by 607	Ice	(1) 1L amber	103501	SRI
—— 1254 c	" " (Dup)	"	"	"	"

IDW = 2.5 gal

Continued from page

Read and Understood By

Signed: [signature] Date: 12-14-2021

Signed: [signature] Date: 12-16-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-14-2021 Page 1 of 1

Sample Location: ST-3-735

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOA	607						Charge Number XGMD
211214/1251 C	3	A	X							
1252 C FB	3		X							
1253 C	1			X						
1254 C	1			X						

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12-14-2021 1530		[signature]	12-15-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

Notebook No. D32 # 124 (C)

Continued from page ________

ROJECT ST-4-481 ENV-0053

Dan Halvorsen & Tony Torrez present. Weather is partly cloudy and cold. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a new Teflon discharge hose. Water quality parameters will be monitored using a QED-MP20 flowcell and water analyzer. Carboy G1 in use.

alibrations:

IDW = 1.5 gal.

Do sensor = In saturated air @ 643 mm/Hg.

pH sensor - using a 3pt (4,7,10) buffer method.

onductivity = using a 1413 us/cm STD. Solution.

urbidity meter #: STD = 44.7 RDG = 44.3 LoT # = 200445 Exp = 12/21

Parameters (Time)	Temp	Cond	DO	pH	ORP	Turb	DTW (ft)
211208 0950 C	20.45	982	6.13	6.74	380	0.50	
—— 0952 C	20.42	980	6.12	6.75	378	0.45	
—— 0954 C	20.43	984	6.13	6.79	378	0.42	

SAMPLES

Sample #	Analysis	Preserve	Container	LoT	LAB
211208 0959 C	VOA by 8260 LL	Ice/HCl	(3) 40 ml vial	2621	ALS
—— 1000 C	" " (FB)	"	"	"	"
—— 1001 C	NDMA LL	Ice	(1) 1L amber	103501	SRI
—— 1002 C	" " (FB)	"	"	"	"

Trip Blanks

Sample #	Analysis	Preserve	Container	LoT	LAB
211208 0700 C	VOA by 8260 LL	Ice/HCl	(3) 40 ml vial	2621	ALS
—— 0701 C	NDMA LL	Ice	(1) 1L amber	103501	SRI

Continued from page

Read and Understood By

12-8-2021

Date

Signed

12-9-21

Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-8-2021 Page 1 of 1

Sample Location: ST-4-481

Sample Number		# of Containers	Sample Matrix*	VOC	NDMA LL						Charge Number
Pertinent Notes (if any)											XGMD
21120807000C	TB	3	A	X							
— 0959C		3		X							
— 1000C	FB	3		X							
— 0701C	TB	1			X						
— 1001C		1			X						
— 1002C	FB	1			X						

Sample Location:

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number
Pertinent Notes (if any)										

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12-8-2021 1040		[signature]	12-9-21 / 0910

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

WSTF 381C (05/2016)

PROJECT SF 4-690 ENV-0053

Dan Halvorsen & Tony Torrez present. Weather is partly cloudy and cool. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a new Teflon discharge hose. Water quality parameters will be monitored using a QED MP-20 Flowcell and water analyzer. Carboy G1 in use.

Calibrations:

DO sensor: In saturated air @ 643 mm/Hg. IDW: 2 gal.

PH sensor: Using a 3 pt. (4,7,10) Buffer method.

Conductivity: Using a 1413 us/cm STD. Solution.

Turbidity meter: #7 STD: 44.7 RDG: 44.3 LoT #: 200445 Exp: 12/21

Parameters (Time)	Temp	Cond	DO	PH	ORP	Turb	DTW (Ft.)
211208/1500 C	20.14	7.86	3.43	7.66	344	1.89	
——— 1502 C	20.17	7.83	3.42	7.61	345	1.83	
——— 1504 C	20.13	7.84	3.41	7.62	345	1.84	

SAMPLES

Sample #	Analysis	Preserve	Container	LoT	LAB
211208/1506 C	VOA by 8260 LL	Ice/HCl	(3) 40 ml Vial	2621	ALS
——— 1507 C	" " (FB)	"	"	"	"
——— 1508 C	NDMA LL	Ice	(1) 1L Amber	103501	SRI
——— 1509 C	" " (FB)	"	"	"	"

Continued from page

Read and Understood By

[signature] 12-8-2021 [signature] 12-9-21

Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-8-2021 Page 1 of 1

Sample Location: ST-4-690

Sample Number	Pertinent Notes (if any)	# of Containers	Sample Matrix*	VOC	UDMA LL						Charge Number
											XGMD
211208/1506C		3	A	X							
—— 1507C	FB	3	|	X							
—— 1508C		1	|		X						
—— 1509C	FB	1	|		X						

Sample Location:

Sample Number	Pertinent Notes (if any)	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12-8-2021 1540		[signature]	12-9-21 / 0910

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

PROJECT ST-6-528 FLUTe

Notebook No. D32 # 122(B)

Continued from page

Dan Halvorsen & Tony Torrez present. Weather is Clear, Cold and Windy. This zone will be purged and sampled using a FLUTe System. Samples will be collected using dedicated Teflon discharge hose. Purge pressure set at 228 psi, sample pressure @ 207 psi. Bubbler set at 3 psi. and Stable @ 7 psi. Minimum of 4 gallons will be purged prior to sampling or until Parameters are stable. 15-20 minute recovery between purges. Carboy G in use.

Parameters prior to Sampling:

PH	= 7.63	7.56
Temp	= 14.8 °C	15.1
Cond	= 1091	1079
Turb	= 0.86	0.70

Meter ID

PH/Cond = 60

Turb = 7

" SD = 44.7

" ROG = 44.4

" Lot = 200445

" Exp = 12/21

Initial Parameters		Final Parameters
Time	= 211206 1400 B	211206 1444 B
PH	= 8.79	8.71
Cond	= 1083 us/cm	1079
Temp	= 14.9 °C	14.9
Turb	= 0.59 NTUs	0.59
NPre	= 7.13-10.07 (17.7 °C)	7.10-10.08
NPost	= 7.14-10.17	7.10-10.09

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	LAB
11206 1430 B	VOA by 8260 LL	Ice/HCl	(3) 40 ml Vial		DLS
— 1431 B	" " (FB)	"	"		"
— 1432 B	NDMA LL	Ice	(1) 1L Amber		SRL
— 1433 B	" " (FB)	"	"		"
— 1434 B	SVOA - SIM	"	(1) 250 ml Amber		DLS
— 1435 B	" " (Dup)	"	"		"

Continued from page

Read and Understood By

Signed: [signature] Date: 12-6-2021

Signed: Lori Wunch Date: 12-7-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-6-2021 Page 1 of 1

Sample Location: ST-6-528

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOC	VOMA CL	SVOC-SIM				Charge Number
									XGMD
2112061430B	3	A	X						
1431B FB	3		X						
1432B	1			X					
1433B FB	1			X					
1434B	1				X				
1435B Dup	1				X				

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	12-6-2021 1535	[signature]	12-7-21 / 0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

PROJECT ST-6-568 FLUTe

Dan Halvorsen present. & Tony Torrez. Weather is Clear, Cold and Windy. This zone will be purged and sampled using a FLUTe system. Samples will be collected using a dedicated Teflon discharge hose. Purge pressure set @ 228 psi, sample pressure set at 207 psi. Bubbler set at 3psi and stable at 7 psi. minimum of 4 gallons will be purged prior to sampling, or until Parameters are stable. 15-20 minute recovery between purges. Carboy G. in use.

Parameters prior to Sampling

PH	= 7.56	7.67
Temp	= 14.8	14.9
Cond	= 1063	1067
Turb	= 0.77	0.90

Meter ID

PH/Cond	= 60
Turb	= 7
" STD	= 44.7
" Rdg	= 44.4
" Lot	= 200445
" Exp	= 12/21

	Initial Parameters	Final Parameters
Time	= 2112061410B	2112061510B
PH	= 8.73	8.69
Temp	= 12.7°C	12.8
Cond	= 1040 us/cm	1041
Turb	= 0.73	0.77
PH Pre	= 7.09-10.04 (17.7°c)	7.10-10.09
PH Post	= 7.15-10.24	7.09-10.09

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	LAB
2112061448B	Voc by 8260 LL	Ice/HCl	(3) 40ml Vial		ALS
——1449B	" " (FB)	"	"		"
——1450B	NDMA LL	Ice	(1) L Amber		SGS
——1451B	" " (Dup)	"	"		"
——1452B	" " (FB)	"	"		"
——1453B	Svoa - SIM	"	(1) 250 ml Amber		ALS
——1454B	" " (Dup)	"	"		"

Blind Control

Sample #	Analysis	Preserve	Container	Lot	LAB
2112061455B	NDMA LL	Ice	(1) L Amber	21MM133A	SGS

Continued from page

Read and Understood By

Signed: [signature] Date: 12-6-2021

Signed: [signature] Date: 12-7-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-6-2021 Page 1 of 1

Sample Location: ST-6-568

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOC	VOMA LL						Charge Number
										X6MD
211206 1448 B	3	A	X							
— 1449 B FB	3		X							
— 1450 B	1			X						
— 1451 B	1			X						
— 1452 B FB	1			X						
— 1455 B BC	1			X						

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	5 VOC-SIM							Charge Number
211206 1453 B	1	A	X							
— 1454 B	1		X							

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12-6-2021 1535		[signature]	12-7-21 / 0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT ST-6-678 FLUTe

Notebook No. D32 #122B

Continued from page

Dan Halvorsen & Tony Torrez present. Weather is partly cloudy and cold. This zone will be purged and sampled using a FLUTe system. Samples will be collected using a dedicated Teflon discharge hose. Purge pressure set at 228 psi, sample pressure at 207 psi. Bubbler set at 3psi and stable at 7psi. minimum of 4 gallons will be purged prior to sampling or until parameters are stable. 15-20 minute recovery between purges. Carboy G1 in use.

Parameters prior to Sampling

PH = 8.53	8.50
Temp = 15.8°c	16.5
Cond = 1013	998
Turb = 0.33	0.39

Meter ID

PH/Cond = 60
Turb = 7
" DO = 44.7
" ROG = 44.3
" Lot = 200445
" Exp = 12/21

Initial Parameters	Final Parameters
Time = 2112071400B	2112071440B
PH = 8.67	8.62
Temp = 16.4°c	16.5
Cond = 1006 us/cm	1010
Turb = 1.12 ntu's	0.98
PHPre = 7.00-10.09 (22.3°c)	7.02-10.03
PHPost = 7.01-10.08	7.03-10.02

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	Lab
2112071430B	VOA by 8260 LL	Ice/HCl	(3) 40 ml Vial	2621	ALS
——1431 B	" " (FB)	"	"	"	"
——1432 B	NDMA LL	Ice	(1) 1L Amber	103501	SRE
——1433 B	" " (FB)	"	"	"	"
——1434 B	SVOA-SIM	"	(1) 250 ml Amber	N/A	ALS
——1435 B	" " (FB)	"	"	"	"

Continued from page

Read and Understood By

[signature] Signed 12-7-2021 Date

[signature] Signed 12-8-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-7-2021 Page 1 of 1

Sample Location: ST-6 678			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOA	VOA LL	SVOS_SIM					Charge Number XGMD
211207 1430 B	3	A	✓							
1431 B FB	3		✓							
1432 B	1			✓						
1433 B FB	1			✓						
1434 B	1				✓					
1435 B FB	1				✓					

Sample Location:			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12-7-2021 1450		[signature]	12-8-21 / 0910

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

PROJECT ST-6-824 FLUTe

Dan Halvorsen & Tony Torrez present. Weather is partly cloudy and cold. This zone will be purged and sampled using a FLUTe system. Samples will be collected using a dedicated Teflon discharge hose. Purge pressure set at 228 psi, sample pressure at 207 psi. Bubbler set at 3 psi and stable at 7 psi. Minimum of 4 gallons will be purged prior to sampling or until parameters are stable. 15-20 minute recovery between purges. Carboy G1 in use.

Parameters prior to Sampling

PH	= 8.23	8.17
Temp	= 16.3°C	16.5
COND	= 905	899
TURB	= 0.34	0.95

Meter ID

PH/COND = 60
TURB = 7
STD = 44.7
REG = 44.3
LOT = 200445
EXP = 12/21

Initial Parameters		Final Parameters
Time	= 211207 1411 B	211207 1456 B
PH	= 8.55	8.44
Temp	= 16.2°C	16.2
COND	= 916 uS/cm	920
TURB	= 0.42 NTUs	0.51
PH Pre	= 7.02-10.04 (22.4°C)	7.03 10.03
PH Post	= 7.03-10.04	7.03-10.02

SAMPLES

Sample	Analysis	Preserve	Container	LOT	LAB
211207 1448 B	VOA by 8260 LL	Ice/HCl	(3) 40 ml vial	2621	DLS
— 1449 B	" " (FB)	"	"	"	"
— 1450 B	NDMA LL	Ice	(1) 1L amber	103501	SRI
— 1451 B	" " (FB)	"	"	"	"

Continued from page

Read and Understood By

Signed [signature] 12-7-2021 Date

Signed [signature] 12-8-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-7-2021 Page 1 of 1

Sample Location: STG-824

Charge Number: XGMD

Sample Number	Pertinent Notes (if any)	# of Containers	Sample Matrix*	VOA	VOMA LL						Charge Number
211207 1448 B		3	A	X							
1449 B	FB	3		X							
1450 B		1			X						
1451 B	FB	1			X						

Sample Location:

Sample Number	Pertinent Notes (if any)	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12-7-2021 1540		[signature]	12-8-21 /0910

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT ST-6-970 FLUTe ENV-0020

Notebook No. D32 #122 B

Continued from page

Dan Halvorsen & Tony Torrez present. Weather is partly cloudy and cold. This zone will be purged and sampled using a FLUTe system. Samples will be collected using a dedicated Teflon discharge hose. Purge pressure set at 228 psi, sample pressure at 207 psi. Bubbler set at 3 psi and stable at 7 psi. minimum of 4 gallons will be purged prior to sampling or until parameters are stable. Canboy G1 in use. 15-20 minute recovery between purges.

Parameters prior to Sampling.

PH	= 8.55	8.27
Temp	= 15.9°C	16.6
COND	= 996	991
TURB	= 0.36	0.96

Meter ID

PH/COND	= 60
TURB	= 7
STD	= 44.7
RDG	= 44.3
LOT	= 200445
EXP	= 12/21

Initial Parameters		Final Parameters
Time	= 211207/1414 B	211207/1510 B
PH	= 7.07	7.10
Temp	= 16.6°C	16.6
COND	= 997 us/cm	996
TURB	= 0.95 NTU's	0.89
PH Pre	= 7.04-10.04 (22.4°C)	7.03-10.02
PH Post	= 7.01-10.03	7.03-10.03

SAMPLES

Sample ID	Analysis	Preserve	Container	LOT	LAB
211207/1502 B	VOA by 8260 LL	Ice/HCl	(3) 40 ml Vial	2621	ACS
——/1503 B	" " (FB)	"	"	"	"
——/1504 B	NDMA LL	Ice	(1) 1L Amber	103501	SRI
——/1505 B	" " (FB)	"	"	"	"

Continued from page

Read and Understood By

Signed [signature] Date 12-7-2021

Signed [signature] Date 12-8-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12-7-2021 Page 1 of 1

Sample Location: ST-6-970

Charge Number: X GMW

Sample Number	Pertinent Notes (if any)	# of Containers	Sample Matrix*	VOA	NDMA 4					Charge Number
211207 1502B		3	A	X						
1503B	FB	3	A	X						
1504B		1	A		X					
1505B	FB	1	A		X					

Sample Location:

Sample Number	Pertinent Notes (if any)	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12-7-2021 1540		[signature]	12-8-21 / 0910

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT WW.1.452 WJI ENV.0053

Marcus Avalos & Robert Burrows present. Weather is clear & cool. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge hose. Water quality parameters will be monitored using a QED MP-20 flow cell & water analyzer. Carboy G-1

Calibrations
DO- Cal in saturated air @ 642 mm/Hg.
PH- Cal using Oakton Buffers (4, 7, 10)
Conductivity- Cal using 1413 uS/cm STD solution.
Turbidity Meter- #8 STD- 54.1 NTU 20G- 55.2 NTU Lot: 200445 Exp. 12/31/21

Parameters (time)	Temp (°C)	Cond (mS/cm)	DO	PH	ORP	Turb (NTU)	DTW (ft)
1) 211206 1415A	21.21	1.005	6.16	6.84	358	0.37	422.85'
2) —— 1417A	21.22	1.012	6.10	6.83	358	0.28	"
3) —— 1419A	21.19	1.010	6.23	6.87	358	0.59	"

Samples

Sample #	Analysis	Preserve	Container	lot	lab
211206 1425A	VOA by 8260 LL	HCl/Ice	(3) 40 ml vials	2621	ALS
—— 1426A	" (FB)	"	"	"	"
—— 1427A	Low Level NDMA	Ice	(1) 1L Amber	0200401G	SRI
—— 1428A	" (FB)	"	"	"	"

Initial DTW - 422.35'

Final DTW - 422.85'

IOW - 3.5 gal

Read and Understood By

Signed 12/6/21 Date

Signed 12-7-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/6/21 Page 1 of 1

Sample Location: WW.1.452

Pertinent Notes (if any):

Sample Number	# of Containers	Sample Matrix*	8260LL	LL NDMA						Charge Number
2112061425A	3	A	X							YGMD
— 1426A (FB)	3	|	X							|
— 1427A	1	|		X						|
— 1428A (FB)	1	|		X						|

Sample Location:

Pertinent Notes (if any):

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	12/6/21 @ 1530		[signature]	12-7-21 / 0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

PROJECT WW-2-489 WJI ENV-0053

Bob Tufts & Craig Del Ferraro present. Weather is cloudy, cool, & breezy. this well will be purged using a dedicated bladder pump. Samples will be collected using a teflon discharge hose. Parameters will be collected using a standard pH/Cond. meter. No QED flow cell available – no DO or ORP will be monitored. Carboy G3 in use. Initial packer pressure was Ø. Crew inflated packer (prior to purging) to 32psi.

Meter ID
pH/cond – 12
Turb – 21
" std – 11.4 NTU's
" rdg – 13.0 NTU's
" lot – 200445
" Exp – 12/31/21

pH/pre cal – 7.13/10.09 (15.5°c)

pH/post cal – 7.15/10.09

Parameters (time)	temp (°c)	cond (us/cm)	PH	Turb (NTU's)	DTW (ft.)
~~Time~~					~~2~~
1) 211214 0935A	17.1	967	8.68	2.50	20.34
2) ——— 0938A	17.4	970	8.64	2.24	20.36
3) ——— 0941A	17.4	968	8.62	1.91	20.31 (transducer

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
211214 0750A	Low Level NDMA (TB)	ice	(1) 1L Amber	02004016	SRI
——— 0945A	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2621	ALS
——— 0946A	" (FB)	"	"	"	"
——— 0947A	Low Level NDMA	ice	(1) 1L Amber	02004016	SRI
——— 0948A	" (FB)	"	"	"	"

Initial DTW – 20.26ft. (transducer reading). Total gallons purged – 2

* final packer pressure — 32psi. *

Read and Understood By

Craig Del Ferraro 12/14/21 [signature] 12-15-21

Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/14/21 Page 1 of 1

Sample Location: WW-2-489

Analytical Requirement

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
2112140750A (TB)	1	A		✓						XGMD
——— 0945A	3	A	✓							"
——— 0946A (FB)	3	A	✓							"
——— 0947A	1	A		✓						"
——— 0948A (FB)	1	A		✓						"

Sample Location:

Analytical Requirement

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferraro	12/14/21 1100hrs.		[signature]	12-15-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT WW-2-664 WJI ENV-0053

Notebook No. D32 #123(A)
Continued from page ______

Bob Tufts & Craig Del Ferraro present. Weather is cloudy, cool, & breezy. This well will be purged using a dedicated bladder pump. Samples will be collected using a teflon discharge hose. Parameters will be monitored using a standard pH/Cond. meter. No QED flow cell available – DO and ORP will not be monitored. Carboy G3 in use. Initial packer pressure holding @ 32 psi. Packer pressure reading was initially @ ∅ when crew arrived at well site. Prior to sampling zone 489, crew inflated packer to 32 psi and it continues to hold steady at this time.

Meter ID
PH/Cond - 12
Turb - 21
" std - 11.4 NTU's
" rdg - 13.0 NTU's
" lot - 200445
" Exp - 12/31/21

PH/precal - 7.03/10.08 (20.8°c)

PH/postcal - 7.05/10.04

Parameters (time)	temp (°c)	Cond (uS/cm)	PH	Turb (NTU's)	DTW (ft)
1) 211214 1355A	19.8	970	8.35	3.32	20.33
2) ——— 1358A	19.8	968	8.37	3.16	20.31
3) ——— 1401A	20.1	964	8.37	2.85	20.27

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
211214 1405A	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2621	ALS
——— 1406A	" (FB)	"	"	"	"
——— 1407A	Low Level NDMA	ice	(1) 1L Amber	02004016	SRI
——— 1408A	" (FB)	"	"	"	"

Initial DTW – 20.41 ft. (transducer reading) Total gallons purged – 2

* Final packer pressure – 32 psi

Continued from page

Read and Understood By

Craig Del Ferraro 12/14/21
Signed Date

[signature] 12-16-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12\14\21 Page 1 of 1

Sample Location: WW-2-664

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
2112141405A	3	A	✓							XGMD
——1406A (FB)	3	A	✓							"
——1407A	1	A		✓						"
——1408A (FB)	1	A		✓						"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	12/14/21 1500hrs.		[illegible signature]	12-16-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

ROJECT WW-3-469 WJI ENV-0020

ob Tufts & Craig Del Ferraro present. Weather is cloudy, cool, & breezy. This zone ill be sampled using 2 triple rinsed, stainless steel sample tubes. Gen. in use. robe#2213. Surface checks performed on probe prior to sampling.

30 Min Equipment Blanks - Carboy G3

Sample	Analysis	Preservative	Container	Lot	Lab
2112071330Y	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2621	ALS
——— 1331Y	Low Level NDMA	ice	(1) 1L Amber	02004016	SRI

Initial Parameters	Final	Meter ID
Time - 2112071407Y	Time - 2112071432Y	pH/Cond - 11
pH - 8.04	PH - 7.98	Turb - 2
Temp - 22.8°C	Temp - 22.5°C	" Std - 28.2
Cond - 1132 us/cm	Cond - 1117 us/cm	" rdg - 29.8
Turb - 3.96 NTU's	Turb - 3.11 NTU's	" lot - 200445
pH pre - 7.04/10.06 (23.9°C)	pH pre - 7.03/10.08 (24.4°C)	" Exp - 12/31/24
pH post - 7.02/10.07	pH post - 7.03/10.05	
DTW - 410.02 ft.	DTW - 410.11 ft.	
Atmos - 12.49 psia	Atmos - 12.51 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp.
7	2108G56	2/23
10	4105G81	9/22

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2112071430Y	VOA by 8260 LL	ice/HCl	(3) 40ml vials	2621	ALS
——— 1431Y	Low Level NDMA	ice	(1) 1L Amber	02004016	SRI

Runs 1) 40.99 2) 40.73
38.84 38.86
38.84 38.87
~~39~~ 40.38
40.53

Read and Understood By

Craig Del Ferraro 12/7/21 [signature] 12-8-21
Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/7/21 Page 1 of 1

Sample Location: WW-3-469

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA					Charge Number
Pertinent Notes (if any)									
2112071330Y (EB)	3	A	✓						XGMD
——1331Y (EB)	1	A		✓					"
——1430Y	3	A	✓						"
——1431Y	1	A		✓					"

Sample Location:

Sample Number	# of Containers	Sample Matrix*							Charge Number
Pertinent Notes (if any)									

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	12/7/21 1510hrs.		[signature]	12-8-21 / 0910

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT WW-3-569 WJI ENV-0020

Notebook No. D64 #128(Y)

Continued from page

Bob Tufts & Craig Del Ferraro present. Weather is cloudy, breezy, & cool. This will be sampled using 2 steam cleaned & triple rinsed, stainless steel sample tubes. Gen. in use. Probe#2213. Surface checks performed on probe prior to sampl

Trip Blanks - Water Purification System

Sample	Analysis	Preservative	Container	Lot	Lab
2112070800Y	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2621	ALS
——— 0801Y	Low Level NDMA	ice	(1) 1L Amber	02004019	SRI

30 Min. Equipment Blanks - Carboy G3

Sample	Analysis	Preservative	Container	Lot	Lab
2112070910Y	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2621	ALS
——— 0911Y	Low Level NDMA	ice	(1) 1L Amber	02004019	SRI

Initial Parameters

Time - 2112071030Y
PH - 8.29
Temp - 21.5°C
Cond - 1094 us/cm
Turb - 2.57 NTU's
pH pre - 7.10/9.98 (17.0°c)
pH post - 7.11/10.03
DTW - 409.88 ft.
Atmos - 12.54 psia

Final

Time - 2112071103Y
PH - 8.34
Temp - 21.3°c
Cond - 1105 us/cm
Turb - 1.82 NTU's
pH pre - 7.12/10.03 (17.8°c)
pH post - 7.09/10.04
DTW - 410.02 ft.
Atmos - 12.56 psia
IDW - 1/2 gal.

Meter ID

pH/cond - 11
Turb - 2
" std - 28.2
" rdg - 29.8
" lot - 200445
" Exp - 12/31/21

Buffers	Lot	Exp
7	2108G56	2/23
10	4103G81	9/22

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2112071100Y	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2621	ALS
——— 1101Y	* " (M.S.) *	"	"	"	"
——— 1102Y	Low Level NDMA	ice	(1) 1L Amber	02004019	SRI

Runs 1) 84.40 2) 84.15
82.16 82.08
82.13 82.05
84.38 84.02

* Samples were very aerated.

Continued from page

Craig Del Ferraro
Signed

12/7/21
Date

Read and Understood By

Lori W Munck
Signed

12-8-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 12/7/21 | Page 1 of 1

Sample Location: WW-3-569

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
211207 0800Y (TB)	3	A	✓							XGMD
——— 0801Y (TB)	1	A		✓						"
——— 0910Y (EB)	3	A	✓							"
——— 0911Y (EB)	1	A		✓						"
——— 1100Y	3	A	✓							"
——— 1101Y (MS)	3	A	✓							"
——— 1102Y	1	A		✓						"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DelFerro	12/7/21 1125hrs.		[signature]	12-8-21 / 0910

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

(5781 #584 ...)
PROJECT 100-F-358 WJI ENV-0053

Marcus Avalos & Dan Halvorsen present. Weather is cloudy & cold. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge tube. Water quality parameters will be monitored using a QED MP-20 flow cell & water analyzer. Carboy G-8

DTW - 316.90'

Calibrations
DO - Cal in saturated air @ 644 mm/Hg.
pH - Cal using Fisher Buffers (4,7,10)
Conductivity - Cal using 1413 uS/cm STD solution
Turbidity Meter - #7 STD - 5.06 NTU RDG - 6.70 NTU lot - 91017 Exp - 1/21

Parameters (time)	Temp (°C)	Conductivity (mS/cm)	DO (mg/L)	pH	ORP	Turb (NTU)	DTW (ft)
1) 210120 1000C	17.84	1.293	1.81	6.94	-120	1.13	316.92'
2) — 1002C	17.83	1.289	1.76	6.97	-119	0.81	"
3) — 1004C	17.96	1.281	1.71	6.95	-118	0.74	"

Trip Blanks

Sample #	Analysis	Preserve	Container	lot	lab
2101200800C	VOA by 8260 LL	HCl/Ice	(3) 40 mL vials	25732	ALS
— 0801C	Low Level NDMA	Ice	(1) 1L Amber	108501	SRI

Samples

Sample #	Analysis	Preserve	Container	lot	lab
2101201010C	VOA by 8260 LL	HCl/Ice	(3) 40 mL vials	25732	ALS
— 1011C	" (FB)	"	"	"	"
— 1012C	607/Bromacil	Ice	(1) 1L Amber	108501	SRI
— 1013C	Low Level NDMA	"	"	"	"
— 1014C	" (FB)	"	"	"	"
— 1015C	SVOA by 8270	"	(2) 1L Amber	10192010K	ALS
— 1016C	Pesticides 8081B	"	(1) "	"	"
— 1017C	1,4-Dioxane 8270D	"	(1) 250 ml Amber		"
— 1018C	Dioxins/Furans 8290	"	(1) 1L Amber	108501	SRI
— 1019C	Herbicides 8151A	"	"	10192010K	ALS
— 1020C	PCB 8082A	"	"	"	"
— 1021C	Phenolics 9066	H_2SO_4/Ice	(1) 250 ml Amber	08032013MC	"
— 1022C	Total Metals	HNO_3/Ice	(2) 125 ml poly	191129	"

Continued from page

Read and Understood By

[signature] 1/20/21 [signature] 1-21-21
Signed Date Signed Date

PROJECT 100-F-358 Continued from page

Samples Cont

Sample #	Analysis	Preserve	Container	lot
210120-1023C	Anions/ALK	Ice/Zero HS	(2) 125 ml poly	191129
— 1024C	TDS SM2540C	Ice	(1) "	"
— 1025C	Perchlorate 6850	Ice/1/3 HS	"	"
— 1026C	NO_2 NO_3 353.2	H_2SO_4/Ice	(1) 250 ml poly	
— 1027C	Sulfide 9030	Zinc Acetate/NaOH/Ice/Zero HS	"	
— 1028C	Cyanide 9012B	NaOH/Ice	(1) 125 ml poly	

IDW - 2 gal

Continued from page

Read and Understood By

Signed	1/20/21 Date	Signed	1-21-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/20/21 Page 1 of 2

Sample Location: 100-F-358

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260C	607	NDMA					Charge Number
2101200800C (TB)	3	A	X							XGMD
0801C (TB)	1				X					
1010C	3		X							
1011C (FB)	3		X							
1012C	1			X						
1013C	1				X					
1014C (FB)	1				X					

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8270	Pesticide	1-4 Dioxane	Dioxin/Furan	Herbicide	PCB	Phenolics	Charge Number
2101201015C	2	A	X							XGMD
1016C				X						
1017C					X					
1018C						X				
1019C							X			
1020C	1							X		
1021C	1								X	

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[illegible signature]	1/20/21 @ 1120		[illegible signature]	1-21-21 / 0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/20/21 Page 2 of 2

Sample Location: 100-F-358

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	T. Metals	Anions/Alk	TDS	Perchlorate	NO2 NO3	Sulfide	Cyanide	Charge Number
2101201022C	2	A	X							XGMD
1023C	2			X						
1024C	1				X					
1025C	1					X				
1026C	1						X			
1027C	1							X		
1028C	1								X	

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1/20/21 @1120		[signature]	1-21-21 /0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ________

WSTF 381C (05/2016)

ROJECT 100-G-223 WJI ENV-0053

Marcus Avalos & Dan Halvorsen present. Weather is cold & really windy. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge tube. Water quality parameters will be monitored using a QED MP20 flow cell & water analyzer.
Carboy G-3

DTW - 78.05'

Calibrations
DO - Cal in saturated air @ 644 mm/Hg
pH - Cal using Fisher Buffers (4,7,10)
Conductivity - Cal using 1413 uS/cm STD solution.
Turbidity Meter - #20 STD - 5.49 NTU RDG - 5.99 NTU lot - 9101? Exp - 1/21

Parameters (time)	Temp (c)	Conductivity ( )	DO (mg/L)	pH	ORP	Turb (NTU)	DTW (ft)
1) 2101191400C	18.64	1.141	3.06	6.97	118	0.92	78.10'
2) —— 1402C	18.63	1.138	3.02	6.96	118	0.41	"
3) —— 1404C	18.58	1.129	3.12	6.97	117	0.24	"

Trip Blanks

Sample #	Analysis	Preserve	Container	lot	lab
2101190800C	VOA by 8260LL	HCl / Ice	(3) 40 ml vials	25732	Als
—— 0801C	Low Level NDMA	Ice	(1) 1L Amber	108501	SRI

Samples

Sample #	Analysis	Preserve	Container	lot	lab
2101191410C	VOA by 8260LL	HCl / Ice	(3) 40 ml vials	25732	Als
—— 1411C	" (FB)	"	"	"	"
—— 1412C	607 / Bromacil	Ice	(1) 1L Amber	108501	SRI
—— 1413C	" (FB)	"	"	"	"
—— 1414C	Low Level NDMA	"	"	"	"
—— 1415C	" (FB)	"	"	"	"
—— 1416C	SVOA by 8270D	"	(2) "	1019201DK	Als
—— 1417C	Pesticides 8081B	"	(1) "	"	"
—— 1418C	1,4-Dioxane 8270D	"	(1) 250 ml Amber	0518201BMC	"
—— 1419C	" (FB)	"	"	"	"
—— 1420C	Dioxins/Furans 8290	"	(1) 1L Amber	108501	SRI
—— 1421C	Herbicides 8151A	"	"	1019201DK	Als
—— 1422C	PCBs 8082A	"	"	"	"

Continued from page

Read and Understood By

Signed 1/19/21 Date
Signed 1-20-21 Date

PROJECT 100·G·223

Notebook No. D32 #118[illegible]

Continued from page 73

Samples Cont

Sample#	Analysis	Preservative	Container	lot	log
21011914230	Phenolics 9066	H_2SO_4/Ice	(1) 250 ml Amber	GB03201BMC	AB[illegible]
— 1424C	Total Metals	HNO_3/Ice	(2) 125 ml poly	191129	[illegible]
— 1425C	Anions/Alk	Ice/Zero HS	"	"	"
— 1426C	TDS SM2540C	Ice	(1) "	"	"
— 1427C	Perchlorate 6850	Ice/ 1/3 HS	"	"	"
— 1428C	NO_2, NO_3 353.2	H_2SO_4/Ice	"	"	"
— 1429C	Sulfide 9030	Zinc Acetate/NaOH/ Zero HS Ice	(1) 500 ml poly		"
— 1430C	Cyanide 9012B	NaOH/Ice	(1) 125 ml poly		"

IDW - 1.5 gal

Continued from page 73

Read and Understood By

[illegible]

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/19/21

Sample Location: 100-G-223

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260 LL	607	LL NDMA					Charge Number
2101190800C (TB)	3	A	X							XGMD
0801C (TB)	1				X					
1410C	3		X							
1411C (FB)	3		X							
1412C	1			X						
1413C (FB)	1			X	X					
1414C	1				X					

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	LL NDMA	SVOA 8270	Pesticides	1,4-Dioxane	Dioxin/Furan	Herbicides		Charge Number
2101191415C (FB)	1	A	X							XGMD
1416C	2			X						
1417C	1				X					
1418C	1					X				
1419C (FB)	1					X				
1420C	1						X			
1421C	1							X		

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	1/19/21 @ 1555	[signature]	1-20-21 / 0915

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/19/21

Sample Location: 100-G-223

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	PCB	Phenolics	T, Metals	Anions/Alk	TDS	Perchlorate	NO2, NO3	Charge Number
2101191422C	1	A	X							XGMD
1423C	1			X						
1424C	2				X					
1425C	2					X				
1426C	1						X			
1427C	1							X		
1428C	1								X	

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Sulfide	Cyanide						Charge Number
2101191429C	1	A	X							XGMD
1430C	1			X						

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1/14/21 @ 1555		[signature]	1-20-21 / 0919

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

'8 (2)8# 58.0

PROJECT 300. F. 175 WJI ENV. 0053

Notebook No. D32

Continued from page

Marcos Avalos & Dan Halvorsen present. Weather is raining & cold. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge tube. Water quality parameters will be monitored using a QED MP.20 flow cell & water analyzer. Carboy G-5.

Calibrations
DO - Cal in saturated air @ 644 mm/Hg.
PH - Cal using Fisher Buffers (4,7,10)
Conductivity - Cal using 1413 uS/cm STD solution.
Turbidity Meter #7 STD 5.06 NTU Rdg- 6.56NTU lot- 91017 Exp- 1/21

Parameters (time)	Temp (°C)	Conductivity (mS/cm)	DO (mg/L)	PH	ORP	Turb (NTU)	DTW/ht
1) 210121 0945 C	17.89	1.166	5.48	7.25	93	3.41	
2) ——— 0946 C	17.78	1.168	5.42	7.28	13	2.85	
3) ——— 0947 C	17.86	1.210	5.39	7.24	13		

Samples

Sample #	Analysis	Preserve	Container	lot	
210121 0950 C	VOA by 8260.LL	HCl/Ice	(3) 40 ml vials	25732	ALS
0951 C	= (FB)	=	=		
0952 C	607/Bromacil	Ice	(1) 1L Amber	108501	SRI
0953 C	Low Level NDMA	=	=	=	=
0954 C	= (FB)	=	=	=	=
0955 C	SVOA by 8270D	=	(2) =	101920 10K	ALS
0956 C	Pesticides 8081B	=	(1) =	=	=
0957 C	1-4, Dioxane 8270D	=	(1) 250ml Amber	057820 1BMC	=
0958 C	= (MS)	=	=	=	=
0959 C	Dioxins/Furans 8290	=	(1) 1L Amber	108501	SRI
1000 C	Herbicides 8151A	=	=	101920 10K	ALS
1001 C	PCB 8082A	=	=	=	=
1002 C	Phenolics 9066	H_2SO_4/Ice	(1) 250 ml Amber	080820 1BMC	=
1003 C	Total Metals	HNO_3/Ice	(2) 125 ml poly	191129	=
1004 C	Anions/Alk	Ice/ZeroHS	=	=	=
1005 C	TDS SM2540C	Ice	(1) =	=	=
1006 C	Perchlorate 6850	Ice/1/3HS	=		=
1007 C	NO_2, NO_3 353.2	H_2SO_4/Ice	(1) 250 ml poly		

Continued from page

Signed [signature] Date 1/21/21

Read and Understood By

Signed [signature] Date 1-26-21

Continued from page 78

PROJECT 300 · F · 175 WJI ENV · 0053

Samples Cont

Sample #	Analysis	Preserv.	Container	lot	lab
2101211008ic	Sulfide 9030	NaOH/ Zinc Acetate / Ice	(1) 250 ml poly		ALS
1009ic	Cyanide 9012B	NaOH/Ice	(1) 125 ml poly		"

IDW - 0.25 gal

Continued from page

Signed 1/21/21 Date

Read and Understood By

Signed 1-26-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/21/21 | Page 1 of 2

Sample Location: 300-F-175

Sample Number	Pertinent Notes (if any)	# of Containers	Sample Matrix*	8260 LL	607	LL NDMA	SVOA 8270	Pesticide			Charge Number
2101210950C		3	A	X							XGMD
0951C	(FB)	3		X							
0952C		1			X						
0953C		1				X					
0954C	(FB)	1				X					
0955C		2					X				
0956C		1						X			

Sample Location:

Sample Number	Pertinent Notes (if any)	# of Containers	Sample Matrix*	1,4-Dioxane	Dioxin/Furan	Herbicide	PCB	Phenolics	T. Metals		Charge Number
2101210957C		1	A	X							XGMD
0958C	(MS)	1		X							
0959C		1			X						
1000C		1				X					
1001C		1					X				
1002C		1						X			
1003C		2							X		

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	1/21/21 @ 1115	[signature]	1-25-21 / 0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/21/21 Page 2 of 2

Sample Location: 300-F-175

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Anions / Alk	TDS	Perchlorate	NO2 NO3	Sulfide	Cyanide		Charge Number
210121 1004 C	2	A	X							XGMD
1005 C	1			X						
1006 C	1				X					
1007 C	1					X				
1008 C	1						X			
1009 C	1							X		

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1/21/21 @ 1115		[signature]	1-25-21 / 0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

WSTF 381C (05/2016)

PROJECT 400'A-151 WSI ENV.0053

Marcus Aumbs & Robert Burrows present. Weather is clear & cool. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge tube. Water quality parameters will be monitored using a QED MP-20 flow cell & water analyzer. Carboy G-5

DTW - 163.34'

Calibrations
DO: Cal in saturated air @ 640 mm/Hg.
PH: Cal using Fisher Buffers (4, 7, 10)
Conductivity: Cal using 1413 uS/cm STD solutions.
Turbidity Meter #7 STD - 5.06 NTU RDG - 5.20 NTU Lot - 9107 Exp - 1/29/21

Parameters (time)	Temp (°C)	Cond (uS/cm)	DO	PH	ORP	Turb (NTU)	DTW (ft)
1) 2101071505C	20.12	1.439	4.97	8.49	73	2.76	163.80'
2) ——— 1506C	20.17	1.435	4.88	8.54	73	1.35	"
3) ——— 1507C	20.19	1.431	4.61	8.66	64	0.78	"

Samples

Sample #	Analysis	Preserve	Container	lot	lab
2101071510C	VOA by 8260	HCl / Ice	(3) 40 ml vials	25732	ALS
——— 1511C	" (FB)	"	"	"	"
——— 1512C	607 / Bromacil	Ice	(1) 1L Amber	108561	SEJ
——— 1513C	" (Dup)	"	"	"	"
——— 1514C	Total Metals	HNO3 / Ice	(2) 125 ml poly	191129	ALS
——— 1515C	" (Dup)	"	"	"	"
——— 1516C	NO_2, NO_3 353.2	H_2SO_4 / Ice	(1) 250 ml poly	200221	"

TOW - 3 gal

* Installed pump & purged extra water to get turbidity down.

Continued from page

Read and Understood By

Signed: [signature] Date: 1/7/21
Signed: [signature] Date: 1-11-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/7/21 Page 1 of 1

Sample Location: 400-A-151			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260	607	T. Metals	NO2, NO3				Charge Number
2101071510C	3	A	X							XGMO
1511C (FB)	3		X							
1512C	1			X						
1513C (Dup)	1			X						
1514C	2				X					
1515C (Dup)	2				X					
1516C	1					X				

Sample Location:			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1/7/21 @ 1600		[signature]	1-11-21 / 1000

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

Notebook No. D32 # 119 (B)

Continued from page ________

JECT 400.FU.131

TL MONITEZ & TONY TORREZ PRESENT. THE WEATHER IS OVERCAST & ...OL. THIS WELL will BE purged & SAmpled using A TEFLON bladder ...ump. SAmples collected FROM A TEFLON discharge Tube. PARAMETERS ...llected WITH A ph/cond METER & Turb METER.

	INITIAL	FINAL
	210121 0955B	210121 1015B
ph	7.64	7.54
Temp	19.1°c	18.9°c
Cond	1501 us/cm	1510 us/cm
Turb	1.06 NTU's	1.24 NTU's
phpre	7.09/10.10 (13.8°c)	7.08/10.07 (14.5°c)
phpost	7.08/10.10	7.08/10.10
DTW		

METER ID's
ph/cond = 11
Turb # 20
" std = 5.46
" Rdg = 5.62
" lot # = 91017
" Exp = 1/31/21

SAMPLES

SAMPLE #	Analysis	PRESERV	LOT #	Cont	Lab
210121 1000B	8260	Ice/HCl	2538	(3) 40ml vials	ACS
— 1001B	" (FB)	"	"	"	"
— 1002B	" (Dup)	"	"	"	"

Continued from page

Read and Understood By

T. D. (signature) Signed — 1-21-21 Date — (signature) Signed — 1-26-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-21-21 Page 1 of 1

Sample Location: 400-F-U-131

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 8260							Charge Number: XGMA
2101211000B	3	A	x							
—— 1001B (FB)	3		X							
—— 1002B (Dup)	3		X							

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
T. D[illegible]	1-21-21 / 1100		[signature]	1-25-21 / 0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

WSTF 381C (05/2016)

PROJECT 400-HU-147

Robert Burrows & Tony Tocker present. The weather is cloudy & cold
This zone will be purge & sampled using a dedicate Teflon bladder
pump samples collected from a dedicated Teflon discharge hose.
Parameters will be collected from Turb meter & pH/cond meters.
carboy G-3

	Initial	Final	Meter ID's
	210125 0925B	210125 0935B	pH/cond = 11
pH	7.93	7.85	Turb # 20
Temp	16.2 °c	15.8 °c	" std = 5.46
Cond	1927 µs/cm	1924 µs/cm	" Rdg = 5.55
Turb	0.52 NTU's	0.66 NTU's	" Lot # = 91017
ph pre	7.17/10.03 (9.8°)	7.19/10.05 (9.9°)	" Exp = 1/31/21
ph post	7.15/1005	7.19/1001	
DTW			

Samples

Sample #	Analysis	Preserv	Lot #	Cont	Lab
210125 0930B	8260	Ice/Hcl	2538	(3) 40ml vials	ALS
— 0931B	" (FB)	"	"	"	"

Trip Blanks

Sample #	Analysis	Preserv	Lot #	Cont	Lab
210125 0700B	8260	Ice/Hcl	2538	(3) 40ml vials	ALS

Continued from page

Read and Understood By

T. [signature] Signed 1-25-21 Date
[signature] Signed 1-26-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-25-21 | Page 1 of 1

Sample Location: 400-HU-147

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 8260							Charge Number: XGMD
210125 0930B	3	A	X							
— 0931B (FB)	3	A	X							
210125 0700B (TB)	3	A	X							

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-25-21 / 1100		[signature]	1-26-21 / 0945

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

ROJECT 600-G-138 WJI ENV-0013

3ob Tufts & Craig Del Ferraro present. Weather is cloudy, cool, & windy. This well will be purged dry prior to sampling. After well recovers, Samples will be collected using a teflon bailer. Carboy G5 in use.

Total depth - 148.40 ft.
Initial DTW - 145.02 ft.
start purge - 0725 hrs.
stop purge - 0733 hrs.
Total gallons purged - 8
Final DTW - 145.36 ft.

Meter ID
pH/Cond - 12
Turb - 7
" std - 5.06
" rdg - 5.19
" lot - 9107
" Exp - 11/29/21

Buffers	Lot	Exp
7	4002991	8/21
10	4001D05	6/21

Initial Parameters		Final	
Time	2101191305B	Time	2101191316B
PH	8.00	PH	7.91
Temp	18.3°C	Temp	18.0°C
Cond	1865 us/cm	Cond	1876 us/cm
Turb	13.2 NTU's	Turb	11.8 NTU's
pH pre	7.23/10.27 (9.5°C)	pH pre	7.19/10.26 (9.9°C)
pH post	7.21/10.27	pH post	7.21/10.28
DTW	145.30 ft.	DTW	145.36 ft.
~~Atmos~~	CO	~~Atmos~~	CO
		IDW	Ø

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
210119 1310B	VOA by 8260	ice/HCL	(3) 40ml vials	2573-2	ALS
—— 1311B	" (FB)	"	"	"	"
—— 1312B	Total Metals	ice/HNO_3	(2) 125ml poly's	20-07-07	"
—— 1313B	" (FB)	"	"	"	"
—— 1314B	Chloride by 300.0	ice	(1) 125ml poly	N/A	"
—— 1315B	NO_2/NO_3 by 353.2	ice/H_2SO_4	(1) 250ml poly	20-08-11	"

Continued from page

Read and Understood By

Craig Del Ferraro 1/19/21
Signed Date

[signature] 1-20-21
Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/19/21 Page 1 of 1

Sample Location: 600-G-138

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	Total Metals	Chloride	NO_2/NO_3				Charge Number
2101191310B	3	A	✓							XGMD
——1311B (FB)	3	A	✓							"
——1312B	2	A		✓						"
——1313B (FB)	2	A		✓						"
——1314B	1	A			✓					"
——1315B	1	A				✓				"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
Craig Del Ferro	1/19/21 1340hrs.	[signature]	1-20-21 / 0915

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

PROJECT BIM-6-488 WJI ENV-0053

Notebook No. D32 [illegible]

Continued from page [illegible]

Marcus Avalos & Robert Burrows present. Weather is clear & cool. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge tube. Water quality parameters will be monitored using a QED MP-20 flow cell & water analyzer. Carboy G-5

DTW - 359.95'

Calibrations

DO - Cal in saturated air @ 640 mm/Hg

PH - Cal using Fisher Buffers (4,7,10)

Conductivity - Cal using 1413 uS/cm STD solution

Turbidity Meter - #7 STD - 5.06 NTU RDG - 5.20 NTU lot - 9101? Exp - 1/29/21

Parameters (time)	Temp (°C)	Cond (mS/cm)	DO	PH	ORP	Turb (NTU)	DTW (ft)
1) 210107 0950C	18.71	1.64	3.52	8.54	-51	5.21	360.10'
2) —— 0952C	18.62	1.63	3.05	8.55	-56	5.45	"
3) —— 0954C	18.64	1.65	2.83	8.50	-48	5.17	"

Samples

Sample #	Analysis	Preserve	Container	lot	lab
210107 1000C	VOA by 8260	HCl/Ice	(3) 40 ml vials	25732	Als
—— 1001C	" (FB)	"	"	"	"
—— 1002C	GRO by 8015D	"	"	"	"
—— 1003C	607/Bromacil	Ice	(1) 1L Amber	108501	SRI
—— 1004C	Low Level NDMA	"	"	"	"
—— 1005C	" (FB)	"	"	"	"
—— 1006C	SVOA by 8270D	Ice	(2) "	101920 10K	"
—— 1007C	Total Metals	HNO3/Ice	(2) 125 ml poly	191129	ALS
—— 1008C	Anions/Alk	Ice/Zero HS	"	"	"
—— 1009C	TDS by SM2540C	Ice	(1) "	"	"
—— 1010C	DRO by 8015D	"	(1) 1L Amber		"
—— 1011C	Perchlorate 6850	Ice/1/3 HS	(1) 125 ml poly	191129	"
—— 1012C	NO_2, NO_3 353.2	H_2SO_4/Ice	(1) 250 ml poly	200221	"

IDW - 2 gal

Continued from page

Read and Understood By

[signature] Signed 1/7/21 Date [signature] Signed 1-11-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/7/21 Page 1 of 1

Sample Location: BIM-6-488

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	GRO	607	LL NDMA	SIM 8270D			Charge Number
2101071000C	3	A	X							XGMD
1001C (FB)	3		X							
1002C	3			X						
1003C	1				X					
1004C	1					X				
1005C (FB)	1					X				
1006C	2						X			

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	T. Metals	Anions/Alk	TDS	DRO	Perchlorate	NO2/NO3		Charge Number
2101071007C	2	A	X							XGMD
1008C	2			X						
1009C	1				X					
1010C	1					X				
1011C	1						X			
1012C	1							X		

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1/7/21 @ 1110		[signature]	1-11-21 /1000

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

Notebook No. D32 #119 (D)

OJECT B/m-10-817 EW-0053

Continued from page

Dan Halvorsen & Tony Torrez present. The weather is clear & warm. This zone will be purged & sampled with a dedicated Teflon bladder pump. Samples will be collected from a Teflon discharge tube. Carboy 3-1.

	INITIAL	FINAL
	210107 1425B	2107 1448B
pH	7.48	7.50
Temp	18.2°c	18.1
cond	1093 us/cm	1099
Turb	0.56	0.43
pH pre	7.05/10.10 (16.1)	7.04/9.99/(16.8°c)
pH post	7.09/10.05	7.05/10.05
DTW		

METER ID'S
pH/cond = 11
Turb # 20
" std = 5.49
" Adj = 5.83
" Lot # = 91017
" Exp = 1-29-21

SAMPLES

Sample #	Analysis	Preserv	Lot #	Cont	Lab
210107 1430B	8260	ice/HCl	2538	(3) 40ml vials	ALS
1431B	" (FB)	"	"	"	"
1432B	607	ice	108501	(1) 1L Amber	SRI
~~(FB) 607~~		~~"~~		~~"~~	~~"~~
1434B	" (M.S)	"	"	"	"
1435B	UNDMA	"	"	"	"
1437B	Total metals	ice/HNO_3	20-07001	(1) 125ml poly	ALS
1436B	UNDMA (FB)	ice/HNO_3	108501	(1) 1L Amber	SRI

Continued from page

Signed: T. [signature] Date: 1-7-21

Read and Understood By

Signed: [signature] Date: 1-11-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: ~~BIm-10-517~~ 1-7-21 Page 1 of 1

Sample Location: BIm-10-517			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260	607	LLNDMA	TOTAL METALS				XGMD / Charge Number
210107 1430B			X							
1431B (FB)			X							
1432B				X						
~~1433B (FB)~~				~~X~~						
1434B (MS)				X						
1435B					X					
~~1436B~~ 1436B					X	~~X~~				

Sample Location:			Analytical Requirement							
Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	TOTAL METALS							Charge Number
1437B			X							

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-7-2021 1600		[signature]	1-11-21 / 1000

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: __________

PROJECT BLM 15-305 ENV-0053

Notebook No. D32 # 118(c

Continued from page

Dan Halvorsen + Al Montes present. Weather is cloudy and cold. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a new Teflon discharge hose. Water quality parameters will be monitored using a QED MP-20 Flowcell and water analyzer. Carboy G(4)'s used

Calibrations:
DO Sensor = In saturated air @ 643 mm/Hg.
pH Sensor = using a 3pt. (4,7,10) Buffer method.
Conductivity = using a 1413 us/cm STD. Solution.
Turbidity meter = # 7   STD = 5.06   RDG = 5/5   Lot # = 91017   Exp = 1/31

Parameters (Time)	Temp	Cond	DO	pH	ORP	Turb.	DTW (ft)
2101250930C	20.66	1203	0.75	7.71	45	3.06	
— 0932C	20.65	1204	0.77	7.70	46	3.01	
— 0934C	20.64	1202	0.74	7.72	46	3.03	

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	Lab
2101250936C	VOA by 8260	Ice/HCl	(3) 40 ml Vial	25732	ALS
— 0937C	" " (FD)	"	"	"	"
— 0938C	NDMA/DMN Bromacil by 607	Ice	(1) 1L Amber	108501	SRI
— 0939C	Total Metals	Ice/HNO3	(2) 125 ml Poly	191129	ALS
— 0940C	Anions/Alk	Ice	(2) "	N/A	"
— 0941C	TDS by SM2540C	"	(1) "	"	"
— 0942C	Perchlorate by 6850	"	(1) "	"	"
— 0943C	NO2/NO3 by 353.2	Ice/H2SO4	(1) 250 ml Poly	"	"

Blind Controls

Sample #	Analysis	Preserve	Container	Lot	Lab
2101250944C	VOA by 8260	Ice/HCl	(3) 40 ml Vial	21EH112 A	ALS
— 0945C	NDMA/DMN Bromacil by 607	Ice	(1) 1L Amber	" B	SRI
— 0946C	Total Metals	Ice/HNO3	(2) 125 ml Poly	" C	ALS

Continued from page

Read and Understood By

[signature] Signed   1-25-2021 Date   [signature] Signed   1-26-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-25-2021 Page 1 of 1

Sample Location: Bldg. 15-305

Pertinent Notes (if any)

Sample Number		# of Containers	Sample Matrix*	VOA	607	metals	Anions/Alk	TDS	Perchlorate		Charge Number: XGMD
2101250936C		3	A	✓							
—— 0937C	FB	3	|	✓							
—— 0938C		1	|		✓						
—— 0939C		2	|			✓					
—— 0940C		2	|				✓				
—— 0941C		1	|					✓			
—— 0942C		1							✓		

Sample Location:

Pertinent Notes (if any)

Sample Number		# of Containers	Sample Matrix*	NO2/NO3	VOA	607	metals				Charge Number
2101250943C		1	A	✓							
—— 0944C	BC	3	|		✓						
—— 0945C	BC	1	|			✓					
—— 0946C	BC	2	|				✓				

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-25-2021 1115		[signature]	1-26-21 /0945

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

Notebook No. D32 #119 (8) 19

PROJECT Blm-17-550 ExW.0053

Continued from page

Tony Torrez & Dan Halvorsen present. The weather is clear & cold. This well will be purged & sampled with a dedicated bladder pump. Samples collected from a Teflon discharge Tube. Carboy G-1

	Initial	Final
	210107 0955B	210107 1014B
pH	7.30	7.34
Temp	17.2°c	16.8°c
Cond	1263	1273
Turb	9.79	10.04
ph pre	7.00/10.04 (12.4°c)	7.05/10.03 (13.1°c)
ph post	7.04/10.07	7.05/10.05
DTW	N/A	

Meter ID's	
pH/cond	11
Turb #	20
" std	5.49
" rdg	5.83
" lot #	91017
" exp	1-29-21

Samples

Sample#	Analysis	Preserv	Lot#	Cont	Lab
210107 1000B	8260	ice/HCl	2538	(3) 40ml vials	ALS
— 1001B	8260 (FB)	"	"	"	"
— 1002B	607	ice	108501	(1) 1Lt amber	SRI
— 1003B	Total metals	ice/HNO3	20-07-01	(2) 125ml poly	ALS
— 1004B	Anions/alk	ice	"	(2) 125ml poly	"
— 1005B	TDS	"	"	(1) "	"
— 1006B	perchlorate	"	"	(1) "	"
— 1007B	NO2/NO3	ice/H2SO4	N/A	(1) 250ml poly	"

Continued from page

Read and Understood By

Signed 1-7-21 Date

Signed 1-11-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-7-21 Page 1 of 1

Sample Location: B/m-17,550

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260	607	TOTAL METALS	ANIONS/ALK	TDS	PERCHLORATES		Charge Number XGMD
210107 1000B	3	A	X							
— 1001B (FB)	3		X							
— 1002B	1			X						
— 1003B	2				X					
— 1004B	2					X				
— 1005B	1						X			
— 1006B	1							X		

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260/8260							Charge Number
— 1007B			X							

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-7-21 / 1100		[signature]	1-11-21 / 1000

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

WSTF 381C (05/2016)

PROJECT Bum 18-430 ENV-0053

Dan Halvorsen & Al Montes present. Weather is windy, cloudy and cold. This well will be purged and sampled using a dedicated bladder pump. Samples will be collected using a new Teflon discharge hose. Water quality parameters will be monitored using a QED MP-20 Flowcell and Water analyzer. Carboy G4 in use.

Initial DTW = 387.35 ft.

Calibrations:
DO Sensor: In Saturated air @ 643 mm/Hg.
Conductivity = Using a 1413 us/cm STD. Solution.
pH Sensor: Using a 3pt. (4,7,10) Buffer method.
Turbidity meter # = 7 STD = 5.06 RDG = 5.15 LOT # = 91017 Exp: 1/21

Parameters (Time)	Temp	Cond	DO	PH	ORP	Turb	DTW (ft)
2101251445 C	18.78	1066	4.71	7.55	72	2.51	387.50
— 1447 C	18.80	1065	4.70	7.51	71	2.46	387.50
— 1449 C	18.79	1066	4.72	7.54	71	2.47	387.50

SAMPLES

Sample #	Analysis	Preserve	Container	LOT	LAB
2101251451C	VOA by 8260	Ice/HCl	(3) 40 ml Vial	25732	ALS
— 1452C	" " (Dup)	"	"	"	"
— 1453C	" " (FB)	"	"	"	"
— 1454C	NDMA/DMN Bromacil by 607	Ice	(1) L Amber	108501	SRT
— 1455C	Total Metals	Ice/HNO_3	(2) 125 ml Poly	191129	ALS
— 1456C	anions/Alk	Ice	(2) "	N/A	"
— 1457C	TDS by SM 2540C	"	(1) 125 ml Poly	"	"
— 1458C	Perchlorate by 6850	"	"	"	"
— 1459C	NO_2/NO_3 by 353.2	Ice/H_2SO_4	(1) 250 ml Poly	"	"

IDW = 2 gal.

Continued from page

Read and Understood By

[signature] Signed 1-25-2021 Date [signature] Signed 1-26-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-25-2021 Page 1 of 1

Sample Location: BLM-18-430

Pertinent Notes (if any)

Charge Number: XGMD

Sample Number	# of Containers	Sample Matrix*	VOC	TOC	Metals	Anions/Alk	TDS			Charge Number
210125 1451C	3	A	X							
1452C	3		X							
1453C	3		X							
1454C	1			X						
1455C	2				X					
1456C	2					X				
1457C	1						X			

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Perchlorate	NO2/NO3						Charge Number
210125 1458C	1	A	X							
1459C	1			X						

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-25-2021 1600		[signature]	1-26-21 / 0945

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ________________

WSTF 381C (05/2016)

PROJECT JER-1-483 ENV-0020

Continued from page

Dan Halvorsen & Robert Burrows. Weather is clear and cold. This zone will be purged and sampled using a FLUTe system. This zone will be purged atleast 4 times every 20 minutes prior to sampling. Samples will be collected using a dedicated Teflon discharge hose. Purge pressure will be set @ 248 psi. Sample pressure will be set @ 227 psi. Bubbler set @ 3 psi and stable @ 4 psi. The first 350 ml will be discarded. Carboy 65 in use.

Initial Parameters		Final Parameters	Meter ID		
Time	= 210112/1020 A	210112/1084A	PH/Cond = 11		
pH	= 8.87	8.83	Turb = 20		
Temp	= 18.8°C	18.3	" STD = 5.49		
Cond	= 1104 us/cm	1086	" RDG = 5.55		
Turb	= 0.82 ntu's	0.91	" LoT = 91017		
pH Pre	= 7.01-10.03 (15.4°C)	7.02-10.01	" Exp = 1/21		
pH Post	= 7.02-10.02	7.01-10.01	Buffer	LoT	Exp
			7		
			10		

Samples

Sample #	Analysis	Preserve	Container	LoT	Lab
210112/1055A	VOA by 8260 LL	Ice/HCl	(3) 40 ml Vial	2573	ALS
——1056A	" " (FB)	"	"	"	"
——1057A	NDMA LL	Ice	(1) 1L Amber	0108501	SRI
——1058A	" " (FB)	"	"	"	"
——1059A	SVOC-SIM	"	(1) 250 ml Amber		ALS

IDW = 8 gal.

Continued from page

Read and Understood By

Signed	Date	Signed	Date
[signature]	1-12-2021	[signature]	1-13-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-12-2021 Page 1 of 1

Sample Location: JER-1-483

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOA	NDMA LL	SVOA-SIM				Charge Number XGMD
210112 1055A	3	A	X						
1056A	3		X						
1057A	1			X					
1058A	1			X					
1059A	1				X				

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-12-2021 1600		[signature]	1-13-21 / 0910

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

Notebook No. D32 #120(A)

OJECT JER-1-563 ENV-0020

Continued from page

..n Halvorsen & Robert Burrows present. Weather is clear and cold. This zone ..ill be purged and sampled using a FLUTe system. This zone will be purged ..least 4 times every 20 minutes prior to sampling. Samples will be collected ..sing a dedicated Teflon discharge hose. Purge pressure set @ 248 psi. ..mple pressure set @ 227 psi. Bubbler set @ 3 psi and stable @ 4 psi. First ..50 ml will be discarded. Carboy G5 in use.

..itial Parameters		Final Parameters	Meter ID	
..me	= 2101121031 A	2101121445 A	PH/COND	= 11
..	= 8.66	8.58	TURB	= 20
..mp	= 18.8°C	18.9	" STD	= 5.49
..nD	= 1137 us/cm	1140	" RDG	= 5.55
..rB	= 2.15 ntu's	2.10	" LOT	= 91017
Pre	= 7.02-10.02 (15.3°C)	7.01-10.02	" EXP	= 1/21
Post	= 7.01-10.02	7.01-10.02		

Buffer	LOT	Exp.
7		
10		

SAMPLES

..mple #	Analysis	Preserve	Container	LOT	LAB
2101121335A	VOC by 8260 LL	Ice/HCl	(3) 40 ml Vial	2573	ALS
— 1336A	" " (FB)	"	"	"	"
— 1337A	NDMA LL	Ice	(1) 1L Amber	108501	SRL
— 1338A	" " (Dup)	"	"	"	"
— 1339A	" " (FB)	"	"	"	"
— 1440A	SVOC - SIM	"	(1) 250 ml Amber		ALS

IDW = 8 gal.

Continued from page

Read and Understood By

Signed 1-12-2021 Date

Signed Date 1-13-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-12-2021

Page 1 of 1

Sample Location: JER-1-563

Charge Number: XGMD

Sample Number	# of Containers	Sample Matrix*	VOC	NDMA LL	SVOC_SIM				
21011213335A	3	A	X						
1336A	3	A	X						
1337A	1	A		X					
1338A	1	A		X					
1339A	1	A		X					
1440A	1	A			X				

Sample Location:

Pertinent Notes (if any)

Charge Number

Sample Number	# of Containers	Sample Matrix*							

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-12-2021 1600		[signature]	1-13-21 / 0910

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________

PROJECT JER-1-683 ENV-0020

Continued from page

Dan Halvorsen & Robert Burrows present. Weather is clear and cold. This zone will be purged and sampled using a FLUTe system. This zone will be purged ~~and sampled~~ atleast 4 times every 20 minutes prior to sampling. Samples will be collected using a dedicated Teflon discharge hose. Purge pressure set @ 248 psi. Sample pressure set @ 227 psi. Bubbler set @ 3 psi, stable @ 4 psi. First 350 ml will be discarded. Carboy G5 in use.

Initial Parameters		Final Parameters
Time	= 2101121039A	2101121415A
pH	= 8.56	8.51
Temp	= 15.5°C	15.7
Cond	= 1108 us/cm	1110
Turb	= 1.17 ntu's	1.13
pH Pre	= 7.01-10.02 (15.3°C)	7.02-10.03
pH Post	= 7.02-10.02	7.01-10.01

Meter ID

PH/COND = 11

TURB = 20

STD = 5.49

RDG = 5.55

LOT = 9101?

EXP = 1/21

Buffer	Lot	Exp
7		
10		

SAMPLES

Sample #	Analysis	Preserve	Container	Lot	LAB
2101121400A	VOC by 8260 LL	Ice/HCl	(3) 40 ml vial	2573	ALS
—— 1401A	" " (FB)	"	"	"	"
—— 1402A	NDMA LL	Ice	(1) 1L Amber	108501	SRL
—— 1403A	" " (FB)	"	"	"	"
—— 1404A	SVOC SIM	"	(1) 250 ml Amber		ALS

IDW = 8 gal.

Continued from page

Read and Understood By

Signed [signature] Date 1-12-2021

Signed [signature] Date 1-13-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-12-2021 Page 1 of 1

Sample Location: JER-1-683

Pertinent Notes (if any)

Charge Number: XGMD

Sample Number	# of Containers	Sample Matrix*	VOC	NOMALL	SVOC_SIM				
2101121400A	3	A	X						
1401A	3		X						
1402A	1			X					
1403A	1			X					
1404A	1				X				

Sample Location:

Pertinent Notes (if any)

Charge Number

Sample Number	# of Containers	Sample Matrix*							

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-12-2021 1600		[signature]	1-13-21 / 0910

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________________

Notebook No. D32 #120(A)

Continued from page

JECT JER-2-504   ENV-0020   FLUTe

n Halvorsen & Robert Burrows present. Weather is clear and cold. This zone will be purged and sampled using a FLUTe system. This zone will be purged at least 4 times every 20 minutes prior to sampling. Samples will be collected using a dedicated Teflon discharge hose. Purge pressure set @ 265 psi, sample pressure set @ 241 psi. Bubbler set @ 3psi and stable @ 7psi. First 350 ml will be discarded. Carboy G5 in use.

Initial Parameters	Final Parameters	Meter ID
Time = 210114 0930 A	210114 1052 A	PH/COND = 11
= 9.06	9.03	TurB = 20
R = 13.7 °C	13.9	STD = 5.49
D = 1053 us/cm	1050	RDG = 5.55
B = 1.19 Ntu's	1.16	LOT = 91017
Pre = 7.02-10.01 (16.5°C)	7.00-10.02	Exp = 1/21
Post = 7.01-10.01	7.01-10.02	

Buffer	LOT	Exp
7		
10		

SAMPLES

Sample #	Analysis	Preserve	Container	LOT	LAB
210114 1010 A	VOA by 8260 LL	Ice/HCl	(3) 40 ml vial	2573	ALS
— 1011 A	" " (FB)	"	"	"	"
— 1012 A	NDMA LL	Ice	(1) 1L Amber	108501	SRI
— 1013 A	" " (FB)	"	"	"	"
— 1014 A	SVOA SIM	"	(1) 250 ml Amber	051820	ALS
— 1049 A	" " (Dup)	"	"	"	"

EDW = 8 gal

Continued from page

Read and Understood By

[signature] Signed   1-14-2021 Date   [signature] Signed   1-19-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-14-2021 Page 1 of 1

Sample Location: SER-2-504

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	VOC	VOMALL	SVOA-SIM					Charge Number
										XGMD
210114101 0A	3	A	X							
—— 1011A FB	3		X							
—— 1012A	1			X						
—— 1013A FB	1			X						
—— 1014A	1				X					
—— 1049A Dup	1				X					

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-14-2021 1600		[signature]	1-19-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________________

WSTF 381C (05/2016)

PROJECT SER-2-584 FLUTe GNJ-0020

Continued from page

Dan Halvorsen & Robert Burrows present. Weather is clear and cold. This zone will be purged and sampled using a FLUTe System. This zone will be purged atleast 4 times every 20 minutes prior to sampling. Samples will be collected using a dedicated Teflon hose. Purge pressure will be set @ 265 psi and sample pressure set @ 244 psi. Bubbler set @ 3 psi and stable @ 7 psi. First 350 ml will be discarded. Carboy G5 in use.

Initial Parameters		Final Parameters	Meter ID	
Time	= 210114 0940A	210114/053A	PH/COND	= 11
PH	= 8.74	8.71	TURB	= 20
Temp	= 13.2°C	13.3	SID	= 5.49
COND	= 1046 us/cm	1042	RDG	= 5.55
TURB	= 2.82 ntus	2.79	LOT	= 91017
PH Pre	= 7.01-10.02 (16.5°C)	7.02-10.02	Exp	= 1/21
PH Post	= 7.01-10.01	7.01-10.01		

Buffer	LOT	Exp
7		
10		

SAMPLES

SAMPLE #	Analysis	Preserve	Container	LOT	LAB
210114 1025A	VOC by 8260 LL	Ice/HCl	(3) 40 ml Vial	2573	ALS
— 1026A	" " (FB)	"	"	"	"
— 1027A	NDMA LL	Ice	(2) 1L Amber	108501	SRI
— 1028A	" " (FB)	"	"	"	"
— 1029A	SVOC SIM	"	(1) 250 ml Amber	051820	ALS

IDW = 8 gal.

Continued from page

Read and Understood By

Signed	Date	Signed	Date
[signature]	1-14-2021	[signature]	1-19-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-14-2021

Sample Location: JER- 2-584

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	VOA	NOMA LL 2	SVOA-SIM					XGMD / Charge Number
210114 1025A	3		X							
— 1026A	3		X							
— 1027A	1			X						
— 1028A	1			X						
— 1029A	1				X					

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-14-2021 1600		[signature]	1-19-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

Notebook No. D32 #120 (A)

OJECT JER-2-684 FLUTe ENV-0020

Continued from page

..n Halvorsen & Robert Burrows present. Weather is clear and cold. This
..one will be purged and sampled using a FLUTe system. This zone will be
..ged atleast 4 times every 20 minutes prior to sampling. Samples will be
..llected using a new Teflon discharge hose. Purge pressure set @ 265 psi
..d Sample pressure set @ 244 psi. Bubbler set @ 3 psi and Stable @ 7 psi.
..rst 350 ml will be discarded. Carboy G5 in use.

..itial Parameters		Final Parameters	Meter ID	
..me	= 210114 ~~0948A~~ 1040A	210114 1442A	PH/COND	= 11
..	= 8.21	8.10	TURB	= 20
..mp	= 17.2°C	17.3	" STD	= 5.49
..nd	= 1052 us/cm	1047	" RDG	= 5.55
..rb	= 0.88 ntus	0.84	" LOT	= 91017
..Pre	= 7.01-10.03 (16.6°C)	7.02-10.02	" EXP	= 1/21
..Post	= 7.01-10.02	7.02-10.01		

Buffer	LOT	EXP
7		
10		

SAMPLES

..mple	Analysis	Preserve	Container	LOT	LAB
210114 1248A	VOC 8260 LL	ICE/HCl	(3) 40 ml vial	2573	ALS
— 1249A	" " (FB)	"	"	"	"
— 1250A	NDMA LL	ICE	(1) 1L Amber	188501	SRI
— 1400A	" " (Dup)	"	"	"	"
— ~~1400A~~ 1401A	" " (FB)	"	"	"	"
— 1435A	SVOA SIM	"	(1) 250 ml Amber	051820	ALS

NOTE: Zone 684 does not hold pressure to sample properly.

±DW = 8 gal.

Continued from page

Signed

Date 1-14-2021

Read and Understood By

Signed

Date 1-19-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-14-2021 Page 1 of 1

Sample Location: JER-2-684			Analytical Requirement							
Pertinent Notes (if any)										XGMP
Sample Number	# of Containers	Sample Matrix*	VOA	NDMA LL	SVOA-SIM					Charge Number
210114/248A	3		X							
1249A	3		X							
1250A	1			X						
1400A	1			X						
1401A	1			X						
1435A	1				X					

Sample Location:			Analytical Requirement							
Pertinent Notes (if any)										
Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-14-2021 1600		[signature]	1-19-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT JP·1·424 WJI ENU·0053

Notebook No. 032 # 1181c)
Continued from page

Marys Avalos & Al Montes present. Weather is hazy & breezy. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge tube. Water quality parameters will be monitored using a QED MP·20 flow cell & water analyzer. Carboy G·5.

DTW - 411.52'

Calibrations
DO - Cal in saturated air @ 644 mm/Hg.
pH - Cal using Fisher Buffers (4,7,10)
Conductivity - Cal using 1413 us/cm STD solution.
Turbidity Meter #7 STD - 5.06 NTU RDG - 6.12 NTU Lot - 91017 Exp. 1/21

Parameters (time)	Temp (°C)	Conductivity (mS/cm)	DO (mg/L)	pH	ORP	Turb (NTU)	DTW (ft)
1) 2101141435c	20.85	1.068	3.90	7.13	98	0.89	411.60'
2) —— 1437c	20.77	1.069	4.07	7.07	104	0.72	"
3) —— 1439c	20.93	1.056	4.24	7.11	96	0.69	"

Samples

Sample #	Analysis	Preserve	Container	lot	lab
2101141445c	VOA by 8260 LL	HCl / Ice	(3) 40 ml vials	25732	ALS
—— 1446c	" (FB)	"	"	"	"
—— 1447c	607 / Bromacil	Ice	(1) 1L Amber	108501	SRI
—— 1448c	Low Level NDMA	"	"	"	"
—— 1449c	" (FB)	"	"	"	"

Blind Controls

Sample #	Analysis	Preserve	Container	lot	lab
2101141525c	Low Level NDMA	Ice	(1) 1L Amber	21CH111A	SRI

FDW · 2 gal

Continued from page

Read and Understood By

Signed [signature] Date 1/14/21

Signed [signature] Date 1-19-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/14/21 Page 1 of 1

Sample Location: 300-1-424

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260LL	LGT	LLNDMA				Charge Number
2101141445C	3	A	X						XGMD
1446C (FB)	3		X						
1447C	1			X					
1448C	1				X				
1449C (FB)	1				X				
1525C (BC)	1				X				

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	1/14/21 @ 1540	[signature]	1-19-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

PROJECT JP.2.447 WJI ENV.0053

Marcus Avalos & Dan Halvorsen present. Weather is cloudy & cold. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge tube. Water quality parameters will be monitored using a QED MP-20 flow cell & water analyzer. Carboy G-5

Calibrations DTW - 412.55'

DO - Cal in saturated air @ 644 mm/Hg.
pH - Cal using Fisher Buffers (4,7,10)
Conductivity - Cal using 1413 uS/cm STD solution.
Turbidity Meter #7 STD - 5.06 NTU RDG - 6.70 NTU Lot - 91017 Exp. 1/21

Parameters (time)	Temp (°C)	Conductivity (mS/cm)	DO (mg/L)	pH	ORP	Turb (NTU)	DTW (ft)
1) 210120 1515C	19.76	1.102	4.02	6.96	120	0.67	412.60'
2) ——— 1517C	19.68	1.108	3.98	6.97	119	1.00	÷
3) ——— 1519C	19.73	1.102	3.99	6.97	119	0.60	÷

Samples

Sample #	Analysis	Preserve	Container	lot	lab
2101201525C	VOA by 8260 LL	HCl/Ice	(3) 40 mL vials	25732	ALS
——— 1526C	= (MS)	=	=	=	=
——— 1527C	= (FB)	=	=	=	=
——— 1528C	Low Level NDMA	Ice	(1) 1L Amber	108501	SRI
——— 1529C	= (FB)	=	=	=	=

IDW - 2 gal

Signed [signature] Date 1/20/21

Read and Understood By

Signed [signature] Date 1-21-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/20/21 Page 1 of 1

Sample Location: JP.2.447

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	LL 8260	LLNDMA						Charge Number
2101201525C	3	A	X							X6MO
1526C (MS)	3		X							
1527C (FB)	3		X							
1528C	1			X						
1529C (FB)	1			X						

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	1/20/21 @ 1600	[signature]	1-21-21 / 0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

'0 Notebook No. D32 118(c)

ROJECT JP-3-509 WJI ENU-0053 Continued from page

Marcus Avalos & Al Montes present. Weather is clear & cool. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge tube. Water quality parameters will be monitored using a QED MP20 flow cell & water analyzer. For this event we will purge 3 ~~casing~~ Screen volumes. 22 gallons. We will collect parameters at 15 gallons & ~~the~~ 1st at the 22 gal mark. Flow rate is 0.0625 gpm.

Calibrations Carboy G-5

DO - Cal in saturated air @ 644 mm/Hg.

pH - Cal using Fisher Buffers (4, 7, 10)

Conductivity - Cal using 1413 uS/cm STD solution.

Turbidity Meter - #7 STD - 5.06 NTU RDG - 6.03 NTU lot - 91017 Exp - 1/29/21

15 gal Parameters	22 gal Parameters	Final
Time - 210112 1540 C	210113 1410 C	210113 1455 C
Temp - 21.03 °C	21.38 °C	21.36 °C
Conductivity - 1.092 mS/cm	1.073 mS/cm	1.068 mS/cm
DO - 3.82 mg/L	4.02 mg/L	3.71 mg/L
pH - 6.87	6.85	6.84
ORP - 106	101	101
Turb - 0.98 NTU	1.34 NTU	1.50 NTU

SAMPLES

Sample #	Analysis	Preserve	Container	lot	lab
210113 1415 C	VOA by 8260 C	HCl / Ice	(3) 40 ml vials	25732	ALS
—— 1416 C	" (FB)	"	"	"	"
—— 1417 C	607 / Bromacil	Ice	(1) 1L Amber	108501	SRI
—— 1418 C	" (MS)	"	"	"	"
—— 1419 C	Low Level NDMA	"	"	"	"
—— 1420 C	" (FB)	"	"	"	"
—— 1421 C	Total Metals	HNO3 / Ice	(2) 125 ml poly	191129	ALS
—— 1422 C	Anions / Alk	Ice / Zero HS	"	"	"
—— 1423 C	TDS by SM2540C	Ice	(1) "	"	"
—— 1424 C	Perchlorate 6850	Ice / 1/3 HS	"	"	"
—— 1425 C	NO2, NO3 353.2	H2SO4 / Ice	(1) 250 ml poly	200221	"

FDW - 15 gal - 1/12/21 — 7 gal 1/13/21

Continued from page

Read and Understood By

Signed 1/13/21 Date

Signed 1-12-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: JP-3-509

Page 1 of 1

Sample Location: 1/13/21

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260 LL	607	LL NDMA	T. Metals				Charge Number
2101131415C	3	A	X							XGMD
1416C (FB)	3		X							
1417C	1			X						
1418C (MS)	1			X						
1419C	1				X					
1420C (FB)	1				X					
1421C	2					X				

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Anions / Alk	TDS	Perchlorate	NO2 NO3				Charge Number
2101131422C	2	A	X							XGMD
1423C	1			X						
1424C	1				X					
1425C	1					X				

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1/13/21 @ 1600		[signature]	1-14-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ________

WSTF 381C (05/2016)

ROJECT JO.3.689 WJI ENV.0053

Marcus Avalos & Al Montes present. Weather is clear & cool. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a teflon discharge tube. Water quality parameters will be monitored using a QED MP20 flow cell & water analyzer. Carboy G-8

Calibrations
DO Cal in saturated air @ 644 mm/Hg.
pH Cal using Fisher Buffers (4,7,10)
Conductivity Cal using 1413 uS/cm STD solution.
Turbidity Meter #7 STD 5.06 NTU RDG lot 91017 Exp. 1/29/21

Trip Blanks

Sample #	Analysis	Preserve	Container	lot	lab
2101140700C	VOA by 8260 LL	HCl/Ice	(3) 40 ml vials	25732	Als.
— 0701C	Low Level NDMA	Ice	(1) 1L Amber	108501	SRI

Parameters (time)	Temp (°C)	Conductivity (mS/cm)	DO (mg/L)	pH	ORP	Turb (NTU)	DTW
1) 2101141005C	20.34	1.081	3.36	7.02	102	0.61	N/A
2) — 1006C	20.11	1.083	3.29	7.04	102	0.54	"
3) — 1007C	20.25	1.072	3.13	7.03	101	0.58	"

Samples

Sample #	Analysis	Preserve	Container	lot	lab
2101141010C	VOA by 8260 LL	HCl/Ice	(3) 40 ml vials	25732	Als
— 1011C	" (FB)	"	"	"	"
— 1012C	607/Bromacil	Ice	(1) 1L Amber	108501	SRI
— 1013C	Low Level NDMA	"	"	"	"
— 1014C	" (FB)	"	"	"	"
— 1015C	Total Metals	HNO3/Ice	(2) 125 ml poly	191129	Als
— 1016C	" (Dup)	"	"	"	"
— 1017C	Anions/Alk	Ice/Zero HS	"	"	"
— 1018C	TDS by SM2540C	Ice	(1) "	"	"
— 1019C	Perchlorate 6850	Ice/1/3 HS	"	"	"
— 1020C	NO2, NO3 353.2	H2SO4/Ice	(1) 250 ml poly	200221	"

Continued from page

Read and Understood By

[signature] 1/14/21 [signature] 1-19-21
Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/14/21 Page 1 of 1

Sample Location: JP.3-689

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260LL	607	LL NDMA	T. Metals				Charge Number
210114 1010C	3		X							XGMD
1011C (FB)	3		X							
1012C	1			X						
1013C					X					
1014C (FB)					X					
1015C	2					✓				
1016C (Dup)	2					X				

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	Anions Alk	TDS	Perchlorate	NO2NO3	8260 LL	LL NDMA		Charge Number
210114 1017C	2		X							XGMD
1018C	1			X						
1019C	1				X					
1020C	1					X				
0700C (TB)	3						X			
0701C (TB)	1							X		

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
M. [illegible]	1/14/21 @ 1110		[signature]	1-19-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

Notebook No. D32 # 118(c) 69

PROJECT 81.1.486 ~~WST ENV.0053~~

Continued from page ________

Marcus Avalos & Al Montes present. Weather is clear & cool. This well will be purged & sampled using a dedicated bladder pump. Samples will be collected using a new teflon discharge tube. Water quality parameters will be monitored using a QED MP-20 flow cell & water analyzer. Carboy G-1

DTW - 485.90'

Calibrations
DO - Cal in saturated air @ 641 mm/Hg.
pH - Cal using Fisher Buffers (4,7,10)
Conductivity - Cal using 1413 us/cm STD solution.
Turbidity Meter - #7 STD - 5.06 NTU RDG - 6.77 NTU Lot - 9/017 Exp - 1/29/21

Parameters (time)	Temp (°C)	Cond ( )	DO	pH	ORP	Turb (NTU)	DTW (ft)
1) 210111455C	17.31	1.111	6.33	7.21	40	1.05	487.05'
2) —— 1457C	17.29	1.104	6.08	7.24	42	0.98	"
3) —— 1459C	17.30	1.098	6.15	7.20	44	0.77	"

Samples

Sample #	Analysis	Preserve	Container	lot	lab
210111505C	VOA by 8260 LL	HCl / Ice	(3) 40 ml vials	25732	ALS
—— 1506C	" (Dup)	"	"	"	"
—— 1507C	" (FB)	"	"	"	"
—— 1508C	Low Level NDMA	Ice	(1) 1L Amber	108501	SRI
—— 1509C	" (FB)	"	"	"	"

TOW - 2 gal

Continued from page

Read and Understood By

Signed [signature] Date

Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: PI. 1. 486 Page 1 of 1

Sample Location: 1/11/21

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA					Charge Number
Pertinent Notes (if any)									
210111 1505C	3	A	X						XGMD
1506C (Dup)	3		X						
1507C (FB)	3		X						
1508C	1			X					
1509C (FB)	1			X					

Sample Location:

Sample Number	# of Containers	Sample Matrix*							Charge Number
Pertinent Notes (if any)									

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1/11/21 @ 1600		[signature]	1-12-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

)JECT PL-6-545 WJI ENV-0020

Notebook No. D64 #127 (Y)

Continued from page ______

b Tufts & Craig Del Ferraro present. Weather is clear & cool. This zone ll be sampled using 5 triple rinsed, stainless steel sample tubes. n. in use Probe # 2213. Surface checks performed on probe prior to mpling.

Trip Blanks - Water Purification System

ample	Analysis	Preservative	Container	Lot	Lab
210113 1245Y	VOA by 8260 LL	ice / HCL	(3) 40ml vials	2573-2	ALS
—— 1246Y	Low Level NDMA	ice	(1) 1L Amber	0108501F	SRI

30 Min. Equipment Blanks - Carboy B3

ample	Analysis	Preservative	Container	Lot	Lab
210113 1400Y	VOA by 8260 LL	ice / HCL	(3) 40ml vials	2573-2	ALS
—— 1401Y	Low Level NDMA	ice	(1) 1L Amber	0108501F	SRI

nitial Parameters	Final	Meter ID
ime - 210113 1440Y	Time - 210113 1535Y	pH / cond - 61
H - 8.17	PH - 8.02	Turb - 21
mp - 22.5 °C	Temp - 22.2 °C	" std - 55.5
ond - 927 us/cm	Cond - 917 us/cm	" rdg - 53.7
rb - 0.92 NTU's	Turb - 0.90 NTU's	" lot - 91017
pre - 7.12 / 10.09 (17.7 °C)	pH pre - 7.13 / 10.07 (17.4 °C)	" Exp - 1/29/21
post - 7.10 / 10.13	pH post - 7.09 / 10.06	
TW - 468.52 ft.	DTW - 468.67 ft.	
tmos - 12.61 psia	Atmos - 12.59 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	4002G91	8/21
10	400 ~~1~~B05	6/21

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
210113 1510Y	VOA by 8260 LL	ice / HCL	(3) 40ml vials	2573-2	ALS
—— 1511Y	Low Level NDMA	ice	(1) 1L Amber	0108501F	SRI

uns	1)	2)	3)
	50.02	49.96	49.93
	56.73	56.72	56.70
	56.70	56.69	56.72
	50.01	49.92	49.90

Continued from page

Read and Understood By

Craig Del Ferraro 1/13/21
Signed Date

[signature] 1-14-21
Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/13/21 | Page 1 of 1

Sample Location: PL-6-545

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
Pertinent Notes (if any)										
210113 1245Y (TB)	3	A	✓							XGMD
—— 1246Y (TB)	1	A		✓						"
—— 1400Y (EB)	3	A	✓							"
—— 1401Y (EB)	1	A		✓						"
—— 1510Y	3	A	✓							"
—— 1511Y	1	A		✓						"

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number
Pertinent Notes (if any)										

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferne	1/13/21 ~~1540 hrs.~~ 1600 hrs.		[signature]	1-14-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: __________

PROJECT PL-6-725 WJI ENV-0020

Bob Tufts & Craig Del Ferraro present. Weather is clear & cold. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe #2213. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G3

Sample	Analysis	Preservative	Container	Lot	Lab
210112 1340Y	VOA by 8260 LL	ice / HCL	(3) 40ml vials	2573-2	ALS
——— 1341Y	Low Level NDMA	ice	(1) 1L Amber	0108501F	SRI

Initial Parameters	Final	Meter ID
Time - 210112 1420Y	Time - 210112 1447Y	pH/cond - 61
PH - 8.01	PH - 7.91	Turb - 21
Temp - 22.5°C	Temp - 22.3°C	" std - 55.5
Cond - 1033 us/cm	Cond - 1018 us/cm	" rdg - 54.0
Turb - 6.37 NTU's	Turb - 3.97 NTU's	" lot - 91017
pH pre - 7.19 / 10.13 (14.2°C)	pH pre - 7.14 / 10.09 (16.3°C)	" Exp - 1/29/21
pH post - 7.17 / 10.10	pH post - 7.15 / 10.07	
DTW - 468.38 ft.	DTW - 468.52 ft.	
Atmos - 12.62 psia	Atmos - 12.61 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp.
7	4002691	8/21
10	4001D05	6/21

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
210112 1445Y	VOA by 8260 LL	ice / HCL	(3) 40ml vials	2573-2	ALS
——— 1446Y	Low Level NDMA	ice	(1) 1L Amber	0108501F	SRI

* Sampling event delayed several hours due to very cold temperatures. Westbay truck components are very sensitive to extreme temps.

Runs	1)	2)
	128.63	128.52
	135.72	135.70
	135.68	135.66
	128.58	128.49

Continued from page

Craig Del Ferraro — Signed — 1/12/21 — Date

Read and Understood By

[signature] — Signed — 1-13-21 — Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/12/21 Page 1 of 1

Sample Location: PL-6-725

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA						Charge Number
21011213404 (EB)	3	A	✓							XGMD
——13414 (EB)	1	A		✓						"
——14454	3	A	✓							"
——14464	1	A		✓						"

Pertinent Notes (if any)

Sample Location:

Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	1/12/21 1515hrs.		[signature]	1-13-21 /0910

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ________________

WSTF 381C (05/2016)

Notebook No. D64#127(y)

OJECT PL-6-915 WJI ENV-0020

Continued from page

ob Tufts & Craig Del Ferraro present. Weather is clear & cold. This one will be sampled using 5 triple rinsed, stainless steel sample tubes. n. in use. Probe #2213. Surface checks performed on probe prior to sampling.

Trip Blanks - Water Purification System

Sample	Analysis	Preservative	Container	Lot	Lab
2101111230Y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2573-2	ALS
——1231Y	Low Level NDMA	ice	(1) 1L Amber	0108501F	SRI

30 Min. Equipment Blanks - Carboy G3

ample	Analysis	Preservative	Container	Lot	Lab
2101111310Y	VOA by 8260 LL	ice/HCL	(3) 40ml/vials	2573-2	ALS
——1311Y	Low Level NDMA	ice	(1) 1L Amber	0108501F	SRI
——1410Y	Total Metals	ice/HNO_3	(2) 125ml poly's	20-07-07	ALS

nitial Parameters	Final	Meter ID
Time - 2101111455Y	Time - 2101111551Y	pH/cond - 61
H - 8.22	PH - 8.13	Turb - 21
mp - 22.3°C	Temp - 21.9°C	" std - 55.5
nd - 940us/cm	Cond - 967us/cm	" rdg - 53.4
rb - 2.53NTU's	Turb - 1.85NTU's	" lot - 91017
pre - 7.20/10.26 (11.4°C)	pH pre - 7.18/10.24 (11.1°C)	" Exp - 1/29/21
post - 7.18/10.27	pH post - 7.21/10.24	
TW - 468.23ft.	DTW - 468.38ft.	
tmos - 12.55psia	Atmos - 12.53psia	
	IDW - ½ gals	

Buffers	Lot	Exp
7	4002691	8/21
10	4001D05	6/21

Sampling event delayed due to cold temps.

Samples

ample	Analysis	Preservative	Container	Lot	Lab
2101111520Y	VOA by 8260LL	ice/HCL	(3) 40ml vials	2573-2	ALS
——1521Y	607/Bromacil	ice	(1) 1L Amber	0108501F	SRI
——1522Y	Low Level NDMA	"	"	"	"
——1550Y	Total Metals	ice/HNO_3	(2) 125ml poly's	20-07-07	ALS

uns	1)	2)	3)
	211.64	211.48	211.45
	218.68	218.72	218.69
	218.65	218.69	218.65
	211.59	211.51	211.42

Continued from page

Read and Understood By

Craig Del Ferraro 1/11/21
Signed Date

[signature] 1-12-21
Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/11/21 Page 1 of 1

Sample Location: PL-6-915

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260 LL	607	LL NDMA	Total Metals			Charge Number
2101111230Y (TB)	3	A	✓						XGMD
1231Y (TB)	1	A			✓				"
1310Y (EB)	3	A	✓						"
1311Y (EB)	1	A			✓				"
1410Y (EB)	2	A				✓			"
1520Y	3	A	✓						"
1521Y	1	A		✓					"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	LL NDMA	Total Metals					Charge Number
2101111522Y	1	A	✓						XGMD
1550Y	2	A		✓					"

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig DeFerro	1/11/21 1615 hrs.		[signature]	1-12-21 /0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

Bob Tufts & Craig Del Ferraro present. Weather is clear & cool. This zone will be sampled using 2 triple rinsed, stainless steel sample tubes. hex. in use. Probe #4955. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks – Carboy GS

Sample	Analysis	Preservative	Container	Lot	Lab
~~20~~ 210105 1410y	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2573-2	ALS
——— 1411y	Low Level NDMA	ice	(1) 1L Amber	0108501F	SRI
——— 1412y	1,4 Dioxane by 8270D	"	(1) 250ml amber	092319-18MC	ALS

Initial Parameters	Final	Meter ID
Time - 210105 1445y	Time - 210105 1556y	pH/cond - 61
PH - 8.29	PH - 8.17	Turb - 21
Temp - 21.9°C	Temp - 22.1°C	" Std - 55.5
Cond - 1093 us/cm	Cond - 1085 us/cm	" rdg - 56.2
Turb - 1.00 NTU's	Turb - 0.88 NTU's	" lot - 91017
pH pre - 7.08/10.10 (20.9°C)	pH pre - 7.07/10.11 (21.1°C)	" Exp - 1/29/21
pH post - 7.05/10.11	pH post - 7.08/10.10	
DTW - 463.08 ft.	DTW - 463.16 ft.	
Atmos - 12.19 psia	Atmos - 12.22 psia	
	IDW - 1/2 gals.	

Buffers	Lot	Exp
7	4002691	8/21
10	4001D05	6/21

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
210105 1520y	VOA by 8260 LL	ice/HCL	(3) 40ml vials	2573-2	ALS
——— 1521y	Low Level NDMA	ice	(1) 1L Amber	0108501F	SRI
——— 1555y	1,4 Dioxane by 8270D	"	(1) 250ml amber	092319-18MC	ALS

Runs	1)	2)	3)
	24.45	24.44	24.42
	21.90	21.93	21.93
	21.92	21.94	21.89
	24.48	24.42	24.37

Continued from page

Craig Del Ferraro — Signed — 1/5/21 — Date

Read and Understood By

[signature] — Signed — 1-6-21 — Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/5/21 Page 1 of 1

Sample Location: PL-10-484

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA	Dioxane					Charge Number
21010514l0Y (EB)	3	A	✓							XGMD
——1411Y (EB)	1	A		✓						"
——1412Y (EB)	1	A			✓					"
——1520Y	3	A	✓							"
——1521Y	1	A		✓						"
——1555Y	1	A			✓					"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	1/5/21 1615 hrs.		[signature]	1-6-21 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

0

ROJECT PL-10-592 WJI ENV-0020

Notebook No. D64 #127 (Y)

Continued from page

ob Tufts & Craig Del Ferraro present. Weather is clear & cool. This zone will e sampled using 2" steam cleaned & triple rinsed, stainless steel sample tubes, en. in use. Probe #4955. Surface checks performed on probe prior to sampling.

Trip Blanks - Water Purification System

Sample	Analysis	Preservative	Container	Lot	Lab
210105 0920Y	VOA by 8260 LL	ice / HCL	(3) 40ml vials	2573-2	ALS
—— 0921Y	Low Level NDMA	ice	(1) 1L Amber	0108501F	SRI

30 Min. Equipment Blanks - Carboy G5

Sample	Analysis	Preservative	Container	Lot	Lab
210105 1030Y	VOA by 8260LL	ice / HCL	(3) 40ml vials	2573-2	ALS
—— 1031Y	Low Level NDMA	ice	(1) 1L Amber	0108501F	SRI

Initial Parameters	Final	Meter ID
Time - 210105 1255Y	Time - 210105 1323Y	pH/cond - 61
pH - 7.95	PH - 7.84	Turb - 21
Temp - 23.2°c	Temp - 23.0°c	" Std - 55.5
Cond - 1092 us/cm	Cond - 1104 us/cm	" rdg - 56.2
Turb - 0.67 NTU's	Turb - 0.61 NTU's	" lot - 9J017
pH pre - 7.11 / 10.07 (18.3°c)	pH pre - 7.05 / 10.10 (20.6°c)	" Exp - 1/31/21
pH post - 7.09 / 10.09	pH post - 7.08 / 10.06	
DTW - 462.83 ft.	DTW - 463.08 ft.	
atmos - 12.20 psia	Atmos - 12.21 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	4002G91	8/21
10	4001D05	6/21

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
210105 1320Y	VOA by 8260 LL	ice / HCL	(3) 40ml vials	2573-2	ALS
—— 1321Y	Low Level NDMA	ice	(1) 1L Amber	0108501F	SRI
—— 1322Y	1,4 Dioxane by 8270D	"	(1) 250ml amber	092319-1BMC	ALS

uns 1) 71.44 2) 71.39
68.88 68.85
68.86 68.85
71.42 71.42

Continued from page

Read and Understood By

Craig Del Ferraro 1/5/21

Signed Date

[signature] 1-6-21

Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/5/21 | Page 1 of 1

Sample Location: PL-10-592

Sample Number	# of Containers	Sample Matrix*	8260 LL	LL NDMA	Dioxane					Charge Number
210105 0920Y (TB)	3	A	✓							XGMD
——— 0921Y (TB)	1	A		✓						"
——— 1030Y (EB)	3	A	✓							"
——— 1031Y (EB)	1	A		✓						"
——— 1320Y	3	A	✓							"
——— 1321Y	1	A		✓						"
——— 1322Y	1	A			✓					"

Pertinent Notes (if any):

Sample Location:

Analytical Requirement

Pertinent Notes (if any):

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	1/5/21 1615hrs		Jon W [illegible]	1-6-21 / 0830

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

2
ROJECT PL-6-1195 WJI ENV-0020

Notebook No. D64 #127(Y)
Continued from page ________

ob Tufts & Craig Del Ferraro present. Weather is clear & cold. This zone will be ampled using 5 steam cleaned & triple rinsed, stainless steel sample tubes en. in use. Probe # 1539. Surface checks performed on probe prior to sampling.

30 Min. Equipment Blanks - Carboy G5

Sample	Analysis	Preservative	Container	Lot	Lab
210106 0955Y	VOA by 8260 LL	ice / HCL	(3) 40ml vials	2573-2	ALS
—— 0956Y	Low Level NDMA	ice	(1) 1L Amber	010850IF	SRI

Initial Parameters	Final	Meter ID
Time - 2101061050Y	Time - 2101061444Y	pH/cond - 61
pH - 8.33	pH - 8.20	Turb - 21
Temp - 21.1°C	Temp - 20.9°C	" std - 55.5
Cond - 1446 us/cm	Cond - 1437 us/cm	" rdg - 56.9
Turb - 38.2 NTU's	Turb - 12.7 NTU's	" lot - 91017
pH pre - 7.17/10.19 (12.3°C)	pH pre - 7.09/10.14 (18.4°C)	" Exp - 1/29/21
pH post - 7.17/10.21	pH post - 7.06/10.15	
DTW - 467.90 ft.	DTW - 468.06 ft.	
Atmos - 12.73 psia	Atmos - 12.71 psia	
	IDW - 1/2 gal.	

Buffers	Lot	Exp
7	4002G91	8/21
10	4001D05	6/21

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
210106 1325Y	VOA by 8260 LL	ice / HCL	(3) 40ml vials	2573-2	ALS
—— 1326Y	607 Bromacil	ice	(1) 1L Amber	010850IF	SRI
—— 1405Y	Low Level NDMA	"	"	"	"
—— 1406Y	Total Metals	ice / HNO_3	(2) 125ml poly's	20-07-07	ALS
—— 1440Y	Anions / Alk.	ice	(2) 250ml poly's	012020-2AA0	"
—— 1441Y	TDS by SM2540C	"	(1) 250ml poly	"	"
—— 1442Y	Perchlorate by 6850	"	"	"	"
—— 1443Y	NO_2/NO_3 by 353.2	ice / H_2SO_4	"	20-08-11	"

Runs 1)	2)	3)	4)
334.64	334.51	334.31	334.15
339.51	339.58	339.43	339.44
339.45	339.51	339.37	339.40
334.49	334.48	334.25	334.11

Continued from page

Read and Understood By

Craig Del Ferraro — Signed — 1/6/21 — Date

[signature] — Signed — 1-7-21 — Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/6/21 | Page 1 of 1

Sample Location: PL-6-1195

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260 LL	607	LL NDMA	Total Metals	Anions/Alk.		Charge Number
2101060955Y (EB)	3	A	✓						XGMD
— 0956Y (EB)	1	A			✓				"
— 1325Y	3	A	✓						"
— 1326Y	1	A		✓					"
— 1405Y	1	A			✓				"
— 1406Y	2	A				✓			"
— 1440Y	2	A					✓		"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	TDS	Perchlorate	NO_2/NO_3				Charge Number
210106 1441Y	1	A	✓						XGMD
— 1442Y	1	A		✓					"
— 1443Y	1	A			✓				"

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Ferro	1/6/21 1530hrs.		[signature]	1-7-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT PL-6-1335 WJI ENV-0020

Continued from page

Bob Tufts & Craig Del Ferraro present. Weather is clear & cold. This zone will be sampled using 5 triple rinsed, stainless steel sample tubes. Gen. in use. Probe #1539. Surface checks performed on probe prior to sampling.

Trip Blanks - Water Purification System

Sample	Analysis	Preservative	Container	Lot	Lab
2101070830Y	VOA by 8260 LL	ice / HCL	(3) 40ml vials	2573-2	ALS
—— 0831Y	Low Level NDMA	ice	(1) 1L Amber	0108501F	SRI

30 Min. Equipment Blanks - Carboy G3

Sample	Analysis	Preservative	Container	Lot	Lab
2101070935Y	VOA by 8260 LL	ice / HCL	(3) 40ml vials	2573-2	ALS
—— 0936Y	607/Bromacil	ice	(1) 1L Amber	0108501F	SRI
—— 1040Y	Low Level NDMA	"	"	"	"

Initial Parameters	Final	Meter ID
Time - 2101071300Y	Time - 2101071517Y	pH/cond - 61
PH - 8.13	PH - 7.96	Turb - 21
Temp - 23.2°C	Temp - 23.0°C	" Std - 55.5
Cond - 1853 us/cm	Cond - 1876 us/cm	" rdg - 56.2
Turb - 12.7 NTU's	Turb - 4.15 NTU's	" lot - 91017
pH pre - 7.05 / 10.11 (19.4°C)	pH pre - 7.03/10.07 (20.5°C)	" Exp - 1/29/21
pH post - 7.06 / 10.13	pH post - 7.06/10.08	
DTW - 468.06 ft.	DTW - 468.23 ft.	Buffers Lot Exp
Atmos - 12.56 psia	Atmos - 12.54 psia	7 4002691 8/21
	IDW - 1/2 gal.	10 4001005 6/21

Samples

Sample	Analysis	Preservative	Container	Lot	Lab
2101071435Y	VOA by 8260 LL	ice / HCL	(3) 40ml vials	2573-2	ALS
—— 1436Y	607/Bromacil	ice	(1) 1L Amber	0108501F	SRI
—— 1515Y	Low Level NDMA	"	"	"	"
—— 1516Y	Total Metals	ice / HNO_3	(2) 125ml poly's	20-07-07	ALS

Runs			
	1) 394.96	2) 394.69	3) 394.65
	399.26	399.24	399.18
	399.21	399.26	399.12
	394.91	394.84	394.58

Continued from page

Read and Understood By

Craig Del Ferraro 1/7/21 [signature] 1-11-21

Signed Date Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1/7/21 Page 1 of 1

Sample Location: PL-6-1335

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260 LL	607	LLNDMA				Charge Number
2101070830Y (TB)	3	A	✓						XGMD
——0831Y (TB)	1	A			✓				"
——0935Y (EB)	3	A	✓						"
——0936Y (EB)	1	A		✓					"
——1040Y (EB)	1	A			✓				"
——1435Y	3	A	✓						"
——1436Y	1	A		✓					"

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	LLNDMA	Total Metals					Charge Number
2101071515Y	1	A	✓						XGMD
——1516Y	2	A		✓					"

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
Craig Del Fierro	1/7/21 1545hrs		[signature]	1-11-21 /1000

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

Notebook No. D32 #120 (4) 33

PROJECT ST-7-453 ENV. ~~III~~ N/A

Continued from page ________

Dan Halverson & Tony Tocker present. The weather is clear & cold. This zone will be purged & sampled using a Flute system. This zone was purged 4-6 times with 30 mins between purges. Samples collected from a dedicated Teflon discharge hose. Purge pressure was set at 228 psi & sample pressure was 207. Flow meter was set @ 8 psi & Bubbler ~~seat~~ stable @ 3 psi. First 350 mL of purge water was discarded prior to sampling. Carboy # 61

Initial		Final
210106 1030 A		210106 1040 A
pH	8.31	8.33
Temp	16.4 °C	16.8
Cond	1146	1137
Turb	1.39	1.29
ph pre	7.09/10.04 (14.5)	7.14/10.19 (14.8 °c)
ph post	7.10/10.07	7.10/10.20
DTT		

Meter ID's	
pH/cond	11
Turb #	20
" std	5.49
" rdg	5.57
" Lot #	91017
" Exp	1-29-21

Samples

Sample #	Analysis	Preserv	Lot #	Cont	Lab
210106 1035A	8260LL	Ice HCl	2573-2	(3) 40ml vials	~~SRL~~ ALS
1036A	" (FB)	"	"	"	"
1037A	LLNDMA	Ice	0108501F	(1) 1L amber	SRL
1038A	" (FB)	"	"	"	"

Continued from page

Signed: [signature] Date: 1-6-21

Read and Understood By

Signed: [signature] Date: 1-7-21

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-6-21 Page 1 of 1

Sample Location: ST-7.453

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement: 8260CC	Analytical Requirement: CCNDMA						Charge Number: XGMA
210106 1035A	3	A	X							
— 1036A	3		X							
— 1037A	1			X						
— 1038A	1			X						

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
T. D[illegible]	1-6-21 / 1600		[signature]	1-7-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

Notebook No. D32 #120 (A)

PROJECT ST-7-544 Env. N/A

Continued from page ______

Dan Halvorsen & Tony Toller present. The weather is clear & cold. This zone will be purged & sampled using a FLUTE system. This zone was purged a minimum of 4 times with 30 minutes between purges. Samples collected from a dedicated teflon discharge tube. Purge pressure @ 228 & sample pressure @ 207. The first 350 ml of purge was discharged prior to sampling. Carboy # 61

	Initial	Final
	210106 1045A	210106 1100A
pH	8.45	8.47
Temp	15.4	15.4
Cond	1123	1119
Turb	0.47	0.67
pH pre	7.15 / 10.17 (14.3)	7.18 / 10.19 (14.3)
pH post	7.17 / 10.18	7.17 / 10.20

METER ID's

pH/Cond = ~~20~~ 11

Turb # 20

" Std = 5.49

" Rdg = 5.54

" Lot # = 91017

" Exp = 1-29-21

Samples

Sample #	Analysis	Lot #	Cont	Preserv	Lab
210106 1050A	8260ll	2573-2	(3) 40 ml vials	w/ HCl	Als
——— 1051A	"	"	"	"	"
——— 1052A	LLNDMA	0108501F	(1) 1L amber	ICE	SRI
——— 1053	"	"	"	"	

Continued from page

Read and Understood By

Signed 1-6-21 Signed 1-7-21

Date Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-6-21 Page ______ of ______

Sample Location: ST-7.544

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260LL	LL8MA4						Charge Number
										XGMD ~~XGMAT~~
210106 1050A	3	A	X							
— 1051A	3		X							
— 1052A	1			X						
— 1053	1			X						

Sample Location:

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
[signature]	1-6-21 / 1600		[signature]	1-7-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______________________

WSTF 381C (05/2016)

Notebook No. D32 #120(A) 35

PROJECT St-7-779 ENV. N/A

Continued from page

DAN HALVORSEN + TONY TORRES PRESENT. THE WEATHER IS CLEAR & cold. This ZONE will be purged using A flute Sampling System. This ZONE will be purged 4-6 Times prior To SAMPLING. 30 mins BETWEEN purges. Samples Collected from A dedicated TEFLON discharge Tube. Purge Pressure @ 228 Sample pressure @ 207. The first 350 ml purged WAS discharged prior To Sampling. CARBOY # 61

	INITIAL	FINAL
	210106 1310A	1320A
pH	8.76	8.78
Temp	19.5 °c	19.8 °c
COND	978	978
Turb	0.41	0.55
ph pre	7.01 / 10.07 (15.4)	7.05 / 10.11 (15.7)
ph post	7.03 / 10.10	7.05 / 10.12

METER ID's
pH/COND = 11
Turb # 20
" Std = 5.49
" Rdg = 5.54
" Lot # = 91017
" Exp = 1-29-21

SAMPLES

SAMPLE #	Analysis	~~ID~~ PRESERV	LOT #	CONT	Lab
210106 1315A	8260LL	ICE/HCl	2573-2	(3) 40ml vials	A/S
—— 1316A	" (FB	"	"	"	"
—— 1317A	LLNDMA	ICE	010850IF	(1) 1L amber	SRI
—— 1318A	"	"	"	"	"

Continued from page

Read and Understood By

[signature] Signed 1/6/21 Date [signature] Signed 1-7-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-6-21 | Page 1 of 1

Sample Location: ST-7-779

Analytical Requirement

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*	8260LL	LLNO3/4						Charge Number: XGMD
210106 1315 A	3	A	X							
— 1316 A	3	|	X							
— 1317 A	1	|		X						
— 1318 A	1	|		X						

Sample Location:

Analytical Requirement

Pertinent Notes (if any)

Sample Number	# of Containers	Sample Matrix*								Charge Number

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
T. [signature]	1.6.21/1600		[signature]	1-7-21 /0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT ST-7.970 ENV. N/A

Notebook No. D32 #120(A)

Continued from page

DAN HALVORSEN & TONY TORREZ PRESENT. THE WEATHER IS CLEAR & COLD. THIS ZONE WILL PURGED & SAMPLED USING A FLUTE SYSTEM. ZONE PURGED AT LEAST 4-6 TIMES PRIOR TO SAMPLING WITH 30 MINUTES BETWEEN PURGES. SAMPLES COLLECTED FROM A DEDICATED TEFLON DISCHARGE HOSE PURGE PRESSURE @ 228 & SAMPLE PRESSURE @ 207. THE FIRST 350mls OF PURGE DISCHARGED PRIOR TO SAMPLING. CARBOY # G1

	INITIAL	FINAL
	210106 1325A	1440A
pH	8.26	~~8.78~~ 8.21
TEMP	19.6 °C	19.8 °C
COND	856	858
Turb	0.44	0.58 NTU's
phpre	7.11/10.19 (16.0)	7.11/10.17 (16.1)
phpost	7.09/10.17	7.09/10.15

METER ID's
pH/COND = 1
Turb # 20
" Std = 5.49
" Rdg = 5.54
" LOT # = 91017
" Exp = 1/29/21

SAMPLES

SAMPLE #	ANALYSIS	PRESERV	LOT	CONT	LAB
210106 1330A	8260	ICE/HCl	2573.2	(3) 40ml VIALS	ALS
1331A	"	"	"	"	"
1332A	1,4 DIOXANE	ICE	0109501F	(1) 1LT AMBER	SRT
1333A	"	"	"	"	"

Continued from page

Read and Understood By

[signature] 1-6-21
Signed Date

[signature] 1-7-21
Signed Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-6-01 Page 1 of 1

Sample Location: ST-7-970

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260LL	LLXMA						Charge Number
										XGMD
210106 1330A			X							
— 1331A			X							
— 1332A				X						
— 1333A				X						

Sample Location:

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	Analytical Requirement							Charge Number

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
T. [signature]	1-6-21 / 1600	[signature]	1-7-21 / 0900

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

PROJECT WW-5-459

Notebook No. D32 #120(43)

Continued from page

AC MONTES & TONY TORREZ PRESENT. THE WEATHER IS OVERCAST & COLD. THIS ZONE WILL BE PURGED & SAMPLED USING A FLUTE SYSTEM. THIS ZONE WILL BE PURGED AT LEAST 4 TIMES PRIOR TO SAMPLING WITH 30 MINS IN BETWEEN PURGES. PURGE PRESSURE SET @ 224 psi & SAMPLE PRESSURE SET @ 203 psi. BUBBLER SET @ 3 psi & STABLE @ 7 psi. THE FIRST 350 ml WILL BE THROWN PRIOR TO SAMPLING. CARBOY 6-3.

	INITIAL	FINAL
	210120 0900A	210120 0915A
ph	8.70	8.83
TEMP	12.1°c	12.1
COND	1062 us/cm	1065
TURB	3.24	3.43
phpre	7.04/9.98 (9.8°c)	7.05/10.05 (9.7)
phpost	7.05/10.05 (9.8)	7.06/10.04

METER ID'S

pH/cond	11
Turb#	20
" std	~~5.49~~ 5.49 NTU's
" Rdg	~~5.49~~ 5.62
" LOT#	~~STC2~~ 91017
" Exp	1/31/21

SAMPLES

SAMPLE#	ANALYSIS	PRESERV	LOT#	CONT	LAB
210120 0901A	8260LL	ICE/HCl	2573	(3) 40ml VIALS	ALS
— 0902A	" (FB)	"	"	"	"
— 0903A	LLNDMA	ICE	108501	(1) 1L AMBER	SRI
— 0904A	" (FB)	"	"	"	"

Continued from page

Read and Understood By

T. [signature] Signed 1-20-21 Date

[signature] Signed 1-20-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-20-21 Page 1 of 1

Sample Location: WW-5-459

Charge Number: XGMD

Sample Number	# of Containers	Sample Matrix*	8260LL	LLNDMA					
210120 0901A	3	A	X						
— 0902A	3		X						
— 0903A	1			X					
— 0904	1			X					

Pertinent Notes (if any)

Sample Location:

Pertinent Notes (if any)

Analytical Requirement

Charge Number

Sample Number	# of Containers	Sample Matrix*							

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	1-20-21/1100	[signature]	1-21-21 /0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

Notebook No. D32#120(A)

Continued from page

[P]ROJECT WW.5.579

[...]L MONTES & TONY TORREZ PRESENT. THE WEATHER IS OVERCAST & [c]old. THIS ZONE WILL BE purged & SAMPLED using A FLUTE [s]ystem. THIS ZONE WILL BE purged AT LEAST 4 TIMES WITH 30 [m]ins BETWEEN purges. PURGE PRESSURE SET @ 224 psi & Sample set [@] 203 psi. BUBBLER SET @ 3 psi WITH IT STABLE @ 7 psi. THE FIRST 50 ml's discarded prior TO SAMPLING... CARBOY 6-3.

	INITIAL	final
	210120 0920A	210120 1005A
[p]H	8.81	8.92
[T]Emp	12.4°c	19.0°c
[C]OND	1024 us/cm	1020
[T]urb	4.45	0.53
[p]h pre	7.05/9.99(9.8)	7.08/10.05(9.9°c)
[p]h post	7.06/10.01	7.06/10.07

METER ID's

pH/cond	11
Turb #	20
" std	5.49
" Rdg	5.62
" LOT #	91017
" Exp	1/31/20

SAMPLES

SAMPLE #	Analysis	PRESERV	LOT #	CONT.	LAB
210120 0921A	8260LL	ICE/HCl	2573	(3) 40ml vials	ALS
— 0922A	" (FB)	"	"	"	"
— 0923A	LL NDMA	ICE	108501	(1) 1L Amber	SRI
— 0924A	" (FB)	"	"	"	"
— 1002A	" (MS)	"	"	"	"
— 1003A	" (Dup, MS)	"	"	"	"

Continued from page

Read and Understood By

[signature] Signed   1-20-21 Date   [signature] Signed   1-20-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-20-21 Page 1 of 1

Sample Location: WW-5-579

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*	8260LL	LLNDMA					Charge Number XGMD
21012009 21A	3	A	X						
— 0922A	3		X						
— 0923A	1			X					
— 0924A	1			X					
— 1002A	1			X					
— 1003A	1			X					

Sample Location:

Analytical Requirement

Pertinent Notes (if any) / Sample Number	# of Containers	Sample Matrix*							Charge Number

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
[signature]	1-20-21 / 1100	[signature]	1-21-21 / 0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ____________

WSTF 381C (05/2016)

PROJECT WW-5-809

Notebook No. D32 #120 (A) 45

Continued from page ______

Al Montes & Tony Torrez present. The weather is overcast & cold. This zone will be purged & sampled with a flute system. This zone will be purge at least 4 times with 30 mins between purges. Purge pressure @ 224 psi & sample pressure @ 203 psi. Bubbler set at 3 psi & stable @ 7 psi. Carboy 6-3

INITIAL		FINAL
2101200930A		2101200945A
pH	8.39	8.43
Temp	13.8 °C	13.9 °C
Cond	972 µs/cm	983 µs/cm
Turb	1.08 NTU's	1.24 NTU's
pH pre	7.09/10.07 (9.9)	7.05/10.08 (9.9 °C)
pH post	7.09/10.05	7.05/10.09

METER ID's

pH/Cond = 11

Turb # = 20

" Std = 5.49

" Rdg = 5.62

" Lot # = 91017

" Exp = 1/31/20

SAMPLES

SAMPLE #	Analysis	PRESERV	LOT #	CONT	LAB
2101200931A	8260LL	Ice/HCl	2573	(3) 40ml vials	ALS
— 0932A	" (F.3)	"	"	"	"
— 0933A	1,4-Dioxane	Ice	108501	(1) 1L Amber	SRI
— 0934A	" (F.3	"	"	"	"

Continued from page

Read and Understood By

[signature] Signed 1-20-21 Date

[signature] Signed 1-20-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-20-21 Page 1 of 1

Sample Location: WW.5809

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*	8260LL	LLNDMA						Charge Number
21012009 31A	3	A	X							XGMA
— 0932A	3	|	X							
— 0933A	1	|		X						
— 0934A	1	⊥		X						

Pertinent Notes (if any)

Sample Location:

Analytical Requirement

Sample Number	# of Containers	Sample Matrix*								Charge Number

Pertinent Notes (if any)

Relinquished by:	Date / Time:		Accepted by:	Date / Time:
T. [signature]	1-20-21 / 1100		[signature]	1-21-21 / 0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

Notebook No. D32 #120 (A)

Continued from page ________

ECT WW-5-909

monTES & Tony TorrEz PRESENT. THE WEATHER IS OVERCAST & Cold.
is ZonE will bE purgEd & SampLEd using ThE FLATE SysTEm.
is ZonE will bE purgEd AT LEAST 4 TimEs with 30 minuTES BETWEEN
urgEs. THE BubbLER WAS SET @ 3psI And STAbLE @ 7psI
rboy 6-3

	INITIAL	FINAL
	210120 0950A	210120 0956A
pH	8.46	8.45
TEmp	13.7°c	13.9°c
ond	943 µs/cm	9.38 µs/cm
Turb	1.41	1.40
hpRE	7.09/10.07 (10.2)	7.07/10.09 (10.3)
hpost	7.07/10.06	7.05/10.08

METER ID's
pH/cond = 11
Turb # 20
" std = 5.49
" Rdg = 5.62
" LoT # = 91017
" Exp = 1-31-21

SAmples

SAmpLE #	AnALysis	PRESERV	LoT #	ConT	Lab
210120 0951A	8260 LL	ICE/Hcl	2573	(3) 40ml vials	ALS
0952A	"	"	"	"	"
0953A	LL NDMA	ICE	108501	(1) 1L Amber	SRI
0954A	" (FB)	"	"	"	"
0955A	" (Dup)	"	"	"	"

Continued from page

Signed 1-20-21 Date

Read and Understood By

Signed 1-20-21 Date

WSTF INTERNAL SAMPLE CHAIN OF CUSTODY RECORD

Date: 1-20-21 Page 1 of 1

Sample Location: WW-5-909

Sample Number	# of Containers	Sample Matrix*	8260CL	LLNDMA						Charge Number
Pertinent Notes (if any)										XGMD
2101200951A	3	A	X							
— 0952A	3		X							
— 0953A	1			X						
— 0954A	1			X						
— 0955A	1			X						

Sample Location:

Sample Number	# of Containers	Sample Matrix*								Charge Number
Pertinent Notes (if any)										

Relinquished by:	Date / Time:	Accepted by:	Date / Time:
T-Dg	1-20-21/1100	Jon W Munch	1-21-21 /0930

* Sample Matrix Types: G – Gaseous; A – Aqueous; S – Solid; O – Other: ______

WSTF 381C (05/2016)

Appendix C
Chemical Analytical Program
(Internal QA reports)

National Aeronautics and Space Administration

Quality Assurance Report for White Sands Test Facility
Groundwater Monitoring Data

November 2021

NM 8800019434

Report Submitted: April 13, 2022

Report Prepared by:
Carlyn A. Tufts
Environmental Scientist
Navarro Research and Engineering, Inc.

1.0 Introduction

The WSTF Groundwater Monitoring Plan (GMP) requires the preparation of a periodic report to assess the quality of groundwater analytical data reported. The monthly Quality Assurance Report (QAR) prepared and reviewed by responsible environmental contractor data management personnel provides the following information:

- A summary of notable anomalies and a follow-up on previous anomalies, if necessary.
- A summary of notable data quality issues by analytical method, if any.
- A list of the sample events for which groundwater samples were collected in November 2021.
- The quantity and type of quality control samples collected or prepared in November 2021.
- Definitions of data qualifiers used in WSTF analytical data reporting.
- The quantity and type of data qualifiers applied to individual analytical results.
- A list of quality assurance narratives for the month arranged by analytical method.
- A summary table of detections in equipment blank, field blank, and trip blank samples.

2.0 Data Quality

2.1 Notable Anomalies Identified in Previous Quality Assurance Reports

There were no notable anomalies requiring follow-up associated with previous QARs.

2.2 Notable Anomalies

There were no notable anomalies in the groundwater data associated with the November 2021 QAR.

3.0 Data Tables

Table 1 summarizes the groundwater sample events initiated in November 2021. This report is based on data quality issues related to the sample events listed in Table 1. Tables 2 through 8 contain information related to the sample events identified in Table 1. As specified by the GMP, specific quality control samples are utilized to assess the quality of analytical data. Table 2 presents the quantity of quality control samples collected for each analytical method. Table 3 compares the quality control sample percentages collected to the requirements in the GMP. When data quality criteria are not met, data qualifiers are applied to the data. Definitions of data qualifiers used for WSTF chemical analytical data are listed in Table 4. Table 5 and Table 6 present the total number of individual result records and summarize the quantity of field and laboratory data qualifiers assigned to individual analyte result records in the WSTF analytical database. Table 7 provides all quality assurance narratives associated with the sample events in Table 1. Narratives associated with qualified data are identified by **bold text** in Table 7. Table 8 provides a summary of all detections in WSTF blank samples.

Table 1 – Sample Events for November 2021

Well ID	Event Date	Well ID	Event Date	Well ID	Event Date
400-EV-131	11/1/2021	400-GV-125	11/2/2021	BLM-36-610	11/2/2021
400-JV-150	11/1/2021	B650-EFF-1	11/2/2021	BLM-36-860	11/2/2021
BLM-32-543	11/1/2021	B650-INF-1	11/2/2021	ST-4-589	11/2/2021
BLM-32-571	11/1/2021	B655-EFF-2	11/2/2021	BLM-17-493	11/3/2021
BLM-32-632	11/1/2021	B655-INF-2	11/2/2021	BLM-26-404	11/3/2021
ST-5-485	11/1/2021	BLM-24-565	11/2/2021	BLM-36-350	11/3/2021
ST-5-655	11/1/2021	BLM-3-182	11/2/2021	BLM-36-800	11/3/2021

Well ID	Event Date
PL-12-570	11/3/2021
PL-12-800	11/3/2021
BLM-38-480	11/4/2021
BLM-38-620	11/4/2021
BLM-8-418	11/4/2021
BW-5-295	11/4/2021
MPE-1	11/4/2021
MPE-10	11/4/2021

Well ID	Event Date
MPE-11	11/4/2021
MPE-8	11/4/2021
PL-7-480	11/8/2021
PL-7-560	11/8/2021
BLM-2-630	11/9/2021
200-I-185	11/10/2021
BLM-22-570	11/10/2021
100-D-176	11/11/2021

Well ID	Event Date
200-I-795	11/12/2021
200-I-490	11/15/2021
200-I-675	11/15/2021
NASA 6	11/15/2021
ST-1-473	11/15/2021
200-I-300	11/16/2021
200-I-375	11/16/2021
400-C-143	11/17/2021

Table 2 - Quantity of Quality Control Samples

Method	Samples	Field Blanks	Equip Blanks	Trip Blanks	Blind Controls	Duplicates	Matrix Spikes
Nitrate plus Nitrite as N by EPA Method 353.2	**9**	0	0	0	0	0	0
Nitrosamines by EPA Method 607	**29**	**1**	**1**	0	**1**	**4**	**1**
Perchlorate by SW-846 Method 6850	**5**	0	0	0	0	0	0
Organics by SW-846 Method 8015M	**2**	0	0	0	0	0	0
Pesticides by SW-846 Method 8081	**1**	0	0	0	0	0	0
PCBs by SW-846 Method 8082	**1**	0	0	0	0	0	0
Herbicides by SW-846 Method 8151	**1**	0	0	0	0	0	0
Volatile Organics by SW-846 Method 8260C	**34**	**24**	**10**	**3**	**1**	**6**	0
Low Level Volatile Organics by SW-846 Method 8260C	**11**	**5**	**6**	**4**	0	0	**1**
Semi-Volatile Organics by SW-846 Method 8270D	**3**	0	0	0	0	0	0
Dioxins/Furans by SW-846 Method 8290	**1**	0	0	0	0	0	0
Cyanide by SW-846 Method 9012B	**1**	0	0	0	0	0	0
Sulfide by SW-846 Method 9030	**1**	0	0	0	0	0	0
Phenolics by SW-846 Method 9066	**1**	0	0	0	0	0	0
Anions by Various EPA Methods	**6**	0	0	0	0	0	0
Total Metals by Various SW-846 Methods	**13**	**1**	**2**	0	**1**	**1**	0
Nitrosamines by Low-Level Method	**18**	**12**	**6**	**6**	**1**	**2**	0
Total Dissolved Solids by Standard Method 2540C	**6**	0	0	0	0	0	0

Table 3 – Quality Control Sample Percentages

Quality Control Requirement	Requirement %	Samp. Qty. since 12/1/2020	QC Qty. since 12/1/2020	QC % since 12/1/2020	Sample Quantity November 2021	QC Quantity November 2021	QC % November 2021
VOA Duplicates	10	521	56	**11**	45	6	13
VOA Matrix Spikes	2	521	11	**2**	45	1	2
607 Duplicates	10	328	32	**10**	29	4	14
607 Matrix Spikes	2	328	9	**3**	29	1	3
607 Equipment Blanks	2	328	10	**3**	29	1	3
607 Field Blanks	2	328	9	**3**	29	1	3
NDMA_LL Duplicates	10	312	37	**12**	18	2	11
NDMA_LL Matrix Spikes	2	312	8	**3**	18	0	0
Metals Duplicates	10	210	22	**10**	13	1	8
Metals Matrix Spikes	2	210	4	**2**	13	0	0

Quality Control Requirement	Requirement %	Samp. Qty. since 12/1/2020	QC Qty. since 12/1/2020	QC % since 12/1/2020	Sample Quantity November 2021	QC Quantity November 2021	QC % November 2021
Metals Equipment Blanks	5	210	13	**6**	13	2	15
Metals Field Blanks	5	210	12	**6**	13	1	8

Quality Control Requirement	Requirement %	Sample Events since 12/1/2020	QC Qty. since 12/1/2020	QC % since 12/1/2020	Sample Events November 2021	QC Quantity November 2021	QC % November 2021
VOA Equipment Blanks and Field Blanks	*Should approach 100%*	521	521	**100%**	45	45	100%
Low Level Nitrosamine Equipment Blanks and Field Blanks	*Should approach 100%*	308	308	**100%**	18	18	100%

Quality Control Requirement	Requirement %	Shipments since 12/1/2020	TB Qty. since 12/1/2020	TB % since 12/1/2020	Shipments in November 2021	TB Quantity November 2021	QC % November 2021
VOA Trip Blank (per shipment)	*Should approach 100%*	98	98	**100%**	7	7	100%
Low Level Nitrosamine Trip Blank (per shipment)	*Should approach 100%*	93	93	**100%**	6	6	100%

Table 4 - Definitions of Data Qualifiers

Qualifier	Definition
*	User defined qualifier. See quality assurance narrative.
A	The result of an analyte for a laboratory control sample (LCS), initial calibration verification (ICV) or continuing calibration verification (CCV) was outside standard limits.
AD	Relative percent difference for analyst (laboratory) duplicates was outside standard limits.
D	The reported result is from a dilution.
EB	The analyte was detected in the equipment blank.
FB	The analyte was detected in the field blank.
G	The result is an estimated value greater than the upper calibration limit.
i	The result, quantitation limit, and/or detection limit may have been affected by matrix interference.
J	The result is an estimated value less than the quantitation limit, but greater than or equal to the detection limit.
NA	The value/result was either not analyzed for or not applicable.
ND	The analyte was not detected above the detection limit.
Q	The result for a blind control sample was outside standard limits.
QD	The relative percent difference for a field duplicate was outside standard limits.
R	The result is rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
RB	The analyte was detected in the method blank.
S	The result was determined by the method of standard addition.
SP	The matrix spike recovery and/or the relative percent difference for matrix spike duplicates was outside standard limits.
T	The sample was analyzed outside the specified holding time or temperature.
TB	The analyte was detected in the trip blank.
TIC	The analyte was tentatively identified by a GC/MS library search and the amount reported is an estimated value.

Table 5 - Quantity of Field Based Data Qualifiers Assigned to Individual Result Records

Method	Total Result Records	"FB"	"EB"	"TB"	"Q"	"QD"	"SP"	"R"
Nitrate plus Nitrite as N by EPA Method 353.2	**9**	0	0	0	0	0	0	0
Nitrosamines by EPA Method 607	**99**	0	0	0	0	**4**	0	0
Perchlorate by SW-846 Method 6850	**5**	0	0	0	0	0	0	0
Organics by SW-846 Method 8015M	**2**	0	0	0	0	0	0	0
Pesticides by SW-846 Method 8081	**21**	0	0	0	0	0	0	0
PCBs by SW-846 Method 8082	**7**	0	0	0	0	0	0	0
Herbicides by SW-846 Method 8151	**6**	0	0	0	0	0	0	0
Volatile Organics by SW-846 Method 8260C	**2613**	**1**	0	**1**	0	0	0	0
Low Level Volatile Organics by SW-846 Method 8260C	**719**	0	**1**	0	0	0	0	0
Semi-Volatile Organics by SW-846 Method 8270D	**362**	0	0	0	0	0	0	0
Dioxins/Furans by SW-846 Method 8290	**25**	0	0	0	0	0	0	0
Cyanide by SW-846 Method 9012B	**1**	0	0	0	0	0	0	0
Sulfide by SW-846 Method 9030	**1**	0	0	0	0	0	0	0
Phenolics by SW-846 Method 9066	**1**	0	0	0	0	0	0	0
Anions by Various EPA Methods	**24**	0	0	0	0	0	0	0
Total Metals by Various SW-846 Methods	**378**	0	**2**	0	0	0	0	0
Nitrosamines by Low-Level Method	**40**	**2**	**7**	**1**	0	0	0	0
Total Dissolved Solids by Standard Method 2540C	**6**	0	0	0	0	0	0	0

Table 6 - Quantity of Laboratory based Data Qualifiers Assigned to Individual Result Records

Method	Total Result Records	"*"	"A"	"AD"	"G"	"RB"	"T"	"D"	"i"	"J"
Nitrate plus Nitrite as N by EPA Method 353.2	**9**	0	0	0	0	0	0	0	0	0
Nitrosamines by EPA Method 607	**99**	0	0	0	0	0	0	**4**	0	**1**
Perchlorate by SW-846 Method 6850	**5**	0	0	0	0	0	0	0	0	**1**
Organics by SW-846 Method 8015M	**2**	0	0	0	0	0	0	0	0	0
Pesticides by SW-846 Method 8081	**21**	0	0	0	0	0	0	0	0	0
PCBs by SW-846 Method 8082	**7**	0	0	0	0	0	0	0	0	0
Herbicides by SW-846 Method 8151	**6**	0	0	0	0	0	0	0	0	0
Volatile Organics by SW-846 Method 8260C	**2613**	0	**1**	0	0	0	0	0	0	**40**
Low Level Volatile Organics by SW-846 Method 8260C	**719**	0	0	0	0	0	0	0	0	**5**
Semi-Volatile Organics by SW-846 Method 8270D	**362**	0	**12**	0	0	0	0	0	0	0
Dioxins/Furans by SW-846 Method 8290	**25**	0	0	0	0	**1**	0	0	0	**1**
Cyanide by SW-846 Method 9012B	**1**	0	0	0	0	0	0	0	0	0
Sulfide by SW-846 Method 9030	**1**	0	0	0	0	0	0	0	0	0
Phenolics by SW-846 Method 9066	**1**	0	0	0	0	0	0	0	0	0
Anions by Various EPA Methods	**24**	0	0	0	0	0	0	0	0	0
Total Metals by Various SW-846 Methods	**378**	0	0	0	0	0	0	0	0	**66**
Nitrosamines by Low-Level Method	**40**	**3**	0	0	0	0	0	0	0	**4**
Total Dissolved Solids by Standard Method 2540C	**6**	0	0	0	0	0	0	0	0	0

Table 7 – Quality Assurance Narratives

Well ID	Event Date	SW-846 Method 8260C QA Narratives
BLM-22-570	11/10/2021	For Low Level SW-846 Method 8260C, 2-propanol (4.2 ug/L) was detected in the method blank for analytical batch 746755 below the reporting limit. No groundwater data are affected by this method blank contamination.
BLM-38-480	11/4/2021	For Low Level SW-846 Method 8260C, 2-propanol (7.5 ug/L) was detected in the method blank for analytical batch 746070 below the reporting limit. No groundwater data are affected by this method blank contamination.
PL-7-480	**11/8/2021**	**For Low Level SW-846 Method 8260C, 2-propanol (8.5 ug/L) was detected in the equipment blank (2111081250Y) below the reporting limit. Affected data are appropriately qualified.**
ST-4-589	11/2/2021	For Low Level SW-846 Method 8260C, matrix spike recoveries for sample 2111021007C were within laboratory control limits.
PL-7-480	**11/8/2021**	**For Low Level SW-846 Method 8260C, silane, fluorotrimethyl- (7.2 ug/L), silane, methoxytrimethyl- (6.4 ug/L), and silanol, trimethyl- (5.4 ug/L) were tentatively identified by a GC/MS library search in sample 2111081445Y.**
BLM-38-620	**11/4/2021**	**For Low Level SW-846 Method 8260C, silane, methoxytrimethyl- (5.1 ug/L) was tentatively identified by a GC/MS library search in sample 2111041310Y.**
B655-EFF-2	11/2/2021	For Low Level SW-846 Method 8260C, sulfur dioxide (6.1 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 745476. No groundwater data are affected by this method blank contamination.
ST-4-589	11/2/2021	For Low Level SW-846 Method 8260C, sulfur dioxide (6.1 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 745476. No groundwater data are affected by this method blank contamination.
ST-5-485	11/1/2021	For Low Level SW-846 Method 8260C, sulfur dioxide (6.1 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 745476. No groundwater data are affected by this method blank contamination.
ST-5-655	11/1/2021	For Low Level SW-846 Method 8260C, sulfur dioxide (6.1 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 745476. No groundwater data are affected by this method blank contamination.
B650-EFF-1	11/2/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
B655-EFF-2	11/2/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-22-570	11/10/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-38-480	11/4/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-38-620	11/4/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-8-418	11/4/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PL-7-480	11/8/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of

Well ID	Event Date	SW-846 Method 8260C QA Narratives
		the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PL-7-560	11/8/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-4-589	11/2/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-5-485	11/1/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-5-655	11/1/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
B650-EFF-1	11/2/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
B655-EFF-2	11/2/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BLM-22-570	11/10/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BLM-38-480	11/4/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BLM-38-620	11/4/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BLM-8-418	11/4/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
PL-7-480	11/8/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
PL-7-560	11/8/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated

Well ID	Event Date	SW-846 Method 8260C QA Narratives
		recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
ST-4-589	11/2/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
ST-5-485	11/1/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
ST-5-655	11/1/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
B650-EFF-1	11/2/2021	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
B655-EFF-2	11/2/2021	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-22-570	11/10/2021	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-38-480	11/4/2021	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-38-620	11/4/2021	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-8-418	11/4/2021	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-4-589	11/2/2021	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-5-485	11/1/2021	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL).

Well ID	Event Date	SW-846 Method 8260C QA Narratives
		Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-5-655	11/1/2021	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
B650-EFF-1	11/2/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
B655-EFF-2	11/2/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
BLM-22-570	11/10/2021	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
BLM-22-570	11/10/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
BLM-38-480	11/4/2021	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
BLM-38-620	11/4/2021	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
BLM-8-418	11/4/2021	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
BLM-8-418	11/4/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
PL-7-560	11/8/2021	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
PL-7-560	11/8/2021	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
ST-4-589	11/2/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
ST-5-485	11/1/2021	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
ST-5-655	11/1/2021	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
ST-5-655	11/1/2021	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
100-D-176	11/11/2021	For SW-846 Method 8260C in blind control sample (2111111021A), all recoveries were within standard limits. Additionally, vinyl chloride (0.21 ug/L) was detected below the reporting limit however none was added.
200-I-795	11/12/2021	For SW-846 Method 8260C, 1,1,2-trichloro-1,2,2-trifluoroethane (0.63 ug/L), trichloroethene (TCE) (0.42 ug/L) and 1,2-dichloro-1,1,2-trifluoroethane (CFC 123a) (0.2 ug/L) were detected in the equipment blank (2111120815Y) below the reporting limit. No groundwater data are affected by this equipment blank contamination.
BLM-3-182	11/2/2021	For SW-846 Method 8260C, 2-propanol (10 ug/L) was detected below the reporting limit and silane, methoxytrimethyl- (7.3 ug/L) and one unknown compound (5.3 ug/L) were tentatively identified by a GC/MS library search in the field blank (2111021343B). No groundwater data are affected by this field blank contamination.
B650-INF-1	11/2/2021	For SW-846 Method 8260C, 2-propanol (3.6 ug/L) and chloromethane (0.31 ug/L) were detected in the method blank for analytical batch 745908 below the reporting limit. No groundwater data are affected by this method blank contamination.
BLM-24-565	**11/2/2021**	**For SW-846 Method 8260C, 2-propanol (4.2 ug/L) was detected in the field blank (2111021432C) below the reporting limit. Affected data are appropriately qualified.**
200-I-490	11/15/2021	For SW-846 Method 8260C, 2-propanol (4.7 ug/L) was detected in the equipment blank (2111151300Y) below the reporting limit. No groundwater data are affected by this equipment blank contamination.
PL-12-570	11/3/2021	For SW-846 Method 8260C, 2-propanol (7.9 ug/L) was detected below the reporting limit and silane, methoxytrimethyl- (7.2 ug/L) was tentatively identified by a GC/MS library search in the trip blank (2111030700C). No groundwater data are affected by this trip blank contamination.
200-I-375	11/16/2021	For SW-846 Method 8260C, chloromethane (0.29 ug/L) was detected in the equipment blank (2111160830Y) below the reporting limit. No groundwater data are affected by this equipment blank contamination.
BLM-24-565	**11/2/2021**	**For SW-846 Method 8260C, chloromethane (1.6 ug/L) was detected below the reporting limit and silane, methoxytrimethyl- was tentatively identified by a GC/MS library search in the trip blank (2111021300C). Affected data are appropriately qualified.**
BLM-3-182	11/2/2021	For SW-846 Method 8260C, due to a sample labeling error in the field, sample 2111021342B and field blank 2111021343B were switched on the chain of custody and in the laboratory report. Using historic concentration comparison, sample numbers in the database were corrected to match the field logbook.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
B650-INF-1	11/2/2021	For SW-846 Method 8260C, field duplicate samples 2111021425 and 2111021426 the relative percent difference for 1,1,2-trichloro-1,2,2-trifluoroethane was 2.7%. Upper acceptance limit for relative percent difference is 25%.
B650-INF-1	11/2/2021	For SW-846 Method 8260C, field duplicate samples 2111021425 and 2111021426 the relative percent difference for trichloroethene (TCE) was 0.0%. Upper acceptance limit for relative percent difference is 25%.
B650-INF-1	11/2/2021	For SW-846 Method 8260C, field duplicate samples 2111021425 and 2111021426 the relative percent difference for trichlorofluoromethane (CFC 11) was 5.4%. Upper acceptance limit for relative percent difference is 25%.
PL-12-570	11/3/2021	For SW-846 Method 8260C, field duplicate samples 2111031003C and 2111031005C the relative percent difference for trichlorofluoromethane (CFC 11) was 3.8%. Upper acceptance limit for relative percent difference is 25%.
PL-12-570	11/3/2021	For SW-846 Method 8260C, field duplicate samples 2111031003C and 2111031005C the relative percent difference for 1,1,2-trichloro-1,2,2-trifluoroethane was 11.4%. Upper acceptance limit for relative percent difference is 25%.
PL-12-570	11/3/2021	For SW-846 Method 8260C, field duplicate samples 2111031003C and 2111031005C the relative percent difference for trichloroethene (TCE) was 5.5%. Upper acceptance limit for relative percent difference is 25%.
BLM-36-350	11/3/2021	For SW-846 Method 8260C, field duplicate samples 2111031350Y and 2111031351Y the relative percent difference for 1,2-dichloro-1,1,2-trifluoroethane (CFC 123a) was 1.5%. Upper acceptance limit for relative percent difference is 25%.
BLM-36-350	11/3/2021	For SW-846 Method 8260C, field duplicate samples 2111031350Y and 2111031351Y the relative percent difference for tetrachloroethene (PCE) was 9.8%. Upper acceptance limit for relative percent difference is 25%.
BLM-36-350	11/3/2021	For SW-846 Method 8260C, field duplicate samples 2111031350Y and 2111031351Y the relative percent difference for dichlorofluoromethane (CFC 21) was 1.3%. Upper acceptance limit for relative percent difference is 25%.
BLM-36-350	11/3/2021	For SW-846 Method 8260C, field duplicate samples 2111031350Y and 2111031351Y the relative percent difference for trichlorofluoromethane (CFC 11) was 2.8%. Upper acceptance limit for relative percent difference is 25%.
BLM-36-350	11/3/2021	For SW-846 Method 8260C, field duplicate samples 2111031350Y and 2111031351Y the relative percent difference for trichloroethene (TCE) was 1.5%. Upper acceptance limit for relative percent difference is 25%.
BLM-36-350	11/3/2021	For SW-846 Method 8260C, field duplicate samples 2111031350Y and 2111031351Y the relative percent difference for 1,1,2-trichloro-1,2,2-trifluoroethane was 4.8%. Upper acceptance limit for relative percent difference is 25%.
BW-5-295	11/4/2021	For SW-846 Method 8260C, field duplicate samples 2111041410B and 2111041411B the relative percent difference for 1,1,2-trichloro-1,2,2-trifluoroethane was 9.2%. Upper acceptance limit for relative percent difference is 25%.
BW-5-295	11/4/2021	For SW-846 Method 8260C, field duplicate samples 2111041410B and 2111041411B the relative percent difference for trichlorofluoromethane (CFC 11) was 2.4%. Upper acceptance limit for relative percent difference is 25%.
200-I-300	11/16/2021	For SW-846 Method 8260C, field duplicate samples 2111161400Y and 2111161401Y the relative percent difference for tetrahydrofuran (THF) was 12.9%. Upper acceptance limit for relative percent difference is 25%.
200-I-300	11/16/2021	For SW-846 Method 8260C, field duplicate samples 2111161400Y and 2111161401Y the relative percent difference for trichloroethene (TCE) was 3.5%. Upper acceptance limit for relative percent difference is 25%.
200-I-300	11/16/2021	For SW-846 Method 8260C, field duplicate samples 2111161400Y and 2111161401Y the relative percent difference for 1,2-dichloro-1,1,2-trifluoroethane (CFC 123a) was 3.9%. Upper acceptance limit for relative percent difference is 25%.
200-I-300	11/16/2021	For SW-846 Method 8260C, field duplicate samples 2111161400Y and 2111161401Y the relative percent difference for 1,1,2-trichloro-1,2,2-trifluoroethane was 10.5%. Upper acceptance limit for relative percent difference is 25%.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
200-I-300	11/16/2021	For SW-846 Method 8260C, field duplicate samples 2111161400Y and 2111161401Y the relative percent difference for dichlorofluoromethane (CFC 21) was 13.1%. Upper acceptance limit for relative percent difference is 25%.
400-C-143	11/17/2021	For SW-846 Method 8260C, field duplicate samples 2111171100C and 2111171101C the relative percent difference for 1,1,2-trichloro-1,2,2-trifluoroethane was 4.7%. Upper acceptance limit for relative percent difference is 25%.
400-C-143	11/17/2021	For SW-846 Method 8260C, field duplicate samples 2111171100C and 2111171101C the relative percent difference for trichlorofluoromethane (CFC 11) was 0.0%. Upper acceptance limit for relative percent difference is 25%.
200-I-795	**11/12/2021**	**For SW-846 Method 8260C, one unknown compound (26 ug/L) was tentatively identified by a GC/MS library search in sample 2111120935Y.**
MPE-10	**11/4/2021**	**For SW-846 Method 8260C, one unknown compound (6.1 ug/L) was tentatively identified by a GC/MS library search in sample 2111040941.**
MPE-8	**11/4/2021**	**For SW-846 Method 8260C, one unknown compound (6.2 ug/L) was tentatively identified by a GC/MS library search in sample 2111040931.**
BW-5-295	**11/4/2021**	**For SW-846 Method 8260C, one unknown compound (6.5 ug/L) was tentatively identified by a GC/MS library search in the field blank (2111041412B). Affected data are appropriately qualified.**
MPE-11	**11/4/2021**	**For SW-846 Method 8260C, one unknown compound (6.5 ug/L) was tentatively identified by a GC/MS library search in the field blank (2111040902). Affected data are appropriately qualified.**
BW-5-295	**11/4/2021**	**For SW-846 Method 8260C, one unknown compound (6.6 ug/L) was tentatively identified by a GC/MS library search in duplicate sample 2111041411B.**
MPE-1	**11/4/2021**	**For SW-846 Method 8260C, one unknown compound (6.6 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 746043. Affected data are appropriately qualified.**
MPE-10	**11/4/2021**	**For SW-846 Method 8260C, one unknown compound (6.6 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 746043. Affected data are appropriately qualified.**
MPE-11	**11/4/2021**	**For SW-846 Method 8260C, one unknown compound (6.6 ug/L) was tentatively identified by a GC/MS library search in sample 2111040901.**
MPE-8	**11/4/2021**	**For SW-846 Method 8260C, one unknown compound (6.6 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 746043. Affected data are appropriately qualified.**
MPE-8	**11/4/2021**	**For SW-846 Method 8260C, one unknown compound (6.7 ug/L) was tentatively identified by a GC/MS library search in the field blank (2111040932). Affected data are appropriately qualified.**
MPE-1	**11/4/2021**	**For SW-846 Method 8260C, one unknown compound (6.9 ug/L) was tentatively identified by a GC/MS library search in sample 2111040916.**
MPE-1	**11/4/2021**	**For SW-846 Method 8260C, one unknown compound (7 ug/L) was tentatively identified by a GC/MS library search in the field blank (2111040917). Affected data are appropriately qualified.**
200-I-300	**11/16/2021**	**For SW-846 Method 8260C, one unknown compound (7.5 ug/L) was tentatively identified by a GC/MS library search in duplicate sample 2111161401Y.**
BW-5-295	**11/4/2021**	**For SW-846 Method 8260C, one unknown compound (7.5 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 746019. Affected data are appropriately qualified.**
MPE-1	11/4/2021	For SW-846 Method 8260C, one unknown compound (7.5 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 746019. No groundwater data are affected by this method blank contamination.
MPE-10	11/4/2021	For SW-846 Method 8260C, one unknown compound (7.5 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 746019. No groundwater data are affected by this method blank contamination.
MPE-11	**11/4/2021**	**For SW-846 Method 8260C, one unknown compound (7.5 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 746019. Affected data are appropriately qualified.**

Well ID	Event Date	SW-846 Method 8260C QA Narratives
MPE-8	11/4/2021	For SW-846 Method 8260C, one unknown compound (7.5 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 746019. No groundwater data are affected by this method blank contamination.
BLM-24-565	**11/2/2021**	**For SW-846 Method 8260C, silane, fluorotrimethyl- (11 ug/L) and silane, methoxytrimethyl- (7 ug/L) were tentatively identified by a GC/MS library search in sample 2111021431C.**
100-D-176	**11/11/2021**	**For SW-846 Method 8260C, silane, fluorotrimethyl- (12 ug/L) and silane, methoxytrimethyl- (5.3 ug/L) were tentatively identified by a GC/MS library search in sample 2111111006A.**
BW-5-295	**11/4/2021**	**For SW-846 Method 8260C, silane, fluorotrimethyl- (7.9 ug/L) and one unknown compound (6.3 ug/L) were tentatively identified by a GC/MS library search in sample 2111041410B.**
400-EV-131	11/1/2021	For SW-846 Method 8260C, silane, methoxytrimethyl- (5.1 ug/L) was tentatively identified by a GC/MS library search in the field blank (2111010952C). No groundwater data are affected by this field blank contamination.
400-EV-131	11/1/2021	For SW-846 Method 8260C, sulfur dioxide (6.1 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 745476. No groundwater data are affected by this method blank contamination.
400-JV-150	11/1/2021	For SW-846 Method 8260C, sulfur dioxide (6.1 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 745476. No groundwater data are affected by this method blank contamination.
BLM-32-543	11/1/2021	For SW-846 Method 8260C, sulfur dioxide (6.1 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 745476. No groundwater data are affected by this method blank contamination.
BLM-32-571	11/1/2021	For SW-846 Method 8260C, sulfur dioxide (6.1 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 745476. No groundwater data are affected by this method blank contamination.
BLM-32-632	11/1/2021	For SW-846 Method 8260C, sulfur dioxide (6.1 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 745476. No groundwater data are affected by this method blank contamination.
200-I-300	11/16/2021	For SW-846 Method 8260C, tetrahydrofuran (THF) (1.8 ug/L) was detected in the equipment blank (2111161300Y) below the reporting limit. No groundwater data are affected by this equipment blank contamination.
NASA 6	11/15/2021	For SW-846 Method 8260C, tetrahydrofuran (THF) (2.3 ug/L) was detected in the field blank (2111151106C) below the reporting limit. No groundwater data are affected by this field blank contamination.
100-D-176	11/11/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
200-I-185	11/10/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
200-I-300	11/16/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
200-I-375	11/16/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
200-I-490	11/15/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
200-I-675	11/15/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
200-I-795	11/12/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
400-C-143	11/17/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
400-EV-131	11/1/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
400-GV-125	11/2/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
400-JV-150	11/1/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
B650-INF-1	11/2/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
B655-INF-2	11/2/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-17-493	11/3/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-24-565	11/2/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-2-630	11/9/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-26-404	11/3/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-3-182	11/2/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-32-543	11/1/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
BLM-32-571	11/1/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-32-632	11/1/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-36-350	11/3/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-36-610	11/2/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-36-800	11/3/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BW-5-295	11/4/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
MPE-1	11/4/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
MPE-10	11/4/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
MPE-11	11/4/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
MPE-8	11/4/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
NASA 6	11/15/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PL-12-570	11/3/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PL-12-800	11/3/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-1-473	11/15/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
100-D-176	11/11/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
200-I-185	11/10/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
200-I-300	11/16/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
200-I-375	11/16/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
200-I-490	11/15/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
200-I-675	11/15/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
200-I-795	11/12/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
400-C-143	11/17/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
400-EV-131	11/1/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
400-GV-125	11/2/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
400-JV-150	11/1/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
B650-INF-1	11/2/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
B655-INF-2	11/2/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BLM-17-493	11/3/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BLM-24-565	11/2/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate. Detections below the reporting limit are appropriately qualified.
BLM-26-404	11/3/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BLM-3-182	11/2/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BLM-32-543	11/1/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BLM-32-571	11/1/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BLM-32-632	11/1/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BLM-36-350	11/3/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BLM-36-610	11/2/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
BLM-36-800	11/3/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BLM-36-860	11/2/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
NASA 6	11/15/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
PL-12-570	11/3/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
PL-12-800	11/3/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
ST-1-473	11/15/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
400-EV-131	11/1/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
400-GV-125	11/2/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
400-JV-150	11/1/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
B650-INF-1	11/2/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
B655-INF-2	11/2/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
BLM-17-493	11/3/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-24-565	11/2/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-26-404	11/3/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-3-182	11/2/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-32-543	11/1/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-32-571	11/1/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-32-632	11/1/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-36-350	11/3/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-36-610	11/2/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-36-800	11/3/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-36-860	11/2/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
PL-12-570	11/3/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-12-800	11/3/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
200-I-185	11/10/2021	For SW-846 Method 8260C, there were no detections in the equipment blank.
200-I-675	11/15/2021	For SW-846 Method 8260C, there were no detections in the equipment blank.
BLM-36-350	11/3/2021	For SW-846 Method 8260C, there were no detections in the equipment blank.
BLM-36-610	11/2/2021	For SW-846 Method 8260C, there were no detections in the equipment blank.
BLM-36-800	11/3/2021	For SW-846 Method 8260C, there were no detections in the equipment blank.
BLM-36-860	11/2/2021	For SW-846 Method 8260C, there were no detections in the equipment blank.
100-D-176	11/11/2021	For SW-846 Method 8260C, there were no detections in the field blank.
400-C-143	11/17/2021	For SW-846 Method 8260C, there were no detections in the field blank.
400-GV-125	11/2/2021	For SW-846 Method 8260C, there were no detections in the field blank.
400-JV-150	11/1/2021	For SW-846 Method 8260C, there were no detections in the field blank.
B650-INF-1	11/2/2021	For SW-846 Method 8260C, there were no detections in the field blank.
B655-INF-2	11/2/2021	For SW-846 Method 8260C, there were no detections in the field blank.
BLM-17-493	11/3/2021	For SW-846 Method 8260C, there were no detections in the field blank.
BLM-2-630	11/9/2021	For SW-846 Method 8260C, there were no detections in the field blank.
BLM-26-404	11/3/2021	For SW-846 Method 8260C, there were no detections in the field blank.
BLM-32-543	11/1/2021	For SW-846 Method 8260C, there were no detections in the field blank.
BLM-32-571	11/1/2021	For SW-846 Method 8260C, there were no detections in the field blank.
BLM-32-632	11/1/2021	For SW-846 Method 8260C, there were no detections in the field blank.
MPE-10	11/4/2021	For SW-846 Method 8260C, there were no detections in the field blank.
PL-12-570	11/3/2021	For SW-846 Method 8260C, there were no detections in the field blank.
PL-12-800	11/3/2021	For SW-846 Method 8260C, there were no detections in the field blank.
ST-1-473	11/15/2021	For SW-846 Method 8260C, there were no detections in the field blank.
200-I-675	11/15/2021	For SW-846 Method 8260C, there were no detections in the trip blank.

Well ID	Event Date	Modified EPA Method 607 QA Narratives
100-D-176	11/11/2021	For Modified EPA Method 607 in blind control sample (2111111022A), all recoveries were within standard limits.
BLM-36-350	11/3/2021	For Modified EPA Method 607, field duplicate samples 2111031352Y and 2111031420Y the relative percent difference for bromacil was 3.4%. Upper acceptance limit for relative percent difference is 25%.
BLM-36-350	11/3/2021	For Modified EPA Method 607, field duplicate samples 2111031352Y and 2111031420Y the relative percent difference for N-nitrosodimethylamine was 10.2%. Upper acceptance limit for relative percent difference is 25%.
BLM-36-350	11/3/2021	For Modified EPA Method 607, field duplicate samples 2111031352Y and 2111031420Y the relative percent difference for N-nitrodimethylamine was 10.5%. Upper acceptance limit for relative percent difference is 25%.
BW-5-295	**11/4/2021**	**For Modified EPA Method 607, field duplicate samples 2111041413B and 2111041414B the relative percent difference for bromacil was 28.6%. This value is outside the upper acceptance limit for relative percent difference of 25%.**

Well ID	Event Date	Modified EPA Method 607 QA Narratives
BW-5-295	11/4/2021	For Modified EPA Method 607, field duplicate samples 2111041413B and 2111041414B the relative percent difference for N-nitrosodimethylamine was 9.7%. Upper acceptance limit for relative percent difference is 25%.
BW-5-295	11/4/2021	For Modified EPA Method 607, field duplicate samples 2111041413B and 2111041414B the relative percent difference for N-nitrodimethylamine was 5.1%. Upper acceptance limit for relative percent difference is 25%.
NASA 6	11/15/2021	For Modified EPA Method 607, field duplicate samples 2111151107C and 2111151108C the relative percent difference for bromacil was 0.0%. Upper acceptance limit for relative percent difference is 25%.
NASA 6	11/15/2021	For Modified EPA Method 607, field duplicate samples 2111151107C and 2111151108C the relative percent difference for N-nitrosodimethylamine was 0.0%. Upper acceptance limit for relative percent difference is 25%.
NASA 6	11/15/2021	For Modified EPA Method 607, field duplicate samples 2111151107C and 2111151108C the relative percent difference for N-nitrodimethylamine was 9.5%. Upper acceptance limit for relative percent difference is 25%.
ST-1-473	**11/15/2021**	**For Modified EPA Method 607, field duplicate samples 2111151417A and 2111151418A the relative percent difference for bromacil was 48.0%. This value is outside the upper acceptance limit for relative percent difference of 25%.**
ST-1-473	11/15/2021	For Modified EPA Method 607, field duplicate samples 2111151417A and 2111151418A the relative percent difference for N-nitrosodimethylamine was 16.4%. Upper acceptance limit for relative percent difference is 25%.
ST-1-473	11/15/2021	For Modified EPA Method 607, field duplicate samples 2111151417A and 2111151418A the relative percent difference for N-nitrodimethylamine was 16.7%. Upper acceptance limit for relative percent difference is 25%.
BLM-36-610	11/2/2021	For Modified EPA Method 607, matrix spike recoveries for sample 2111021035Y were within laboratory control limits.
NASA 6	**11/15/2021**	**For Modified EPA Method 607, NDMA and DMN were detected in samples 2111151107C and 2111151108C at levels exceeding the calibration curve. Both samples were diluted 20-fold and reanalyzed. Bromacil results are reported from the initial analysis since there might be carryover from a previous sample into the 20-fold dilution analysis of 2111151107C. Affected groundwater data are appropriately qualified.**
200-I-375	11/16/2021	For Modified EPA Method 607, there were no detections in the equipment blank.
BLM-26-404	11/3/2021	For Modified EPA Method 607, there were no detections in the field blank.

Well ID	Event Date	Low-Level Nitrosamine Method QA Narratives
BLM-2-630	11/9/2021	For Low Level Nitrosamine Method in blind control sample (2111101145C), the percent recovery for N-nitrosodimethylamine (131.2%) was outside of the standard limits (70-130%). Additionally, N-nitrodimethylamine (1.63 ng/L) was detected but none was added. No groundwater data are affected by this QC issue.
PL-12-800	11/3/2021	For Low Level Nitrosamine Method, field duplicate samples 2111031432C and 2111031434C the relative percent difference for N-nitrosodimethylamine was 0.0%. Upper acceptance limit for relative percent difference is 25%.
BLM-2-630	11/9/2021	For Low Level Nitrosamine Method, for blind control 2111101145C the recovery of the internal standard NDMA-d6 (7.2%) was outside laboratory control limits (10-100%). No corrective action was needed, since the instrument demonstrated sufficient signal to noise intensity to detect native NDMA in the sample.
PL-7-480	**11/8/2021**	**For Low Level Nitrosamine Method, for sample 2111081446Y the recovery of the internal standard NDMA-d6 (8.2%) was outside laboratory control limits (10-100%). No corrective action was needed, since the instrument demonstrated sufficient signal to noise intensity to detect native NDMA in the sample. Potentially affected data are appropriately qualified.**
BLM-22-570	11/10/2021	For Low Level Nitrosamine Method, for sample 2111101442B and field blank 2111101443B the recoveries of the internal standard NDMA-d6 (9.4%) and (7.0%) were outside laboratory control limits (10-100%). No corrective action was needed, since the instrument demonstrated sufficient signal to noise intensity to detect native NDMA in the sample.

Well ID	Event Date	Low-Level Nitrosamine Method QA Narratives
PL-7-560	11/8/2021	For Low Level Nitrosamine Method, for trip blank 2111080741Y, equipment blank 2111080826Y, and sample 2111080941Y the recoveries of the internal standard NDMA-d6 (8.7%), (9.0%), and (9.3%) were outside laboratory control limits (10-100%). No corrective action was needed, since the instrument demonstrated sufficient signal to noise intensity to detect native NDMA in the sample.
BLM-38-480	**11/4/2021**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.4 ng/L) was detected in the equipment blank (2111041401Y) below the reporting limit. Affected data are appropriately qualified.**
BLM-32-571	**11/1/2021**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.42 ng/L) was detected in the field blank (2111011505B) below the reporting limit. Affected data are appropriately qualified.**
BLM-32-632	**11/1/2021**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.42 ng/L) was detected in the field blank (2111011524B) below the reporting limit. Affected data are appropriately qualified.**
PL-7-560	**11/8/2021**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.5 ng/L) was detected in the trip blank (2111080741Y). Affected data are appropriately qualified.**
ST-5-485	**11/1/2021**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.58 ng/L) was detected in the equipment blank (2111011301Y). Affected data are appropriately qualified.**
BLM-38-620	**11/4/2021**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.76 ng/L) and N-nitrodimethylamine (0.2 ng/L) were detected in the equipment blank (2111041016Y) below the reporting limit for N-nitrodimethylamine only. Affected data are appropriately qualified.**
ST-5-655	**11/1/2021**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.95 ng/L) was detected in the equipment blank (2111010906Y). Affected data are appropriately qualified.**
PL-7-560	**11/8/2021**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (2.54 ng/L) and N-nitrodimethylamine (0.23 ng/L) were detected in the equipment blank (2111080826Y) below the reporting limit for N-nitrodimethylamine only. Affected data are appropriately qualified.**
BLM-2-630	11/9/2021	For Low Level Nitrosamine Method, relative percent differences (RPD) for duplicate samples 2111091424C and 2111091425C were within control limits or below the calculable range.
B650-EFF-1	11/2/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
B655-EFF-2	11/2/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
BLM-22-570	11/10/2021	For Low Level Nitrosamine Method, there were no detections in the trip blank.
BLM-22-570	11/10/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
BLM-24-565	11/2/2021	For Low Level Nitrosamine Method, there were no detections in the trip blank.
BLM-24-565	11/2/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
BLM-2-630	11/9/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
BLM-32-543	11/1/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
BLM-8-418	11/4/2021	For Low Level Nitrosamine Method, there were no detections in the trip blank.
BLM-8-418	11/4/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
PL-12-570	11/3/2021	For Low Level Nitrosamine Method, there were no detections in the trip blank.
PL-12-570	11/3/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
PL-12-800	11/3/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
PL-7-480	11/8/2021	For Low Level Nitrosamine Method, there were no detections in the equipment blank.
ST-4-589	11/2/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
ST-5-655	11/1/2021	For Low Level Nitrosamine Method, there were no detections in the trip blank.

Well ID	Event Date	SW-846 Method 8270D QA Narratives
100-D-176	**11/11/2021**	**For SW-846 Method 8270D, 1H-benzotriazole, 4-methyl- (19 ug/L), dichloromethane (methylene chloride) (6.8 ug/L), and two unknown compounds were tentatively identified by a GC/MS library search in sample 2111111009A.**

Well ID	Event Date	SW-846 Method 8270D QA Narratives
BLM-32-543	**11/1/2021**	**For SW-846 Method 8270D, benzenesulfonamide, N-butyl- (2,100 ug/L) was tentatively identified by a GC/MS library search in sample 2111011529B.**
100-D-176	**11/11/2021**	**For SW-846 Method 8270D, benzidine has been reported as zero percent recovery in the LCS due to a limitation in LIMs. Benzidine was detected at 9% recovery, outside laboratory limits. The LCS is not acceptable and should be flagged on the summary form. The LCSD was within limits. Affected groundwater data are appropriately qualified.**
100-D-176	**11/11/2021**	**For SW-846 Method 8270D, cyclohexasiloxane, dodecamethyl- (4.7 ug/L) and two unknown compounds were tentatively identified by a GC/MS library search in the method blank for analytical batch 391485. Affected data are appropriately qualified.**
BLM-3-182	**11/2/2021**	**For SW-846 Method 8270D, one unknown compound (5.3 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 390957. Affected data are appropriately qualified.**
BLM-3-182	**11/2/2021**	**For SW-846 Method 8270D, the control limits were exceeded for one or more surrogates. A reanalysis was not performed because insufficient sample was available. No further corrective action was possible. Surrogate data are appropriately quailified.**
BLM-3-182	**11/2/2021**	**For SW-846 Method 8270D, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Additional analysis of the associated field samples could not be performed because insufficient sample remained for testing. Potentially affected groundwater data are appropriately qualified.**
BLM-32-543	**11/1/2021**	**For SW-846 Method 8270D, the lower control limit for the spike recovery of the Laboratory Control Sample Duplicate (LCSD) was exceeded for indeno(1,2,3-cd)pyrene. There were no detections of the analyte in the associated field samples. The LCS/Batch MS/MSD were within limits for all analytes. Affected data are appropriately qualified.**
BLM-3-182	11/2/2021	For SW-846 Method 8270D, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
100-D-176	11/11/2021	For SW-846 Method 8270D, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-3-182	**11/2/2021**	**For SW-846 Method 8270D, one unknown compound- (4.9 ug/L) was tentatively identified by a GC/MS library search in sample 2111021345B.**

Well ID	Event Date	Total Metals QA Narratives
100-D-176	11/11/2021	For Total Metals, blind control sample (2111111023A) was prepared at a concentration below the reporting limits for calcium and boron. The results for these metals are not qualified based on this control.
200-I-300	**11/16/2021**	**For Total Metals, calcium (0.3 mg/L), magnesium (0.09 mg/L), strontium (0.04 mg/L), and zinc (0.004 mg/L) were detected in the equipment blank (2111161301Y) below the reporting limit. Affected data are appropriately qualified.**
200-I-675	**11/15/2021**	**For Total Metals, calcium (0.5 mg/L), magnesium (0.1 mg/L), strontium (0.02 mg/L) and zinc (0.01 mg/L) were detected in the equipment blank (2111150846Y) below the reporting limit. Affected data are appropriately qualified.**
NASA 6	11/15/2021	For Total Metals, field duplicate samples 2111151109C and 2111151110C the relative percent difference for calcium was 0.2%. Upper acceptance limit for relative percent difference is 25%.
NASA 6	11/15/2021	For Total Metals, field duplicate samples 2111151109C and 2111151110C the relative percent difference for sodium was 0.0%. Upper acceptance limit for relative percent difference is 25%.
NASA 6	11/15/2021	For Total Metals, field duplicate samples 2111151109C and 2111151110C the relative percent difference for magnesium was 0.1%. Upper acceptance limit for relative percent difference is 25%.

Well ID	Event Date	Total Metals QA Narratives
NASA 6	11/15/2021	For Total Metals, field duplicate samples 2111151109C and 2111151110C the relative percent difference for barium was 4.4%. Upper acceptance limit for relative percent difference is 25%.
NASA 6	11/15/2021	For Total Metals, field duplicate samples 2111151109C and 2111151110C the relative percent difference for strontium was 0.0%. Upper acceptance limit for relative percent difference is 25%.
NASA 6	11/15/2021	For Total Metals, field duplicate samples 2111151109C and 2111151110C the relative percent difference for iron was 0.0%. Upper acceptance limit for relative percent difference is 25%.
NASA 6	11/15/2021	For Total Metals, field duplicate samples 2111151109C and 2111151110C the relative percent difference for chromium was 1.0%. Upper acceptance limit for relative percent difference is 25%.
NASA 6	11/15/2021	For Total Metals, field duplicate samples 2111151109C and 2111151110C the relative percent difference for manganese was 3.1%. Upper acceptance limit for relative percent difference is 25%.
BW-5-295	11/4/2021	For Total Metals, there were no detections in the field blank.

Well ID	Event Date	Miscellaneous QA Narratives
100-D-176	11/11/2021	For EPA Method 300.0, fluoride (0.06 mg/L) was detected in the method blank for analytical batch 746589. No groundwater data are affected by this method blank contamination.
200-I-185	11/10/2021	For EPA Method 300.0, fluoride (0.06 mg/L) was detected in the method blank for analytical batch 746589. No groundwater data are affected by this method blank contamination.
100-D-176	11/11/2021	For SW-846 Method 8015D, gasoline range organics (10.2 ug/L) was detected in the method blank for analytical batch 790509 below the reporting limit. No groundwater data are affected by this method blank contamination.
BLM-3-182	11/2/2021	For SW-846 Method 8151A, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-3-182	11/2/2021	For SW-846 Method 8151A, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-3-182	**11/2/2021**	**For SW-846 Method 8290A, several compounds were detected above the reporting limit in the method blank. Affected data are appropriately qualified.**

Table 8 – WSTF Blank Sample Detections

Well ID	Event Date	Comment	Analysis	Sample Type	CAS No.	Analyte	Result	Units	QA flag
BLM-3-182	11/2/2021	Carboy G2	8260	VOA-FB	67-63-0	2-Propanol	10	ug/L	J FB
PL-7-480	11/8/2021	Carboy G5	8260_LL	VOA-EB	67-63-0	2-Propanol	8.5	ug/L	J EB
PL-12-570	11/3/2021	Carboy G3	8260	VOA-TB	67-63-0	2-Propanol	7.9	ug/L	J TB
BLM-3-182	11/2/2021	Carboy G2	8260	VOA-FB	1825-61-2	Silane, methoxytrimethyl-	7.3	ug/L	TIC FB
PL-12-570	11/3/2021	Carboy G3	8260	VOA-TB	1825-61-2	Silane, methoxytrimethyl-	7.2	ug/L	TIC TB
MPE-1	11/4/2021	Carboy PF1	8260	VOA-FB	TIC	Unknown	7	ug/L	TIC RB FB
MPE-8	11/4/2021	Carboy PF1	8260	VOA-FB	TIC	Unknown	6.7	ug/L	TIC RB FB
MPE-11	11/4/2021	Carboy PF1	8260	VOA-FB	TIC	Unknown	6.5	ug/L	TIC RB FB
BW-5-295	11/4/2021	Carboy G2	8260	VOA-FB	TIC	Unknown	6.5	ug/L	TIC RB FB
BLM-24-565	11/2/2021	Carboy G3	8260	VOA-TB	1825-61-2	Silane, methoxytrimethyl-	5.8	ug/L	TIC TB
BLM-3-182	11/2/2021	Carboy G2	8260	VOA-FB	TIC	Unknown	5.3	ug/L	TIC FB
400-EV-131	11/1/2021	Carboy G1	8260	VOA-FB	1825-61-2	Silane, methoxytrimethyl-	5.1	ug/L	TIC FB
200-I-490	11/15/2021	Carboy G5	8260	VOA-EB	67-63-0	2-Propanol	4.7	ug/L	J EB

Well ID	Event Date	Comment	Analysis	Sample Type	CAS No.	Analyte	Result	Units	QA flag
BLM-24-565	11/2/2021	Carboy G3	8260	VOA-FB	67-63-0	2-Propanol	4.2	ug/L	J FB
PL-7-560	11/8/2021	Carboy G5	NDMA_LL	NDMA_LL-EB	62-75-9	N-Nitrosodimethylamine	2.54	ng/L	* TB EB
NASA 6	11/15/2021	Carboy G1	8260	VOA-FB	109-99-9	Tetrahydrofuran (THF)	2.3	ug/L	J FB
200-I-300	11/16/2021	Carboy G5	8260	VOA-EB	109-99-9	Tetrahydrofuran (THF)	1.8	ug/L	J EB
BLM-24-565	11/2/2021	Carboy G3	8260	VOA-TB	74-87-3	Chloromethane	1.6	ug/L	J TB A
ST-5-655	11/1/2021	Carboy G5	NDMA_LL	NDMA_LL-EB	62-75-9	N-Nitrosodimethylamine	0.95	ng/L	EB
BLM-38-620	11/4/2021	Carboy G5	NDMA_LL	NDMA_LL-EB	62-75-9	N-Nitrosodimethylamine	0.76	ng/L	EB
200-I-795	11/12/2021	Carboy G5	8260	VOA-EB	76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.63	ug/L	J EB
ST-5-485	11/1/2021	Carboy G5	NDMA_LL	NDMA_LL-EB	62-75-9	N-Nitrosodimethylamine	0.58	ng/L	EB
200-I-675	11/15/2021	Carboy G5	METALS	METALS-EB	7440-70-2	Calcium, Total	0.5	mg/L	J EB
PL-7-560	11/8/2021	Carboy G5	NDMA_LL	NDMA_LL-TB	62-75-9	N-Nitrosodimethylamine	0.5	ng/L	* TB EB
200-I-795	11/12/2021	Carboy G5	8260	VOA-EB	79-01-6	Trichloroethene (TCE)	0.42	ug/L	J EB
BLM-32-571	11/1/2021	Carboy G2	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.42	ng/L	J FB
BLM-32-632	11/1/2021	Carboy G2	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.42	ng/L	J FB
BLM-38-480	11/4/2021	Carboy G5	NDMA_LL	NDMA_LL-EB	62-75-9	N-Nitrosodimethylamine	0.4	ng/L	J EB
200-I-300	11/16/2021	Carboy G5	METALS	METALS-EB	7440-70-2	Calcium, Total	0.3	mg/L	J EB
200-I-375	11/16/2021	Carboy G5	8260	VOA-EB	74-87-3	Chloromethane	0.29	ug/L	J EB A
PL-7-560	11/8/2021	Carboy G5	NDMA_LL	NDMA_LL-EB	4164-28-7	N-Nitrodimethylamine	0.23	ng/L	J EB
BLM-38-620	11/4/2021	Carboy G5	NDMA_LL	NDMA_LL-EB	4164-28-7	N-Nitrodimethylamine	0.2	ng/L	J EB
200-I-795	11/12/2021	Carboy G5	8260	VOA-EB	354-23-4	1,2-Dichloro-1,1,2-trifluoroethane (CFC 123a)	0.2	ug/L	J EB
200-I-675	11/15/2021	Carboy G5	METALS	METALS-EB	7439-95-4	Magnesium, Total	0.1	mg/L	J EB
200-I-300	11/16/2021	Carboy G5	METALS	METALS-EB	7439-95-4	Magnesium, Total	0.09	mg/L	J EB
200-I-300	11/16/2021	Carboy G5	METALS	METALS-EB	7440-24-6	Strontium, Total	0.04	mg/L	J EB
200-I-675	11/15/2021	Carboy G5	METALS	METALS-EB	7440-24-6	Strontium, Total	0.02	mg/L	J EB
200-I-675	11/15/2021	Carboy G5	METALS	METALS-EB	7440-66-6	Zinc, Total	0.01	mg/L	J EB
200-I-300	11/16/2021	Carboy G5	METALS	METALS-EB	7440-66-6	Zinc, Total	0.004	mg/L	J EB

National Aeronautics and Space Administration

Quality Assurance Report for White Sands Test Facility Groundwater Monitoring Data

December 2021

NM 8800019434

Report Submitted: April 15, 2022

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1.0 Introduction

The WSTF Groundwater Monitoring Plan (GMP) requires the preparation of a periodic report to assess the quality of groundwater analytical data reported. The monthly Quality Assurance Report (QAR) prepared and reviewed by responsible environmental contractor data management personnel provides the following information:

- A summary of notable anomalies and a follow-up on previous anomalies, if necessary.
- A summary of notable data quality issues by analytical method, if any.
- A list of the sample events for which groundwater samples were collected in December 2021.
- The quantity and type of quality control samples collected or prepared in December 2021.
- Definitions of data qualifiers used in WSTF analytical data reporting.
- The quantity and type of data qualifiers applied to individual analytical results.
- A list of quality assurance narratives for the month arranged by analytical method.
- A summary table of detections in equipment blank, field blank, and trip blank samples.

2.0 Data Quality

2.1 Notable Anomalies Identified in Previous Quality Assurance Reports

There were no notable anomalies requiring follow-up associated with previous QARs.

2.2 Notable Anomalies

There were no notable anomalies in the groundwater data associated with the December 2021 QAR.

3.0 Data Tables

Table 1 summarizes the groundwater sample events initiated in December 2021. This report is based on data quality issues related to the sample events listed in Table 1. Tables 2 through 8 contain information related to the sample events identified in Table 1. As specified by the GMP, specific quality control samples are utilized to assess the quality of analytical data. Table 2 presents the quantity of quality control samples collected for each analytical method. Table 3 compares the quality control sample percentages collected to the requirements in the GMP. When data quality criteria are not met, data qualifiers are applied to the data. Definitions of data qualifiers used for WSTF chemical analytical data are listed in Table 4. Table 5 and Table 6 present the total number of individual result records and summarize the quantity of field and laboratory data qualifiers assigned to individual analyte result records in the WSTF analytical database. Table 7 provides all quality assurance narratives associated with the sample events in Table 1. Narratives associated with qualified data are identified by **bold text** in Table 7. Table 8 provides a summary of all detections in WSTF blank samples.

Table 1 – Sample Events for December 2021

Well ID	Event Date	Well ID	Event Date	Well ID	Event Date
200-G-420	12/1/2021	PL-11-820	12/2/2021	BLM-7-509	12/6/2021
200-G-495	12/1/2021	PL-11-980	12/2/2021	ST-6-528	12/6/2021
PL-11-470	12/1/2021	200-G-175	12/6/2021	ST-6-568	12/6/2021
PL-11-530	12/1/2021	B650-EFF-1	12/6/2021	WW-1-452	12/6/2021
200-G-220	12/2/2021	B650-INF-1	12/6/2021	ST-6-678	12/7/2021
200-G-340	12/2/2021	B655-EFF-2	12/6/2021	ST-6-824	12/7/2021
PL-11-710	12/2/2021	B655-INF-2	12/6/2021	ST-6-970	12/7/2021

Well ID	Event Date
WW-3-469	12/7/2021
WW-3-569	12/7/2021
PL-8-455	12/8/2021
PL-8-605	12/8/2021
ST-4-481	12/8/2021
ST-4-690	12/8/2021
700-B-510	12/9/2021
JP-3-509	12/9/2021

Well ID	Event Date
ST-3-486	12/9/2021
PL-2-504	12/10/2021
BLM-42-569	12/13/2021
BLM-42-709	12/13/2021
ST-3-586	12/13/2021
ST-3-735	12/14/2021
WW-2-489	12/14/2021
WW-2-664	12/14/2021

Well ID	Event Date
BLM-27-270	12/15/2021
BW-7-211	12/15/2021
PL-4-464	12/15/2021
ST-3-666	12/15/2021
ST-1-541	12/16/2021
ST-1-630	12/16/2021

Table 2 - Quantity of Quality Control Samples

Method	Samples	Field Blanks	Equip Blanks	Trip Blanks	Blind Controls	Duplicates	Matrix Spikes
Nitrate plus Nitrite as N by EPA Method 353.2	**2**	0	0	0	0	0	0
Nitrosamines by EPA Method 607	**19**	0	0	0	**1**	**3**	0
Perchlorate by SW-846 Method 6850	**2**	0	0	0	0	0	0
Volatile Organics by SW-846 Method 8260C	**18**	**13**	**5**	0	**1**	**4**	0
Low Level Volatile Organics by SW-846 Method 8260C	**25**	**21**	**4**	**7**	0	0	**1**
Semi-Volatile Organics by SW-846 Method 8270D	**8**	**1**	0	0	0	**3**	0
Anions by Various EPA Methods	**2**	0	0	0	0	0	0
Total Metals by Various SW-846 Methods	**9**	0	**1**	0	**1**	**1**	0
Nitrosamines by Low-Level Method	**26**	**22**	**4**	**8**	**1**	**3**	**1**
Total Dissolved Solids by Standard Method 2540C	**2**	0	0	0	0	0	0

Table 3 – Quality Control Sample Percentages

Quality Control Requirement	Requirement %	Samp. Qty. since 1/1/2021	QC Qty. since 1/1/2021	QC % since 1/1/2021	Sample Quantity December 2021	QC Quantity December 2021	QC % December 2021
VOA Duplicates	10	523	55	**11**	43	4	9
VOA Matrix Spikes	2	523	11	**2**	43	1	2
607 Duplicates	10	327	33	**10**	19	3	16
607 Matrix Spikes	2	327	9	**3**	19	0	0
607 Equipment Blanks	2	327	10	**3**	19	0	0
607 Field Blanks	2	327	9	**3**	19	0	0
NDMA_LL Duplicates	10	312	37	**12**	26	3	12
NDMA_LL Matrix Spikes	2	312	8	**3**	26	1	4
Metals Duplicates	10	208	21	**10**	9	1	11
Metals Matrix Spikes	2	208	4	**2**	9	0	0
Metals Equipment Blanks	5	208	12	**6**	9	1	11
Metals Field Blanks	5	208	11	**5**	9	0	0

Quality Control Requirement	Requirement %	Sample Events since 1/1/2021	QC Qty. since 1/1/2021	QC % since 1/1/2021	Sample Events December 2021	QC Quantity December 2021	QC % December 2021
VOA Equipment Blanks and Field Blanks	*Should approach 100%*	523	523	**100%**	43	43	100%
Low Level Nitrosamine Equipment Blanks and Field Blanks	*Should approach 100%*	308	308	**100%**	26	26	100%

Quality Control Requirement	Requirement %	Shipments since 1/1/2021	TB Qty. since 1/1/2021	TB % since 1/1/2021	Shipments in December 2021	TB Quantity December 2021	QC % December 2021
VOA Trip Blank (per shipment)	*Should approach 100%*	97	97	**100%**	7	7	100%
Low Level Nitrosamine Trip Blank (per shipment)	*Should approach 100%*	93	93	**100%**	8	8	100%

Table 4 - Definitions of Data Qualifiers

Qualifier	Definition
*	User defined qualifier. See quality assurance narrative.
A	The result of an analyte for a laboratory control sample (LCS), initial calibration verification (ICV) or continuing calibration verification (CCV) was outside standard limits.
AD	Relative percent difference for analyst (laboratory) duplicates was outside standard limits.
D	The reported result is from a dilution.
EB	The analyte was detected in the equipment blank.
FB	The analyte was detected in the field blank.
G	The result is an estimated value greater than the upper calibration limit.
i	The result, quantitation limit, and/or detection limit may have been affected by matrix interference.
J	The result is an estimated value less than the quantitation limit, but greater than or equal to the detection limit.
NA	The value/result was either not analyzed for or not applicable.
ND	The analyte was not detected above the detection limit.
Q	The result for a blind control sample was outside standard limits.
QD	The relative percent difference for a field duplicate was outside standard limits.
R	The result is rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
RB	The analyte was detected in the method blank.
S	The result was determined by the method of standard addition.
SP	The matrix spike recovery and/or the relative percent difference for matrix spike duplicates was outside standard limits.
T	The sample was analyzed outside the specified holding time or temperature.
TB	The analyte was detected in the trip blank.
TIC	The analyte was tentatively identified by a GC/MS library search and the amount reported is an estimated value.

Table 5 - Quantity of Field Based Data Qualifiers Assigned to Individual Result Records

Method	Total Result Records	"FB"	"EB"	"TB"	"Q"	"QD"	"SP"	"R"
Nitrate plus Nitrite as N by EPA Method 353.2	**2**	0	0	0	0	0	0	0
Nitrosamines by EPA Method 607	**66**	0	0	0	0	**4**	0	0
Perchlorate by SW-846 Method 6850	**2**	0	0	0	0	0	0	0
Volatile Organics by SW-846 Method 8260C	**1432**	0	0	0	**4**	**4**	0	0
Low Level Volatile Organics by SW-846 Method 8260C	**1627**	**1**	0	0	0	0	0	0
Semi-Volatile Organics by SW-846 Method 8270D	**0**	0	0	0	0	**2**	0	0
Anions by Various EPA Methods	**8**	0	0	0	0	0	0	0
Total Metals by Various SW-846 Methods	**270**	0	**2**	0	0	0	0	0
Nitrosamines by Low-Level Method	**58**	**5**	**1**	0	0	**2**	0	0
Total Dissolved Solids by Standard Method 2540C	**2**	0	0	0	0	0	0	0

Table 6 - Quantity of Laboratory based Data Qualifiers Assigned to Individual Result Records

Method	Total Result Records	"*"	"A"	"AD"	"G"	"RB"	"T"	"D"	"i"	"J"
Nitrate plus Nitrite as N by EPA Method 353.2	**2**	0	0	0	0	0	0	0	0	0
Nitrosamines by EPA Method 607	**66**	**1**	0	0	0	**9**	0	0	0	**2**
Perchlorate by SW-846 Method 6850	**2**	0	0	0	0	0	0	0	0	0
Volatile Organics by SW-846 Method 8260C	**1432**	0	0	0	0	0	0	0	0	**17**
Low Level Volatile Organics by SW-846 Method 8260C	**1627**	0	0	0	0	**3**	0	0	0	**11**
Semi-Volatile Organics by SW-846 Method 8270D	**0**	0	0	0	0	0	0	0	0	**1**
Anions by Various EPA Methods	**8**	0	0	0	0	0	0	0	0	0
Total Metals by Various SW-846 Methods	**270**	0	0	0	0	0	0	0	0	**45**
Nitrosamines by Low-Level Method	**58**	**1**	0	0	0	0	0	0	0	**2**
Total Dissolved Solids by Standard Method 2540C	**2**	0	0	0	0	0	0	0	0	0

Table 7 – Quality Assurance Narratives

Well ID	Event Date	SW-846 Method 8260C QA Narratives
PL-11-710	12/2/2021	For Low Level SW-846 Method 8260C, 2-propanol (4.3 ug/L) was detected in the method blank for analytical batch 748553 below the reporting limit. No groundwater data are affected by this method blank contamination.
PL-11-820	12/2/2021	For Low Level SW-846 Method 8260C, 2-propanol (4.3 ug/L) was detected in the method blank for analytical batch 748553 below the reporting limit. No groundwater data are affected by this method blank contamination.
PL-11-980	12/2/2021	For Low Level SW-846 Method 8260C, 2-propanol (4.3 ug/L) was detected in the method blank for analytical batch 748553 below the reporting limit. No groundwater data are affected by this method blank contamination.
B650-EFF-1	**12/6/2021**	**For Low Level SW-846 Method 8260C, chloromethane (0.3 ug/L) was detected in the field blank (2112061259) below the reporting limit. Affected data are appropriately qualified.**
B650-EFF-1	**12/6/2021**	**For Low Level SW-846 Method 8260C, chloromethane (0.33 ug/L) was detected in the method blank for analytical batch 748881 below the reporting limit. Affected data are appropriately qualified.**
B655-EFF-2	**12/6/2021**	**For Low Level SW-846 Method 8260C, chloromethane (0.33 ug/L) was detected in the method blank for analytical batch 748881 below the reporting limit. Affected data are appropriately qualified.**
BLM-7-509	**12/6/2021**	**For Low Level SW-846 Method 8260C, chloromethane (0.33 ug/L) was detected in the method blank for analytical batch 748881 below the reporting limit. Affected data are appropriately qualified.**
WW-1-452	12/6/2021	For Low Level SW-846 Method 8260C, chloromethane (0.33 ug/L) was detected in the method blank for analytical batch 748881 below the reporting limit. No groundwater data are affected by this method blank contamination.
WW-3-569	12/7/2021	For Low Level SW-846 Method 8260C, matrix spike recoveries for sample 2112071101Y were within laboratory control limits.
PL-11-470	**12/1/2021**	**For Low Level SW-846 Method 8260C, sulfur dioxide (11 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 748546. Affected data are appropriately qualified.**
PL-11-530	**12/1/2021**	**For Low Level SW-846 Method 8260C, sulfur dioxide (11 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 748546. Affected data are appropriately qualified.**
PL-11-470	**12/1/2021**	**For Low Level SW-846 Method 8260C, sulfur dioxide (16 ug/L) was tentatively identified by a GC/MS library search in sample 2112011430B.**
PL-11-530	**12/1/2021**	**For Low Level SW-846 Method 8260C, sulfur dioxide (16 ug/L) was tentatively identified by a GC/MS library search in sample 2112011450B.**

Well ID	Event Date	SW-846 Method 8260C QA Narratives
PL-11-710	12/2/2021	For Low Level SW-846 Method 8260C, sulfur dioxide (5.5 ug/L) was tentatively identified by a GC/MS library search in the trip blank (2112020730B). No groundwater data are affected by this trip blank contamination.
PL-11-820	12/2/2021	For Low Level SW-846 Method 8260C, sulfur dioxide (5.5 ug/L) was tentatively identified by a GC/MS library search in the field blank (2112021442B). No groundwater data are affected by this field blank contamination.
PL-11-470	**12/1/2021**	**For Low Level SW-846 Method 8260C, sulfur dioxide (5.6 ug/L) was tentatively identified by a GC/MS library search in the field blank (2112011431B). Affected data are appropriately qualified.**
PL-11-980	12/2/2021	For Low Level SW-846 Method 8260C, sulfur dioxide (7.6 ug/L) was tentatively identified by a GC/MS library search in the field blank (2112021456B). No groundwater data are affected by this field blank contamination.
PL-11-470	**12/1/2021**	**For Low Level SW-846 Method 8260C, sulfur dioxide (9.8 ug/L) was tentatively identified by a GC/MS library search in the trip blank (2112010700B). Affected data are appropriately qualified.**
B650-EFF-1	12/6/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
B655-EFF-2	12/6/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-42-569	12/13/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-42-709	12/13/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-7-509	12/6/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PL-11-470	12/1/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PL-11-530	12/1/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-6-528	12/6/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-6-568	12/6/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-6-678	12/7/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
ST-6-824	12/7/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-6-970	12/7/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
WW-1-452	12/6/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
WW-2-489	12/14/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
WW-2-664	12/14/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
WW-3-469	12/7/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
WW-3-569	12/7/2021	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-42-569	12/13/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BLM-42-709	12/13/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
PL-11-470	12/1/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
PL-11-530	12/1/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
PL-11-710	12/2/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
PL-11-820	12/2/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated

Well ID	Event Date	SW-846 Method 8260C QA Narratives
		recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
PL-11-980	12/2/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
ST-6-528	12/6/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
ST-6-568	12/6/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
ST-6-678	12/7/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
ST-6-824	12/7/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
ST-6-970	12/7/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
WW-2-489	12/14/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
WW-2-664	12/14/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
WW-3-469	12/7/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
WW-3-569	12/7/2021	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BLM-42-569	12/13/2021	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL).

Well ID	Event Date	SW-846 Method 8260C QA Narratives
		Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-42-709	12/13/2021	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-11-470	12/1/2021	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-11-530	12/1/2021	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-11-710	12/2/2021	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-11-820	12/2/2021	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-11-980	12/2/2021	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-6-528	12/6/2021	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-6-568	12/6/2021	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
WW-2-489	12/14/2021	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
WW-2-664	12/14/2021	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
B655-EFF-2	12/6/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
BLM-42-569	12/13/2021	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
BLM-42-569	12/13/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
BLM-42-709	12/13/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
BLM-7-509	12/6/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
BLM-7-509	12/6/2021	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
JP-3-509	12/9/2021	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
JP-3-509	12/9/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
PL-11-530	12/1/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
PL-11-710	12/2/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
PL-8-455	12/8/2021	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
PL-8-605	12/8/2021	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
ST-4-481	12/8/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
ST-4-481	12/8/2021	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
ST-4-690	12/8/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
ST-6-528	12/6/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
ST-6-568	12/6/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
ST-6-678	12/7/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
ST-6-824	12/7/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
ST-6-970	12/7/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
WW-1-452	12/6/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
WW-2-489	12/14/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
WW-2-664	12/14/2021	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
WW-3-469	12/7/2021	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
WW-3-569	12/7/2021	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
WW-3-569	12/7/2021	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
BW-7-211	**12/15/2021**	**For SW-846 Method 8260C in blind control sample (2112151030C), the percent recoveries for 1,1,2-trichloro-1,2,2-trifluoroethane (66%), trichloroethene (65%), tetrachloroethene (68%), and trichlorofluoromethane (71%) were outside of the standard limits (75-125%). Additionally, vinyl chloride (0.22 ug/L) was detected below the reporting limit but none was added. Affected data are appropriately qualified.**
200-G-220	12/2/2021	For SW-846 Method 8260C, 2-propanol (4.3 ug/L) was detected in the method blank for analytical batch 748553 below the reporting limit. No groundwater data are affected by this method blank contamination.
200-G-340	12/2/2021	For SW-846 Method 8260C, 2-propanol (4.3 ug/L) was detected in the method blank for analytical batch 748553 below the reporting limit. No groundwater data are affected by this method blank contamination.
200-G-175	**12/6/2021**	**For SW-846 Method 8260C, field duplicate samples 2112061030Y and 2112061031Y the relative percent difference for trichlorofluoromethane (CFC 11) was 39.0%. This value is outside the upper acceptance limit for relative percent difference of 25%.**
200-G-175	**12/6/2021**	**For SW-846 Method 8260C, field duplicate samples 2112061030Y and 2112061031Y the relative percent difference for 1,1,2-trichloro-1,2,2-trifluoroethane was 38.5%. This value is outside the upper acceptance limit for relative percent difference of 25%.**
B655-INF-2	12/6/2021	For SW-846 Method 8260C, field duplicate samples 2112061416 and 2112061417 the relative percent difference for 1,1,2-trichloro-1,2,2-trifluoroethane was 6.1%. Upper acceptance limit for relative percent difference is 25%.
B655-INF-2	12/6/2021	For SW-846 Method 8260C, field duplicate samples 2112061416 and 2112061417 the relative percent difference for trichlorofluoromethane (CFC 11) was 2.6%. Upper acceptance limit for relative percent difference is 25%.
B655-INF-2	12/6/2021	For SW-846 Method 8260C, field duplicate samples 2112061416 and 2112061417 the relative percent difference for trichloroethene (TCE) was 5.3%. Upper acceptance limit for relative percent difference is 25%.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
BLM-27-270	12/15/2021	For SW-846 Method 8260C, field duplicate samples 2112150930A and 2112150931A the relative percent difference for dichlorofluoromethane (CFC 21) was 3.6%. Upper acceptance limit for relative percent difference is 25%.
BLM-27-270	12/15/2021	For SW-846 Method 8260C, field duplicate samples 2112150930A and 2112150931A the relative percent difference for 1,2-dichloro-1,1,2-trifluoroethane (CFC 123a) was 15.9%. Upper acceptance limit for relative percent difference is 25%.
BLM-27-270	12/15/2021	For SW-846 Method 8260C, field duplicate samples 2112150930A and 2112150931A the relative percent difference for 1,1,2-trichloro-1,2,2-trifluoroethane was 5.7%. Upper acceptance limit for relative percent difference is 25%.
BLM-27-270	12/15/2021	For SW-846 Method 8260C, field duplicate samples 2112150930A and 2112150931A the relative percent difference for trichlorofluoromethane (CFC 11) was 4.8%. Upper acceptance limit for relative percent difference is 25%.
ST-3-586	12/13/2021	For SW-846 Method 8260C, relative percent differences (RPD) for duplicate samples 2112130940C and 2112130941C were within control limits or below the calculable range.
200-G-420	12/1/2021	For SW-846 Method 8260C, sulfur dioxide (11 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 748546. No groundwater data are affected by this method blank contamination.
200-G-495	**12/1/2021**	**For SW-846 Method 8260C, sulfur dioxide (11 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 748546. Affected data are appropriately qualified.**
200-G-495	**12/1/2021**	**For SW-846 Method 8260C, sulfur dioxide (16 ug/L) was tentatively identified by a GC/MS library search in sample 2112011030Y.**
ST-1-541	**12/16/2021**	**For SW-846 Method 8260C, sulfur dioxide (33 ug/L) was tentatively identified by a GC/MS library search in sample 2112160950A.**
200-G-420	12/1/2021	For SW-846 Method 8260C, sulfur dioxide (6.3 ug/L) was tentatively identified by a GC/MS library search in the equipment blank (2112011325Y). No groundwater data are affected by this equipment blank contamination.
BLM-27-270	12/15/2021	For SW-846 Method 8260C, sulfur dioxide (8 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 749858. No groundwater data are affected by this method blank contamination.
BW-7-211	12/15/2021	For SW-846 Method 8260C, sulfur dioxide (8 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 749858. No groundwater data are affected by this method blank contamination.
PL-4-464	12/15/2021	For SW-846 Method 8260C, sulfur dioxide (8 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 749858. No groundwater data are affected by this method blank contamination.
ST-1-541	**12/16/2021**	**For SW-846 Method 8260C, sulfur dioxide (8 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 749858. Affected data are appropriately qualified.**
ST-1-630	12/16/2021	For SW-846 Method 8260C, sulfur dioxide (8 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 749858. No groundwater data are affected by this method blank contamination.
ST-3-586	12/13/2021	For SW-846 Method 8260C, sulfur dioxide (8 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 749858. No groundwater data are affected by this method blank contamination.
ST-3-666	12/15/2021	For SW-846 Method 8260C, sulfur dioxide (8 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 749858. No groundwater data are affected by this method blank contamination.
ST-3-735	12/14/2021	For SW-846 Method 8260C, sulfur dioxide (8 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 749858. No groundwater data are affected by this method blank contamination.
200-G-175	12/6/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
200-G-420	12/1/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
200-G-495	12/1/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
B650-INF-1	12/6/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
B655-INF-2	12/6/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-27-270	12/15/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BW-7-211	12/15/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PL-2-504	12/10/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PL-4-464	12/15/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-1-541	12/16/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-1-630	12/16/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-3-586	12/13/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-3-666	12/15/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-3-735	12/14/2021	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
200-G-175	12/6/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a

Well ID	Event Date	SW-846 Method 8260C QA Narratives
		high bias. The sample data is not significantly affected. No further corrective action was appropriate.
200-G-220	12/2/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
200-G-340	12/2/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
200-G-420	12/1/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
200-G-495	12/1/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
B650-INF-1	12/6/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
B655-INF-2	12/6/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BLM-27-270	12/15/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BW-7-211	12/15/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
PL-4-464	12/15/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
ST-1-541	12/16/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
ST-1-630	12/16/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a

Well ID	Event Date	SW-846 Method 8260C QA Narratives
		high bias. The sample data is not significantly affected. No further corrective action was appropriate.
ST-3-586	12/13/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
ST-3-666	12/15/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
ST-3-735	12/14/2021	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
200-G-220	12/2/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
200-G-340	12/2/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
200-G-420	12/1/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
200-G-495	12/1/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-27-270	12/15/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BW-7-211	12/15/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-4-464	12/15/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-1-541	12/16/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the

Well ID	Event Date	SW-846 Method 8260C QA Narratives
		exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-1-630	12/16/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-3-586	12/13/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-3-666	12/15/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-3-735	12/14/2021	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
200-G-175	12/6/2021	For SW-846 Method 8260C, there were no detections in the equipment blank.
200-G-220	12/2/2021	For SW-846 Method 8260C, there were no detections in the equipment blank.
200-G-340	12/2/2021	For SW-846 Method 8260C, there were no detections in the equipment blank.
200-G-495	12/1/2021	For SW-846 Method 8260C, there were no detections in the equipment blank.
700-B-510	12/9/2021	For SW-846 Method 8260C, there were no detections in the field blank.
B650-INF-1	12/6/2021	For SW-846 Method 8260C, there were no detections in the field blank.
B655-INF-2	12/6/2021	For SW-846 Method 8260C, there were no detections in the field blank.
BLM-27-270	12/15/2021	For SW-846 Method 8260C, there were no detections in the field blank.
BW-7-211	12/15/2021	For SW-846 Method 8260C, there were no detections in the field blank.
PL-2-504	12/10/2021	For SW-846 Method 8260C, there were no detections in the field blank.
PL-4-464	12/15/2021	For SW-846 Method 8260C, there were no detections in the field blank.
ST-1-541	12/16/2021	For SW-846 Method 8260C, there were no detections in the field blank.
ST-1-630	12/16/2021	For SW-846 Method 8260C, there were no detections in the field blank.
ST-3-486	12/9/2021	For SW-846 Method 8260C, there were no detections in the field blank.
ST-3-586	12/13/2021	For SW-846 Method 8260C, there were no detections in the field blank.
ST-3-666	12/15/2021	For SW-846 Method 8260C, there were no detections in the field blank.
ST-3-735	12/14/2021	For SW-846 Method 8260C, there were no detections in the field blank.

Well ID	Event Date	Modified EPA Method 607 QA Narratives
BW-7-211	12/15/2021	For Modified EPA Method 607 in blind control sample (2112151031C), all recoveries were within standard limits.
200-G-175	**12/6/2021**	**For Modified EPA Method 607, bromacil (0.07 ug/L) was detected in the method blank PB21M08CM1. Affected data are appropriately qualified.**
200-G-220	**12/2/2021**	**For Modified EPA Method 607, bromacil (0.07 ug/L) was detected in the method blank PB21M08CM1. Affected data are appropriately qualified.**
200-G-340	**12/2/2021**	**For Modified EPA Method 607, bromacil (0.07 ug/L) was detected in the method blank PB21M08CM1. Affected data are appropriately qualified.**
200-G-420	**12/1/2021**	**For Modified EPA Method 607, bromacil (0.07 ug/L) was detected in the method blank PB21M08CM1. Affected data are appropriately qualified.**

Well ID	Event Date	Modified EPA Method 607 QA Narratives
200-G-495	**12/1/2021**	**For Modified EPA Method 607, bromacil (0.07 ug/L) was detected in the method blank PB21M08CM1. Affected data are appropriately qualified.**
B650-EFF-1	**12/6/2021**	**For Modified EPA Method 607, bromacil (0.07 ug/L) was detected in the method blank PB21M08CM1. Affected data are appropriately qualified.**
B650-INF-1	**12/6/2021**	**For Modified EPA Method 607, bromacil (0.07 ug/L) was detected in the method blank PB21M08CM1. Affected data are appropriately qualified.**
B655-EFF-2	**12/6/2021**	**For Modified EPA Method 607, bromacil (0.07 ug/L) was detected in the method blank PB21M08CM1. Affected data are appropriately qualified.**
B655-INF-2	**12/6/2021**	**For Modified EPA Method 607, bromacil (0.07 ug/L) was detected in the method blank PB21M08CM1. Affected data are appropriately qualified.**
PL-2-504	12/10/2021	For Modified EPA Method 607, field duplicate samples 2112100952A and 2112100953A the relative percent difference for N-nitrosodimethylamine was 13.3%. Upper acceptance limit for relative percent difference is 25%.
PL-2-504	12/10/2021	For Modified EPA Method 607, field duplicate samples 2112100952A and 2112100953A the relative percent difference for N-nitrodimethylamine was 9.5%. Upper acceptance limit for relative percent difference is 25%.
PL-2-504	12/10/2021	For Modified EPA Method 607, field duplicate samples 2112100952A and 2112100953A the relative percent difference for bromacil was 12.9%. Upper acceptance limit for relative percent difference is 25%.
ST-3-735	**12/14/2021**	**For Modified EPA Method 607, field duplicate samples 2112141253C and 2112141254C the relative percent difference for bromacil was 93.1%. This value is outside the upper acceptance limit for relative percent difference of 25%.**
ST-3-735	12/14/2021	For Modified EPA Method 607, field duplicate samples 2112141253C and 2112141254C the relative percent difference for N-nitrosodimethylamine was 4.3%. Upper acceptance limit for relative percent difference is 25%.
ST-3-735	12/14/2021	For Modified EPA Method 607, field duplicate samples 2112141253C and 2112141254C the relative percent difference for N-nitrodimethylamine was 3.8%. Upper acceptance limit for relative percent difference is 25%.
BLM-27-270	**12/15/2021**	**For Modified EPA Method 607, field duplicate samples 2112150933A and 2112150934A the relative percent difference for bromacil was 83.1%. This value is outside the upper acceptance limit for relative percent difference of 25%.**
BLM-27-270	12/15/2021	For Modified EPA Method 607, field duplicate samples 2112150933A and 2112150934A the relative percent difference for N-nitrodimethylamine was 0.0%. Upper acceptance limit for relative percent difference is 25%.
BLM-27-270	12/15/2021	For Modified EPA Method 607, field duplicate samples 2112150933A and 2112150934A the relative percent difference for N-nitrosodimethylamine was 3.9%. Upper acceptance limit for relative percent difference is 25%.
200-G-220	12/2/2021	For Modified EPA Method 607, the sample extract of 2112021321Y was spiked twice with internal standards. Surrogate and bromacil results were adjusted in the forms to reflect the correct amount.

Well ID	Event Date	Low-Level Nitrosamine Method QA Narratives
ST-6-568	12/6/2021	For Low Level Nitrosamine Method in blind control sample (2112061455B), all recoveries were within standard limits.
PL-8-605	**12/8/2021**	**For Low Level Nitrosamine Method, field duplicate samples 2112081009Y and 2112081035Y the relative percent difference for N-nitrosodimethylamine was 66.2%. This value is outside the upper acceptance limit for relative percent difference of 25%.**
WW-3-569	12/7/2021	For Low Level Nitrosamine Method, for sample 2112071102Y the recovery of the internal standard NDMA-d6 (4.5%) was outside laboratory control limits (10-100%). The lab was unable to re-extract the sample due to a lack of reserve. The signal to noise (actual was >10) is greater than the minimum stated in the laboratory TAP. Native NDMA was not detected in the sample. No additional corrective action was required.
BLM-42-709	12/13/2021	For Low Level Nitrosamine Method, matrix spike recoveries for sample 2112131418A and duplicate sample 2112131419A were within laboratory control limits.

Well ID	Event Date	Low-Level Nitrosamine Method QA Narratives
BLM-42-569	12/13/2021	For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.41 ng/L) was detected in the field blank (2112131013A) below the reporting limit. No groundwater data are affected by this field blank contamination.
WW-2-489	12/14/2021	For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.44 ng/L) was detected in the trip blank (2112140750A) below the reporting limit. No groundwater data are affected by this trip blank contamination.
PL-8-455	**12/8/2021**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.56 ng/L) was detected in the equipment blank (2112081336Y). Affected data are appropriately qualified.**
B650-EFF-1	**12/6/2021**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.59 ng/L) was detected in the field blank (2112061302). Affected data are appropriately qualified.**
BLM-7-509	12/6/2021	For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.66 ng/L) was detected in the trip blank (2112060801A). No groundwater data are affected by this trip blank contamination.
ST-4-481	12/8/2021	For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.78 ng/L) was detected in the trip blank (2112080701C). No groundwater data are affected by this trip blank contamination.
B655-EFF-2	**12/6/2021**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.8 ng/L) was detected in the field blank (2112061404). Affected data are appropriately qualified.**
WW-1-452	**12/6/2021**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (1.17 ng/L) was detected in the field blank (2112061428A). Affected data are appropriately qualified.**
ST-6-568	**12/6/2021**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (1.54 ng/L) was detected in the field blank (2112061452B). Affected data are appropriately qualified.**
WW-3-569	12/7/2021	For Low Level Nitrosamine Method, N-nitrosodimethylamine (1.66 ng/L) was detected in the trip blank (2112070801Y). No groundwater data are affected by this trip blank contamination.
PL-11-710	12/2/2021	For Low Level Nitrosamine Method, relative percent differences (RPD) for duplicate samples 2112021507B and 2112021508B were within control limits or below the calculable range.
ST-6-568	12/6/2021	For Low Level Nitrosamine Method, relative percent differences (RPD) for duplicate samples 2112061450B and 2112061451B were within control limits or below the calculable range.
BLM-42-569	12/13/2021	For Low Level Nitrosamine Method, there were no detections in the trip blank.
BLM-42-709	12/13/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
BLM-7-509	12/6/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
JP-3-509	12/9/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
JP-3-509	12/9/2021	For Low Level Nitrosamine Method, there were no detections in the trip blank.
PL-11-470	12/1/2021	For Low Level Nitrosamine Method, there were no detections in the trip blank.
PL-11-470	12/1/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
PL-11-530	12/1/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
PL-11-710	12/2/2021	For Low Level Nitrosamine Method, there were no detections in the trip blank.
PL-11-710	12/2/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
PL-11-820	12/2/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
PL-11-980	12/2/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
PL-4-464	12/15/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
PL-8-605	12/8/2021	For Low Level Nitrosamine Method, there were no detections in the equipment blank.
ST-4-481	12/8/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
ST-4-690	12/8/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
ST-6-528	12/6/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
ST-6-678	12/7/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
ST-6-824	12/7/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
ST-6-970	12/7/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
WW-2-489	12/14/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
WW-2-664	12/14/2021	For Low Level Nitrosamine Method, there were no detections in the field blank.
WW-3-469	12/7/2021	For Low Level Nitrosamine Method, there were no detections in the equipment blank.
WW-3-569	12/7/2021	For Low Level Nitrosamine Method, there were no detections in the equipment blank.

Well ID	Event Date	SW-846 Method 8270D QA Narratives
PL-11-470	**12/1/2021**	**For SW-846 Method 8270D, field duplicate samples 2112011434B and 2112011435B the relative percent difference for 1,4-dioxane was 26.7%. This value is outside the upper acceptance limit for relative percent difference of 25%.**
ST-6-528	12/6/2021	For SW-846 Method 8270D, field duplicate samples 2112061434B and 2112061435B the relative percent difference for 1,4-dioxane was 0.0%. Upper acceptance limit for relative percent difference is 25%.
ST-6-568	12/6/2021	For SW-846 Method 8270D, field duplicate samples 2112061453B and 2112061454B the relative percent difference for 1,4-dioxane was 8.7%. Upper acceptance limit for relative percent difference is 25%.
ST-6-678	12/7/2021	For SW-846 Method 8270D, there were no detections in the field blank.

Well ID	Event Date	Total Metals QA Narratives
BW-7-211	12/15/2021	For Total Metals, blind control sample (2112151032C) was prepared at a concentration below the reporting limits for calcium. The result for this metal is not qualified based on this control.
200-G-340	**12/2/2021**	**For Total Metals, calcium (0.4 mg/L), magnesium (0.1 mg/L), molybdenum (0.004 mg/L), strontium (0.01 mg/L) and zinc (0.007 mg/L) were detected in the equipment blank (2112020731Y) below the reporting limit. Affected data are appropriately qualified.**
700-B-510	12/9/2021	For Total Metals, field duplicate samples 2112091423A and 2112091424A the relative percent difference for strontium was 1.1%. Upper acceptance limit for relative percent difference is 25%.
700-B-510	12/9/2021	For Total Metals, field duplicate samples 2112091423A and 2112091424A the relative percent difference for sodium was 0.6%. Upper acceptance limit for relative percent difference is 25%.
700-B-510	12/9/2021	For Total Metals, field duplicate samples 2112091423A and 2112091424A the relative percent difference for calcium was 0.4%. Upper acceptance limit for relative percent difference is 25%.
700-B-510	12/9/2021	For Total Metals, field duplicate samples 2112091423A and 2112091424A the relative percent difference for magnesium was 0.0%. Upper acceptance limit for relative percent difference is 25%.

Table 8 – WSTF Blank Sample Detections

Well ID	Event Date	Comment	Analysis	Sample Type	CAS No.	Analyte	Result	Units	QA flag
PL-11-470	12/1/2021		8260_LL	VOA-TB	7446-09-5	Sulfur Dioxide	9.8	ug/L	TIC RB TB FB
PL-11-980	12/2/2021	Carboy G1	8260_LL	VOA-FB	7446-09-5	Sulfur Dioxide	7.6	ug/L	TIC FB
200-G-420	12/1/2021	Carboy G3	8260	VOA-EB	7446-09-5	Sulfur Dioxide	6.3	ug/L	TIC EB
PL-11-470	12/1/2021		8260_LL	VOA-FB	7446-09-5	Sulfur Dioxide	5.6	ug/L	TIC RB TB FB
PL-11-820	12/2/2021	Carboy G1	8260_LL	VOA-FB	7446-09-5	Sulfur Dioxide	5.5	ug/L	TIC FB
PL-11-710	12/2/2021	Carboy G1	8260_LL	VOA-TB	7446-09-5	Sulfur Dioxide	5.5	ug/L	TIC TB
WW-3-569	12/7/2021	Carboy G3	NDMA_LL	NDMA_LL-TB	62-75-9	N-Nitrosodimethylamine	1.66	ng/L	TB
ST-6-568	12/6/2021	Carboy	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	1.54	ng/L	FB
WW-1-452	12/6/2021	Carboy G1	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	1.17	ng/L	FB
B655-EFF-2	12/6/2021		NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.8	ng/L	FB
ST-4-481	12/8/2021	Carboy G1	NDMA_LL	NDMA_LL-TB	62-75-9	N-Nitrosodimethylamine	0.78	ng/L	TB
BLM-7-509	12/6/2021	Carboy G1	NDMA_LL	NDMA_LL-TB	62-75-9	N-Nitrosodimethylamine	0.66	ng/L	TB
B650-EFF-1	12/6/2021		NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.59	ng/L	FB
PL-8-455	12/8/2021	Carboy G3	NDMA_LL	NDMA_LL-EB	62-75-9	N-Nitrosodimethylamine	0.56	ng/L	EB
WW-2-489	12/14/2021	Carboy G3	NDMA_LL	NDMA_LL-TB	62-75-9	N-Nitrosodimethylamine	0.44	ng/L	J TB
BLM-42-569	12/13/2021	Carboy G3	NDMA_LL	NDMA_LL-FB	62-75-9	N-Nitrosodimethylamine	0.41	ng/L	J FB
200-G-340	12/2/2021	Carboy G3	METALS	METALS-EB	7440-70-2	Calcium, Total	0.4	mg/L	J EB

Well ID	Event Date	Comment	Analysis	Sample Type	CAS No.	Analyte	Result	Units	QA flag
B650-EFF-1	12/6/2021		8260_LL	VOA-FB	74-87-3	Chloromethane	0.3	ug/L	J RB FB
200-G-340	12/2/2021	Carboy G3	METALS	METALS-EB	7439-95-4	Magnesium, Total	0.1	mg/L	J EB
200-G-340	12/2/2021	Carboy G3	METALS	METALS-EB	7440-24-6	Strontium, Total	0.01	mg/L	J EB
200-G-340	12/2/2021	Carboy G3	METALS	METALS-EB	7440-66-6	Zinc, Total	0.007	mg/L	J EB
200-G-340	12/2/2021	Carboy G3	METALS	METALS-EB	7439-98-7	Molybdenum, Total	0.004	mg/L	J EB

National Aeronautics and Space Administration

Quality Assurance Report for White Sands Test Facility Groundwater Monitoring Data

January 2022

NM 8800019434

Report Submitted: April 18, 2022

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1.0 Introduction

The WSTF Groundwater Monitoring Plan (GMP) requires the preparation of a periodic report to assess the quality of groundwater analytical data reported. The monthly Quality Assurance Report (QAR) prepared and reviewed by responsible environmental contractor data management personnel provides the following information:

- A summary of notable anomalies and a follow-up on previous anomalies, if necessary.
- A summary of notable data quality issues by analytical method, if any.
- A list of the sample events for which groundwater samples were collected in January 2022.
- The quantity and type of quality control samples collected or prepared in January 2022.
- Definitions of data qualifiers used in WSTF analytical data reporting.
- The quantity and type of data qualifiers applied to individual analytical results.
- A list of quality assurance narratives for the month arranged by analytical method.
- A summary table of detections in equipment blank, field blank, and trip blank samples.

2.0 Data Quality

2.1 Notable Anomalies Identified in Previous Quality Assurance Reports

There were no notable anomalies requiring follow-up associated with previous QARs.

2.2 Notable Anomalies

There were no notable anomalies in the groundwater data associated with the January 2022 QAR.

3.0 Data Tables

Table 1 summarizes the groundwater sample events initiated in January 2022. This report is based on data quality issues related to the sample events listed in Table 1. Tables 2 through 8 contain information related to the sample events identified in Table 1. As specified by the GMP, specific quality control samples are utilized to assess the quality of analytical data. Table 2 presents the quantity of quality control samples collected for each analytical method. Table 3 compares the quality control sample percentages collected to the requirements in the GMP. When data quality criteria are not met, data qualifiers are applied to the data. Definitions of data qualifiers used for WSTF chemical analytical data are listed in Table 4. Table 5 and Table 6 present the total number of individual result records and summarize the quantity of field and laboratory data qualifiers assigned to individual analyte result records in the WSTF analytical database. Table 7 provides all quality assurance narratives associated with the sample events in Table 1. Narratives associated with qualified data are identified by **bold text** in Table 7. Table 8 provides a summary of all detections in WSTF blank samples.

Table 1 – Sample Events for January 2022

Well ID	Event Date	Well ID	Event Date	Well ID	Event Date
BLM-10-517	1/3/2022	ST-7-779	1/4/2022	JER-2-684	1/5/2022
BLM-17-550	1/3/2022	ST-7-970	1/4/2022	B650-EFF-1	1/6/2022
ST-7-453	1/3/2022	400-A-151	1/5/2022	B650-INF-1	1/6/2022
ST-7-544	1/3/2022	BLM-6-488	1/5/2022	JER-1-483	1/6/2022
JP-1-424	1/4/2022	JER-2-504	1/5/2022	JER-1-563	1/6/2022
JP-2-447	1/4/2022	JER-2-584	1/5/2022	JP-3-509	1/6/2022

Well ID	Event Date
JP-3-689	1/6/2022
B655-EFF-2	1/7/2022
B655-INF-2	1/7/2022
JER-1-683	1/7/2022
PL-10-592	1/10/2022
PL-1-486	1/10/2022
WW-5-459	1/10/2022
WW-5-579	1/10/2022
PFE-4A	1/11/2022
PFE-5	1/11/2022

Well ID	Event Date
PL-10-484	1/11/2022
WW-5-809	1/11/2022
WW-5-909	1/11/2022
BLM-15-305	1/12/2022
PFE-2	1/12/2022
PFE-7	1/12/2022
PL-6-1195	1/12/2022
BLM-18-430	1/13/2022
PL-6-1335	1/13/2022
100-F-358	1/18/2022

Well ID	Event Date
100-G-223	1/18/2022
400-FV-131	1/18/2022
400-HV-147	1/18/2022
PL-6-915	1/18/2022
300-F-175	1/19/2022
600-G-138	1/19/2022
PL-6-545	1/19/2022
PL-6-725	1/19/2022

Table 2 - Quantity of Quality Control Samples

Method	Samples	Field Blanks	Equip Blanks	Trip Blanks	Blind Controls	Duplicates	Matrix Spikes
Chloride by EPA Method 300.0	**1**	0	0	0	0	0	0
Nitrate plus Nitrite as N by EPA Method 353.2	**11**	0	0	0	0	0	0
Nitrosamines by EPA Method 607	**20**	**1**	**1**	0	**1**	**3**	0
Perchlorate by SW-846 Method 6850	**8**	0	0	0	0	0	0
Organics by SW-846 Method 8015M	**2**	0	0	0	0	0	0
Pesticides by SW-846 Method 8081	**3**	0	0	0	0	0	0
PCBs by SW-846 Method 8082	**3**	0	0	0	0	0	0
Herbicides by SW-846 Method 8151	**3**	0	0	0	0	0	0
Volatile Organics by SW-846 Method 8260C	**14**	**14**	0	0	**1**	**4**	0
Low Level Volatile Organics by SW-846 Method 8260C	**32**	**25**	**7**	**8**	0	0	**1**
Semi-Volatile Organics by SW-846 Method 8270D	**15**	**1**	0	0	0	**1**	0
Dioxins/Furans by SW-846 Method 8290	**3**	0	0	0	0	0	0
Cyanide by SW-846 Method 9012B	**3**	0	0	0	0	0	0
Sulfide by SW-846 Method 9030	**3**	0	0	0	0	0	0
Phenolics by SW-846 Method 9066	**3**	0	0	0	0	0	0
Anions by Various EPA Methods	**8**	0	0	0	0	0	0
Total Metals by Various SW-846 Methods	**17**	**1**	**1**	0	**1**	**2**	**1**
Nitrosamines by Low-Level Method	**34**	**27**	**7**	**10**	**1**	**4**	**1**
Total Dissolved Solids by Standard Method 2540C	**8**	0	0	0	0	0	0

Table 3 – Quality Control Sample Percentages

Quality Control Requirement	Requirement %	Samp. Qty. since 2/1/2021	QC Qty. since 2/1/2021	QC % since 2/1/2021	Sample Quantity January 2022	QC Quantity January 2022	QC % January 2022
VOA Duplicates	10	523	54	**10**	46	4	9
VOA Matrix Spikes	2	523	11	**2**	46	1	2
607 Duplicates	10	324	34	**10**	20	3	15
607 Matrix Spikes	2	324	7	**2**	20	0	0
607 Equipment Blanks	2	324	10	**3**	20	1	5
607 Field Blanks	2	324	9	**3**	20	1	5
NDMA_LL Duplicates	10	312	37	**12**	34	4	12
NDMA_LL Matrix Spikes	2	312	8	**3**	34	1	3

Quality Control Requirement	Requirement %	Samp. Qty. since 2/1/2021	QC Qty. since 2/1/2021	QC % since 2/1/2021	Sample Quantity January 2022	QC Quantity January 2022	QC % January 2022
Metals Duplicates	10	208	21	**10**	17	2	12
Metals Matrix Spikes	2	208	5	**2**	17	1	6
Metals Equipment Blanks	5	208	12	**6**	17	1	6
Metals Field Blanks	5	208	11	**5**	17	1	6

Quality Control Requirement	Requirement %	Sample Events since 2/1/2021	QC Qty. since 2/1/2021	QC % since 2/1/2021	Sample Events January 2022	QC Quantity January 2022	QC % January 2022
VOA Equipment Blanks and Field Blanks	*Should approach 100%*	523	523	**100%**	46	46	100%
Low Level Nitrosamine Equipment Blanks and Field Blanks	*Should approach 100%*	308	308	**100%**	34	34	100%

Quality Control Requirement	Requirement %	Shipments since 2/1/2021	TB Qty. since 2/1/2021	TB % since 2/1/2021	Shipments in January 2022	TB Quantity January 2022	QC % January 2022
VOA Trip Blank (per shipment)	*Should approach 100%*	96	96	**100%**	8	8	100%
Low Level Nitrosamine Trip Blank (per shipment)	*Should approach 100%*	94	94	**100%**	10	10	100%

Table 4 - Definitions of Data Qualifiers

Qualifier	Definition
*	User defined qualifier. See quality assurance narrative.
A	The result of an analyte for a laboratory control sample (LCS), initial calibration verification (ICV) or continuing calibration verification (CCV) was outside standard limits.
AD	Relative percent difference for analyst (laboratory) duplicates was outside standard limits.
D	The reported result is from a dilution.
EB	The analyte was detected in the equipment blank.
FB	The analyte was detected in the field blank.
G	The result is an estimated value greater than the upper calibration limit.
i	The result, quantitation limit, and/or detection limit may have been affected by matrix interference.
J	The result is an estimated value less than the quantitation limit, but greater than or equal to the detection limit.
NA	The value/result was either not analyzed for or not applicable.
ND	The analyte was not detected above the detection limit.
Q	The result for a blind control sample was outside standard limits.
QD	The relative percent difference for a field duplicate was outside standard limits.
R	The result is rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
RB	The analyte was detected in the method blank.
S	The result was determined by the method of standard addition.
SP	The matrix spike recovery and/or the relative percent difference for matrix spike duplicates was outside standard limits.
T	The sample was analyzed outside the specified holding time or temperature.
TB	The analyte was detected in the trip blank.
TIC	The analyte was tentatively identified by a GC/MS library search and the amount reported is an estimated value.

Table 5 - Quantity of Field Based Data Qualifiers Assigned to Individual Result Records

Method	Total Result Records	"FB"	"EB"	"TB"	"Q"	"QD"	"SP"	"R"
Chloride by EPA Method 300.0	**1**	0	0	0	0	0	0	0
Nitrate plus Nitrite as N by EPA Method 353.2	**11**	0	0	0	0	0	0	0
Nitrosamines by EPA Method 607	**69**	0	**1**	0	0	0	0	0
Perchlorate by SW-846 Method 6850	**8**	0	0	0	0	0	0	0
Organics by SW-846 Method 8015M	**2**	0	0	0	0	0	0	0
Pesticides by SW-846 Method 8081	**63**	0	0	0	0	0	0	0
PCBs by SW-846 Method 8082	**21**	0	0	0	0	0	0	0
Herbicides by SW-846 Method 8151	**18**	0	0	0	0	0	0	0
Volatile Organics by SW-846 Method 8260C	**1175**	0	0	0	**1**	0	0	0
Low Level Volatile Organics by SW-846 Method 8260C	**2086**	**1**	**2**	0	0	0	0	0
Semi-Volatile Organics by SW-846 Method 8270D	**486**	**1**	0	0	0	**2**	0	0
Dioxins/Furans by SW-846 Method 8290	**75**	0	0	0	0	0	0	0
Cyanide by SW-846 Method 9012B	**3**	0	0	0	0	0	0	0
Sulfide by SW-846 Method 9030	**3**	0	0	0	0	0	0	0
Phenolics by SW-846 Method 9066	**3**	0	0	0	0	0	0	0
Anions by Various EPA Methods	**32**	0	0	0	0	0	0	0
Total Metals by Various SW-846 Methods	**513**	0	**1**	0	0	0	0	0
Nitrosamines by Low-Level Method	**76**	0	**2**	**1**	0	**2**	0	0
Total Dissolved Solids by Standard Method 2540C	**8**	0	0	0	0	0	0	0

Table 6 - Quantity of Laboratory based Data Qualifiers Assigned to Individual Result Records

Method	Total Result Records	"*"	"A"	"AD"	"G"	"RB"	"T"	"D"	"i"	"J"
Chloride by EPA Method 300.0	**1**	0	0	0	0	0	0	0	0	0
Nitrate plus Nitrite as N by EPA Method 353.2	**11**	0	0	0	0	0	0	0	0	**1**
Nitrosamines by EPA Method 607	**69**	0	0	0	0	**2**	0	0	0	**2**
Perchlorate by SW-846 Method 6850	**8**	0	0	0	0	0	0	0	0	**1**
Organics by SW-846 Method 8015M	**2**	0	0	0	0	0	0	0	0	0
Pesticides by SW-846 Method 8081	**63**	0	0	0	0	0	0	0	0	0
PCBs by SW-846 Method 8082	**21**	0	0	0	0	0	0	0	0	0
Herbicides by SW-846 Method 8151	**18**	0	0	0	0	0	0	0	0	0
Volatile Organics by SW-846 Method 8260C	**1175**	0	**1**	0	0	**1**	0	0	0	**22**
Low Level Volatile Organics by SW-846 Method 8260C	**2086**	0	**4**	0	0	**4**	0	0	0	**11**
Semi-Volatile Organics by SW-846 Method 8270D	**486**	0	**3**	0	0	0	0	0	0	**5**
Dioxins/Furans by SW-846 Method 8290	**75**	0	0	0	0	0	0	0	0	**3**
Cyanide by SW-846 Method 9012B	**3**	0	0	0	0	0	0	0	0	0
Sulfide by SW-846 Method 9030	**3**	0	0	0	0	0	0	0	0	0
Phenolics by SW-846 Method 9066	**3**	0	0	0	0	0	0	0	0	0
Anions by Various EPA Methods	**32**	0	0	0	0	0	0	0	0	0
Total Metals by Various SW-846 Methods	**513**	0	0	0	0	**2**	0	0	0	**90**
Nitrosamines by Low-Level Method	**76**	**1**	0	0	0	0	0	0	0	**10**
Total Dissolved Solids by Standard Method 2540C	**8**	0	0	0	0	0	0	0	0	0

Table 7 – Quality Assurance Narratives

Well ID	Event Date	SW-846 Method 8260C QA Narratives
JER-2-504	1/5/2022	For Low Level SW-846 Method 8260C, 2-propanol (3.5 ug/L) was detected below the reporting limit and silane, methoxytrimethyl- (5.3 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 751223 below the reporting limit. No groundwater data are affected by this method blank contamination.
JER-2-584	1/5/2022	For Low Level SW-846 Method 8260C, 2-propanol (3.5 ug/L) was detected below the reporting limit and silane, methoxytrimethyl- (5.3 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 751223 below the reporting limit. No groundwater data are affected by this method blank contamination.
JER-2-684	1/5/2022	For Low Level SW-846 Method 8260C, 2-propanol (3.5 ug/L) was detected below the reporting limit and silane, methoxytrimethyl- (5.3 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 751223 below the reporting limit. No groundwater data are affected by this method blank contamination.
PL-1-486	**1/10/2022**	**For Low Level SW-846 Method 8260C, chloromethane (0.28 ug/L) was detected in the field blank (2201101001A) below the reporting limit. Affected data are appropriately qualified.**
PL-6-1195	1/12/2022	For Low Level SW-846 Method 8260C, chloromethane (0.29 ug/L) was detected in the method blank for analytical batch 752071 below the reporting limit. No groundwater data are affected by this method blank contamination.
PL-6-915	1/18/2022	For Low Level SW-846 Method 8260C, chloromethane (0.29 ug/L) was detected in the equipment blank (2201180930Y) below the reporting limit. No groundwater data are affected by this equipment blank contamination.
PL-10-484	**1/11/2022**	**For Low Level SW-846 Method 8260C, chloromethane (0.31 ug/L) was detected in the method blank for analytical batch 751958 below the reporting limit. Affected data are appropriately qualified.**
PL-10-592	**1/10/2022**	**For Low Level SW-846 Method 8260C, chloromethane (0.31 ug/L) was detected in the method blank for analytical batch 751958 below the reporting limit. Affected data are appropriately qualified.**
PL-1-486	**1/10/2022**	**For Low Level SW-846 Method 8260C, chloromethane (0.31 ug/L) was detected in the method blank for analytical batch 751958 below the reporting limit. Affected data are appropriately qualified.**
WW-5-459	1/10/2022	For Low Level SW-846 Method 8260C, chloromethane (0.31 ug/L) was detected in the method blank for analytical batch 751958 below the reporting limit. No groundwater data are affected by this method blank contamination.
WW-5-579	1/10/2022	For Low Level SW-846 Method 8260C, chloromethane (0.31 ug/L) was detected in the method blank for analytical batch 751958 below the reporting limit. No groundwater data are affected by this method blank contamination.
WW-5-809	1/11/2022	For Low Level SW-846 Method 8260C, chloromethane (0.31 ug/L) was detected in the method blank for analytical batch 751958 below the reporting limit. No groundwater data are affected by this method blank contamination.
WW-5-909	1/11/2022	For Low Level SW-846 Method 8260C, chloromethane (0.31 ug/L) was detected in the method blank for analytical batch 751958 below the reporting limit. No groundwater data are affected by this method blank contamination.
PL-10-484	**1/11/2022**	**For Low Level SW-846 Method 8260C, chloromethane (0.32 ug/L) was detected in the equipment blank (2201110905Y) below the reporting limit. Affected data are appropriately qualified.**
WW-5-809	1/11/2022	For Low Level SW-846 Method 8260C, chloromethane (0.32 ug/L) was detected in the field blank (2201111406B) below the reporting limit. No groundwater data are affected by this field blank contamination.
PL-10-592	**1/10/2022**	**For Low Level SW-846 Method 8260C, chloromethane (0.37 ug/L) was detected in the equipment blank (2201100930Y) below the reporting limit. Affected data are appropriately qualified.**
WW-5-459	1/10/2022	For Low Level SW-846 Method 8260C, chloromethane (0.41 ug/L) was detected in the field blank (2201101346B) below the reporting limit. No groundwater data are affected by this field blank contamination.
JP-3-689	1/6/2022	For Low Level SW-846 Method 8260C, matrix spike recoveries for sample 2201061411C were within laboratory control limits.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
WW-5-909	**1/11/2022**	**For Low Level SW-846 Method 8260C, one unknown compound (5.7 ug/L) was tentatively identified by a GC/MS library search in sample 2201111435B.**
JP-3-689	**1/6/2022**	**For Low Level SW-846 Method 8260C, one unknown compound (5.2 ug/L) was tentatively identified by a GC/MS library search in sample 2201061410C.**
JER-1-563	**1/6/2022**	**For Low Level SW-846 Method 8260C, one unknown compound (7.1 ug/L) was tentatively identified by a GC/MS library search in sample 2201061442B.**
JER-1-563	1/6/2022	For Low Level SW-846 Method 8260C, sulfur dioxide (5.6 ug/L) was tentatively identified by a GC/MS library search in the field blank (2201061443B). No groundwater data are affected by this field blank contamination.
JP-3-509	**1/6/2022**	**For Low Level SW-846 Method 8260C, sulfur dioxide (10 ug/L) was tentatively identified by a GC/MS library search in the field blank (2201060941C). Affected data are appropriately qualified.**
B650-EFF-1	1/6/2022	For Low Level SW-846 Method 8260C, sulfur dioxide (7.1 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 751443. No groundwater data are affected by this method blank contamination.
B655-EFF-2	1/7/2022	For Low Level SW-846 Method 8260C, sulfur dioxide (7.1 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 751443. No groundwater data are affected by this method blank contamination.
JER-1-483	1/6/2022	For Low Level SW-846 Method 8260C, sulfur dioxide (7.1 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 751443. No groundwater data are affected by this method blank contamination.
JER-1-563	1/6/2022	For Low Level SW-846 Method 8260C, sulfur dioxide (7.1 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 751443. No groundwater data are affected by this method blank contamination.
JER-1-683	**1/7/2022**	**For Low Level SW-846 Method 8260C, sulfur dioxide (7.1 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 751443. Affected data are appropriately qualified.**
JP-3-509	**1/6/2022**	**For Low Level SW-846 Method 8260C, sulfur dioxide (7.1 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 751443. Affected data are appropriately qualified.**
JP-3-689	1/6/2022	For Low Level SW-846 Method 8260C, sulfur dioxide (7.1 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 751443. No groundwater data are affected by this method blank contamination.
JER-1-483	1/6/2022	For Low Level SW-846 Method 8260C, sulfur dioxide (7.3 ug/L) was tentatively identified by a GC/MS library search in the trip blank (2201060730B). No groundwater data are affected by this trip blank contamination.
JER-1-683	**1/7/2022**	**For Low Level SW-846 Method 8260C, sulfur dioxide (7.5 ug/L) was tentatively identified by a GC/MS library search in sample 2201071335B.**
JP-3-509	**1/6/2022**	**For Low Level SW-846 Method 8260C, sulfur dioxide (8.1 ug/L) and 1-propene, 2-methyl- (11 ug/L) were tentatively identified by a GC/MS library search in sample 2201060940C.**
100-F-358	1/18/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
100-G-223	1/18/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
B650-EFF-1	1/6/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
B655-EFF-2	1/7/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
BLM-10-517	1/3/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
JER-1-483	1/6/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
JER-1-563	1/6/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
JER-1-683	1/7/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
JER-2-504	1/5/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
JER-2-584	1/5/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
JER-2-684	1/5/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
JP-1-424	1/4/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
JP-2-447	1/4/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
JP-3-509	1/6/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
JP-3-689	1/6/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PL-6-1335	1/13/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PL-6-915	1/18/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-7-453	1/3/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
ST-7-544	1/3/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-7-779	1/4/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
ST-7-970	1/4/2022	For Low Level SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
300-F-175	1/19/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias.The sample data is not significantly affected. No further corrective action was appropriate.
B650-EFF-1	1/6/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
B655-EFF-2	1/7/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BLM-10-517	1/3/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
JER-1-483	1/6/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
JER-1-563	1/6/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
JER-1-683	1/7/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
JER-2-504	1/5/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
JER-2-584	1/5/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated

Well ID	Event Date	SW-846 Method 8260C QA Narratives
		recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
JER-2-684	1/5/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
JP-1-424	1/4/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
JP-2-447	1/4/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
JP-3-509	1/6/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
JP-3-689	1/6/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
PL-10-484	1/11/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate. Detections below the MRL are appropriately qualified.
PL-10-592	1/10/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate. Detections below the MRL are appropriately qualified.
PL-1-486	1/10/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate. Detections below the MRL are appropriately qualified.
PL-6-1195	1/12/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
PL-6-1335	1/13/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
PL-6-545	1/19/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated

Well ID	Event Date	SW-846 Method 8260C QA Narratives
		recovery equates to a high bias.The sample data is not significantly affected. No further corrective action was appropriate.
PL-6-725	1/19/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
ST-7-453	1/3/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
ST-7-544	1/3/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
ST-7-779	1/4/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
ST-7-970	1/4/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
WW-5-459	1/10/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate. Detection in the field blank below the MRL is appropriately qualified.
WW-5-579	1/10/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate. Detections below the MRL are appropriately qualified.
WW-5-809	1/11/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate. Detections below the MRL are appropriately qualified.
WW-5-909	1/11/2022	For Low Level SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
300-F-175	1/19/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
B650-EFF-1	1/6/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL).

Well ID	Event Date	SW-846 Method 8260C QA Narratives
		Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
B655-EFF-2	1/7/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-10-517	1/3/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
JER-1-483	1/6/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
JER-1-563	1/6/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
JER-1-683	1/7/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
JER-2-504	1/5/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
JER-2-584	1/5/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
JER-2-684	1/5/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
JP-1-424	1/4/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
JP-2-447	1/4/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
JP-3-509	1/6/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL).

Well ID	Event Date	SW-846 Method 8260C QA Narratives
		Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
JP-3-689	1/6/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-10-484	1/11/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-10-592	1/10/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-1-486	1/10/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-6-1195	1/12/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-6-1335	1/13/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-6-545	1/19/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PL-6-725	1/19/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-7-453	1/3/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-7-544	1/3/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-7-779	1/4/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL).

Well ID	Event Date	SW-846 Method 8260C QA Narratives
		Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
ST-7-970	1/4/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
WW-5-459	1/10/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
WW-5-579	1/10/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
WW-5-809	1/11/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
WW-5-909	1/11/2022	For Low Level SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
100-F-358	1/18/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
100-G-223	1/18/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
300-F-175	1/19/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
B650-EFF-1	1/6/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
B655-EFF-2	1/7/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
BLM-10-517	1/3/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
BLM-10-517	1/3/2022	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
JER-1-483	1/6/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
JER-1-683	1/7/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
JER-2-504	1/5/2022	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
JER-2-504	1/5/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
JER-2-584	1/5/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
JER-2-684	1/5/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
JP-1-424	1/4/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
JP-2-447	1/4/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
JP-3-689	1/6/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
PL-1-486	1/10/2022	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
PL-6-1195	1/12/2022	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
PL-6-1195	1/12/2022	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
PL-6-1335	1/13/2022	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
PL-6-1335	1/13/2022	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
PL-6-545	1/19/2022	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
PL-6-725	1/19/2022	For Low Level SW-846 Method 8260C, there were no detections in the equipment blank.
PL-6-725	1/19/2022	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
PL-6-915	1/18/2022	For Low Level SW-846 Method 8260C, there were no detections in the trip blank.
ST-7-453	1/3/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
ST-7-544	1/3/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
ST-7-779	1/4/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
ST-7-970	1/4/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
WW-5-579	1/10/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
WW-5-909	1/11/2022	For Low Level SW-846 Method 8260C, there were no detections in the field blank.
BLM-18-430	**1/13/2022**	**For SW-846 Method 8260C in blind control sample (2201131030C), the percent recovery for trichlorofluoromethane (135%) was outside of the standard limits (75-125%). Affected data are appropriately qualified.**
BLM-17-550	1/3/2022	For SW-846 Method 8260C, 2-propanol (3.5 ug/L) was detected below the reporting limit and silane, methoxytrimethyl- (5.3 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 751223 below the reporting limit. No groundwater data are affected by this method blank contamination.
B650-INF-1	1/6/2022	For SW-846 Method 8260C, 2-propanol (3.8 ug/L) was detected below the reporting limit and sulfur dioxide (5.3 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 751557 below the reporting limit. No groundwater data are affected by this method blank contamination.
B655-INF-2	1/7/2022	For SW-846 Method 8260C, 2-propanol (3.8 ug/L) was detected below the reporting limit and sulfur dioxide (5.3 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 751557 below the reporting limit. No groundwater data are affected by this method blank contamination.
PFE-5	1/11/2022	For SW-846 Method 8260C, chloromethane (0.29 ug/L) was detected in the method blank for analytical batch 752071 below the reporting limit. No groundwater data are affected by this method blank contamination.
PFE-4A	1/11/2022	For SW-846 Method 8260C, chloromethane (0.31 ug/L) was detected in the method blank for analytical batch 751958 below the reporting limit. No groundwater data are affected by this method blank contamination.
PFE-5	1/11/2022	For SW-846 Method 8260C, chloromethane (0.31 ug/L) was detected in the method blank for analytical batch 751958 below the reporting limit. No groundwater data are affected by this method blank contamination.
400-A-151	1/5/2022	For SW-846 Method 8260C, chloromethane (0.35 ug/L) was detected in the method blank for analytical batch 751311 below the reporting limit. No groundwater data are affected by this method blank contamination.
BLM-6-488	**1/5/2022**	**For SW-846 Method 8260C, chloromethane (0.35 ug/L) was detected in the method blank for analytical batch 751311 below the reporting limit. Affected data are appropriately qualified.**
B655-INF-2	1/7/2022	For SW-846 Method 8260C, field duplicate samples 2201070604 and 2201070605 the relative percent difference for trichloroethene (TCE) was 4.0%. Upper acceptance limit for relative percent difference is 25%.
B655-INF-2	1/7/2022	For SW-846 Method 8260C, field duplicate samples 2201070604 and 2201070605 the relative percent difference for trichlorofluoromethane (CFC 11) was 0.0%. Upper acceptance limit for relative percent difference is 25%.
B655-INF-2	1/7/2022	For SW-846 Method 8260C, field duplicate samples 2201070604 and 2201070605 the relative percent difference for 1,1,2-trichloro-1,2,2-trifluoroethane was 0.0%. Upper acceptance limit for relative percent difference is 25%.
PFE-7	1/12/2022	For SW-846 Method 8260C, field duplicate samples 2201121315 and 2201121316 the relative percent difference for 1,1,2-trichloro-1,2,2-trifluoroethane was 15.8%. Upper acceptance limit for relative percent difference is 25%.
PFE-7	1/12/2022	For SW-846 Method 8260C, field duplicate samples 2201121315 and 2201121316 the relative percent difference for trichloroethene (TCE) was 5.0%. Upper acceptance limit for relative percent difference is 25%.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
PFE-7	1/12/2022	For SW-846 Method 8260C, field duplicate samples 2201121315 and 2201121316 the relative percent difference for trichlorofluoromethane (CFC 11) was 2.5%. Upper acceptance limit for relative percent difference is 25%.
600-G-138	1/19/2022	For SW-846 Method 8260C, field duplicate samples 2201191101A and 2201191102A the relative percent difference for trichloroethene (TCE) was 3.2%. Upper acceptance limit for relative percent difference is 25%.
600-G-138	1/19/2022	For SW-846 Method 8260C, field duplicate samples 2201191101A and 2201191102A the relative percent difference for 1,1,2-trichloro-1,2,2-trifluoroethane was 3.2%. Upper acceptance limit for relative percent difference is 25%.
BLM-6-488	1/5/2022	For SW-846 Method 8260C, relative percent differences (RPD) for duplicate samples 2201051440A and 2201051441A were within control limits or below the calculable range.
BLM-15-305	**1/12/2022**	**For SW-846 Method 8260C, silane, methoxytrimethyl- (5.1 ug/L) was tentatively identified by a GC/MS library search in sample 2201121415C.**
BLM-6-488	**1/5/2022**	**For SW-846 Method 8260C, silane, methoxytrimethyl- (5.4 ug/L) and one unknown compound (12 ug/L) were tentatively identified by a GC/MS library search in duplicate sample 2201051441A.**
PFE-7	**1/12/2022**	**For SW-846 Method 8260C, silane, methoxytrimethyl- (6.3 ug/L) was tentatively identified by a GC/MS library search in duplicate sample 2201121316.**
BLM-17-550	**1/3/2022**	**For SW-846 Method 8260C, sulfur dioxide (10 ug/L) was tentatively identified by a GC/MS library search in sample 2201031430A.**
BLM-17-550	**1/3/2022**	**For SW-846 Method 8260C, sulfur dioxide (19 ug/L) was tentatively identified by a GC/MS library search in the field blank (2201031431A). Affected data are appropriately qualified.**
400-A-151	1/5/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
400-FV-131	1/18/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
400-HV-147	1/18/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
B650-INF-1	1/6/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
B655-INF-2	1/7/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-15-305	1/12/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-17-550	1/3/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
BLM-18-430	1/13/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
BLM-6-488	1/5/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PFE-2	1/12/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
PFE-7	1/12/2022	For SW-846 Method 8260C, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
400-A-151	1/5/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
400-FV-131	1/18/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
400-HV-147	1/18/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
600-G-138	1/19/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
B650-INF-1	1/6/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
B655-INF-2	1/7/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BLM-15-305	1/12/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BLM-17-550	1/3/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BLM-18-430	1/13/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a

Well ID	Event Date	SW-846 Method 8260C QA Narratives
		high bias. The sample data is not significantly affected. No further corrective action was appropriate.
BLM-6-488	1/5/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate. Affected groundwater data below the MRL are appropriately qualified.
PFE-2	1/12/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
PFE-4A	1/11/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
PFE-5	1/11/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
PFE-7	1/12/2022	For SW-846 Method 8260C, the upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.
400-A-151	1/5/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
400-FV-131	1/18/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
400-HV-147	1/18/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
600-G-138	1/19/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
B650-INF-1	1/6/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
B655-INF-2	1/7/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the

Well ID	Event Date	SW-846 Method 8260C QA Narratives
		exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-15-305	1/12/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-17-550	1/3/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-18-430	1/13/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-6-488	1/5/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PFE-2	1/12/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PFE-4A	1/11/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PFE-5	1/11/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
PFE-7	1/12/2022	For SW-846 Method 8260C, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
400-A-151	1/5/2022	For SW-846 Method 8260C, there were no detections in the field blank.
400-FV-131	1/18/2022	For SW-846 Method 8260C, there were no detections in the field blank.
400-HV-147	1/18/2022	For SW-846 Method 8260C, there were no detections in the field blank.
600-G-138	1/19/2022	For SW-846 Method 8260C, there were no detections in the field blank.
B650-INF-1	1/6/2022	For SW-846 Method 8260C, there were no detections in the field blank.
B655-INF-2	1/7/2022	For SW-846 Method 8260C, there were no detections in the field blank.
BLM-15-305	1/12/2022	For SW-846 Method 8260C, there were no detections in the field blank.
BLM-18-430	1/13/2022	For SW-846 Method 8260C, there were no detections in the field blank.
BLM-6-488	1/5/2022	For SW-846 Method 8260C, there were no detections in the field blank.
PFE-2	1/12/2022	For SW-846 Method 8260C, there were no detections in the field blank.
PFE-4A	1/11/2022	For SW-846 Method 8260C, there were no detections in the field blank.
PFE-5	1/11/2022	For SW-846 Method 8260C, there were no detections in the field blank.

Well ID	Event Date	SW-846 Method 8260C QA Narratives
PFE-7	1/12/2022	For SW-846 Method 8260C, there were no detections in the field blank.

Well ID	Event Date	Modified EPA Method 607 QA Narratives
BLM-18-430	1/13/2022	For Modified EPA Method 607 in blind control sample (2201131031C), all recoveries were within standard limits.
BLM-18-430	**1/13/2022**	**For Modified EPA Method 607, bromacil (0.03 ug/L) was detected in method blank PB22A19HE1. Affected data are appropriately qualified.**
PL-6-1335	**1/13/2022**	**For Modified EPA Method 607, bromacil (0.03 ug/L) was detected in method blank PB22A19HE1. Affected data are appropriately qualified.**
PL-6-1335	**1/13/2022**	**For Modified EPA Method 607, bromacil (0.057 ug/L) was detected in the equipment blank (2201130856Y). Affected data are appropriately qualified.**
BLM-6-488	1/5/2022	For Modified EPA Method 607, due to a laboratory error sample 2201051145A was not analyzed as a matrix spike sample. It will be treated as a duplicate sample in the database.
BLM-17-550	1/3/2022	For Modified EPA Method 607, field duplicate samples 2201031432A and 2201031433A the relative percent difference for N-nitrosodimethylamine was 4.7%. Upper acceptance limit for relative percent difference is 25%.
BLM-17-550	1/3/2022	For Modified EPA Method 607, field duplicate samples 2201031432A and 2201031433A the relative percent difference for bromacil was 0.0%. Upper acceptance limit for relative percent difference is 25%.
BLM-17-550	1/3/2022	For Modified EPA Method 607, field duplicate samples 2201031432A and 2201031433A the relative percent difference for N-nitrodimethylamine was 0.0%. Upper acceptance limit for relative percent difference is 25%.
BLM-6-488	1/5/2022	For Modified EPA Method 607, field duplicate samples 2201051444A and 2201051445A the relative percent difference for bromacil was 1.1%. Upper acceptance limit for relative percent difference is 25%.
PFE-2	1/12/2022	For Modified EPA Method 607, field duplicate samples 2201121258 and 2201121259 the relative percent difference for N-nitrosodimethylamine was 0.0%. Upper acceptance limit for relative percent difference is 25%.
PFE-2	1/12/2022	For Modified EPA Method 607, field duplicate samples 2201121258 and 2201121259 the relative percent difference for N-nitrodimethylamine was 1.3%. Upper acceptance limit for relative percent difference is 25%.
100-F-358	1/18/2022	For Modified EPA Method 607, there were no detections in the field blank.

Well ID	Event Date	Low-Level Nitrosamine Method QA Narratives
WW-5-909	1/11/2022	For Low Level Nitrosamine Method in blind control sample (2201111510B), all recoveries were within standard limits.
WW-5-809	**1/11/2022**	**For Low Level Nitrosamine Method, field duplicate samples 2201111407B and 2201111408B the relative percent difference for N-nitrosodimethylamine was 102.1%. This value is outside the upper acceptance limit for relative percent difference of 25%.**
JER-1-683	**1/7/2022**	**For Low Level Nitrosamine Method, for sample 21071337B the recovery of the internal standard DMN-d6 (134%) was outside laboratory control limits (10-100%). No corrective action was required for elevated recovery since the signal to noise exceeded the minimum of 3, and native DMN was detected in the sample. Affected data are appropriately qualified.**
PL-6-545	1/19/2022	For Low Level Nitrosamine Method, matrix spike recoveries for sample 2201191410Y and 2201191440Y were within laboratory control limits.
WW-5-579	1/10/2022	For Low Level Nitrosamine Method, N-nitrodimethylamine (0.25 ng/L) was detected in the field blank (2201101411B) below the reporting limit. No groundwater data are affected by this field blank contamination.
PL-6-1335	**1/13/2022**	**For Low Level Nitrosamine Method, N-nitrodimethylamine (0.26 ng/L) was detected in the equipment blank (2201130955Y) below the reporting limit. Affected data are appropriately qualified.**

Well ID	Event Date	Low-Level Nitrosamine Method QA Narratives
PL-10-484	**1/11/2022**	**For Low Level Nitrosamine Method, N-nitrodimethylamine (0.33 ng/L) was detected in the equipment blank (2201110906Y) below the reporting limit. Affected data are appropriately qualified.**
PL-6-1335	**1/13/2022**	**For Low Level Nitrosamine Method, N-nitrosodimethylamine (0.44 ng/L) was detected in the trip blank (2201130751Y) below the reporting limit. Affected data are appropriately qualified.**
JER-1-483	1/6/2022	For Low Level Nitrosamine Method, relative percent differences (RPD) for duplicate samples 2201061412B and 2201061413B were within control limits or below the calculable range.
PL-10-592	1/10/2022	For Low Level Nitrosamine Method, relative percent differences (RPD) for duplicate samples 2201101046Y and 2201101047Y were within control limits or below the calculable range.
ST-7-544	1/3/2022	For Low Level Nitrosamine Method, relative percent differences (RPD) for duplicate samples 2201031524B and 2201031525B were within control limits or below the calculable range.
100-F-358	1/18/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
100-G-223	1/18/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
300-F-175	1/19/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
B650-EFF-1	1/6/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
B655-EFF-2	1/7/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
BLM-10-517	1/3/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
BLM-10-517	1/3/2022	For Low Level Nitrosamine Method, there were no detections in the trip blank.
BLM-6-488	1/5/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
JER-1-483	1/6/2022	For Low Level Nitrosamine Method, there were no detections in the trip blank.
JER-1-483	1/6/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
JER-1-563	1/6/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
JER-1-683	1/7/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
JER-2-504	1/5/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
JER-2-504	1/5/2022	For Low Level Nitrosamine Method, there were no detections in the trip blank.
JER-2-584	1/5/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
JER-2-684	1/5/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
JP-1-424	1/4/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
JP-2-447	1/4/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
JP-3-509	1/6/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
JP-3-689	1/6/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
PFE-7	1/12/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
PL-10-484	1/11/2022	For Low Level Nitrosamine Method, there were no detections in the trip blank.
PL-10-592	1/10/2022	For Low Level Nitrosamine Method, there were no detections in the equipment blank.
PL-1-486	1/10/2022	For Low Level Nitrosamine Method, there were no detections in the trip blank.
PL-1-486	1/10/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
PL-6-1195	1/12/2022	For Low Level Nitrosamine Method, there were no detections in the trip blank.
PL-6-1195	1/12/2022	For Low Level Nitrosamine Method, there were no detections in the equipment blank.
PL-6-545	1/19/2022	For Low Level Nitrosamine Method, there were no detections in the equipment blank.
PL-6-725	1/19/2022	For Low Level Nitrosamine Method, there were no detections in the trip blank.
PL-6-725	1/19/2022	For Low Level Nitrosamine Method, there were no detections in the equipment blank.
PL-6-915	1/18/2022	For Low Level Nitrosamine Method, there were no detections in the trip blank.
PL-6-915	1/18/2022	For Low Level Nitrosamine Method, there were no detections in the equipment blank.
ST-7-453	1/3/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
ST-7-544	1/3/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
ST-7-779	1/4/2022	For Low Level Nitrosamine Method, there were no detections in the trip blank.
ST-7-779	1/4/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.

Well ID	Event Date	Low-Level Nitrosamine Method QA Narratives
ST-7-970	1/4/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
WW-5-459	1/10/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
WW-5-809	1/11/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.
WW-5-909	1/11/2022	For Low Level Nitrosamine Method, there were no detections in the field blank.

Well ID	Event Date	SW-846 Method 8270D QA Narratives
PL-10-592	**1/10/2022**	**For SW-846 Method 8270D, 1,4-dioxane (0.047 ug/L) was detected in the field blank (2201101346Y). Affected data are appropriately qualified.**
100-G-223	**1/18/2022**	**For SW-846 Method 8270D, cyclopentasiloxane, decamethyl- (5.1 ug/L) and two unknown compounds were tentatively identified by a GC/MS library search in sample 2201181439C.**
300-F-175	**1/19/2022**	**For SW-846 Method 8270D, cyclopentasiloxane, decamethyl- (7.1 ug/L) was tentatively identified by a GC/MS library search in sample 2201190939C.**
BLM-6-488	**1/5/2022**	**For SW-846 Method 8270D, cyclopentasiloxane, decamethyl- (7.4 ug/L) was tentatively identified by a GC/MS library search in sample 2201051448A.**
BLM-6-488	**1/5/2022**	**For SW-846 Method 8270D, cyclopentasiloxane, decamethyl- (7.6 ug/L) was tentatively identified by a GC/MS library search in the method blank for analytical batch 393676. Affected data are appropriately qualified.**
JER-1-563	**1/6/2022**	**For SW-846 Method 8270D, field duplicate samples 2201061446B and 2201061447B the relative percent difference for 1,4-dioxane was 34.3%. This value is outside the upper acceptance limit for relative percent difference of 25%.**
BLM-6-488	**1/5/2022**	**For SW-846 Method 8270D, the lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for benzidine. The Duplicate Laboratory Control Sample (DLCS) passed limits. There were no detections of the analyte(s) in the associated field samples. The analytes affected are flagged in the LCS Summary. Potentially affected groundwater data are appropriately qualified.**
BLM-6-488	**1/5/2022**	**For SW-846 Method 8270D, the lower control limit for the spike recovery of the Duplicate Laboratory Control Sample (DLCS) was exceeded for one or more analytes. The Laboratory Control Sample (LCS) passed limits. There were no detections of the analyte(s) in the associated field samples. The analytes affected are flagged in the LCS Summary. Potentially affected groundwater data are appropriately qualified.**
100-F-358	1/18/2022	For SW-846 Method 8270D, the lower control limit was exceeded by more than 40% for 4-nitroquinonline-1-oxide in the Continuing Calibration Verification (CCV) due to standards not matching. Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. No further corrective action was taken.
100-G-223	1/18/2022	For SW-846 Method 8270D, the lower control limit was exceeded by more than 40% for 4-nitroquinonline-1-oxide in the Continuing Calibration Verification (CCV) due to standards not matching. Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. No further corrective action was taken.
100-F-358	1/18/2022	For SW-846 Method 8270D, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
100-G-223	1/18/2022	For SW-846 Method 8270D, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
100-F-358	1/18/2022	For SW-846 Method 8270D, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
100-G-223	1/18/2022	For SW-846 Method 8270D, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the

Well ID	Event Date	SW-846 Method 8270D QA Narratives
		exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
BLM-6-488	1/5/2022	For SW-846 Method 8270D, the upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.
100-F-358	**1/18/2022**	**For SW-846 Method 8270D, three unknown compounds were tentatively identified by a GC/MS library search in sample 2201180940C.**
100-F-358	**1/18/2022**	**For SW-846 Method 8270D, two unknown compounds were tentatively identified by a GC/MS library search in the method blank for analytical batch 394363. Affected data are appropriately qualified.**
100-G-223	**1/18/2022**	**For SW-846 Method 8270D, two unknown compounds were tentatively identified by a GC/MS library search in the method blank for analytical batch 394363. Affected data are appropriately qualified.**
300-F-175	**1/19/2022**	**For SW-846 Method 8270D, two unknown compounds were tentatively identified by a GC/MS library search in the method blank for analytical batch 394363. Affected data are appropriately qualified.**

Well ID	Event Date	Total Metals QA Narratives
BLM-18-430	1/13/2022	For Total Metals, blind control sample (2201131032C) was prepared at a concentration below the reporting limits for calcium and boron. The results for these metals are not qualified based on this control.
JP-3-509	1/6/2022	For Total Metals, field duplicate samples 2201060944C and 2201060945C the relative percent difference for calcium was 1.8%. Upper acceptance limit for relative percent difference is 25%.
JP-3-509	1/6/2022	For Total Metals, field duplicate samples 2201060944C and 2201060945C the relative percent difference for magnesium was 1.8%. Upper acceptance limit for relative percent difference is 25%.
JP-3-509	1/6/2022	For Total Metals, field duplicate samples 2201060944C and 2201060945C the relative percent difference for sodium was 0.0%. Upper acceptance limit for relative percent difference is 25%.
JP-3-509	1/6/2022	For Total Metals, field duplicate samples 2201060944C and 2201060945C the relative percent difference for strontium was 1.7%. Upper acceptance limit for relative percent difference is 25%.
B655-EFF-2	1/7/2022	For Total Metals, field duplicate samples 2201070515 and 2201070516 the relative percent difference for calcium was 2.6%. Upper acceptance limit for relative percent difference is 25%.
B655-EFF-2	1/7/2022	For Total Metals, field duplicate samples 2201070515 and 2201070516 the relative percent difference for magnesium was 2.3%. Upper acceptance limit for relative percent difference is 25%.
B655-EFF-2	1/7/2022	For Total Metals, field duplicate samples 2201070515 and 2201070516 the relative percent difference for sodium was 2.3%. Upper acceptance limit for relative percent difference is 25%.
B655-EFF-2	1/7/2022	For Total Metals, field duplicate samples 2201070515 and 2201070516 the relative percent difference for strontium was 2.0%. Upper acceptance limit for relative percent difference is 25%.
BLM-10-517	1/3/2022	For Total Metals, for matrix spike sample 2201031051A the concentrations of calcium and magnesium in the native sample were greater than four times the concentration of the spike added. The sample results for these metals are not qualified based on this control.
PL-6-915	**1/18/2022**	**For Total Metals, iron (0.08 mg/L), strontium (0.005 mg/L) and zinc (0.008 mg/L) were detected in the equipment blank (2201180932Y) below the reporting limit. Affected data are appropriately qualified.**
B655-EFF-2	1/7/2022	For Total Metals, selenium (0.008 mg/L) was detected in the method blank for analytical batch 393920 below the reporting limit. No groundwater data are affected by this method blank contamination.
B655-INF-2	1/7/2022	For Total Metals, selenium (0.008 mg/L) was detected in the method blank for analytical batch 393920 below the reporting limit. No groundwater data are affected by this method blank contamination.

Well ID	Event Date	Total Metals QA Narratives
JP-3-509	1/6/2022	For Total Metals, selenium (0.008 mg/L) was detected in the method blank for analytical batch 393920 below the reporting limit. No groundwater data are affected by this method blank contamination.
JP-3-689	1/6/2022	For Total Metals, selenium (0.008 mg/L) was detected in the method blank for analytical batch 393920 below the reporting limit. No groundwater data are affected by this method blank contamination.
100-F-358	1/18/2022	For Total Metals, there were no detections in the field blank.
BLM-18-430	**1/13/2022**	**For Total Metals, zinc (0.006 mg/L) was detected in the method blank for analytical batch 394322 below the reporting limit. Affected data are appropriately qualified.**
PL-6-1335	**1/13/2022**	**For Total Metals, zinc (0.006 mg/L) was detected in the method blank for analytical batch 394322 below the reporting limit. Affected data are appropriately qualified.**

Well ID	Event Date	Miscellaneous QA Narratives
PL-6-1335	1/13/2022	For Standard Method 2540C, total dissolved solids (9 mg/L) was detected in the method blank for analytical batch 752169 below the reporting limit. No groundwater data are affected by this method blank contamination.
100-F-358	1/18/2022	For SW-846 Method 8081B, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV) on one detector. All recoveries were acceptable on the secondary detector. Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
100-G-223	1/18/2022	For SW-846 Method 8081B, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV) on one detector. All recoveries were acceptable on the secondary detector. Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.
300-F-175	1/19/2022	For SW-846 Method 8081B, the lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV) on one detector. All recoveries were acceptable on the secondary detector. Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Table 8 – WSTF Blank Sample Detections

Well ID	Event Date	Comment	Analysis	Sample Type	CAS No.	Analyte	Result	Units	QA flag
BLM-17-550	1/3/2022	Carboy G3	8260	VOA-FB	7446-09-5	Sulfur Dioxide	19	ug/L	TIC FB
JP-3-509	1/6/2022	Carboy G1	8260_LL	VOA-FB	7446-09-5	Sulfur Dioxide	10	ug/L	TIC RB FB
JER-1-483	1/6/2022	Carboy G3	8260_LL	VOA-TB	7446-09-5	Sulfur Dioxide	7.3	ug/L	TIC RB TB
JER-1-563	1/6/2022	Carboy G3	8260_LL	VOA-FB	7446-09-5	Sulfur Dioxide	5.6	ug/L	TIC RB FB
PL-6-1335	1/13/2022	Carboy G2	NDMA_LL	NDMA_LL-TB	62-75-9	N-Nitrosodimethylamine	0.44	ng/L	J TB
WW-5-459	1/10/2022	Carboy G3	8260_LL	VOA-FB	74-87-3	Chloromethane	0.41	ug/L	J RB A FB
PL-10-592	1/10/2022	Carboy G2	8260_LL	VOA-EB	74-87-3	Chloromethane	0.37	ug/L	J RB A EB
PL-10-484	1/11/2022	Carboy G2	NDMA_LL	NDMA_LL-EB	4164-28-7	N-Nitrodimethylamine	0.33	ng/L	J EB
WW-5-809	1/11/2022	Carboy G3	8260_LL	VOA-FB	74-87-3	Chloromethane	0.32	ug/L	J RB A FB
PL-10-484	1/11/2022	Carboy G2	8260_LL	VOA-EB	74-87-3	Chloromethane	0.32	ug/L	J RB A EB
PL-6-915	1/18/2022	Carboy G2	8260_LL	VOA-EB	74-87-3	Chloromethane	0.29	ug/L	J EB
PL-1-486	1/10/2022	Carboy G3	8260_LL	VOA-FB	74-87-3	Chloromethane	0.28	ug/L	J RB A FB
PL-6-1335	1/13/2022	Carboy G2	NDMA_LL	NDMA_LL-EB	4164-28-7	N-Nitrodimethylamine	0.26	ng/L	J EB
WW-5-579	1/10/2022	Carboy G3	NDMA_LL	NDMA_LL-FB	4164-28-7	N-Nitrodimethylamine	0.25	ng/L	J FB
PL-6-915	1/18/2022	Carboy G2	METALS	METALS-EB	7439-89-6	Iron, Total	0.08	mg/L	J EB
PL-6-1335	1/13/2022	Carboy G2	607	NDMA-EB	314-40-9	Bromacil	0.057	µg/L	RB EB

Well ID	Event Date	Comment	Analysis	Sample Type	CAS No.	Analyte	Result	Units	QA flag
PL-10-592	1/10/2022	Carboy G2	8270	SVOA_SIM-FB	123-91-1	1,4-Dioxane	0.047	ug/L	FB
PL-6-915	1/18/2022	Carboy G2	METALS	METALS-EB	7440-66-6	Zinc, Total	0.008	mg/L	J EB
PL-6-915	1/18/2022	Carboy G2	METALS	METALS-EB	7440-24-6	Strontium, Total	0.005	mg/L	J EB

Appendix D
Comparison to Cleanup Levels

Appendix D.1: Groundwater Monitoring Wells
Appendix D.2: PFTS
Appendix D.3: MPITS

Appendix D.1
Groundwater Monitoring Wells

Analytical Results for Groundwater Monitoring Wells that Exceed Clean Up Levels

CAS Number 67-66-3 **Analyte** Chloroform

Cleanup Level 2.2 ug/L **Source** GMP

Well ID	Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
BLM-15-305	1/12/2022	8260	2201121415C	Chloroform	2.4	ug/L	1	0.24		

CAS Number **62-75-9** **Analyte** **N-Nitrosodimethylamine**

Cleanup Level **0.0011 ug/L (1.1 ng/L)** **Source** **GMP**

Well ID	Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
400-A-151	1/5/2022	607	2201051006A	N-Nitrosodimethylamine	5.9	µg/L	0.0095	0.0048	45	
400-C-143	11/17/2021	607	2111171103C	N-Nitrosodimethylamine	3.4	µg/L	0.0095	0.0048	54	
BLM-15-305	1/12/2022	607	2201121417C	N-Nitrosodimethylamine	9	µg/L	0.0096	0.0048	46	
BLM-17-493	11/3/2021	607	2111030952B	N-Nitrosodimethylamine	0.86	µg/L	0.0094	0.0047	53	
BLM-17-550	1/3/2022	607	2201031432A	N-Nitrosodimethylamine	0.63	µg/L	0.0094	0.0047	45	
BLM-17-550	1/3/2022	607	2201031433A	N-Nitrosodimethylamine	0.66	µg/L	0.0094	0.0047	45	
BLM-18-430	1/13/2022	607	2201131007C	N-Nitrosodimethylamine	0.014	µg/L	0.0097	0.0049	33	
BLM-26-404	11/3/2021	607	2111031457B	N-Nitrosodimethylamine	0.17	µg/L	0.0095	0.0048	53	
BLM-27-270	12/15/2021	607	2112150933A	N-Nitrosodimethylamine	2.5	µg/L	0.0094	0.0047	50	
BLM-27-270	12/15/2021	607	2112150934A	N-Nitrosodimethylamine	2.6	µg/L	0.0095	0.0048	50	
BLM-32-543	11/1/2021	NDMA_LL	2111011527B	N-Nitrosodimethylamine	1.8	ng/L	0.49	0.41		
BLM-36-350	11/3/2021	607	2111031352Y	N-Nitrosodimethylamine	0.62	µg/L	0.0096	0.0048	53	
BLM-36-350	11/3/2021	607	2111031420Y	N-Nitrosodimethylamine	0.56	µg/L	0.0095	0.0048	53	
BLM-38-620	11/4/2021	NDMA_LL	2111041311Y	N-Nitrosodimethylamine	2.05	ng/L	0.5	0.42		EB
BW-5-295	11/4/2021	607	2111041413B	N-Nitrosodimethylamine	0.49	µg/L	0.0096	0.0048	52	
BW-5-295	11/4/2021	607	2111041414B	N-Nitrosodimethylamine	0.54	µg/L	0.0095	0.0048	52	
BW-7-211	12/15/2021	607	2112150840C	N-Nitrosodimethylamine	1.2	µg/L	0.0095	0.0048	50	
JER-1-563	1/6/2022	NDMA_LL	2201061444B	N-Nitrosodimethylamine	1.3	ng/L	0.48	0.4		
JER-1-683	1/7/2022	NDMA_LL	2201071337B	N-Nitrosodimethylamine	1.43	ng/L	0.5	0.42		
JER-2-584	1/5/2022	NDMA_LL	2201051502B	N-Nitrosodimethylamine	1.34	ng/L	0.48	0.4		
JER-2-684	1/5/2022	NDMA_LL	2201051527B	N-Nitrosodimethylamine	1.75	ng/L	0.47	0.4		
NASA 6	11/15/2021	607	2111151107C	N-Nitrosodimethylamine	15	µg/L	0.19	0.094	54	D
NASA 6	11/15/2021	607	2111151108C	N-Nitrosodimethylamine	15	µg/L	0.19	0.097	54	D
PL-11-470	12/1/2021	NDMA_LL	2112011432B	N-Nitrosodimethylamine	5.13	ng/L	0.48	0.4		
PL-11-530	12/1/2021	NDMA_LL	2112011452B	N-Nitrosodimethylamine	2.14	ng/L	0.48	0.4		
PL-12-570	11/3/2021	NDMA_LL	2111031006C	N-Nitrosodimethylamine	1.4	ng/L	0.48	0.4		
PL-12-800	11/3/2021	NDMA_LL	2111031432C	N-Nitrosodimethylamine	3.5	ng/L	0.51	0.43		
PL-12-800	11/3/2021	NDMA_LL	2111031434C	N-Nitrosodimethylamine	3.5	ng/L	0.51	0.42		
PL-2-504	12/10/2021	607	2112100952A	N-Nitrosodimethylamine	0.16	µg/L	0.0095	0.0048	51	
PL-2-504	12/10/2021	607	2112100953A	N-Nitrosodimethylamine	0.14	µg/L	0.0094	0.0047	51	
PL-7-480	11/8/2021	NDMA_LL	2111081446Y	N-Nitrosodimethylamine	2.87	ng/L	0.48	0.4		*
PL-7-560	11/8/2021	NDMA_LL	2111080941Y	N-Nitrosodimethylamine	1.69	ng/L	0.48	0.4		* TB EB
PL-8-455	12/8/2021	NDMA_LL	2112081441Y	N-Nitrosodimethylamine	2.75	ng/L	0.48	0.4		EB
PL-8-605	12/8/2021	NDMA_LL	2112081035Y	N-Nitrosodimethylamine	1.77	ng/L	0.47	0.4		QD
ST-1-473	11/15/2021	607	2111151418A	N-Nitrosodimethylamine	0.33	µg/L	0.0098	0.0049	54	
ST-1-473	11/15/2021	607	2111151417A	N-Nitrosodimethylamine	0.28	µg/L	0.0094	0.0047	54	
ST-1-541	12/16/2021	607	2112160952A	N-Nitrosodimethylamine	1.7	µg/L	0.0095	0.0048	50	

CAS Number **62-75-9** **Analyte** **N-Nitrosodimethylamine**

Cleanup Level **0.0011 ug/L** **Source** **GMP**

Well ID	Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
ST-1-630	12/16/2021	607	2112161002C	N-Nitrosodimethylamine	0.22	µg/L	0.0094	0.0047	50	
ST-3-486	12/9/2021	607	2112090942C	N-Nitrosodimethylamine	0.09	µg/L	0.0095	0.0048	51	
ST-3-586	12/13/2021	607	2112130943C	N-Nitrosodimethylamine	0.0066	µg/L	0.0094	0.0047	51	J
ST-3-666	12/15/2021	607	2112151412C	N-Nitrosodimethylamine	0.046	µg/L	0.0095	0.0048	50	
ST-3-735	12/14/2021	607	2112141254C	N-Nitrosodimethylamine	0.47	µg/L	0.0095	0.0048	50	
ST-3-735	12/14/2021	607	2112141253C	N-Nitrosodimethylamine	0.45	µg/L	0.01	0.005	50	
ST-5-485	11/1/2021	NDMA_LL	2111011406Y	N-Nitrosodimethylamine	1.1	ng/L	0.48	0.4		EB
WW-3-469	12/7/2021	NDMA_LL	2112071431Y	N-Nitrosodimethylamine	2.16	ng/L	0.48	0.4		
WW-5-809	1/11/2022	NDMA_LL	2201111407B	N-Nitrosodimethylamine	1.82	ng/L	0.48	0.4		QD
WW-5-909	1/11/2022	NDMA_LL	2201111437B	N-Nitrosodimethylamine	2.31	ng/L	0.47	0.4		

CAS Number 127-18-4 **Analyte** Tetrachloroethene (PCE)

Cleanup Level 5 ug/L **Source** GMP

Well ID	Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
ST-1-473	11/15/2021	8260	2111151415A	Tetrachloroethene (PCE)	6.8	ug/L	1	0.21		
ST-1-541	12/16/2021	8260	2112160950A	Tetrachloroethene (PCE)	6.5	ug/L	1	0.21		
ST-1-630	12/16/2021	8260	2112161000C	Tetrachloroethene (PCE)	8.4	ug/L	1	0.21		

CAS Number **79-01-6** **Analyte** **Trichloroethene (TCE)**

Cleanup Level **4.9 ug/L** **Source** **GMP**

Well ID	Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
200-I-185	11/10/2021	8260	2111101020Y	Trichloroethene (TCE)	13	ug/L	1	0.2		
200-I-300	11/16/2021	8260	2111161400Y	Trichloroethene (TCE)	29	ug/L	1	0.2		
200-I-300	11/16/2021	8260	2111161401Y	Trichloroethene (TCE)	28	ug/L	1	0.2		
600-G-138	1/19/2022	8260	2201191102A	Trichloroethene (TCE)	32	ug/L	1	0.2		
600-G-138	1/19/2022	8260	2201191101A	Trichloroethene (TCE)	31	ug/L	1	0.2		
BLM-17-493	11/3/2021	8260	2111030950B	Trichloroethene (TCE)	58	ug/L	1	0.2		
BLM-17-550	1/3/2022	8260	2201031430A	Trichloroethene (TCE)	85	ug/L	1	0.2		
BLM-18-430	1/13/2022	8260	2201131005C	Trichloroethene (TCE)	9.9	ug/L	1	0.2		
BLM-26-404	11/3/2021	8260	2111031455B	Trichloroethene (TCE)	20	ug/L	1	0.2		
BLM-36-350	11/3/2021	8260	2111031351Y	Trichloroethene (TCE)	66	ug/L	1	0.2		
BLM-36-350	11/3/2021	8260	2111031350Y	Trichloroethene (TCE)	65	ug/L	1	0.2		
PL-12-570	11/3/2021	8260	2111031003C	Trichloroethene (TCE)	7.5	ug/L	1	0.2		
PL-12-570	11/3/2021	8260	2111031005C	Trichloroethene (TCE)	7.1	ug/L	1	0.2		
PL-12-800	11/3/2021	8260	2111031430C	Trichloroethene (TCE)	13	ug/L	1	0.2		
PL-2-504	12/10/2021	8260	2112100950A	Trichloroethene (TCE)	66	ug/L	1	0.2		
ST-1-473	11/15/2021	8260	2111151415A	Trichloroethene (TCE)	230	ug/L	2.5	0.5		
ST-1-541	12/16/2021	8260	2112160950A	Trichloroethene (TCE)	150	ug/L	1	0.2		
ST-1-630	12/16/2021	8260	2112161000C	Trichloroethene (TCE)	260	ug/L	2.5	0.5		
ST-3-735	12/14/2021	8260	2112141251C	Trichloroethene (TCE)	25	ug/L	1	0.2		

Appendix D.2
PFTS

Analytical Results for PFTS and PFE Wells that Exceed Clean Up Levels

CAS Number 62-75-9 **Analyte** N-Nitrosodimethylamine

Cleanup Level 0.0011 ug/L (1.1 mg/L) **Source** GMP

Well ID	Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
B650-INF-1	11/2/2021	607	2111021428	N-Nitrosodimethylamine	0.075	µg/L	0.0094	0.0047	53	
B650-INF-1	1/6/2022	607	2201061023	N-Nitrosodimethylamine	0.08	µg/L	0.0096	0.0048	43	
B650-INF-1	12/6/2021	607	2112061317	N-Nitrosodimethylamine	0.099	µg/L	0.0095	0.0048	59	
PFE-2	1/12/2022	607	2201121259	N-Nitrosodimethylamine	0.15	µg/L	0.0095	0.0048	46	
PFE-2	1/12/2022	607	2201121258	N-Nitrosodimethylamine	0.15	µg/L	0.0098	0.0049	46	
PFE-4A	1/11/2022	607	2201111237	N-Nitrosodimethylamine	0.0067	µg/L	0.0096	0.0048	46	J
PFE-5	1/11/2022	607	2201111258	N-Nitrosodimethylamine	0.32	µg/L	0.0099	0.005	46	
PFE-7	1/12/2022	NDMA_LL	2201121319	N-Nitrosodimethylamine	1.18	ng/L	0.5	0.42		

CAS Number **79-01-6** **Analyte** **Trichloroethene (TCE)**

Cleanup Level **4.9 ug/L** **Source** **GMP**

Well ID	Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
B650-INF-1	11/2/2021	8260	2111021426	Trichloroethene (TCE)	25	ug/L	1	0.2		
B650-INF-1	11/2/2021	8260	2111021425	Trichloroethene (TCE)	25	ug/L	1	0.2		
B650-INF-1	1/6/2022	8260	2201061021	Trichloroethene (TCE)	26	ug/L	1	0.2		
B650-INF-1	12/6/2021	8260	2112061315	Trichloroethene (TCE)	18	ug/L	1	0.2		
PFE-2	1/12/2022	8260	2201121256	Trichloroethene (TCE)	55	ug/L	1	0.2		
PFE-5	1/11/2022	8260	2201111256	Trichloroethene (TCE)	41	ug/L	1	0.2		

Appendix D.3
MPITS

Analytical Results for MPITS and MPE Wells that Exceed Clean Up Levels

CAS Number 62-75-9 **Analyte** N-Nitrosodimethylamine

Clean Up Level 0.0011 ug/L (1.1 ng/L) **Source** GMP

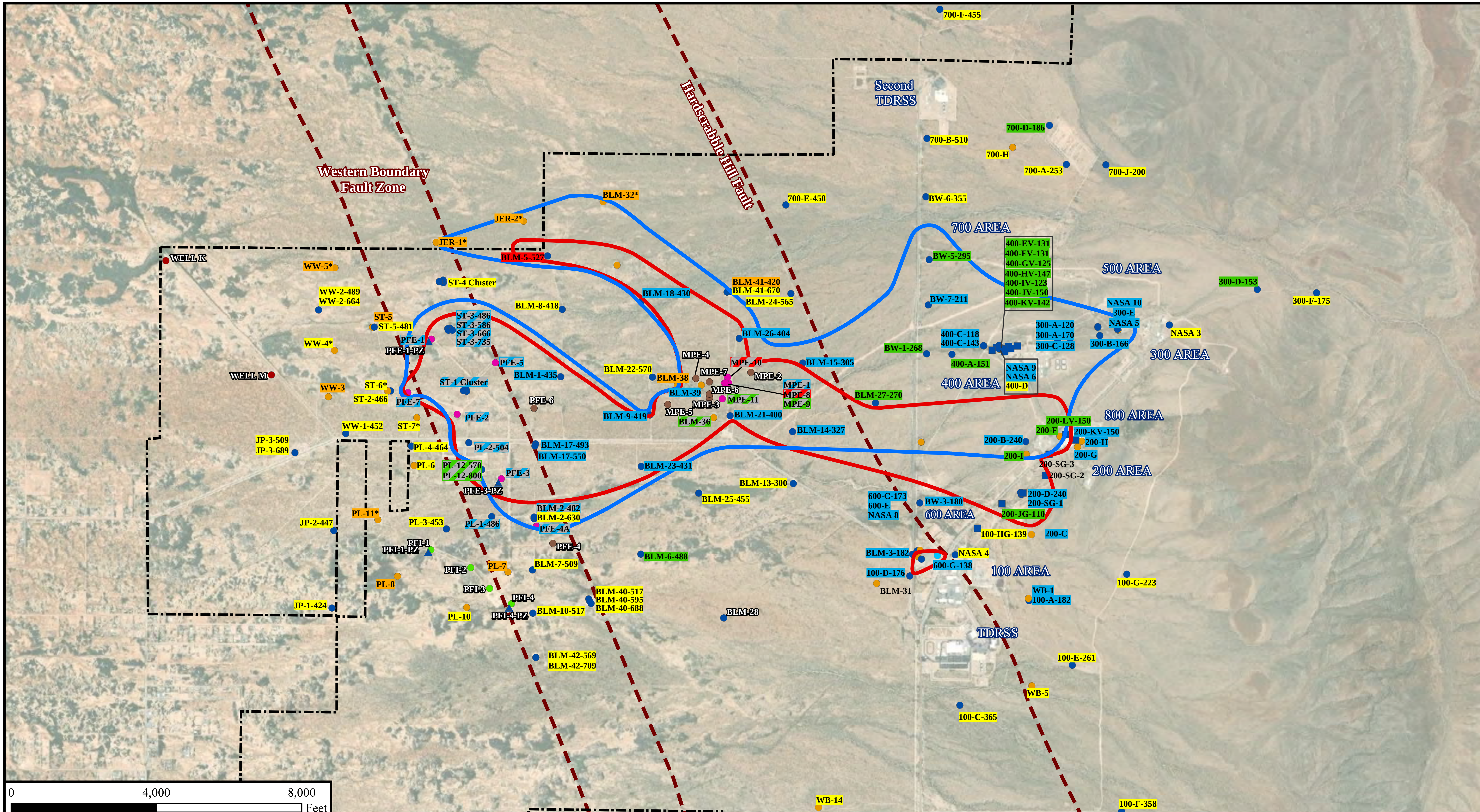
Well ID	Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
B655-EFF-2	12/6/2021	NDMA_LL	2112061403	N-Nitrosodimethylamine	1.14	ng/L	0.48	0.4		FB
B655-INF-2	1/7/2022	607	2201070607	N-Nitrosodimethylamine	1.9	µg/L	0.0094	0.0047	43	
B655-INF-2	11/2/2021	607	2111021203	N-Nitrosodimethylamine	1.8	µg/L	0.0094	0.0047	53	
B655-INF-2	12/6/2021	607	2112061419	N-Nitrosodimethylamine	1.6	µg/L	0.0095	0.0048	59	
MPE-1	11/4/2021	607	2111040918	N-Nitrosodimethylamine	3.8	µg/L	0.0095	0.0048	52	
MPE-10	11/4/2021	607	2111040943	N-Nitrosodimethylamine	3.5	µg/L	0.0095	0.0048	52	
MPE-11	11/4/2021	607	2111040903	N-Nitrosodimethylamine	0.14	µg/L	0.0095	0.0048	52	
MPE-8	11/4/2021	607	2111040933	N-Nitrosodimethylamine	2.7	µg/L	0.0095	0.0048	52	

CAS Number **79-01-6** **Analyte** **Trichloroethene (TCE)**

Clean Up Level **4.9 ug/L** **Source** **GMP**

Well ID	Event Date	Analysis Method	Sample	Constituent	Result	Units	Quant Limit	Det Limit	Xtrct Effic	QA Flag
B655-INF-2	1/7/2022	8260	2201070604	Trichloroethene (TCE)	51	ug/L	1	0.2		
B655-INF-2	1/7/2022	8260	2201070605	Trichloroethene (TCE)	49	ug/L	1	0.2		
B655-INF-2	11/2/2021	8260	2111021201	Trichloroethene (TCE)	49	ug/L	1	0.2		
B655-INF-2	12/6/2021	8260	2112061416	Trichloroethene (TCE)	39	ug/L	1	0.2		
B655-INF-2	12/6/2021	8260	2112061417	Trichloroethene (TCE)	37	ug/L	1	0.2		
MPE-1	11/4/2021	8260	2111040916	Trichloroethene (TCE)	86	ug/L	1	0.2		
MPE-10	11/4/2021	8260	2111040941	Trichloroethene (TCE)	70	ug/L	1	0.2		
MPE-11	11/4/2021	8260	2111040901	Trichloroethene (TCE)	5.3	ug/L	1	0.2		
MPE-8	11/4/2021	8260	2111040931	Trichloroethene (TCE)	88	ug/L	1	0.2		

Appendix E
Time-Concentration Plots



Time Concentration Plot Interpretations for First Quarter 2022

Interpretations

- Non-Detect
- Fluctuating Low-Level NDMA Detections (≥1.1 ng/L)
- Natural Migration - No Overall Trend
- Natural Migration - Decreasing T-C
- Natural Migration - Increasing T-C
- Pumping-Related Migration - No Overall Trend
- Pumping-Related Migration - Decreasing T-C
- Pumping-Related Migration - Increasing T-C

Well Type

- Conventional Well
- Perched Well
- Multiport Well
- MSVGM Well
- Extraction Well
- Injection Well
- Piezometer
- Exploration Well
- Production Well

* Multiport well with FLUTe sampling system.

Other

- NDMA Cleanup Level (1.1 ng/L)
- TCE Cleanup Level (4.9 ug/L)
- Fault
- WSTF Boundary

N W E S

April 2022

Appendix E:

Reporting Period: 1Q/2022

Summary of Maximum Concentrations, Current Concentrations and T-C Plot Interpretations for WSTF Monitoring Well Network

Upgradient Well Group

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
100-F-358 Conv	2005	Non Detect	0.48 DL	2010	0.24 DL	2022	0.43 DL	2010	0.21 DL	2022	0.63 DL	2010	0.2 DL	2022	0.005 DL	NP	2012	0.004 DL	NP	2022	N/A		N/A	
100-G-223 Conv	2005	Non Detect	0.48 DL	2010	0.24 DL	2022	0.43 DL	2010	0.21 DL	2022	0.63 DL	2010	0.2 DL	2022	0.005 DL	NP	2012	0.004 DL	NP	2022	N/A		N/A	
300-F-175 Conv	2005	Non Detect	0.48 DL	2010	0.24 DL	2022	0.43 DL	2010	0.21 DL	2022	0.63 DL	2010	0.2 DL	2022	0.005 DL	NP	2016	0.004 DL	NP	2022	N/A		N/A	
NASA 3 Conv	1988	Non Detect	5.00 RL	1988	0.24 DL	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.2 DL	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	N/A		N/A	

100/600 Area Well Group

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
100-C-365 Conv	1989	Non Detect	1.00 DL	2010	0.24 DL	2021	1.00 DL	2010	0.21 DL	2021	1.00 DL	2010	0.2 DL	2021	0.05 RL	NP	1992	0.004 DL	NP	2021	N/A		N/A	
100-D-176 Conv	1997	Natural Migration (Decreasing)	1.60 DL	2003	0.24 DL	2021	2.00 DL	1999	0.21 DL	2021	9.60	1999	3.00	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	N/A		N/A	
100-HG-139 MSVGM	2011	Non Detect	0.79 J	2011	0.24 DL	2021	0.33 J	2015	0.21 DL	2021	10	2014	0.2 DL	2021	0.005 DL	NP	2020	0.004 DL	NP	2021	0.93 RB FB	2012	0.93 RB FB	2012
600-C-173 Conv	1988	Natural Migration (Decreasing)	5.00 RL	1988	0.24 DL	2021	2.50 RL	1996	0.21 DL	2021	9.00	1998	1.80 RB FB	2021	0.1	NP	1988	0.004 DL	NP	2021	N/A		N/A	
600-E WestBay	1998	Natural Migration (Decreasing)	1.60 DL	2002	0.24 DL	2021	2.00 DL	1999	0.21 DL	2021	2.00 DL	1999	0.61 J	2021	0.005 DL	NP	2016	0.004 DL	NP	2021	N/A		N/A	
600-G-138 Conv	2011	Natural Migration (Decreasing)	5.10	2017	0.76 J	2022	0.3 DL	2018	0.21 DL	2022	130	2012	32	2022	0.1 DL	NP	2021	0.1 DL	NP	2021	0.96 RB FB	2012	0.96 RB FB	2012
BW-3-180 Conv	1988	Natural Migration (Decreasing)	10	1988	0.33 J Q	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.2 DL	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	N/A		N/A	
NASA 4 Conv	1988	Non Detect	5.00 RL	1988	0.24 DL	2021	2.50 RL	1995	0.21 DL	2021	3.50	2009	0.33 J RB FB	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	N/A		N/A	
NASA 8 Conv	1988	Natural Migration (Decreasing)	5.00	1996	0.27 DL	2018	2.50 RL	1996	0.28 DL	2018	130	1995	7.90	2018	0.05 RL	NP	1993	0.004 DL	NP	2018	N/A		N/A	

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
WB-1 Westbay	1990	Natural Migration (Decreasing)	15	1996	0.24 DL	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.26 J	2021	0.05 RL	NP	1993	0.004 DL	NP	2021	N/A		N/A	

200 Area Well Group

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
200-B-240 Conv	1989	Natural Migration (Decreasing)	280	1996	92	2021	15 QD	1989	2.90	2021	290 QD	1989	61	2021	1.60	25	1993	0.37	38	2021	N/A		N/A	
200-C WestBay	1993	Natural Migration (Decreasing)	51	1996	16	2021	2.50 RL	1996	0.21 DL	2021	4.30	2003	2.50	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	N/A		N/A	
200-D-240 Conv	1988	Natural Migration (Decreasing)	240 QD	1995	54	2021	2.50 RL	1995	0.31 J	2021	110	1990	14	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	N/A		N/A	
200-F WestBay	1995	Natural Migration (No Overall Trend)	41	2005	5.50	2021	2.50 RL	1996	0.45 J	2021	34	2009	21	2021	0.41 J A	1	2021	0.41 J A	1	2021	N/A		N/A	
200-G WestBay	1995	Natural Migration (Decreasing)	55	1995	4.60 QD	2021	2.50 RL	1996	0.21 DL	2021	4.80	2004	2.10	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	N/A		N/A	
200-H WestBay	1994	Natural Migration (Decreasing)	6.00	2003	0.92 J	2021	2.50 RL	1996	0.21 DL	2021	3.00 J	1997	0.2 DL	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	N/A		N/A	
200-I WestBay	1997	Natural Migration (No Overall Trend)	2.40 J	1999	0.27 J	2021	2.00 DL	1999	0.55 J	2021	35	2019	29	2021	0.021 J	42	2006	0.004 DL	NP	2021	N/A		N/A	
200-JG-110 MSVGM	2012	Natural Migration (No Overall Trend)	17	2013	5.20	2021	2.20	2020	2.10	2021	25	2013	24	2021	0.005 DL	NP	2012	0.004 DL	NP	2021	0.93 J	2012	0.93 J	2012
200-KV-150 MSVGM	2015	Natural Migration (Decreasing)	90	2020	18	2021	0.3 DL	2015	0.21 DL	2021	22	2020	2.90	2021	0.005 DL	NP	2020	0.004 DL	NP	2021	N/A		N/A	
200-LV-150 Conv	2018	Natural Migration (No Overall Trend)	0.27 DL	2018	0.24 DL	2021	0.3 DL	2018	0.21 DL	2021	0.89 J Q	2018	0.24 J	2021	0.004 DL	NP	2018	0.004 DL	NP	2021	N/A		N/A	
200-SG-1 MSVGM	2004	Natural Migration (Decreasing)	81	2008	9.10	2021	17	2007	4.60	2021	380	2007	110	2021	0.016 J	44	2008	0.004 DL	NP	2021	N/A		N/A	
BLM-3-182 Conv	1988	Natural Migration (Decreasing)	10	1988	0.24 DL	2021	2.50 RL	1995	0.21 DL	2021	41	1991	3.30	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	N/A		N/A	

300/400 Area Well Group

Appendix E: Summary of Maximum Concentrations, Current Concentrations and T-C Plot Interpretations for WSTF Monitoring Well Network

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
300-A-120 Conv	1988	Natural Migration (Decreasing)	4300 FB	1996	52	2021	2.50 RL	1996	0.21 DL	2021	2.50	2004	0.34 J	2021	46	24	1990	2.90 QD	58	2021	N/A		N/A	
300-A-170 Conv	1988	Natural Migration (Decreasing)	6000	1988	320	2021	2.50 RL	1996	0.21 DL	2021	7.00	1988	1.10	2021	48 QD	21	1995	3.80	39	2021	N/A		N/A	
300-B-166 Conv	1988	Natural Migration (Decreasing)	1600	1988	190	2021	2.50 RL	1996	0.21 DL	2021	8.00	1988	0.2 DL	2021	14	39	1991	7.80	36	2021	N/A		N/A	
300-C-128 Conv	1988	Natural Migration (Decreasing)	3000	1988	420	2021	2.50 RL	1996	0.21 DL	2021	3.70 J	1996	2.10	2021	47	32	2000	7.80	50	2021	N/A		N/A	
300-D-153 Conv	1988	Natural Migration (No Overall Trend)	6.30	2013	2.20	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.2 DL	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	N/A		N/A	
300-E WestBay	1995	Natural Migration (Decreasing)	180	1996	9.00	2021	2.50 RL	1996	0.21 DL	2021	9.30	1997	1.40	2021	49 A	1	2021	0.004 DL	NP	2021	N/A		N/A	
400-A-151 Conv	1989	Natural Migration (No Overall Trend)	450	1990	230	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.9 J	2022	280	18	1991	13	45	2022	N/A		N/A	
400-C-118 Conv	1989	Natural Migration (Decreasing)	1600	1989	200	2019	2.50 RL	1996	0.21 DL	2019	5.00	1989	1.60	2019	87	38	1989	4.90	55	2019	N/A		N/A	
400-C-143 Conv	1989	Natural Migration (Decreasing)	1600	1989	200	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	1.40	2021	93	15	1989	6.30	54	2021	N/A		N/A	
400-EV-131 MSVGM	2017	Natural Migration (No Overall Trend)	520	2017	440	2021	0.3 DL	2018	0.21 DL	2021	13	2017	2.10	2021	3.30	46	2020	1.80	44	2021	N/A		N/A	
400-FV-131 MSVGM	2017	Natural Migration (No Overall Trend)	290	2021	130	2022	0.3 DL	2018	0.21 DL	2022	1.90	2021	0.86 J	2022	3.30	60	2020	1.40	53	2021	N/A		N/A	
400-GV-125 MSVGM	2017	Natural Migration (No Overall Trend)	320	2021	180	2021	0.3 DL	2018	0.21 DL	2021	1.80	2021	1.40	2021	5.70	44	2021	5.70	44	2021	N/A		N/A	
400-HV-147 MSVGM	2017	Natural Migration (No Overall Trend)	240	2021	180	2022	0.3 DL	2018	0.21 DL	2022	2.00	2017	0.58 J	2022	320 D	53	2021	320 D	53	2021	N/A		N/A	
400-IV-123 MSVGM	2017	Natural Migration (No Overall Trend)	430	2017	140	2021	0.93 J	2018	0.21 DL	2021	0.29 J	2021	0.29 J	2021	0.041	87	2017	0.004 DL	NP	2021	N/A		N/A	
400-JV-150 MSVGM	2017	Natural Migration (No Overall Trend)	970	2021	590	2021	0.3 DL	2018	0.21 DL	2021	1.50	2017	0.95 J	2021	5.90	44	2021	5.90	44	2021	N/A		N/A	

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
400-KV-142 MSVGM	2017	Natural Migration (No Overall Trend)	1700	2018	990	2019	7.00 DL	2018	0.21 DL	2019	5.00 DL	2018	0.37 J	2019	1.50	36	2019	1.50	36	2019	N/A		N/A	
BW-1-268 Conv	1989	Natural Migration (No Overall Trend)	1100	1989	190	2021	2.50 RL	1996	0.21 DL	2021	5.00	1989	1.10	2021	130	18	1991	11	58	2021	N/A		N/A	
BW-5-295 Conv	1989	Natural Migration (No Overall Trend)	360	1989	86	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.46 J	2021	1.90	49	1997	1.00	52	2021	N/A		N/A	
BW-7-211 Conv	1989	Natural Migration (Decreasing)	2400	1991	130 Q	2021	2.50 RL	1995	0.21 DL	2021	13	1989	1.00 Q	2021	17	34	1994	2.40	50	2021	N/A		N/A	
NASA 10 Conv	1988	Natural Migration (Decreasing)	250	1996	11	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.2 DL	2021	4.70	19	1996	0.099	58	2021	N/A		N/A	
NASA 5 Conv	1988	Natural Migration (Decreasing)	350	1991	25 Q	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.2 DL	2021	13	19	1996	0.81	58	2021	N/A		N/A	
NASA 6 Conv	1988	Natural Migration (Decreasing)	1300	1996	150	2021	2.50 RL	1996	0.21 DL	2021	5.00	1990	0.31 J	2021	95	21	1996	28 D	54	2021	N/A		N/A	
NASA 9 Conv	1988	Natural Migration (Decreasing)	2000	1996	110	2019	12 RL	1988	0.21 DL	2019	12 RL	1988	0.56 J	2019	18	32	1990	1.40	52	2019	N/A		N/A	

Northern Boundary Well Group

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
700-A-253 Conv	1990	Non Detect	2.50 RL	1996	0.16 DL	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.2 DL	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	N/A		N/A	
700-B-510 Conv	1990	Non Detect	2.50 RL	1995	0.24 DL	2021	2.50 RL	1995	0.21 DL	2021	2.50 RL	1995	0.2 DL	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	N/A		N/A	
700-D-186 Conv	1990	Natural Migration (No Overall Trend)	2.50 RL	1995	0.44 J	2021	2.50 RL	1995	0.21 DL	2021	2.50 RL	1995	0.34 J	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	N/A		N/A	
700-E-458 Conv	1990	Non Detect	2.50 RL	1996	0.24 DL	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.2 DL	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	N/A		N/A	
700-F-455 Conv	1991	Non Detect	2.50 RL	1996	0.37 DL	2005	2.50 RL	1996	0.27 DL	2005	2.50 RL	1996	0.52 DL	2005	0.05 RL	NP	1997	0.005 DL	NP	2005	N/A		N/A	
700-H WestBay	1999	Non Detect	1.60 DL	2003	0.16 DL	2021	0.62 DL	2004	0.21 DL	2021	1.90 RB TB EB	2021	0.2 DL	2021	0.005 DL	NP	2013	0.004 DL	NP	2021	N/A		N/A	

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
700-J-200 Conv	1999	Non Detect	1.60 DL	2003	0.16 DL	2021	0.62 DL	2004	0.21 DL	2021	3.70	2005	0.2 DL	2021	0.005 DL	NP	2017	0.004 DL	NP	2021	N/A		N/A	
BLM-24-565 Conv	1991	Non Detect	2.50 RL	1995	0.24 DL	2021	2.50 RL	1995	0.21 DL	2021	2.50 RL	1995	0.2 DL	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	N/A		N/A	
BLM-32 Westbay	1997	Fluctuating LL NDMA	1.60 DL	2002	0.24 DL	2021	2.00 DL	1999	0.21 DL	2021	2.00 DL	1999	0.2 DL	2021	0.016 J	36	2004	0.004 DL	NP	2021	21	2015	1.80	2021
BLM-41-420 Conv	2013	Fluctuating LL NDMA	0.27 DL	2018	0.24 DL	2021	0.3 DL	2013	0.21 DL	2021	1.00	2013	0.2 DL	2021	0.005 DL	NP	2015	0.004 DL	NP	2021	5.40	2017	1.6 QD FB	2021
BLM-41-670 Conv	2013	Non Detect	0.27 DL	2018	0.24 DL	2021	0.28 DL	2018	0.21 DL	2021	0.2 DL	2021	0.2 DL	2021	0.005 DL	NP	2013	0.004 DL	NP	2021	5.50 FB	2017	0.84 TB FB	2021
BW-6-355 Conv	1992	Non Detect	2.50 RL	1996	0.24 DL	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.2 DL	2021	0.32	37	2004	0.004 DL	NP	2021	N/A		N/A	
JER-1 Westbay	2004	Fluctuating LL NDMA	0.6 DL	2004	0.24 DL	2022	0.62 DL	2004	0.21 DL	2022	0.72	2011	0.2 DL	2022	0.014 J	41	2005	0.004 DL	NP	2021	360	2009	1.40	2022
JER-2 Westbay	2004	Fluctuating LL NDMA	0.6 DL	2004	0.24 DL	2022	0.62 DL	2004	0.21 DL	2022	0.63 DL	2010	0.2 DL	2022	0.016 J	43	2005	0.004 DL	NP	2021	290 QD	2006	1.80	2022

Southern Boundary Well Group

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
100-E-261 Conv	1989	Non Detect	2.50 RL	1996	0.24 DL	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.2 DL	2021	0.05 RL	NP	1996	0.004 DL	NP	2021	N/A		N/A	
BLM-13-300 Conv	1988	Non Detect	5.00 RL	1988	0.24 DL	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.2 DL	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	N/A		N/A	
BLM-25-455 Conv	1991	Non Detect	2.50 RL	1996	0.24 DL	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.2 DL	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	N/A		N/A	
BLM-40-517 Conv	2013	Non Detect	0.27 DL	2018	0.24 DL	2021	0.3 DL	2017	0.21 DL	2021	0.22 DL	2017	0.2 DL	2021	0.005 DL	NP	2018	0.004 DL	NP	2021	1.10	2017	0.48	2021
BLM-40-595 FLUTe	2013	Non Detect	0.27 DL	2018	0.24 DL	2021	0.28 DL	2018	0.21 DL	2021	0.2 DL	2021	0.2 DL	2021	0.005 DL	NP	2019	0.004 DL	NP	2021	0.67 FB	2014	0.4 DL	2021
BLM-40-688 Conv	2013	Non Detect	0.27 DL	2018	0.24 DL	2021	0.3 DL	2016	0.21 DL	2021	0.22 DL	2016	0.2 DL	2021	0.005 DL	NP	2015	0.004 DL	NP	2021	0.74	2016	0.48	2021
BLM-6-488 Conv	1990	Natural Migration (No Overall Trend)	3.10 J	1999	0.24 DL	2022	2.50 RL	1996	0.21 DL	2022	14	1999	0.57 J	2022	0.05 RL	NP	1997	0.004 DL	NP	2022	45 FB	2001	0.4 DL	2022
WB-14 Westbay	1992	Non Detect	2.50 RL	1996	0.24 DL	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.26 J	2021	0.05 RL	NP	1993	0.004 DL	NP	2021	N/A		N/A	

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
WB-5 Westbay	1990	Non Detect	2.50 RL	1996	0.24 DL	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.2 DL	2021	0.05 RL	NP	1991	0.004 DL	NP	2021	N/A		N/A	

MPCA Well Group

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
BLM-14-327 Conv	1990	Natural Migration (Decreasing)	230	1995	95	2021	9.20	2002	3.80	2021	180	1995	75	2021	1.20	18	2002	0.58	53	2021	N/A		N/A	
BLM-15-305 Conv	1989	Natural Migration (Decreasing)	770	1991	110	2022	2.50 RL	1996	0.21 DL	2022	22	1989	1.40	2022	150 A	8	1989	20	46	2022	N/A		N/A	
BLM-18-430 Conv	1989	Natural Migration (Decreasing)	120 QD	2005	17 Q	2022	2.50 RL	1996	0.21 DL	2022	58	2009	9.90	2022	0.15 QD	31	2009	0.042	33	2022	N/A		N/A	
BLM-21-400 Conv	1991	Natural Migration (Decreasing)	320	1996	79	2021	12	1995	2.40	2021	220	1991	48	2021	5.60	16	1995	1.10	39	2021	N/A		N/A	
BLM-22-570 Conv	1990	Non Detect	2.50 RL	1995	0.24 DL	2021	2.50 RL	1995	0.21 DL	2021	2.50 RL	1995	0.2 DL	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	N/A		N/A	
BLM-23-431 Conv	1990	Natural Migration (Decreasing)	240	1995	39 Q	2021	8.00	1991	1.60 Q	2021	240	1995	53 Q	2021	1.10	33	2006	0.52	44	2021	N/A		N/A	
BLM-26-404 Conv	1991	Natural Migration (Decreasing)	110	2008	55	2021	2.50 RL	1996	0.61 J	2021	28	2008	20	2021	1.20	50	1991	0.32	53	2021	N/A		N/A	
BLM-27-270 Conv	1991	Natural Migration (No Overall Trend)	500	2010	430	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	1.10	2021	13	41	2006	5.20	50	2021	N/A		N/A	
BLM-36 WestBay	2000	Pumping Related Migration (No Overall Trend)	98	2011	36	2021	4.40	2011	3.20	2021	97	2008	66	2021	2.00	43	2007	1.20	53	2021	N/A		N/A	
BLM-38 WestBay	2000	Fluctuating LL NDMA	1.60 DL	2003	0.24 DL	2021	0.62 DL	2004	0.21 DL	2021	0.7 DL	2003	0.2 DL	2021	0.024 J	33	2002	0.004 DL	NP	2021	2.05 EB	2021	2.05 EB	2021
BLM-39 WestBay	2000	Natural Migration (Decreasing)	340	2005	81	2021	10	2007	6.80	2021	330 QD	2002	180	2021	9.70	19	2002	5.50	58	2021	N/A		N/A	
BLM-5-527 Conv	1988	Natural Migration (Increasing)	23	2020	19	2021	2.50 RL	1996	0.82 J	2021	29	2020	28	2021	0.21	38	2021	0.2	54	2021	220 G	2017	220 G	2017
BLM-8-418 Conv	1988	Non Detect	2.50 RL	1996	0.25 J	2021	2.50 RL	1996	0.21 DL	2021	3.80 QD	2001	0.2 DL	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	N/A		N/A	

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
BLM-9-419 Conv	1989	Natural Migration (Decreasing)	320	1991	3.30	2021	12	1989	0.24 J	2021	240	1989	2.10	2021	8.80	16	1995	0.02 J	42	2021	N/A		N/A	

Main Plume Well Group

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
BLM-1-435 Conv	1988	Natural Migration (Decreasing)	270	1991	45	2020	18	1988	2.40	2020	360	1988	62	2020	5.90	108	1997	1.30	68	2020	N/A		N/A	
BLM-17-493 Conv	1989	Natural Migration (Decreasing)	480	1989	45	2021	31	1989	2.20	2021	430	1989	58	2021	11 A Q	7	1989	1.60	53	2021	N/A		N/A	
BLM-17-550 Conv	1990	Natural Migration (Decreasing)	440	1991	98	2022	20	1990	3.60	2022	390	1991	85	2022	8.10	16	1995	1.50	45	2022	N/A		N/A	
BLM-2-482 Conv	1988	Pumping Related Migration (Decreasing)	320	1996	9.40	2012	16	1996	0.35 J	2012	450	1990	11	2012	2.30 QD	30	2006	0.072	58	2012	N/A		N/A	
BLM-2-630 Conv	1988	Non Detect	470 QD	1988	0.24 DL	2021	8.00	1991	0.21 DL	2021	310 QD	1988	0.2 DL	2021	1.30	31	2002	0.004 DL	NP	2021	N/A		N/A	
PL-1-486 Conv	1988	Pumping Related Migration (Decreasing)	190	1996	0.24 DL	2022	4.60	2004	0.21 DL	2022	180	2004	0.2 DL	2022	0.093	43	2005	0.004 DL	NP	2021	260 QD	2002	0.41 DL	2022
PL-2-504 Conv	1989	Pumping Related Migration (Decreasing)	230	1996	43	2021	2.50 RL	1996	1.30	2021	180	2004	66	2021	0.45 QD	58	2021	0.31	51	2021	300 G RB Q	2020	300 G RB Q	2020
ST-1-473 Conv	1989	Pumping Related Migration (Decreasing)	610	1996	170	2021	13	2010	6.80	2021	370	2005	230	2021	1.70	27	2009	0.61	54	2021	N/A		N/A	
ST-1-541 Conv	1992	Pumping Related Migration (Decreasing)	790	1995	160	2021	37	1995	6.50	2021	650	1995	150	2021	4.80 QD	37	2003	3.40	50	2021	N/A		N/A	
ST-1-630 Conv	1992	Pumping Related Migration (Decreasing)	410	2006	210	2021	19 QD	2007	8.40	2021	440	2000	260	2021	1.90	40	2019	0.44	50	2021	N/A		N/A	
ST-3-486	1991	Pumping Related Migration (Decreasing)	800	1996	2.50	2021	19	2003	0.35 J	2021	690	1991	3.80	2021	4.40	45	2011	0.18	51	2021	N/A		N/A	

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
ST-3-586 Conv	1992	Pumping Related Migration (Decreasing)	640 T TB Q	1996	0.64 J	2021	15	2007	0.21 DL	2021	320	2005	0.82 J	2021	3.80 QD	37	2003	0.012 J	51	2021	N/A		N/A	
ST-3-666 Conv	1992	Pumping Related Migration (Decreasing)	280	2009	2.70	2021	15	2009	0.28 J	2021	320	2009	4.20	2021	3.70	30	2006	0.092	50	2021	N/A		N/A	
ST-3-735 Conv	1992	Pumping Related Migration (Decreasing)	240	2005	13	2021	14	2007	0.96 J	2021	320	2005	25	2021	7.80 QD	32	2009	0.94	50	2021	N/A		N/A	

Plume Front Well Group

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
BLM-10-517 Conv	1988	Non Detect	5.00 RL	1988	0.24 DL	2022	2.50 RL	1996	0.21 DL	2022	4.40	2012	0.2 DL	2022	0.095 RL	NP	1988	0.004 DL	NP	2022	5.90	2020	0.4 DL	2022
BLM-7-509 Conv	1988	Non Detect	5.00 RL	1988	0.24 DL	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.2 DL	2021	0.09 J	32	1996	0.004 DL	NP	2021	0.76 FB	2018	0.4 DL	2021
PL-3-453 Conv	1989	Non Detect	5.00 RL	1989	0.24 DL	2020	2.50 RL	1996	0.21 DL	2020	2.50 RL	1996	0.2 DL	2020	0.05 RL	NP	1997	0.004 DL	NP	2020	3.80 RB FB	2005	3.80 RB FB	2005
PL-4-464 Conv	1990	Non Detect	28	2005	0.3 J	2021	2.50 RL	1996	0.21 DL	2021	21	2005	0.2 DL	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	2.70 RB FB	2005	0.4 DL	2021
PL-6 Westbay	1992	Non Detect	4.10 J	1996	0.24 DL	2022	5.60	1996	0.21 DL	2022	4.90 J	1996	0.2 DL	2022	0.64	28	1999	0.004 DL	NP	2022	23	2001	0.45 J	2022
PL-7 Westbay	1993	Fluctuating LL NDMA	2.50 RL	1996	0.24 DL	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.2 DL	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	4.90	2021	2.90 *	2021
ST-2-466 Conv	1989	Non Detect	2.50 RL	1995	0.24 DL	2021	2.50 RL	1995	0.21 DL	2021	2.50 RL	1995	0.2 DL	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	2.60 RB	2004	0.48	2021
ST-4-481 Conv	1992	Non Detect	2.50 RL	1996	0.24 DL	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.2 DL	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	1.80 FB	2012	0.4 DL	2021
ST-4-589 Conv	1992	Non Detect	2.50 RL	1996	0.24 DL	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.2 DL	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	1.10 RB Q	2008	0.4 DL	2021
ST-4-690 Conv	1992	Non Detect	3.00 J	1998	0.24 DL	2021	2.50 RL	1995	0.21 DL	2021	10	1998	0.2 DL	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	2.70	2008	0.43 J	2021
ST-5 Westbay	1992	Fluctuating LL NDMA	2.50 RL	1996	0.24 DL	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.2 DL	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	7.20	2017	1.10 EB	2021
ST-5-481 Conv	1992	Non Detect	2.50 RL	1996	0.24 DL	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.2 DL	2021	0.05 RL	NP	1997	0.005 DL	NP	2021	0.7 FB	2002	0.48	2021

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
ST-6 Westbay	1998	Non Detect	21 EB	2005	0.62	2021	2.00 DL	1999	0.21 DL	2021	67	2004	0.73	2021	0.012	90	2017	0.004 DL	NP	2021	28 RB FB Q	2005	0.4 DL	2021
ST-7 Westbay	1999	Pumping Related Migration (No Overall Trend)	1.60 DL	2003	1.50	2022	0.62 DL	2004	0.21 DL	2022	1.40	2022	1.40	2022	0.005 DL	NP	2013	0.004 DL	NP	2021	3.80 FB	2002	0.4 DL	2022
WW-1-452 Conv	1988	Non Detect	5.00 RL	1988	0.24 DL	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.2 DL	2021	0.3 T	30	2006	0.004 DL	NP	2021	3.20 RB FB	2012	1.00 FB	2021

Sentinel Well Group

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
100-A-182 Conv	1989	Natural Migration (Decreasing)	5.00	1995	1.90	2021	2.50 RL	1996	0.21 DL	2021	2.50 RL	1996	0.2 DL	2021	0.05 RL	NP	1997	0.004 DL	NP	2021	N/A		N/A	
400-D WestBay	1995	Non Detect	3.30 J EB	1996	0.24 DL	2021	3.50 J	1998	0.21 DL	2021	2.50 RL	1996	0.2 DL	2021	0.29	34	1996	0.004 DL	NP	2021	N/A		N/A	
BLM-42-569 Conv	2020	Non Detect	0.24 DL	2021	0.24 DL	2021	0.21 DL	2021	0.21 DL	2021	0.2 DL	2021	0.2 DL	2021	0.004 DL	NP	2021	0.004 DL	NP	2021	1.60 RB * TB FB	2021	0.4 DL	2021
BLM-42-709 Conv	2020	Non Detect	0.24 DL	2021	0.24 DL	2021	0.21 DL	2021	0.21 DL	2021	0.2 DL	2021	0.2 DL	2021	0.004 DL	NP	2020	0.004 DL	NP	2021	1.50 RB * FB	2021	0.51	2021
JP-1-424 Conv	1988	Non Detect	5.50	2001	0.24 DL	2022	2.50 RL	1996	0.21 DL	2022	2.50 RL	1996	0.2 DL	2022	0.061 J	36	1998	0.005 DL	NP	2021	15 RB QD	2004	0.4 DL	2022
JP-2-447 Conv	1988	Non Detect	2.50 RL	1996	0.24 DL	2022	2.50 RL	1996	0.21 DL	2022	4.50	2001	0.2 DL	2022	0.05 RL	NP	1997	0.004 DL	NP	2021	14	2000	0.4 DL	2022
JP-3-509 Conv	2013	Non Detect	0.27 DL	2019	0.24 DL	2022	0.28 DL	2019	0.21 DL	2022	0.2 DL	2022	0.2 DL	2022	0.004 DL	NP	2017	0.004 DL	NP	2021	0.85 * TB	2021	0.4 DL	2022
JP-3-689 Conv	2014	Non Detect	0.27 DL	2019	0.24 DL	2022	0.28 DL	2019	0.21 DL	2022	0.2 DL	2022	0.2 DL	2022	0.005 DL	NP	2014	0.004 DL	NP	2021	1.80 TB FB	2021	0.4 DL	2022
PL-10 Westbay	2002	Non Detect	1.60 DL	2003	0.24 DL	2022	0.62 DL	2004	0.21 DL	2022	0.62 DL	2004	0.2 DL	2022	0.005 DL	NP	2021	0.005 DL	NP	2021	6.10	2019	0.95	2022
PL-11 FLUTe	2017	Fluctuating LL NDMA	0.45 J	2019	0.24 DL	2021	0.28 DL	2018	0.21 DL	2021	0.22 J	2019	0.2 DL	2021	0.005 DL	NP	2017	0.004 DL	NP	2021	5.90 SP	2019	5.10	2021
PL-12-570 Conv	2020	Pumping Related Migration (No Overall Trend)	17	2020	5.30	2021	0.46 J	2020	0.21 DL	2021	20	2020	7.50	2021	0.004 DL	NP	2020	0.004 DL	NP	2021	3.60	2020	1.40	2021
PL-12-800 Conv	2020	Pumping Related	14	2020	8.90	2021	0.24 J	2021	0.21 DL	2021	17	2020	13	2021	0.004 DL	NP	2021	0.004 DL	NP	2021	4.60 FB	2021	3.50	2021

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
		Migration (No Overall Trend)																						
PL-8 Westbay	2000	Fluctuating LL NDMA	1.60 DL	2002	0.24 DL	2021	0.62 DL	2004	0.21 DL	2021	0.7 DL	2003	0.2 DL	2021	0.005 DL	NP	2015	0.004 DL	NP	2021	12.0 FB	2002	2.80 EB	2021
WW-2-489 Conv	2013	Non Detect	0.27 DL	2018	0.24 DL	2021	0.28 DL	2018	0.21 DL	2021	0.2 DL	2021	0.2 DL	2021	0.005 DL	NP	2014	0.004 DL	NP	2021	0.41 J FB	2016	0.4 DL	2021
WW-2-664 Conv	2013	Non Detect	0.27 DL	2018	0.24 DL	2021	0.28 DL	2018	0.21 DL	2021	0.2 DL	2021	0.2 DL	2021	0.005 DL	NP	2014	0.004 DL	NP	2021	1.80 RB * FB	2021	0.4 DL	2021
WW-3 Westbay	2001	Fluctuating LL NDMA	1.60 DL	2002	0.24 DL	2021	0.62 DL	2004	0.21 DL	2021	0.7 DL	2003	0.2 DL	2021	0.012 J	40	2004	0.004 DL	NP	2021	95 RB *	2007	2.20	2021
WW-4 Westbay	2001	Non Detect	1.60 DL	2002	0.24 DL	2019	0.62 DL	2004	0.21 DL	2019	0.7 DL	2003	0.2 DL	2019	0.005 DL	NP	2016	0.004 DL	NP	2018	35	2016	0.22 DL	2019
WW-5 Westbay	2001	Fluctuating LL NDMA	1.60 DL	2003	0.24 DL	2022	0.62 DL	2004	0.21 DL	2022	0.62 DL	2004	0.2 DL	2022	0.005 DL	NP	2016	0.004 DL	NP	2021	6.50 *	2021	2.30	2022

Other Well Group

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
MPE-1 Conv*	1999	Pumping Related Migration (Decreasing)	560	2005	150	2021	8.70	2010	4.80	2021	180	2010	86	2021	25	30	2009	7.30	52	2021	N/A		N/A	
MPE-10 Conv*	2004	Pumping Related Migration (Increasing)	150	2017	87	2021	3.50	2020	3.30	2021	70	2021	70	2021	8.50	40	2021	6.70	52	2021	N/A		N/A	
MPE-11 Conv*	2004	Pumping Related Migration (No Overall Trend)	65	2008	12	2021	1.60	2008	0.32 J	2021	41	2008	5.30	2021	1.60	40	2007	0.27	52	2021	N/A		N/A	
MPE-8 Conv*	2003	Pumping Related Migration (Increasing)	200	2020	180	2021	4.20	2021	4.20	2021	88	2021	88	2021	6.50	40	2021	5.20	52	2021	N/A		N/A	
MPE-9 Conv*	2004	Pumping Related Migration (No Overall Trend)	250	2015	54	2021	5.60	2018	3.20	2021	130	2018	87	2021	13	35	2019	9.50	44	2021	N/A		N/A	
PFE-1 Conv*	2000	Pumping Related Migration (Decreasing)	110	2010	3.80	2021	4.80	2010	0.32 J	2021	140	2005	5.90	2021	0.39	36	2017	0.12	53	2021	N/A		N/A	

Appendix E: Summary of Maximum Concentrations, Current Concentrations and T-C Plot Interpretations for WSTF Monitoring Well Network

Well	1st Sample	Interpretation	Freon 11 Concentration (ug/L)				PCE Concentration (ug/L)				TCE Concentration (ug/L)				NDMA 607 Concentration (ug/L)						NDMA LL Concentration (ng/L)			
			Max	Year	Last	Year	Max	Year	Last	Year	Max	Year	Last	Year	Max	Ex Eff	Year	Last	Ex Eff	Year	Max	Year	Last	Year
PFE-2 Conv*	2000	Pumping Related Migration (Decreasing)	170	2007	58	2022	7.60	2007	2.10	2022	220	2007	55	2022	0.39	38	2021	0.33	46	2022	N/A		N/A	
PFE-3 Conv*	1991	Pumping Related Migration (Decreasing)	290	2006	37	2021	18	2004	1.80	2021	340	2004	44	2021	3.90	18	1991	0.34	38	2021	N/A		N/A	
PFE-4A Conv*	2001	Pumping Related Migration (Decreasing)	190	2004	1.10	2022	8.40	2007	0.21 DL	2022	240	2004	1.10	2022	0.26	36	2010	0.014 J	46	2022	N/A		N/A	
[1]PFE-5	2000	Pumping Related Migration (Decreasing)	120	2009	18	2022	7.70	2006	1.60	2022	180	2009	41	2022	2.40	33	2006	0.7	46	2022	N/A		N/A	
PFE-7 Conv*	2001	Pumping Related Migration (Decreasing)	32	2004	4.00	2022	0.81 J	2004	0.21 DL	2022	41	2004	4.10	2022	0.022	44	2004	0.005 DL	NP	2022	N/A		N/A	

Notes:

T-C plot interpretations are based on a review of all T-C plots for a given well. This table generalizes the historical maximum concentration and last concentrations for four of the primary VOCs in groundwater. Evaluation of the data in this table should be used in conjunction with T-C plots as the maximum and current values do not always accurately represent the overall T-C plot trend.

NDMA analytical results using two methods: 1) Method 607 (ug/L), extraction efficiency provided, the applicable detection limit is typically 0.004 to 0.005 ug/L; and 2) Low Level (ng/L), the applicable detection limit is 0.22 to 0.23 ng/L.

For wells with several maximum concentrations with the same value (typically the detection limit), the latest sampling event for which the detection limit applied was used for the sample year.

J = Concentration values between the detection limit and practical quantitation limit.

FB = Detected in field blank

EB = Detected in equipment blank

NP = NDMA Method 607 extraction efficiency not provided where the analytical result is non-detect (eg, 0.004DL or 0.05RL)

TB = Detected in trip blank

QD = duplicate error

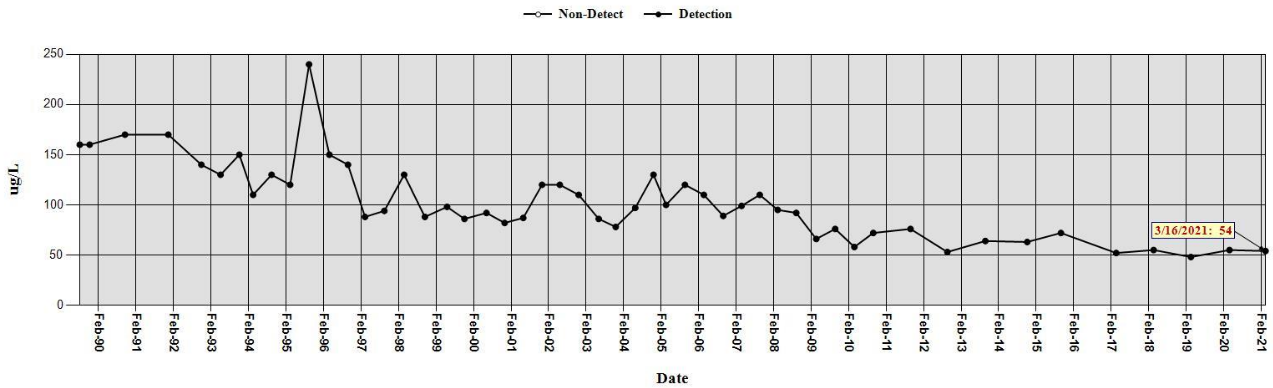
RL = Concentration presents half of the reporting limit. The maximum reporting limits and most recent year it was used are reported in the table. Reporting limits can change over time, typically decreasing as analytical techniques improve.

DL = Maximum detection limit and most recent year they were used are reported in the table. Detection limits can change over time, typically decreasing as analytical techniques improve.

[1]Well PFE-5 taken offline in 2011. Last sampled on 2/19/2014 using a Bennett pump.

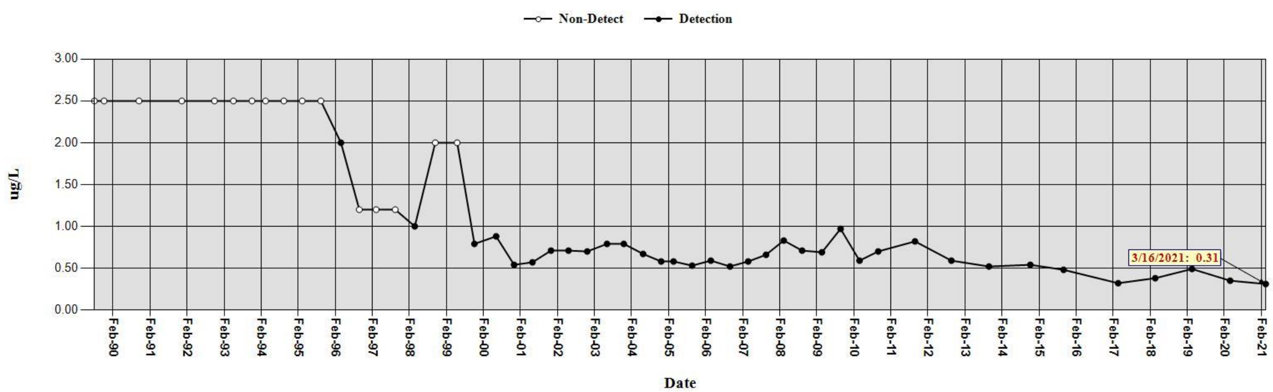
Well ID: 200-D-240
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



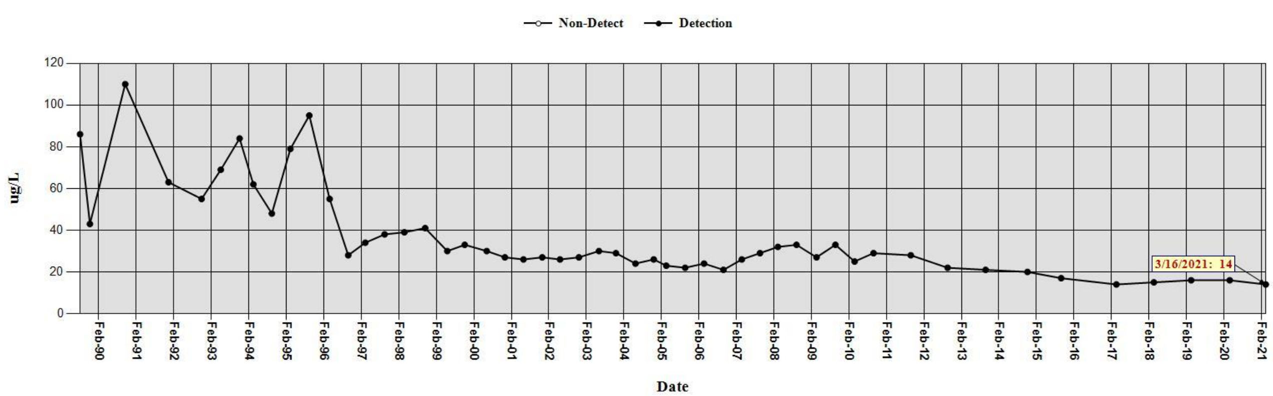
Well ID: 200-D-240
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



Well ID: 200-D-240
CAS RN: 79-01-6 Trichloroethene

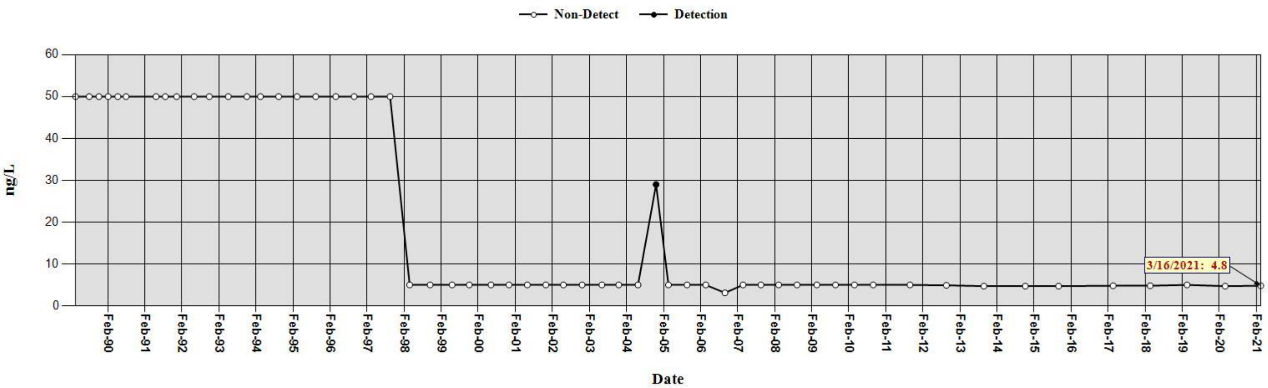
Analysis: 8260



Well ID: 200-D-240
CAS RN: 62-75-9 N-Nitrosodimethylamine

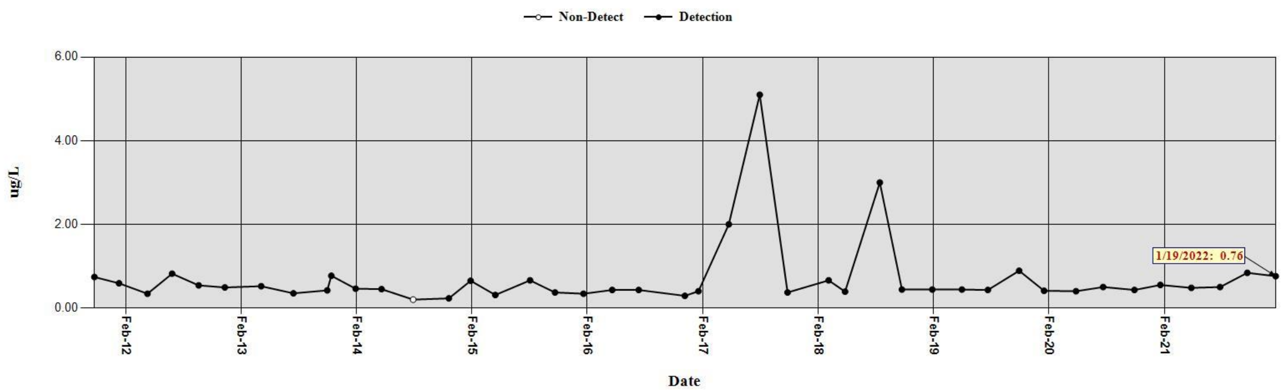
Analysis: 607

Results are Corrected for Extraction Efficiency



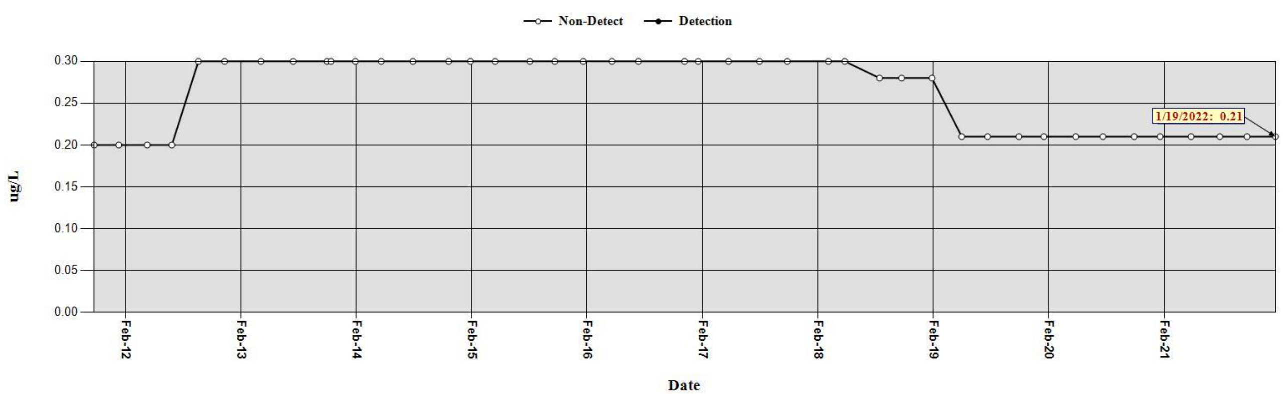
Well ID: 600-G-138
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



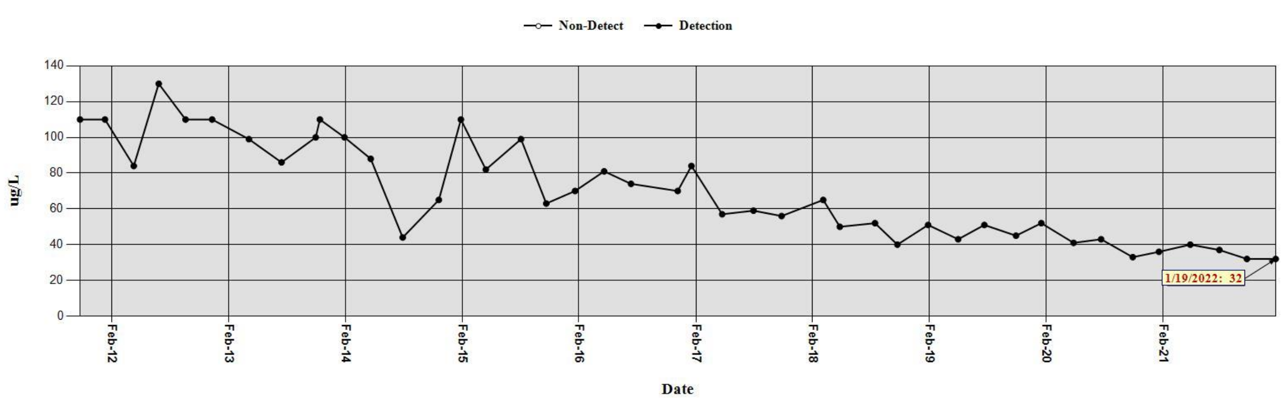
Well ID: 600-G-138
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



Well ID: 600-G-138
CAS RN: 79-01-6 Trichloroethene

Analysis: 8260



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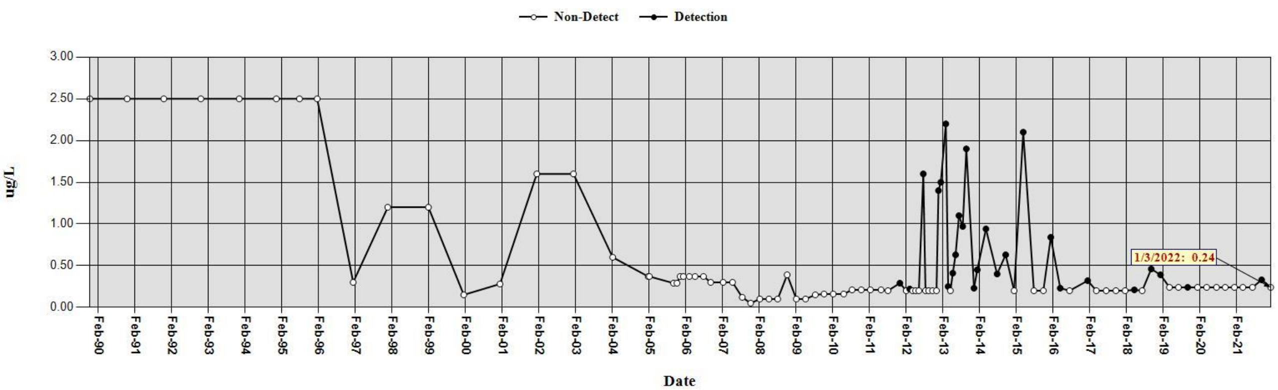
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



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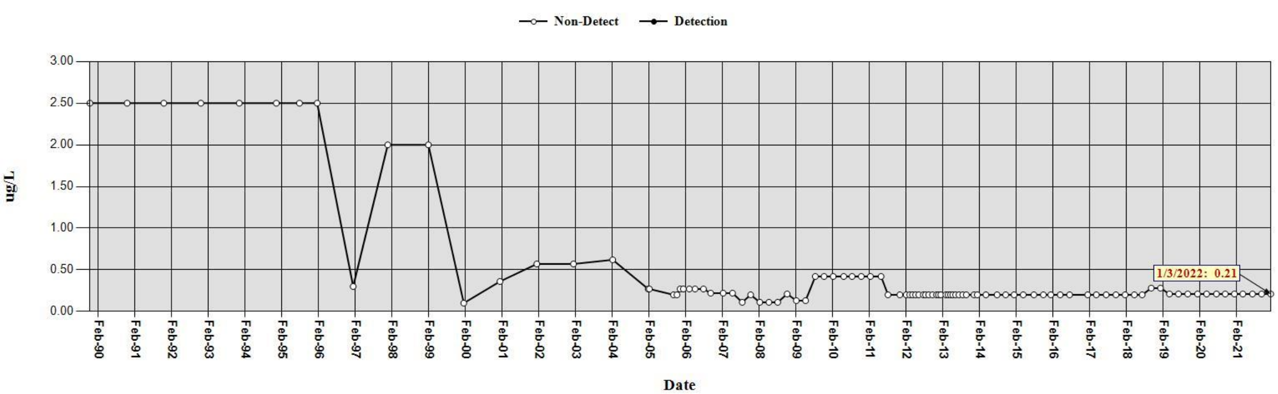
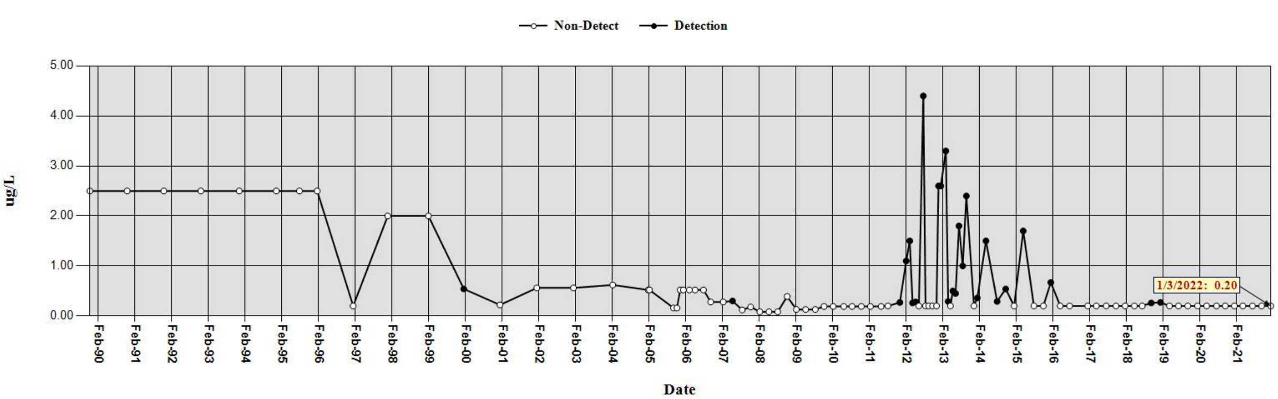
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



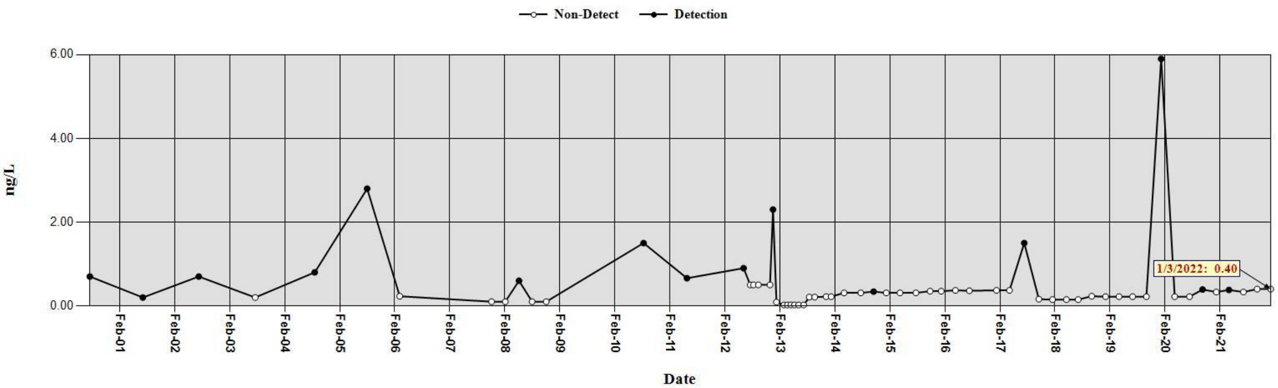
Well ID: BLM-10-517
CAS RN: 79-01-6 Trichloroethene

Analysis: 8260



Well ID: BLM-10-517
CAS RN: 62-75-9 N-Nitrosodimethylamine

Analysis: NDMA_LL



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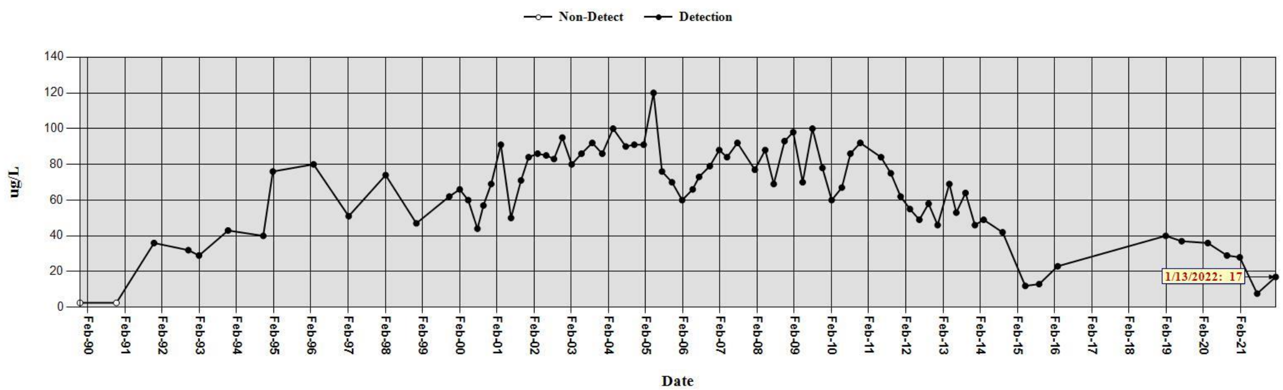
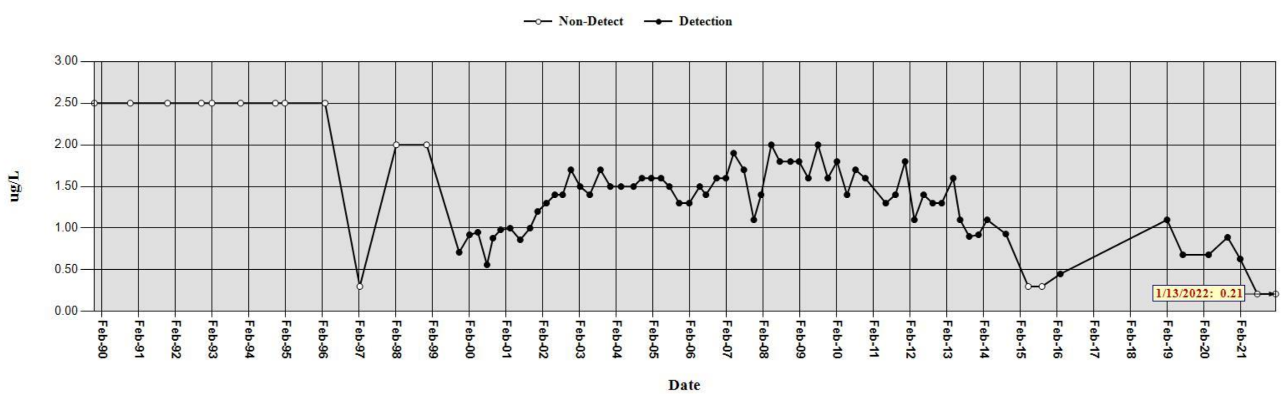
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



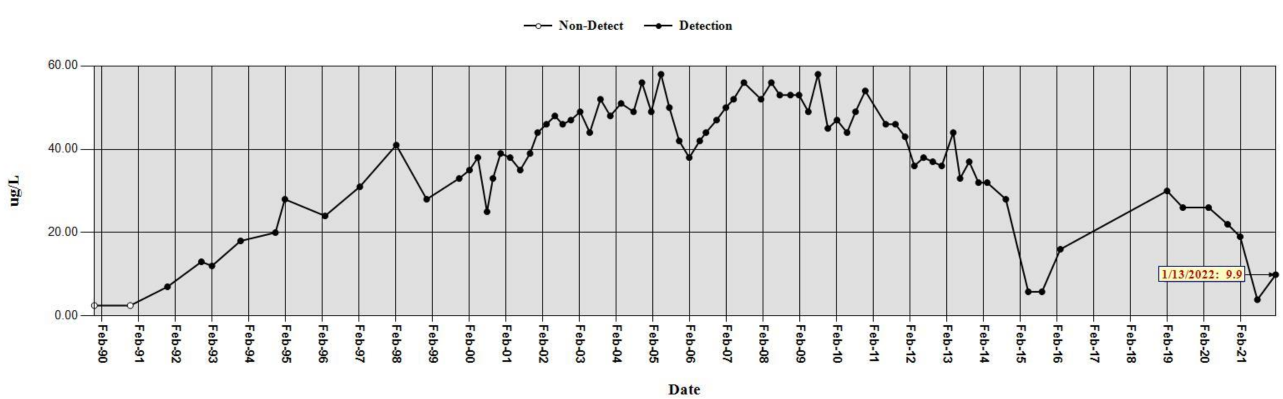
Well ID: BLM-18-430
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



Well ID: BLM-18-430
CAS RN: 79-01-6 Trichloroethene

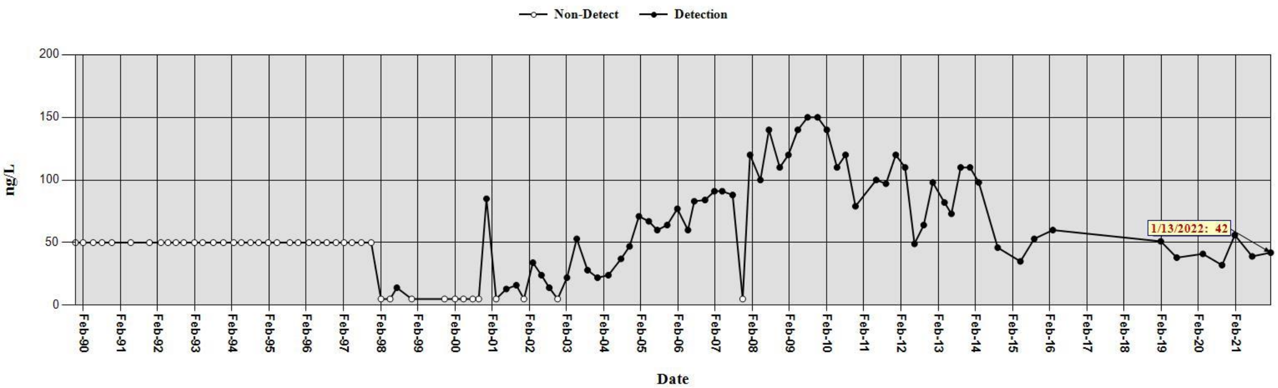
Analysis: 8260



Well ID: BLM-18-430
CAS RN: 62-75-9 N-Nitrosodimethylamine

Analysis: 607

Results are Corrected for Extraction Efficiency



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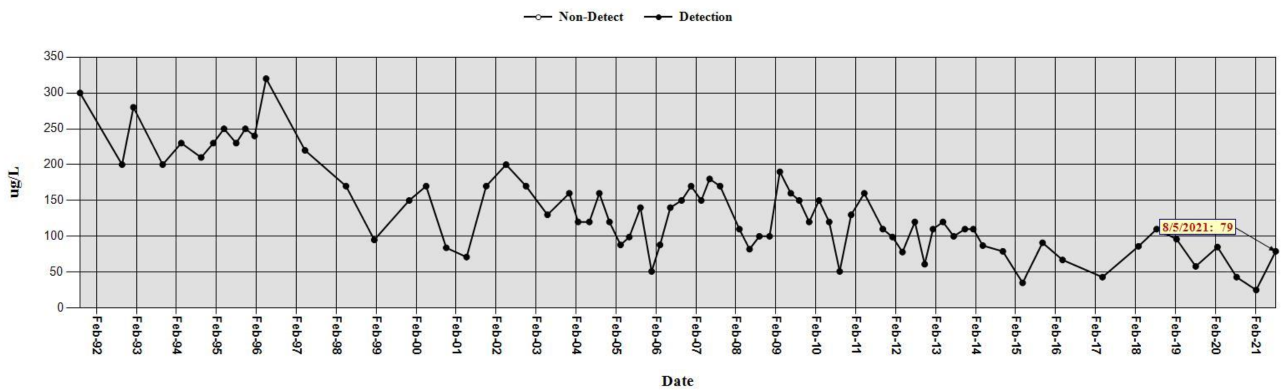
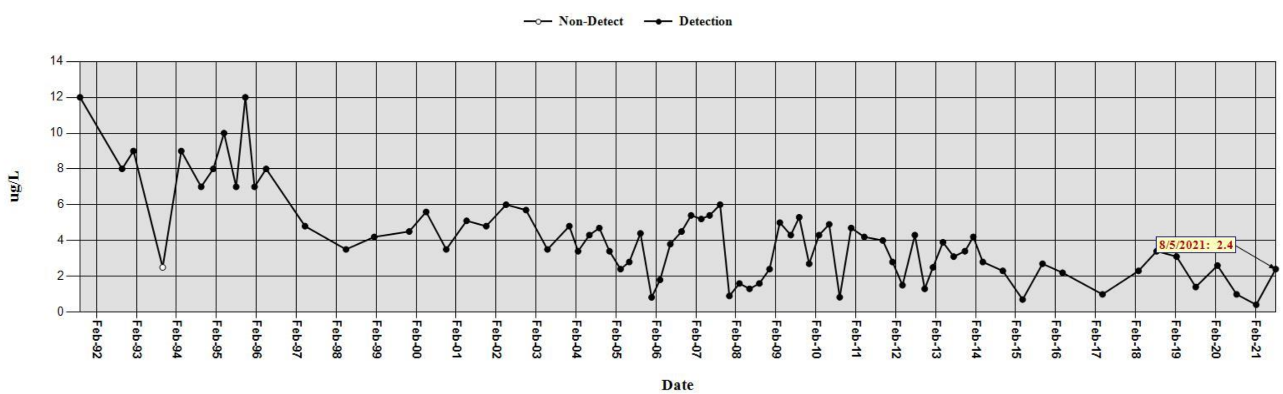
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



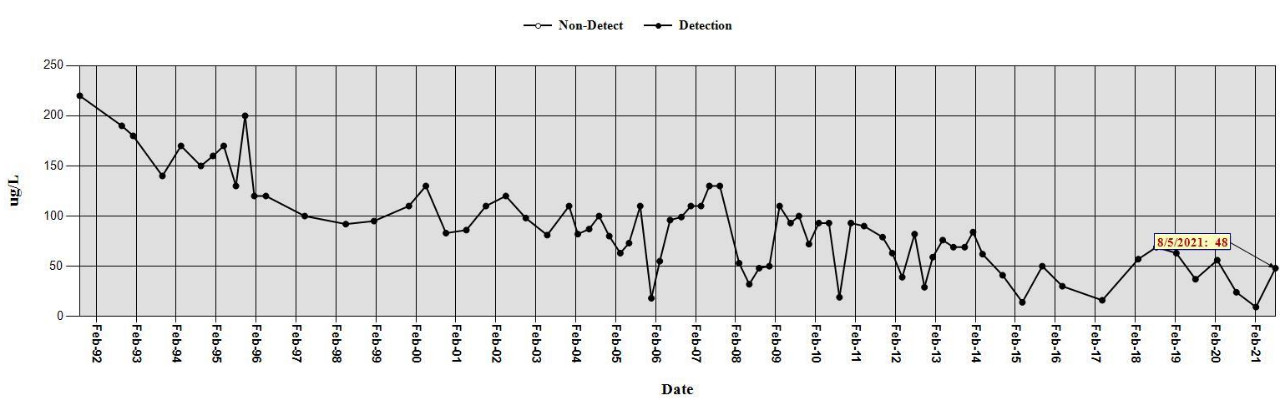
Well ID: BLM-21-400
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



Well ID: BLM-21-400
CAS RN: 79-01-6 Trichloroethene

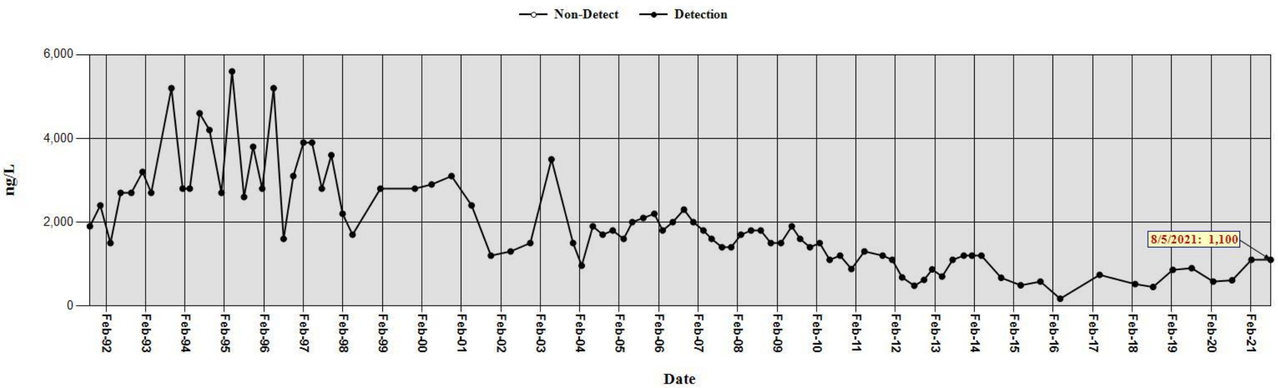
Analysis: 8260



Well ID: BLM-21-400
CAS RN: 62-75-9 N-Nitrosodimethylamine

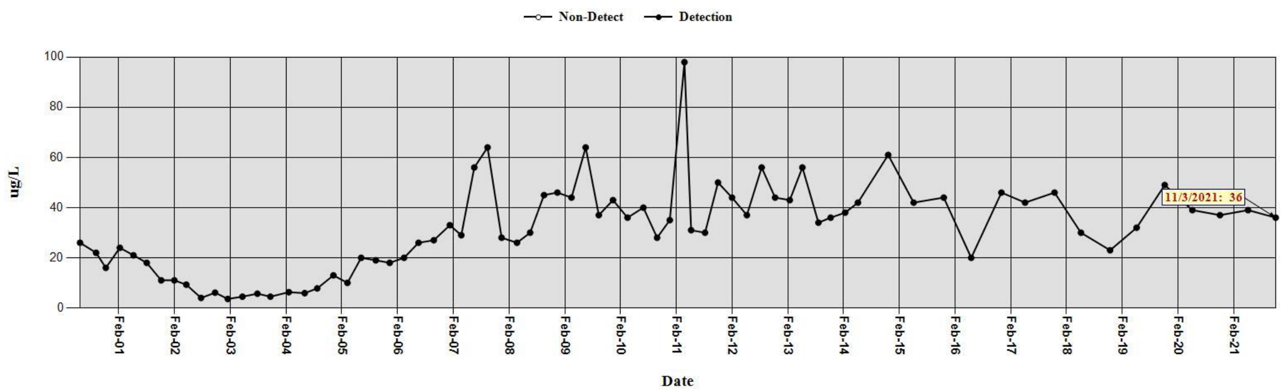
Analysis: 607

Results are Corrected for Extraction Efficiency



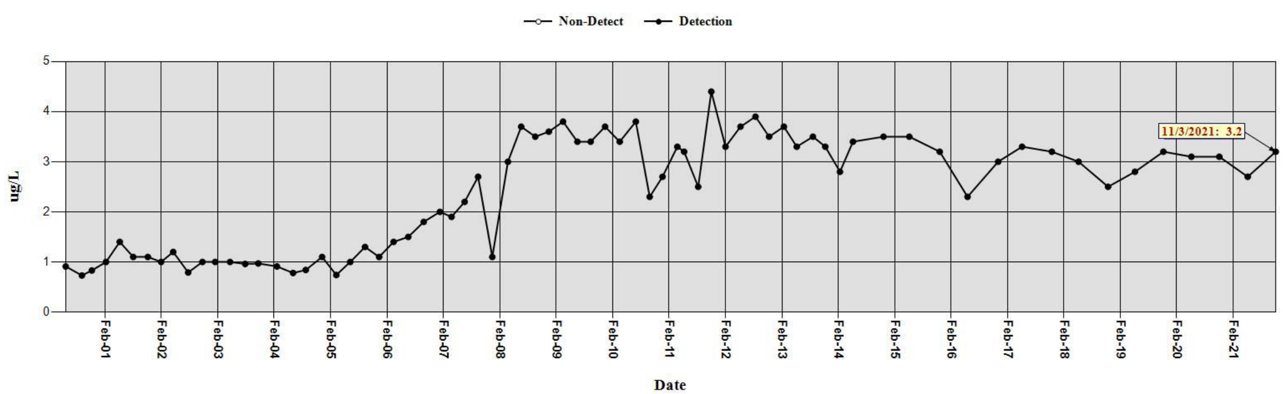
Well ID: BLM-36-350
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



Well ID: BLM-36-350
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



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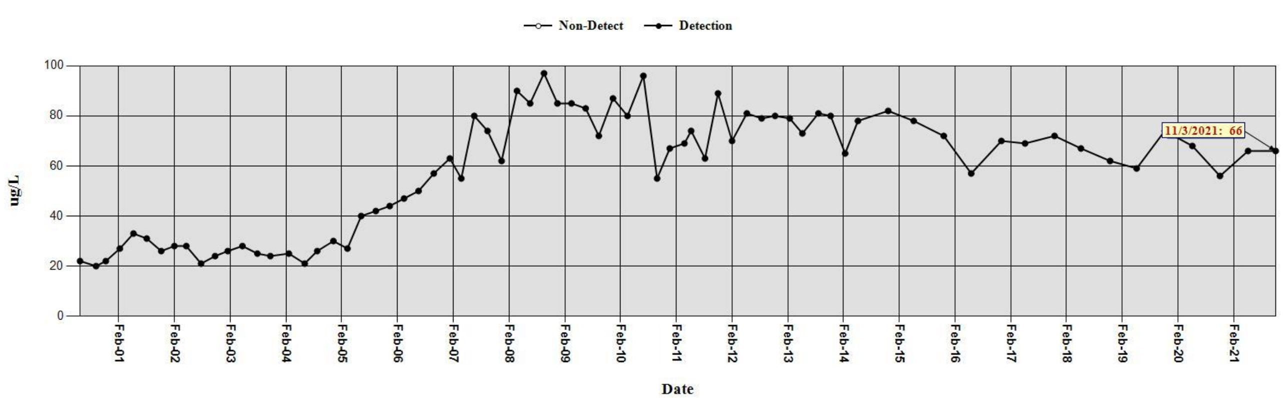
CAS RN: 79-01-6 Trichloroethene

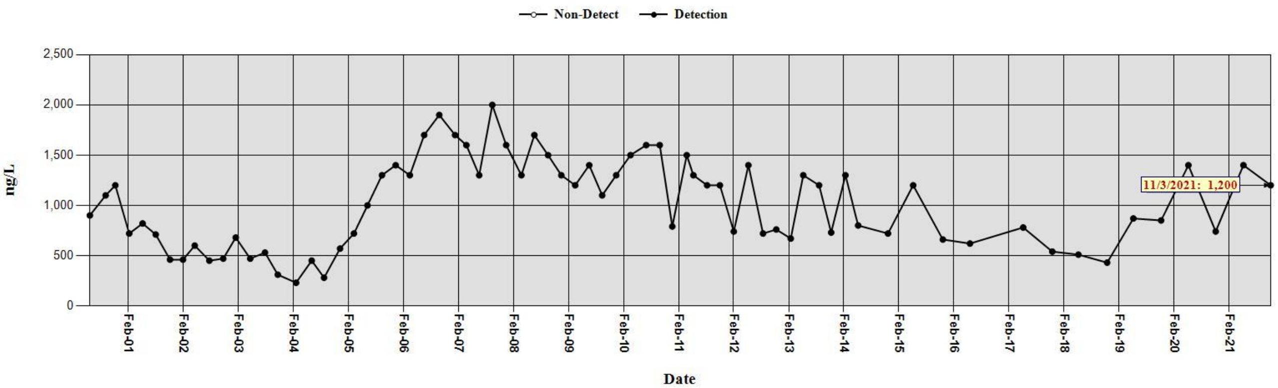
Analysis: 8260



Well ID: BLM-36-350
CAS RN: 62-75-9 N-Nitrosodimethylamine

Analysis: 607

Results are Corrected for Extraction Efficiency



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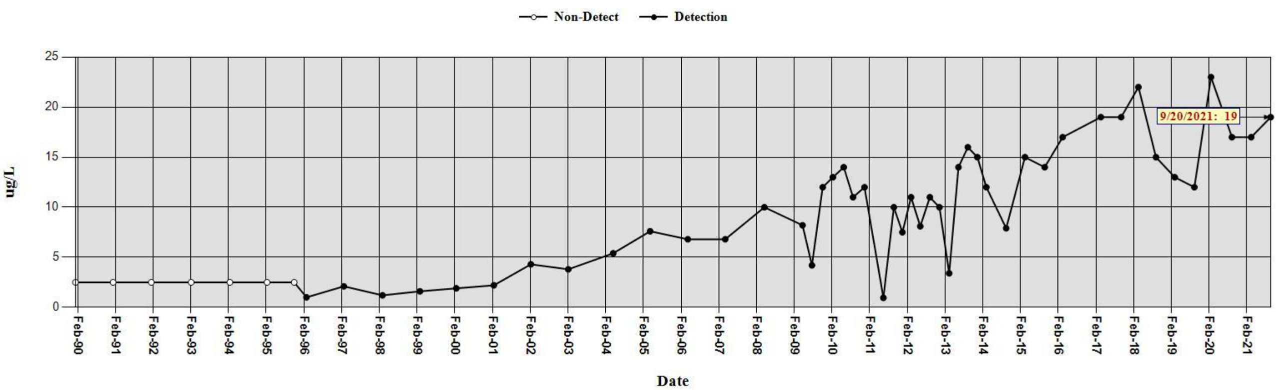
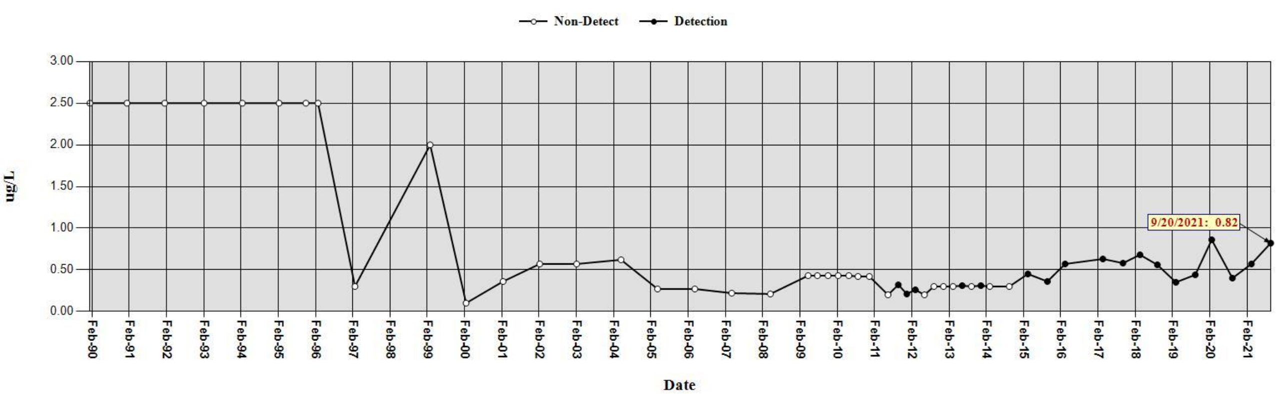
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



Well ID: BLM-5-527
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



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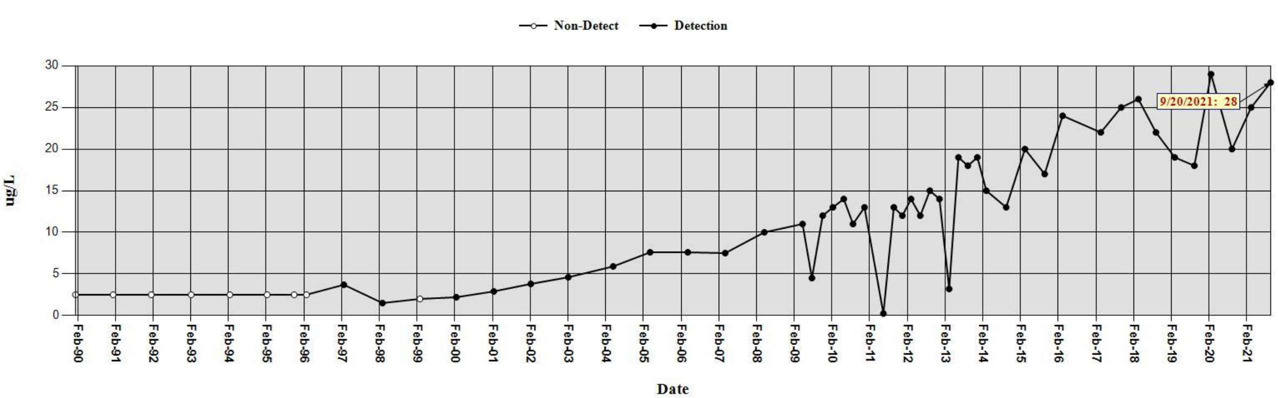
Analysis: 8260



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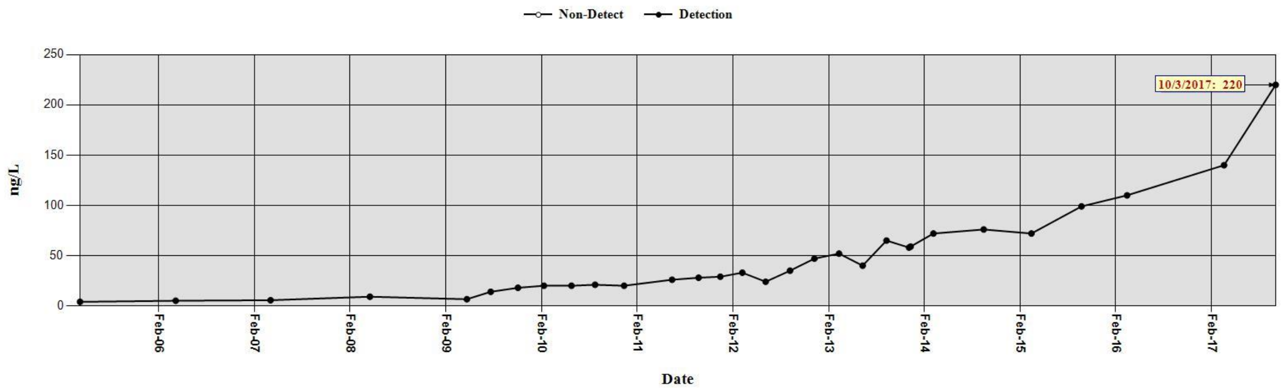
CAS RN: 62-75-9 N-Nitrosodimethylamine

Analysis: NDMA_LL



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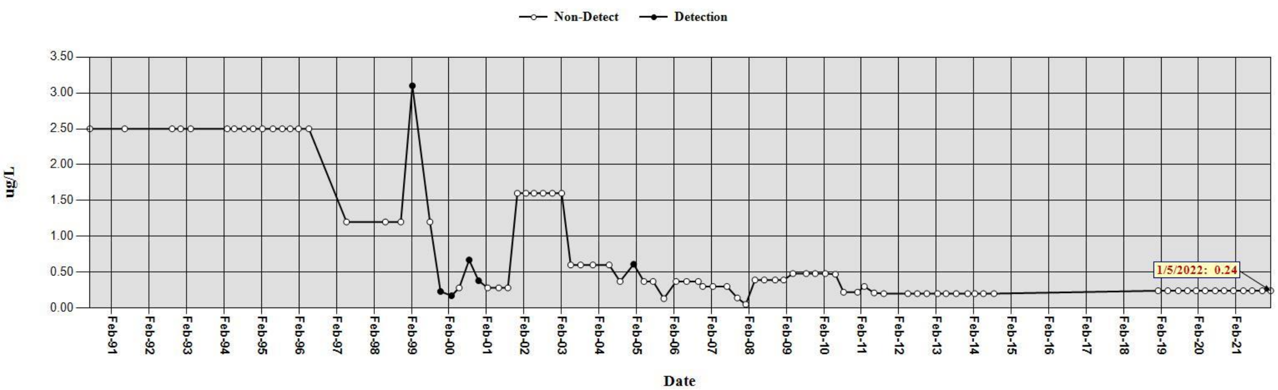
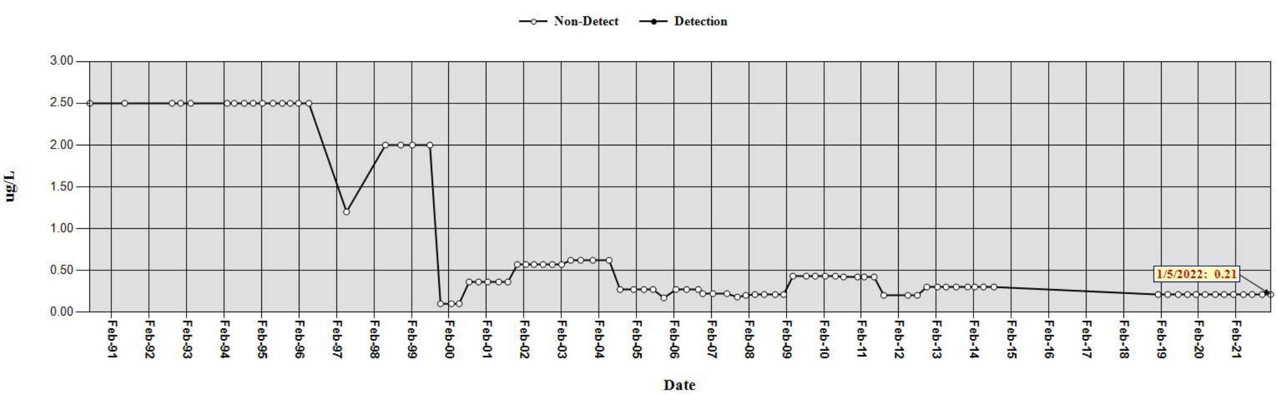
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



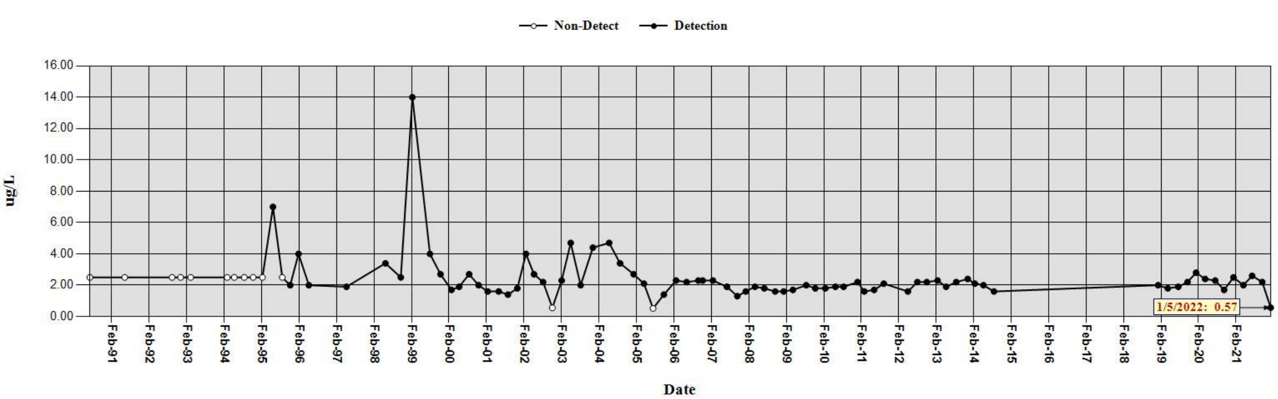
Well ID: BLM-6-488
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



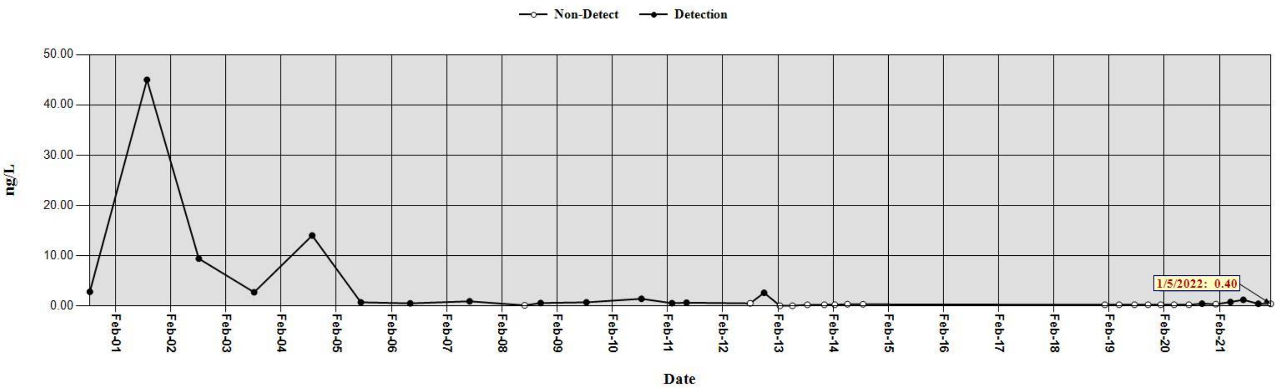
Well ID: BLM-6-488
CAS RN: 79-01-6 Trichloroethene

Analysis: 8260



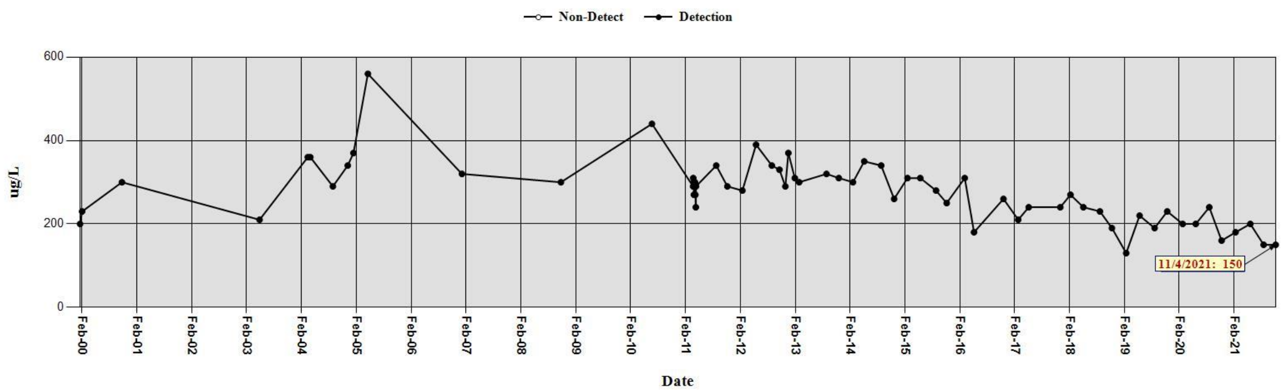
Well ID: BLM-6-488
CAS RN: 62-75-9 N-Nitrosodimethylamine

Analysis: NDMA_LL



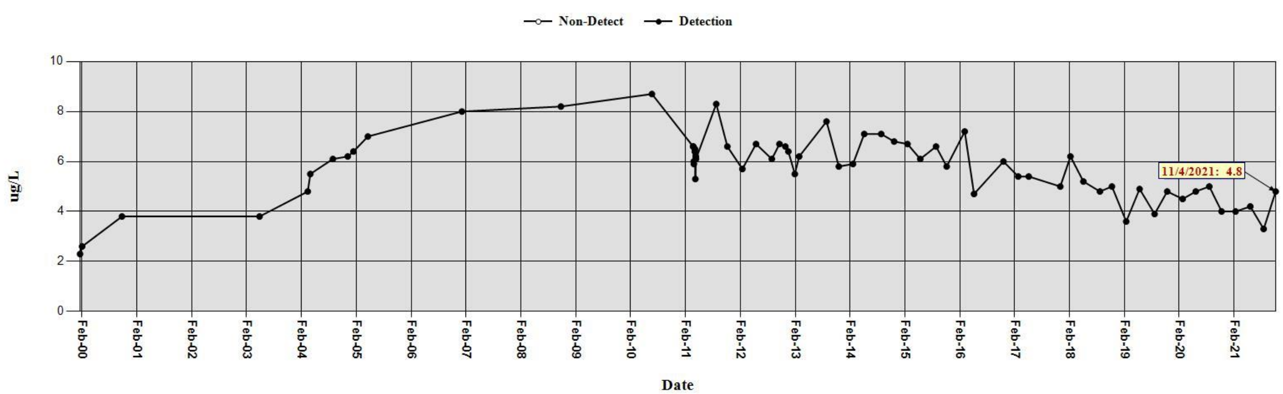
Well ID: MPE-1
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



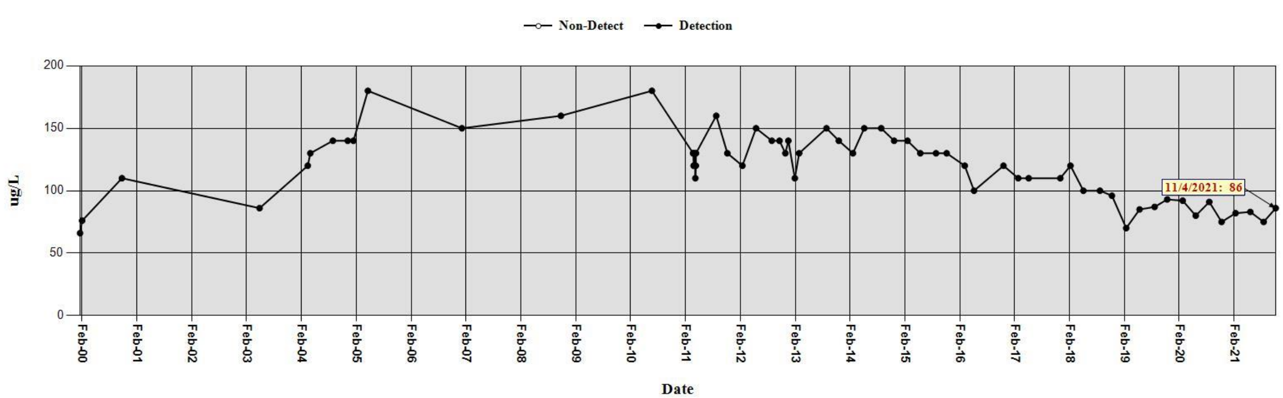
Well ID: MPE-1
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



Well ID: MPE-1
CAS RN: 79-01-6 Trichloroethene

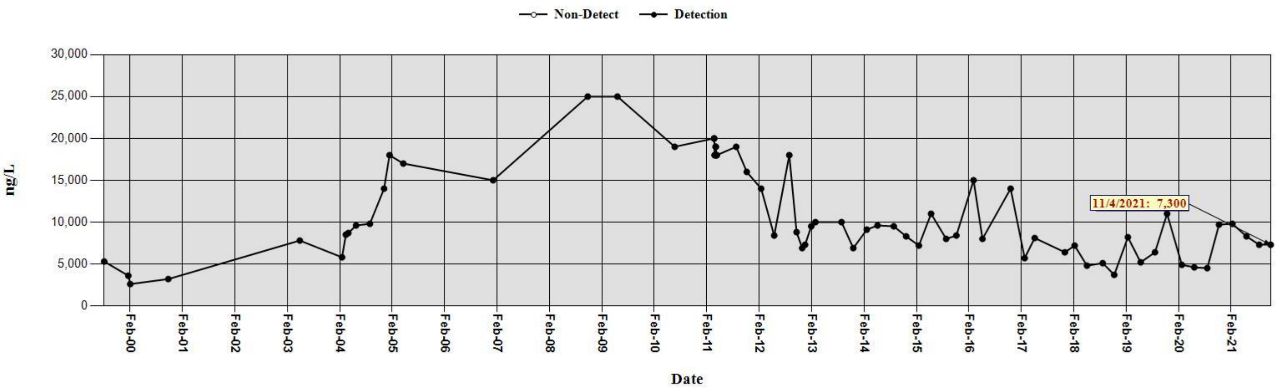
Analysis: 8260



Well ID: MPE-1
CAS RN: 62-75-9 N-Nitrosodimethylamine

Analysis: 607

Results are Corrected for Extraction Efficiency



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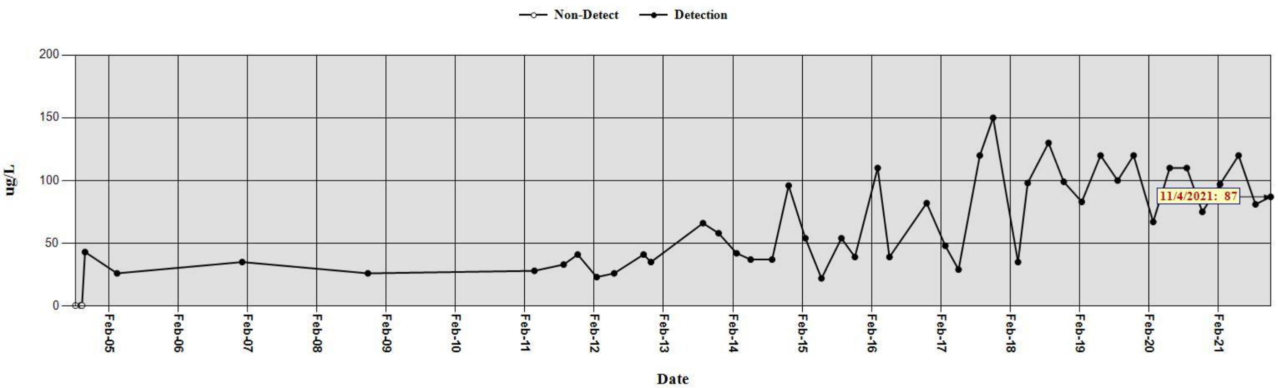
CAS RN: 75-69-4 F11 - Trichlorofluoromethane

Analysis: 8260



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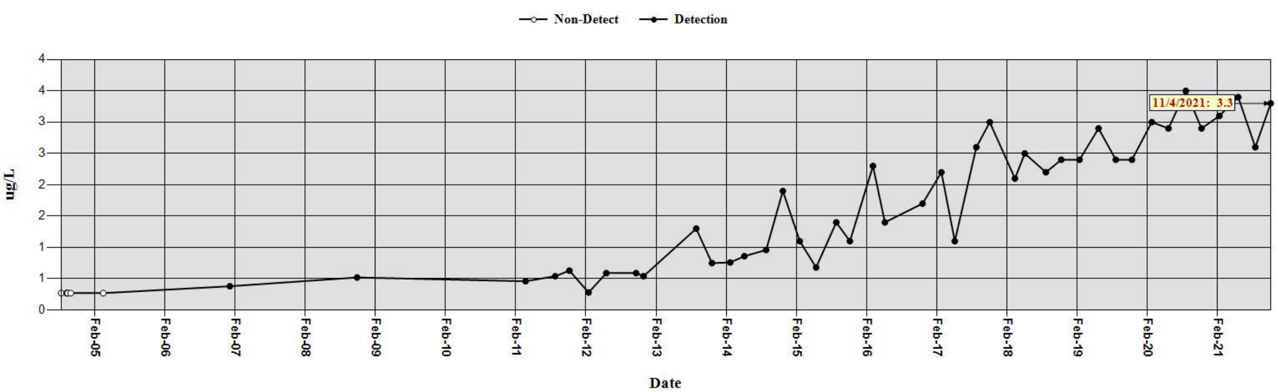
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



Well ID: MPE-10
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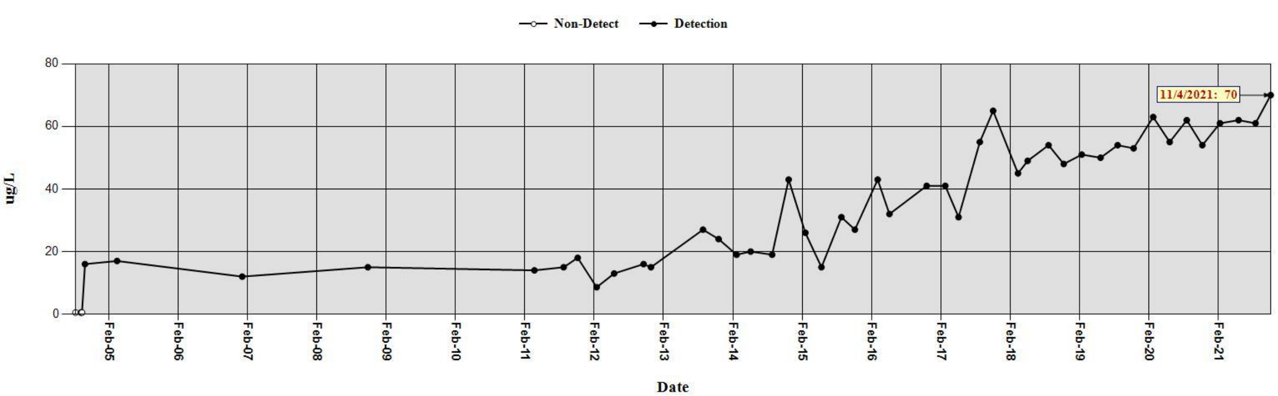
Analysis: 8260



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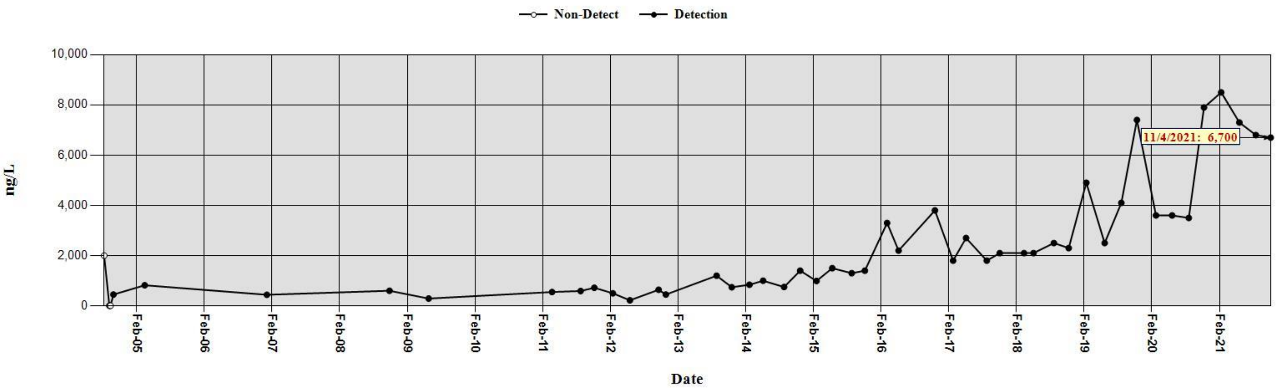
Analysis: 607

Results are Corrected for Extraction Efficiency



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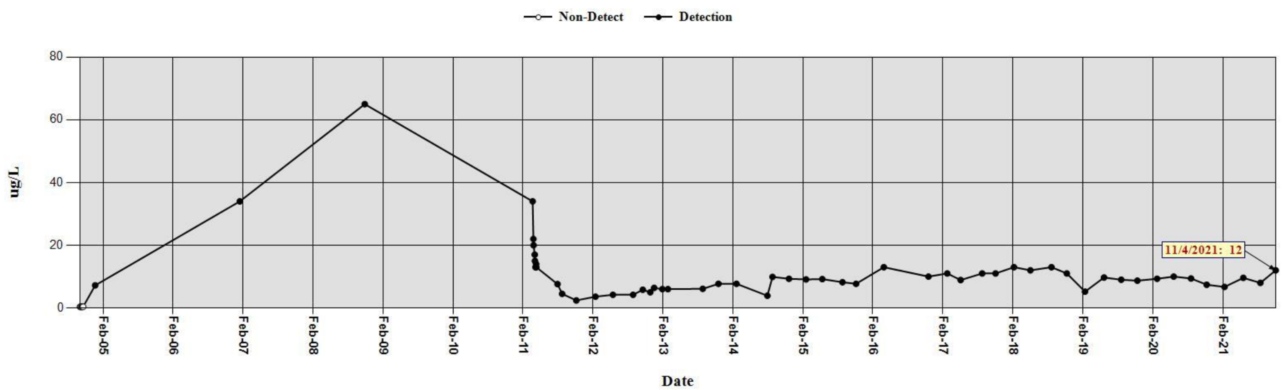
Analysis: 8260



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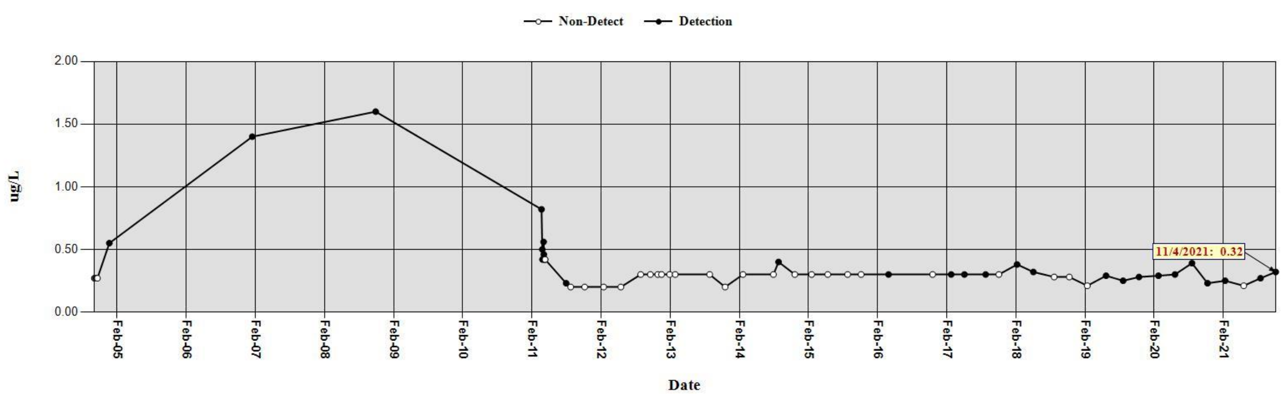

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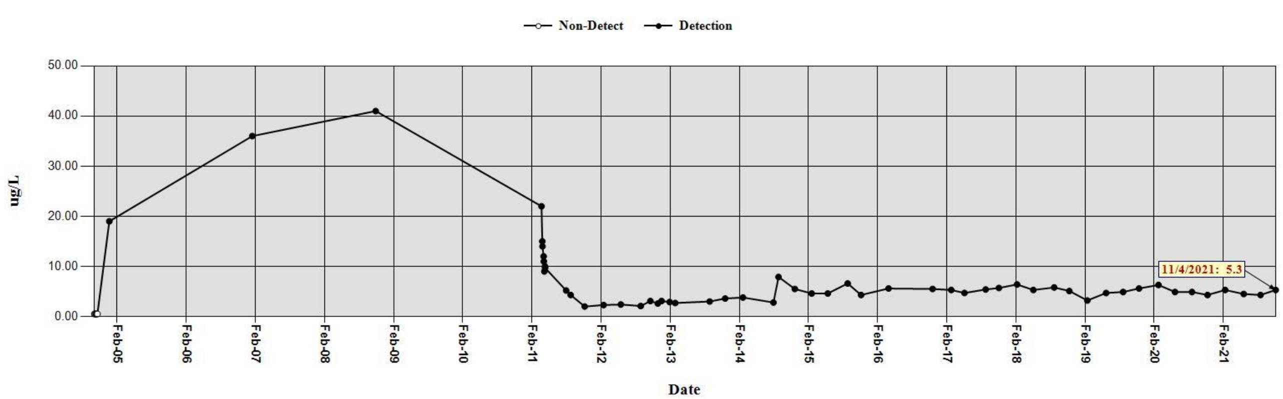

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Analysis: 607

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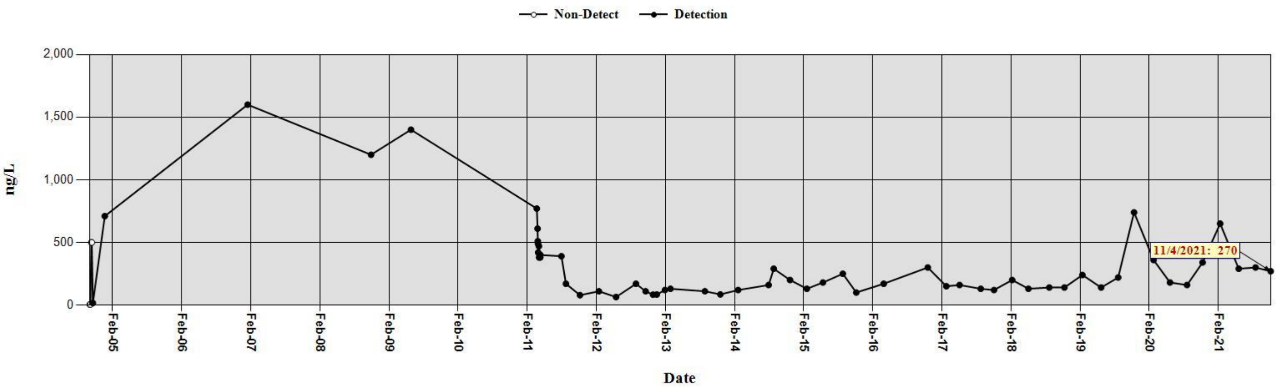

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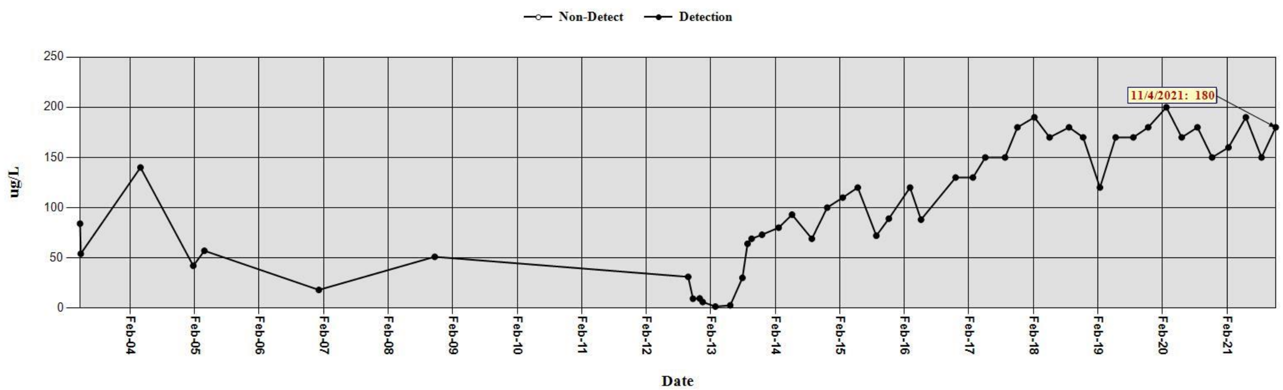
Analysis: 8260



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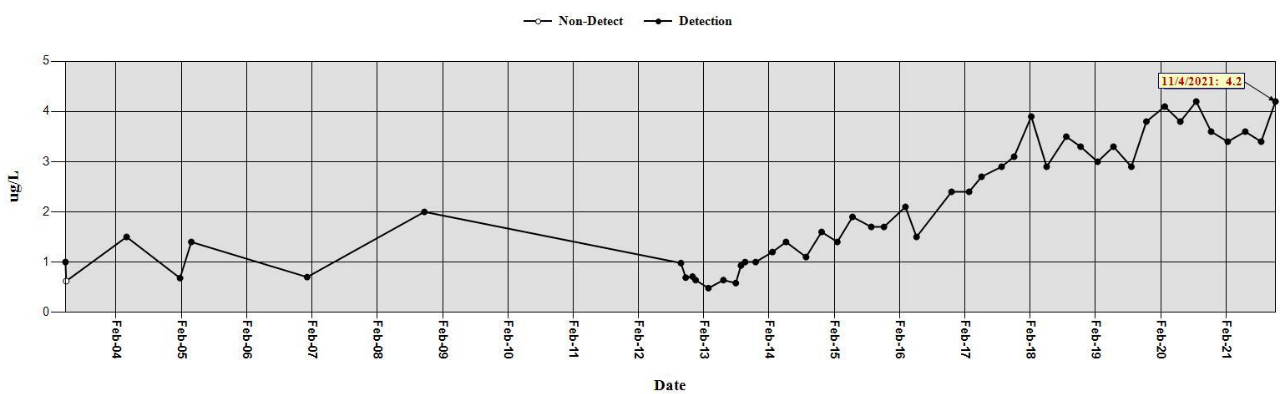
Analysis: 8260



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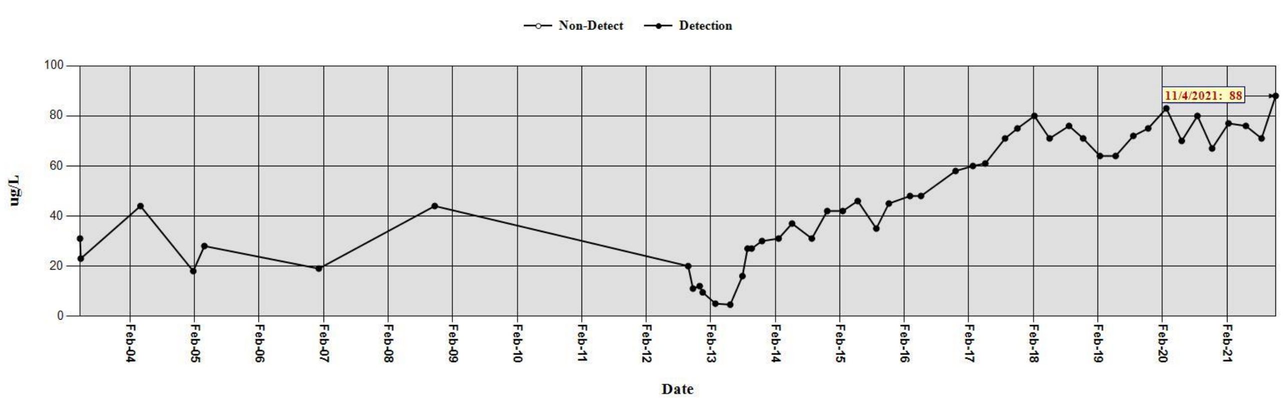

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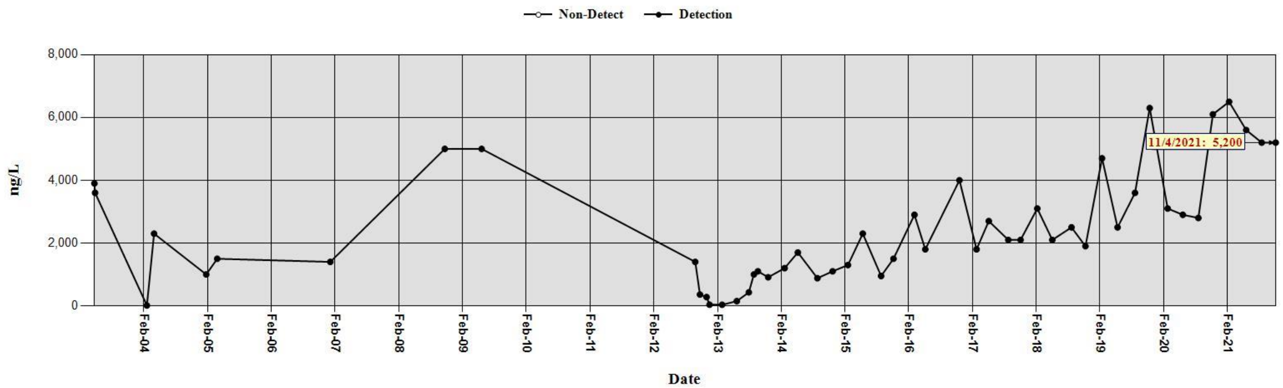
Analysis: 607

Results are Corrected for Extraction Efficiency



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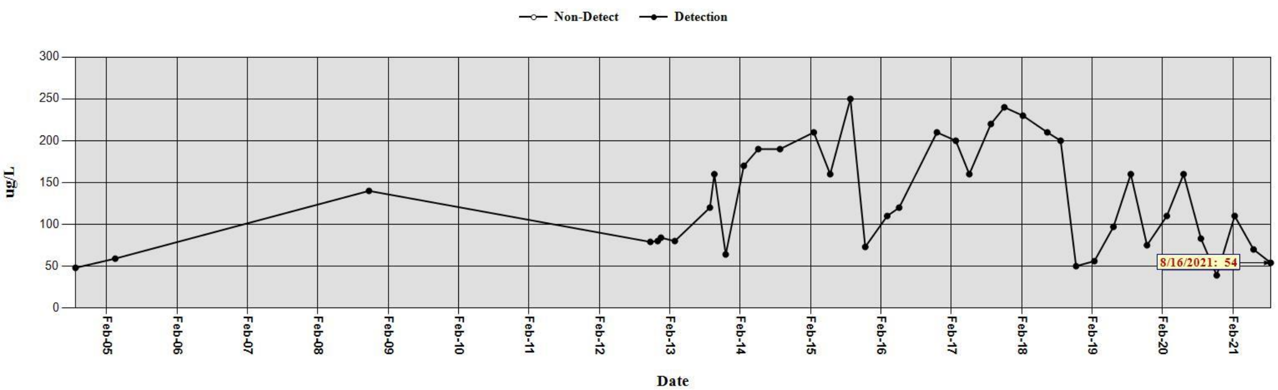

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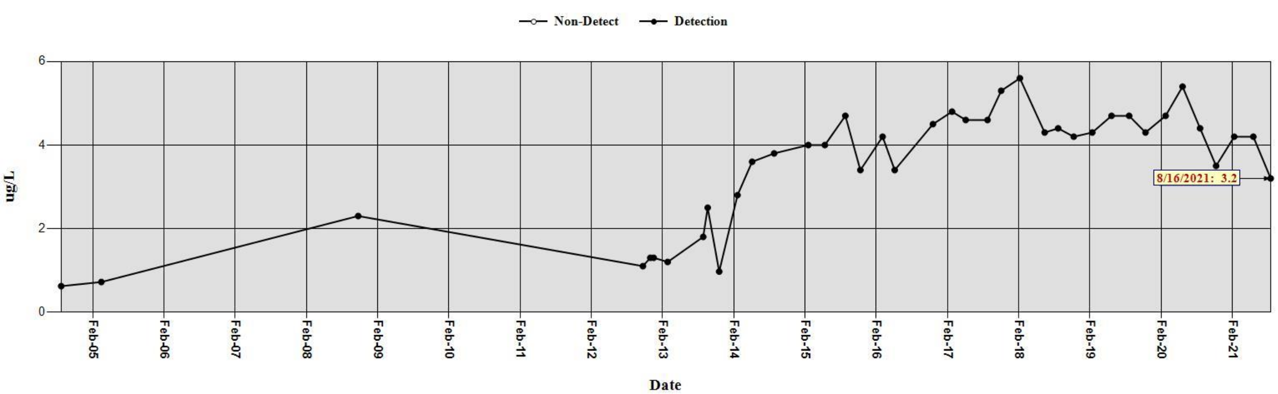

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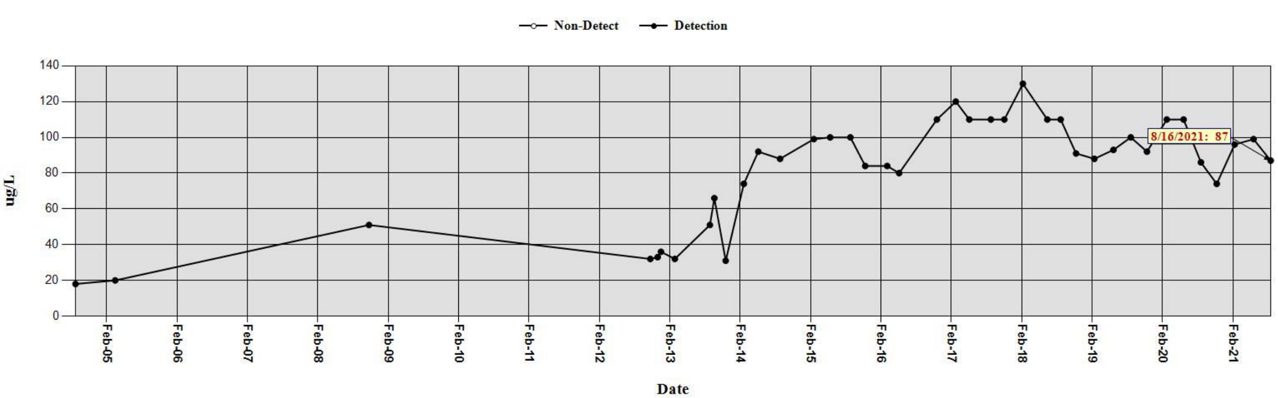
Analysis: 8260



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Analysis: 607

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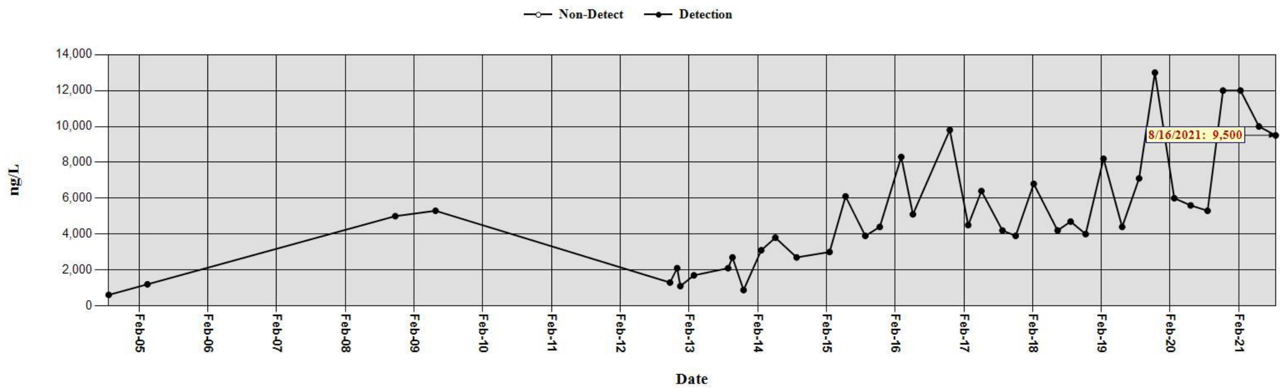

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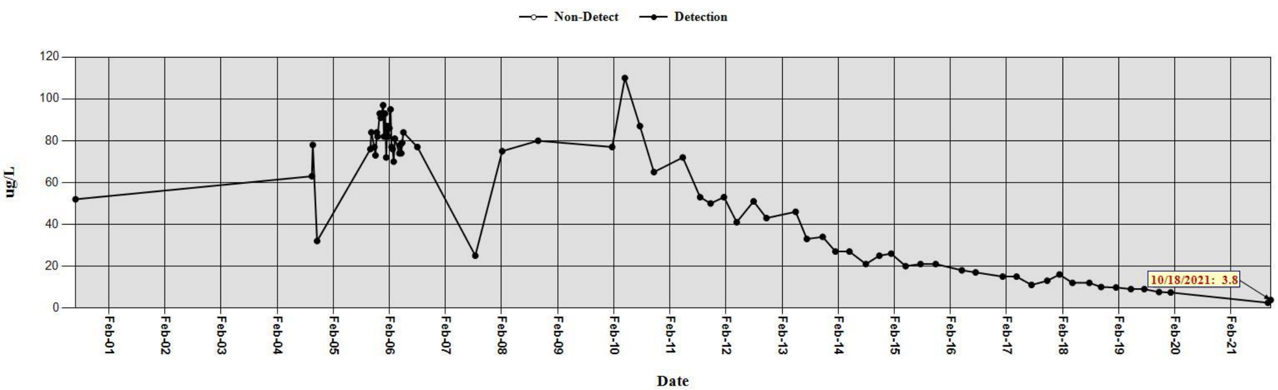
Analysis: 8260



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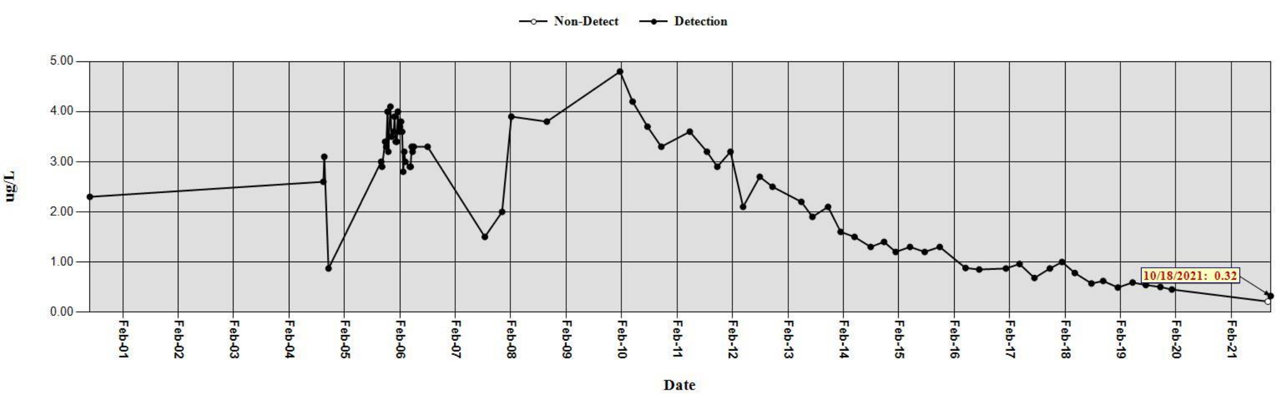
Analysis: 8260



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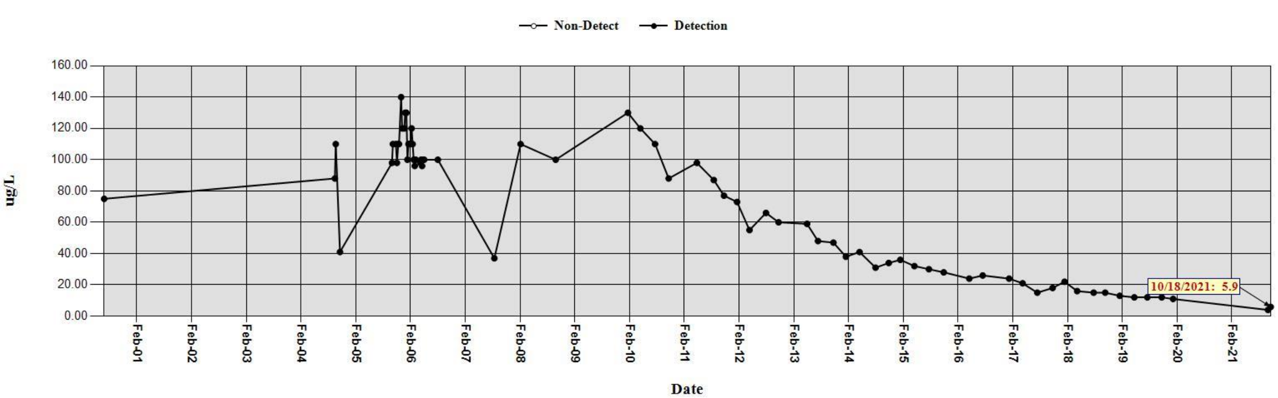

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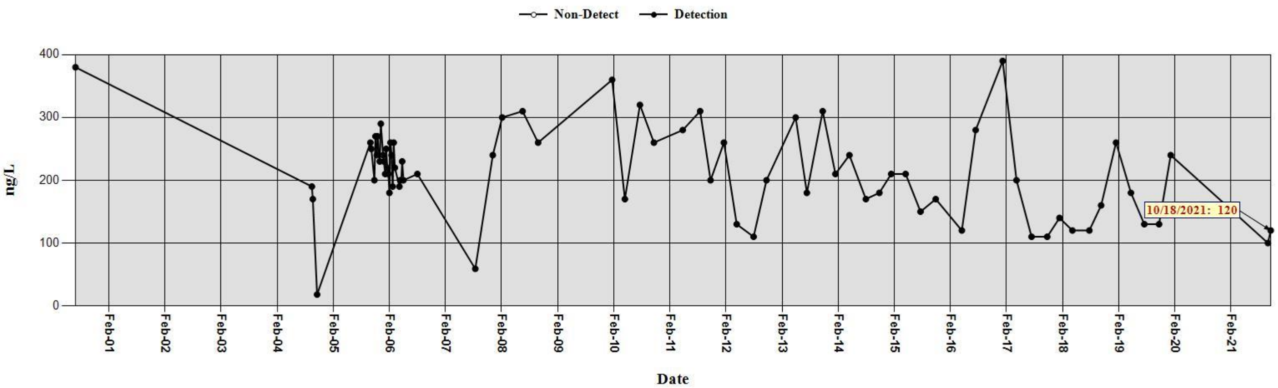

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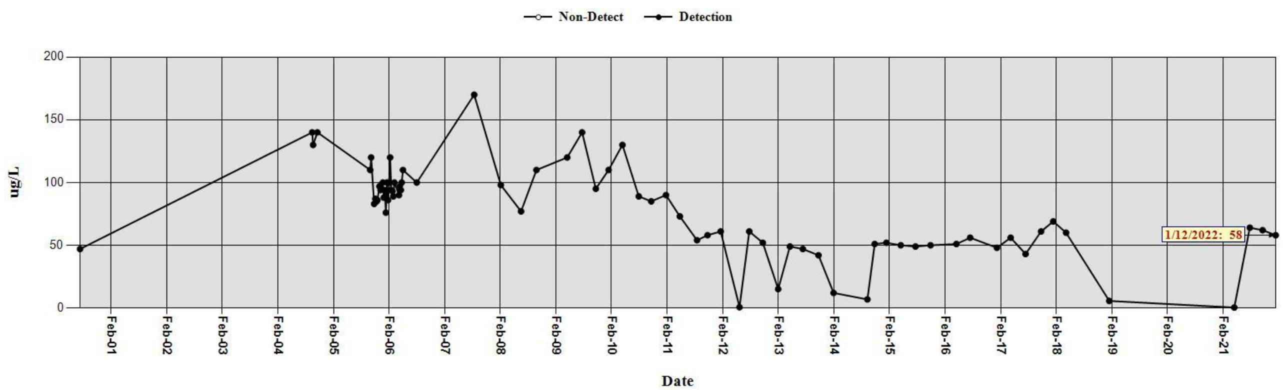
Analysis: 8260



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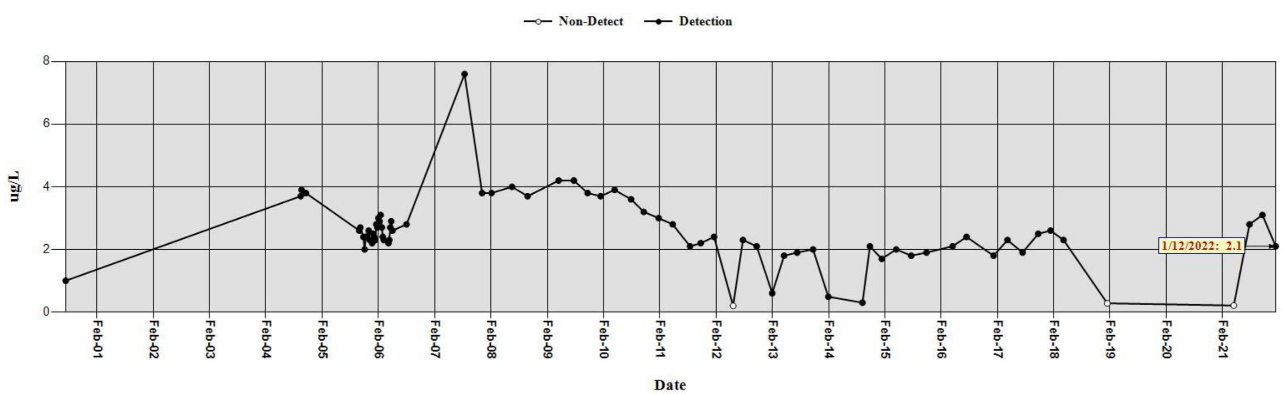

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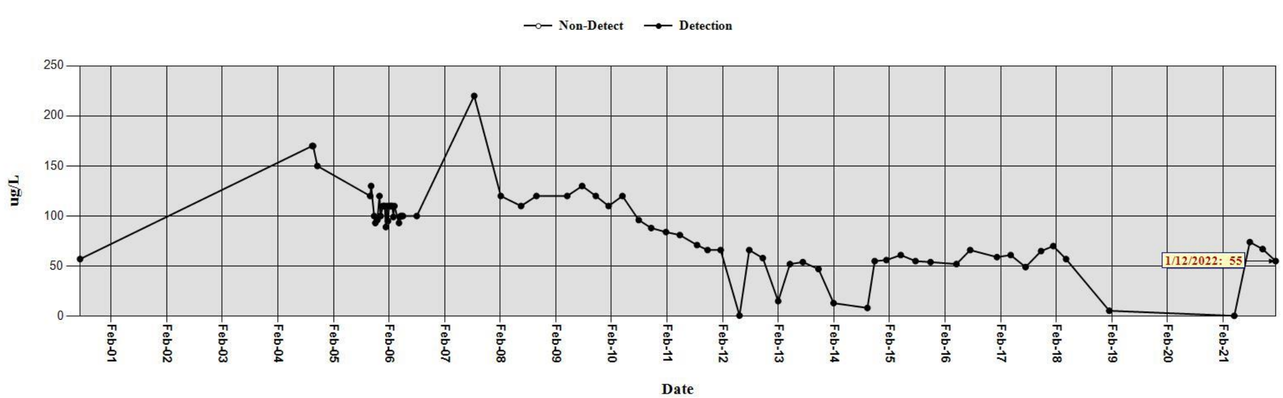
Analysis: 8260



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Analysis: 607

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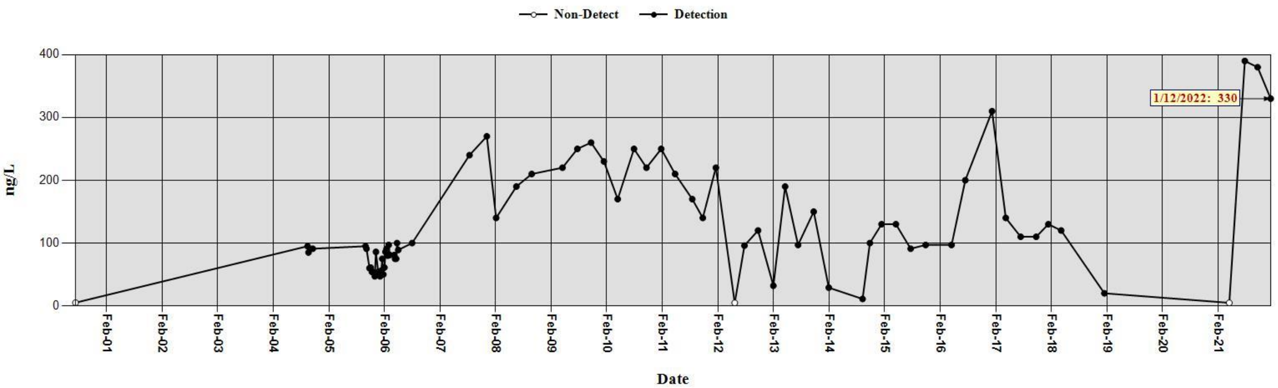

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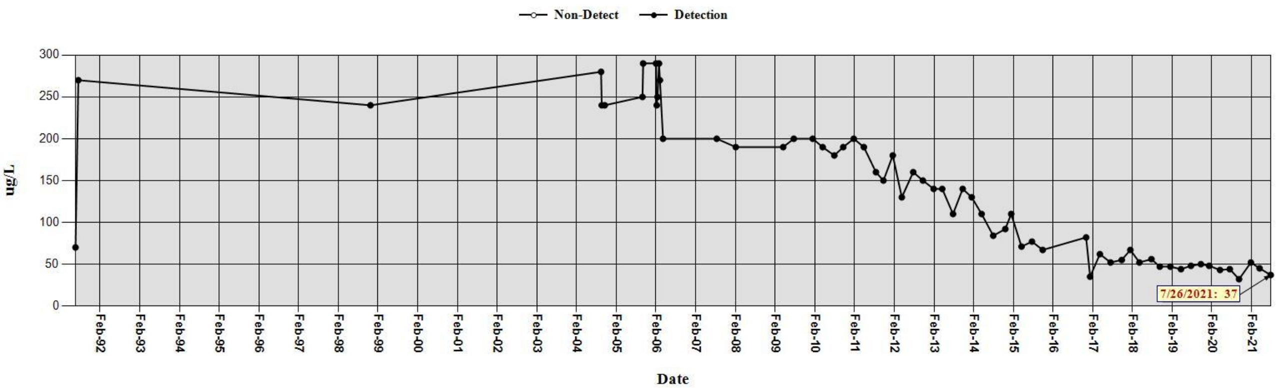
Analysis: 8260



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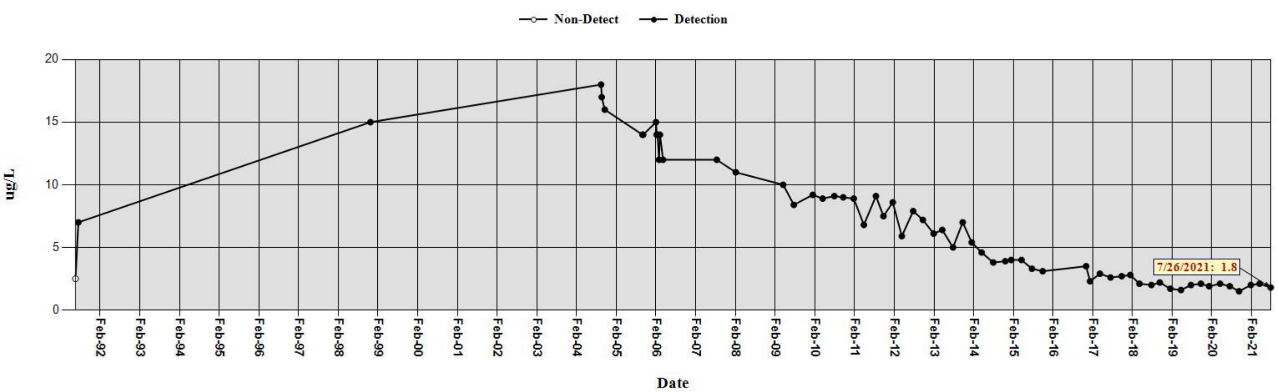
Analysis: 8260



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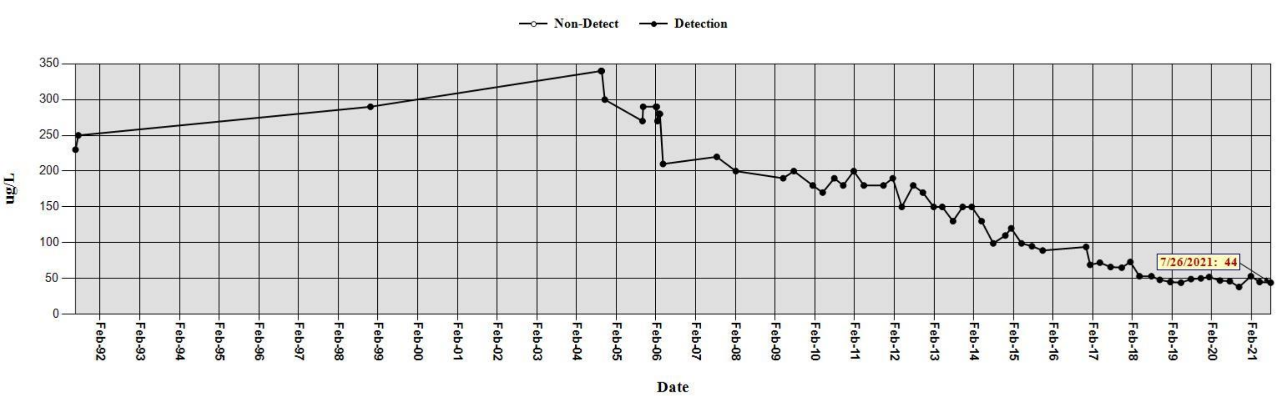
Analysis: 8260



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Analysis: 607

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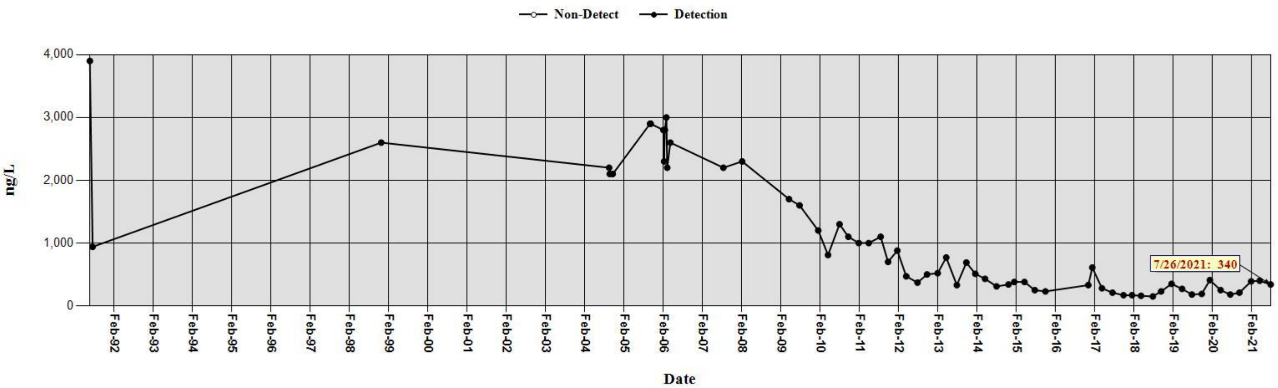

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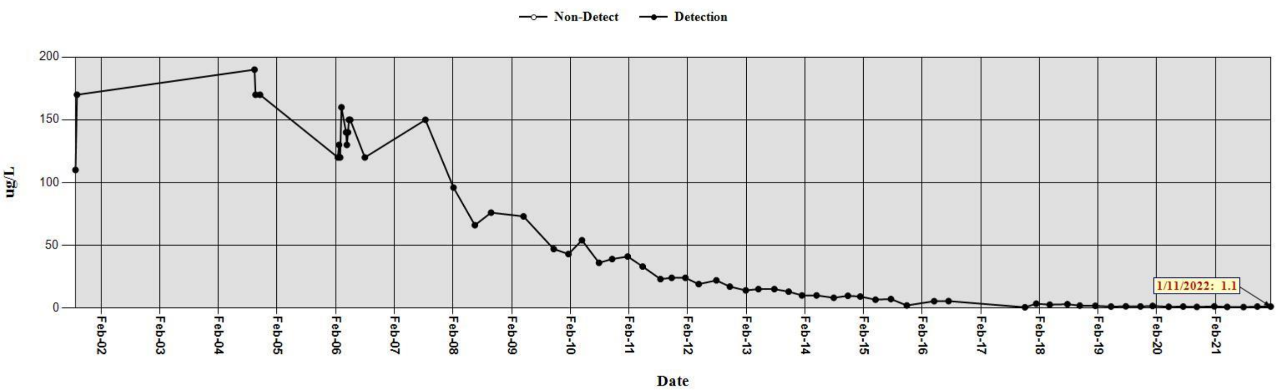
Analysis: 8260



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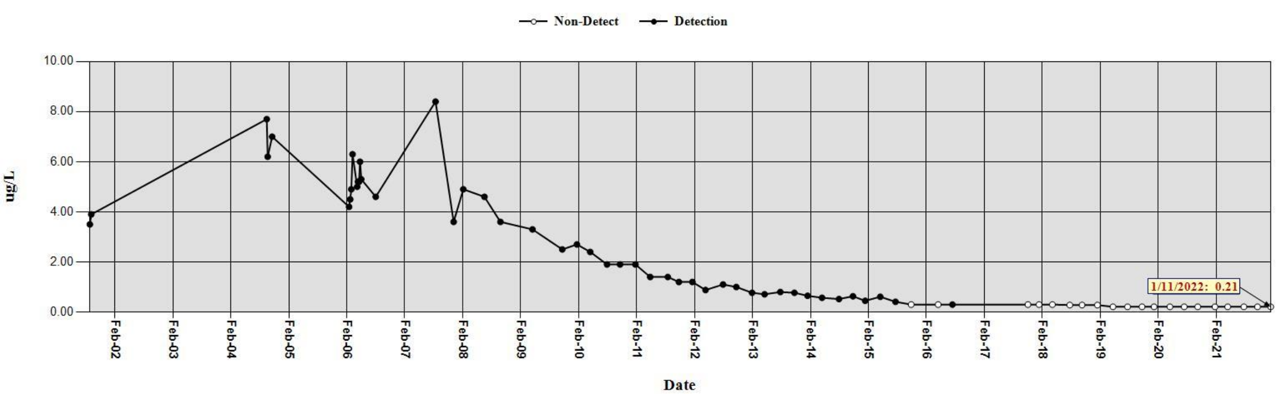

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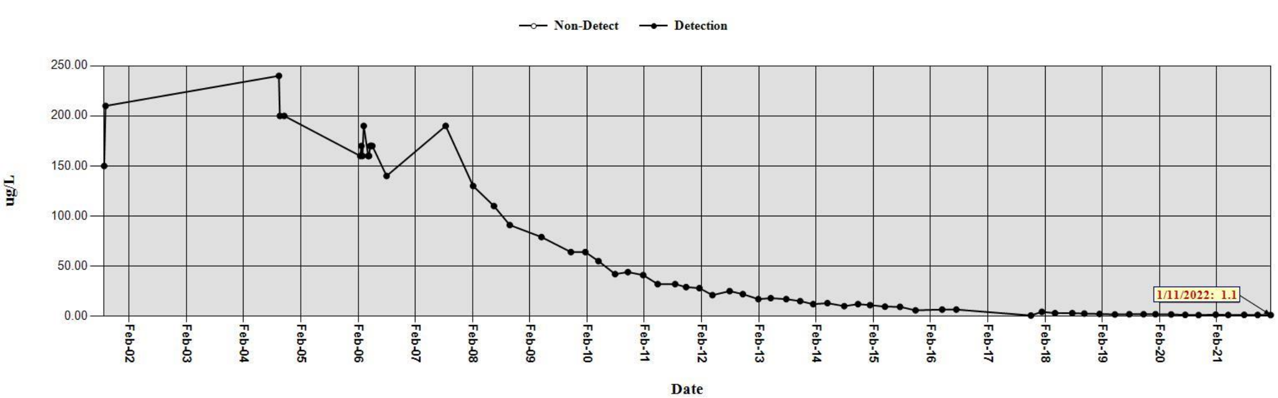

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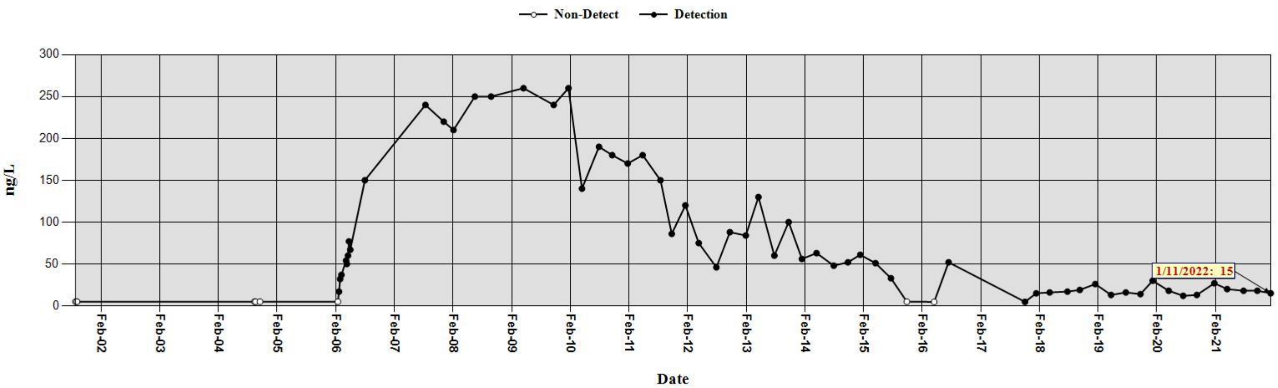
Analysis: 607

Results are Corrected for Extraction Efficiency



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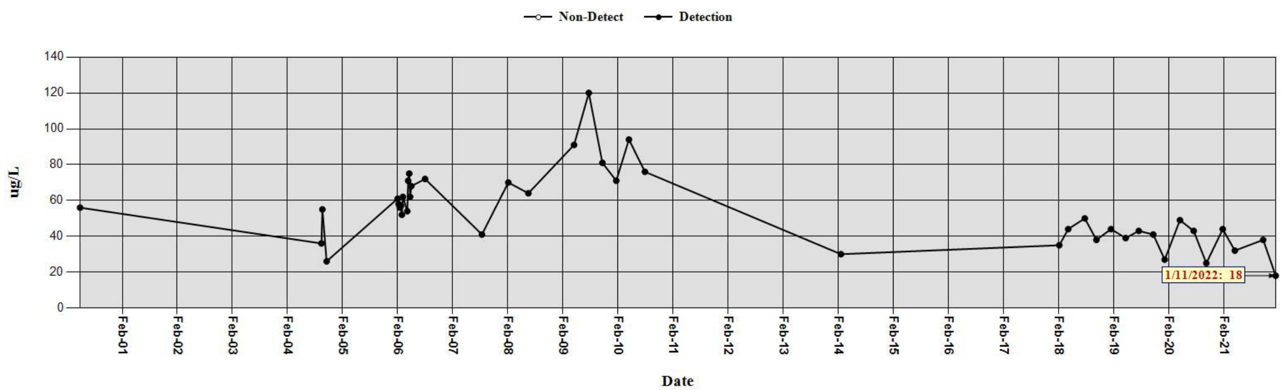

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CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260

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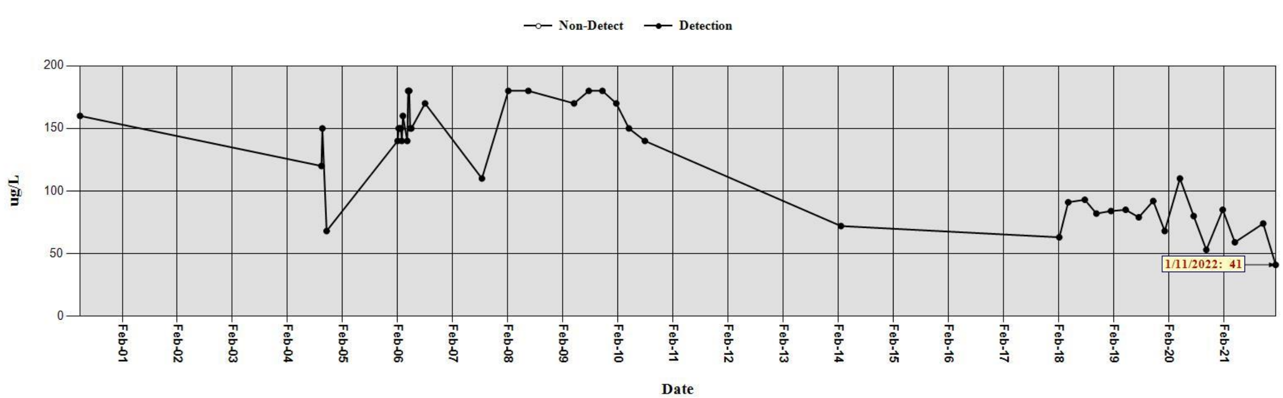
Analysis: 8260



Well ID: PFE-5
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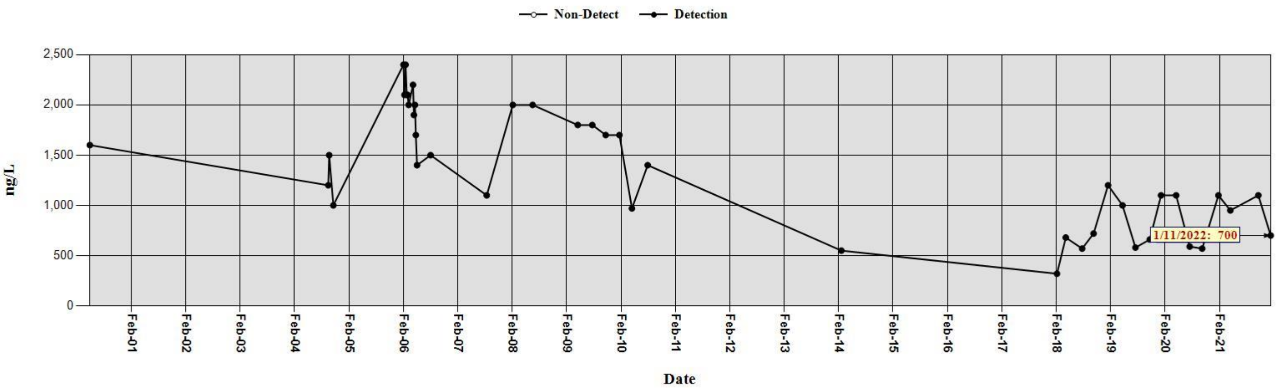
Analysis: 607

Results are Corrected for Extraction Efficiency



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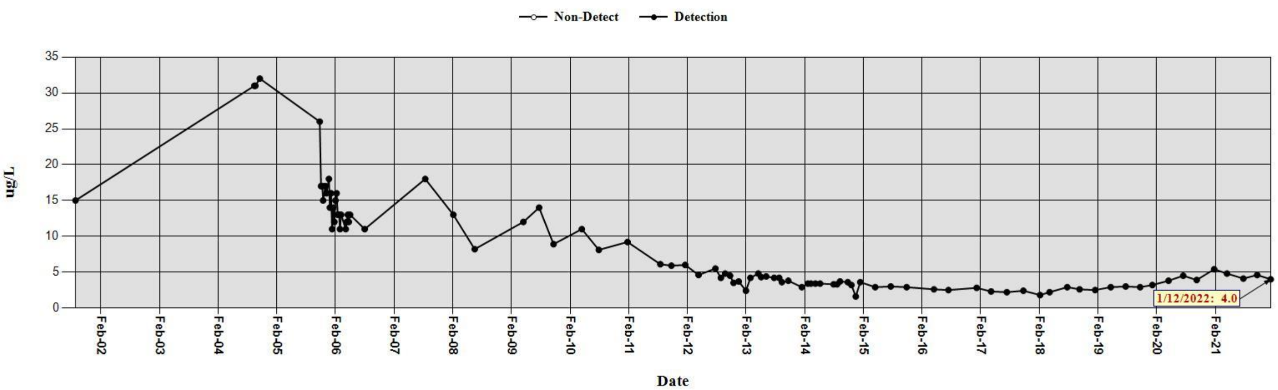
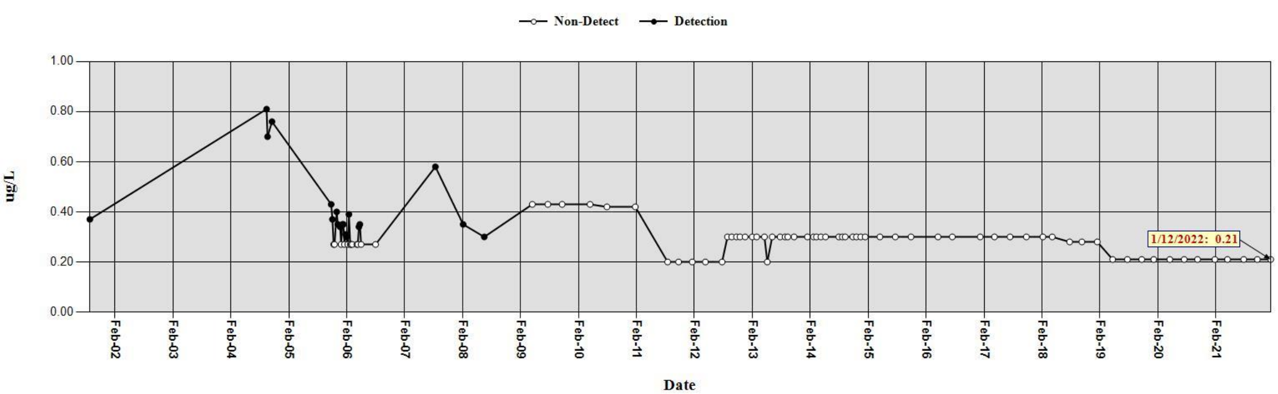
Analysis: 8260



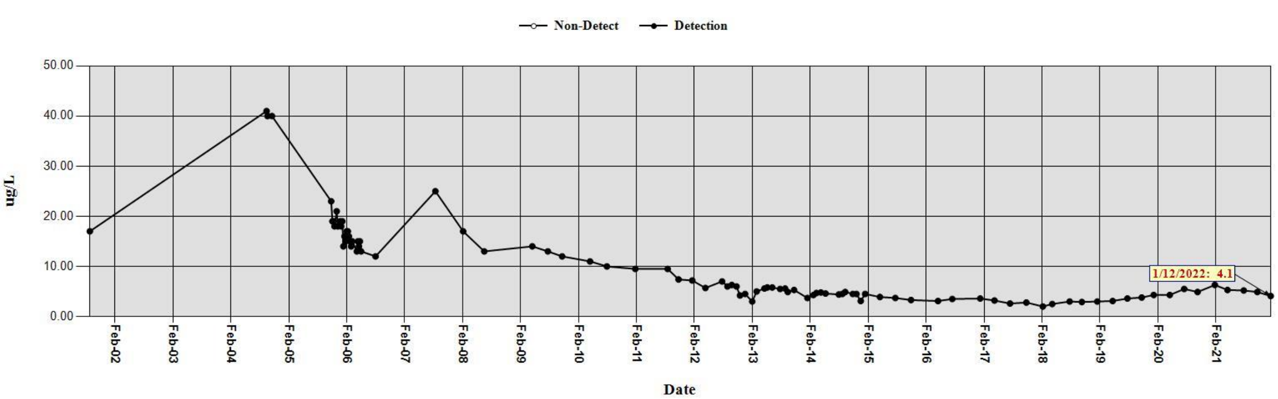
Well ID: PFE-7
CAS RN: 127-18-4 Tetrachloroethene

Analysis: 8260



Well ID: PFE-7
CAS RN: 79-01-6 Trichloroethene

Analysis: 8260



Well ID: PFE-7
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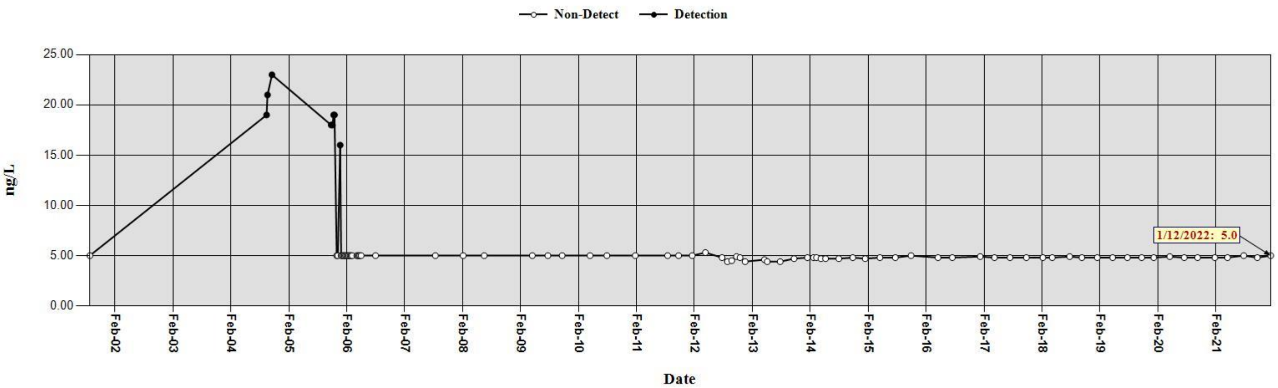
Analysis: 607

Results are Corrected for Extraction Efficiency



Appendix F
Summary of Source Area Investigations

Summary of Groundwater Monitoring Projects and Source Area Investigations

1.0 Groundwater Monitoring Well Abandonment, Installation, and Reconfiguration

1.1 Well Abandonment and Replacement

There was no fieldwork related to well abandonment or replacement in the first quarter of 2022.

1.1.1 Wells BLM-42 and PL-12

In 2019, NASA plugged and abandoned (P&A) wells BLM-37 and PL-5 in accordance with the *Work Plan for Abandonment of NASA WSTF Monitoring Well BLM-37 and Replacement with Monitoring Well BLM-42* (NASA, 2018) and the *NASA WSTF Drilling Work Plan for Groundwater Monitoring Well PL-12* (NASA, 2017a). NASA replaced these wells with BLM-42 and PL-12, respectively. NASA submitted the *Well Completion Report for BLM-42* on May 4, 2020 (NASA, 2020f). NMED reviewed the report and issued an approval with modifications on May 6, 2021 (NMED, 2021l). NASA submitted a response to the approval with modifications of the BLM-42 well completion report on May 18, 2021 (NASA, 2021i). NASA also submitted the *Well Completion Report for Well PL-12* on May 4, 2020 (NASA, 2020g). NMED reviewed the report and issued an approval on May 6, 2021 (NMED, 2021j).

A comprehensive summary of activities and correspondence related to wells BLM-42 and PL-12 was provided in the Periodic Monitoring Report – Third Quarter 2021 (NASA, 2021z).

1.1.2 Well BLM-30

On November 5, 2020, NMED issued an approval with modifications (NMED, 2020j) of NASA's plan to P&A well BLM-30 and replace it with new well BLM-43. NMED directed NASA to perform geophysical logging and to provide a well completion report for BLM-43 no later than November 30, 2021. NASA submitted the *Response to Approval with Modifications Work Plan for Abandonment of NASA WSTF Well BLM-30 and Replacement with Monitoring Well BLM-43* on February 3, 2021 (NASA, 2021a) and corresponded with the New Mexico Office of the State Engineer (NASA, 2021e) on the plugging plan for well BLM-30 and application for a permit to drill well BLM-43. On September 28, 2021, NASA submitted the *Request for Extension of Time for Submittal of the Completion Report for Monitoring Well BLM-30 Abandonment and Installation of Replacement Monitoring Well BLM-43* (NASA, 2021t). NMED approved the request on October 27, 2021, which extended the due date for submittal of the report to November 30, 2022 (NMED, 2021q).

1.1.3 Well BLM-28

NASA plans to abandon well BLM-28 and install replacement well 600C-001-GW. See also Section 1.4.1.

1.1.4 Well NASA 9

In June of 2020, NASA attempted to remove the dedicated low-flow bladder pump from well NASA 9 to extend the tubing and lower the pump intake due to declining water levels. During removal activities, the tubing bundle separated from the pump, and the pump then dropped into the 5-foot (ft) well sump. During attempts to recover the pump using special fishing tools, NASA discovered that the inside of the 2-inch stainless-steel casing was obstructed with small roots just above and below the static water level. Numerous attempts to lock onto the top of the pump with the fishing tool were unsuccessful and the bladder pump could not be retrieved. On November 15, 2021, NMED approved the 2021 Groundwater Monitoring Plan (GMP) with a modification that directed NASA to submit a work plan for abandoning and replacing well NASA 9 (NMED, 2021r). NASA plans to prepare and submit the required work plan.

1.2 Well Abandonment

There was no fieldwork related to well abandonment in the first quarter of 2022.

1.2.1 200-SG Wells

On September 13, 2018, NMED approved NASA's April 24, 2018 GMP update for 2018 (NMED, 2018a; NASA, 2018b) with modifications, one of which required NASA to provide additional information on wells 200-SG-2 and 200-SG-3 and provide the rationale for not including them in the sampling schedule. NASA's December 3, 2018 response provided the required information and indicated that NASA would evaluate wells 200-SG-2 and 200-SG-3 for potential future sampling (NASA, 2018d). In April 2019, NASA evaluated the performance of the two wells, and determined that the groundwater levels in each are inadequate to allow for the collection of representative samples. NASA also determined that the relatively low concentrations of WSTF COC in these wells are not representative of groundwater within the Gardner Spring Arroyo in which monitoring well 200-D-109 is installed.

In their January 25, 2021 *Approval with Modifications of the NASA Groundwater Monitoring Plan 2020 Update*, NMED directed NASA to prepare and submit a work plan for abandonment of monitoring wells 200-SG-2 and 200-SG-3 and installation of replacement wells, to be submitted for review no later than November 30, 2021 (NMED, 2021b). NASA submitted the *Well Plugging Plan of Operations for Multiport Soil Vapor Groundwater Monitoring Wells 200-SG-2 and 200-SG-3* for NMED review on November 30, 2021 (NASA, 2021aa). NMED approved the work plan on January 10, 2022 (NMED, 2022a). NASA does not intend to replace these wells and they are not included in this Plan. NASA continues to plan for well plugging and abandonment.

1.3 Well Installation

There was no fieldwork related to well installation in the first quarter of 2022.

1.3.1 New Well 600C-001-GW

NMED is reviewing the *NASA WSTF Work Plan for Drilling and Installation of Monitoring Well 600C-001-GW*, submitted on August 31, 2021 (NASA, 2021v, pp1-2).

1.4 Westbay Well Reconfiguration

As of calendar Year 2020, NASA has reconfigured two Westbay wells (JP-3 and WW-2) to dual-zone dedicated low-flow bladder pumps and seven Westbay wells (BLM-32, JER-1, JER-2, ST-6, ST-7, WW-4, and WW-5) to multiport Water FLUTe sampling systems.

1.4.1 BLM-28

NASA submitted the *Well Reconfiguration Report for Well BLM-28 and Notice of Intent to Plug and Abandon* on May 4, 2020 (NASA, 2020i). On November 19, 2020, NMED provided requirements for abandonment and replacement of the well (NMED, 2020l). The requirements were that after complete evaluation of all available data and information, NASA would then either submit a work plan for a replacement monitoring well or formally notify NMED that BLM-28 will not be replaced no later than January 31, 2022.

Following NMED's direction from the November 19, 2020 response for reconfiguring BLM-28, NASA submitted a work plan for abandonment of well BLM-28 on April 29, 2021 (NASA, 2021h). NASA then determined that a replacement well is necessary and developed and submitted the *NASA WSTF Work Plan for Drilling and Installation of Monitoring Well 600B-001-GW* on August 31, 2021 (NASA, 2021p, p1).

1.4.2 BLM-30

On November 5, 2020, NMED issued an approval with modifications (NMED, 2020i) of NASA's plan to P&A well BLM-30 and replace it with new well BLM-43 and required geophysical logging and a due date as November 30, 2021 for the BM-43 well completion report. NASA provided a response to the Approval with Modifications on February 3, 2021 (NASA, 2021a) and corresponded with the New Mexico Office of the State Engineer (NASA, 2021e) on the plugging plan for well BLM-30 and application for a permit to drill well BLM-43. Owing to contractor backlog due to COVID, NASA requested a one-year extension to submit the completion report on September 28, 2021 (NASA, 2021y).

1.4.3 BW-4

NASA determined that the well BW-4 can be reconfigured for continued use and submitted a well reconfiguration work plan for well BW-4 on June 29, 2021 (NASA, 2021m, p5).

1.4.4 Data Representativeness and Westbay Well Reconfiguration Plan

The FLUTe Data Representativeness investigation took the form of isolation and serial sampling of four zones of well WW-4 with the FLUTe liner removed. NASA completed the groundwater data representativeness evaluation performed at groundwater monitoring well WW-4 and submitted the *Groundwater Data Representativeness Phase 1: Water FLUTe Well Evaluation Abbreviated Investigation Report* to NMED on February 27, 2020 (NASA, 2020d, pp2-13). NMED reviewed the *Groundwater Data Representativeness Phase 1: Water FLUTe Well Evaluation Abbreviated Investigation Report* (2/27/2020) and on June 3, 2021 issued an Approval with Modifications (NMED, 2021m). This approval required a change to the investigation report indicating a need for an expanded investigation, and a subsequent work plan for the investigation. NASA submitted a response to the approval with modifications on August 17, 2021 (NASA, 2021u, p14).

The Westbay Well Reconfiguration Plan required time extensions to allow NASA to evaluate data from FLUTe sampling systems currently in place at WSTF, in the form of data from Westbay wells converted to FLUTe, and from laboratory testing of the FLUTe sample components. Beginning in 2020, NMED approved an extension request to submit the well reconfiguration work plan no later than December 31, 2020 (NMED, 2020d). On November 30, 2020, NASA submitted a *Request for Fourth Extension of Time for Well Reconfiguration Work Plan* (NASA, 2020r). NMED approved the fourth extension request for submittal of the well reconfiguration work plan for wells PL-6, PL-7, PL-8, PL-10, ST-5, and WW-3 on January 25, 2021 (NMED, 2021a). NASA submitted the *Westbay Well Reconfiguration Work Plan for Wells PL-7, PL-8, PL-10, ST-5, and WW-3* to NMED on April 29, 2021 (NASA, 2021g, pp2-4).

2.0 Source Area Investigations

2.1 200 Area

At the start of 2020, NMED approved a request for extension on January 16 for NASA to respond to 12 comments and submit a revised investigation report by February 3, 2020 (NMED, 2020b). NASA developed the required responses to the 12 comments in NMED's June 5, 2019 Disapproval 200 Area and 600 Area Vapor Intrusion Assessment Report (NMED, 2019b) and submitted the *NMED Disapproval Response for 200 Area and 600 Area Vapor Intrusion Assessment Report* on January 30, 2020 (NASA, 2020b).

2.2 300 Area

Work in the 300 Area is primarily related to investigation and closure of the adjacent 400 Area. Prior to 2020, NASA's May 30, 2019 *300 Area Supplemental Abbreviated Drilling Work Plan* (NASA, 2019f) was the first document submitted. NMED disapproved the work plan on March 19, 2021 (NMED, 2021f) and directed NASA to address four comments and submit a revised work plan no later than July 30, 2021. NASA submitted the *Response to Disapproval of 300 Area Supplemental Abbreviated Drilling Work Plan* on July 14, 2021 (NASA, 2021p).

2.3 400 Area

Prior to 2020, NASA's last submittal for the 400 Area was the December 30, 2019 400 *Area Closure Investigation Report* (NASA, 2019q; revised). NMED disapproved report on March 19, 2021 (NMED, 2021g) and directed NASA to address 17 comments and submit a revised report no later than July 30, 2021. NASA submitted the *NASA WSTF 400 Area Closure Investigation Report – NMED Third Disapproval Response* on July 27, 2021 (NASA, 2021s, Response Table). NASA also submitted the *400 Area Supplemental Groundwater and Soil Vapor Monitoring Plan* on May 29, 2019 (NASA, 2019d) and the related *300 Area Supplemental Abbreviated Drilling Work Plan* (NASA, 2019f) for two additional multiport soil vapor and groundwater monitoring wells in the 300 Area. NMED disapproved the *400 Area Supplemental Groundwater and Soil Vapor Monitoring Plan* on March 15, 2021 (NMED, 2021e), and NMED directed NASA to address three comments and submit a revised monitoring plan no later than July 30, 2021. NASA submitted the *Response to Disapproval of 400 Area Supplemental Groundwater and Soil Vapor Monitoring Plan* on July 14, 2021 (NASA, 2021q, Response Table).

2.4 600 Area Perched Groundwater Investigations

2.4.1 600 Area Perched Groundwater Extraction

NASA initiated extraction of perched groundwater from monitoring well 600-G-138 on April 19, 2013 in accordance with the NMED-approved *600 Area Perched Groundwater Extraction Pilot Test Work Plan* (NASA, 2012). NASA has continued to extract groundwater in accordance with the plan and submit annual status reports. NASA submitted the Interim Status Report for *600 Area Perched Groundwater Extraction Pilot Test Interim Status Report – Project Year 8* on April 29, 2021 (NASA, 2021f). NMED approved the report on December 8, 2021 (NMED, 2021s).

2.4.2 600 Area Perched Groundwater Investigation.

At the start of 2020, a 600 Area Perched Groundwater investigation and report was scheduled in accordance with the *Abbreviated Investigation Work Plan for 600 Area Perched Groundwater* (NASA, 2016b). This work plan was subsequently changed per NASA's August 7, 2019 *Request to Remove Electrical Resistivity Component of the 600 Area Perched Groundwater Geophysical Survey based on Geophysical Subcontractor Input Received during the Procurement Process* (NASA, 2019j) and NMED's August 23, 2019 approval (NMED, 2019c).

In 2019, a seismic reflection and reflection survey was completed in accordance with the AIWP and work scope modification (NASA, 2019o). NASA provided the *Synopsis of the Findings of the 600 Area Closure Geophysical Seismic Refraction Tomography and Reflection Surveys with Revised Soil Boring*

Locations Submitted for NMED Approval on December 19, 2019 (NASA, 2019p). Because of an indeterminate review period for that status report and the start of drilling dependent on approval of the boring locations recommended therein, NASA had submitted a *Request for Extension of Time for Submittal of the 600 Area Perched Groundwater Investigation Report* on March 24, 2020 (NASA, 2020c). NMED approved the extension on July 1, 2020 to 150 days after NMED provides comments (NMED, 2020l).

On December 22, 2020, NMED issued its *Approval with Modifications 600 Area Closure Geophysical Survey Status Report* (NMED, 2020m) and established a due date for the 600 Area Perched Groundwater Investigation Report of December 31, 2021. On May 18, 2021, NASA provided the *Response to NMED Approval with Modifications for the 600 Area Closure Geophysical Survey Status Report – Comment 2 (Further Investigation)* (NASA, 2021j) in which NASA proposed a different approach for collection of geophysical data up- and down-gradient of the 600 Area Closure. The accuracy of the 600 Area geophysical survey would be assessed by comparing the actual bedrock depths from six NMED-approved perched groundwater investigation borings to the predicted depths from the geophysical survey before expanding the geophysical survey. NMED concurred with the approach on July 6, 2021 (NMED, 2021n). During the remainder of 2021, NASA performed planning and procurement activities in preparation for investigation fieldwork, which was initiated in January 2022 as described in Section 6.4.4 of the report body.

2.5 SWMUs 2, 8, and 34 and Area of Concern (AOC) 51 (Wastewater Lagoons)

2.5.1 Interim Status Reports and Investigation Reports

2.5.1.1 100 Area Lagoons

On May 29, 2019, NASA submitted the *NASA WSTF (White Sands Test Facility) 100 Area Wastewater Lagoons Closure (SWMU 2) Interim Status Report* (NASA, 2019e). NMED responded to that report on May 14, 2020 (NMED, 2020i) and informed NASA that comments would be incorporated into the SWMU 2 Investigation Report. NASA submitted the *NASA White Sands Test Facility (WSTF) 100 Area Wastewater Lagoons Closure (SWMU 2) Investigation Report on* August 3, 2020 (NASA, 2020l).

2.5.1.2 200 Area Lagoons

NASA submitted the *NASA White Sands Test Facility (WSTF) 200 Area Wastewater Lagoons Closure (SWMU 8) Investigation Report* to NMED on November 25, 2019 (NASA, 2019n) The report remains under review as of this report date.

2.5.1.3 600 Area Lagoons

NASA submitted the *NASA White Sands Test Facility (WSTF) 600 Area Wastewater Lagoons Closure (SWMU 34) Investigation Report* to NMED on November 26, 2019 (NASA, 20190). The report remains under review as of this report date.

2.5.1.4 STGT Lagoons

In February 2020, NASA and a subcontracted drilling company completed installation of the five remaining soil borings at the STGT Wastewater Lagoons. NASA collected and managed samples of subsurface soil and shipped them to the off-site laboratories for analysis. This activity completed soil sampling described in the NMED-approved work plan. NASA conducted soil vapor sampling at the STGT Wastewater Lagoons in March 2020. This completed all investigation fieldwork described in the

NMED-approved work plan. *NASA White Sands Test Facility (WSTF) STGT Wastewater Lagoons Closure (AOC 51) Investigation Report* on October 13, 2020 (NASA, 2020o, p42). The report remains under review as of this report date.

2.6 SWMU 10 (200 Area Hazardous Waste Transmission Lines)

NASA provided the *Response to Disapproval of the NASA WSTF 200 Area HWTL (SWMU 10) Investigation Report* to NMED on July 30, 2019 (NASA, 2019i). On November 16, 2020, NMED disapproved the revised report (NMED, 2020k) and directed NASA to address 16 comments and perform resampling along the HWTL by August 30, 2021. On May 19, 2021, NASA requested that the due date for submittal of a revised report be extended from August 30, 2021 to November 30, 2021 (NASA, 2021l). NMED approved this extension on July 6, 2021 (NMED, 2021o). NASA completed the collection of replacement soil samples for the analysis of volatile organic compounds along the HWTL on August 31, 2021. NASA installed 12 soil vapor implants at the sampling locations nearest the 200 Area occupied buildings and collected soil vapor samples using 1-liter SUMMA canisters on September 23, 2021. Due to ongoing drilling and laboratory contractor backlog due to COVID, on September 14, 2021, NASA then requested a second extension to submit the revised IR by January 31, 2022 (NASA, 2021w).

2.7 SWMU 16 (600 Area Bureau of Land Management [BLM] Off-Site Soil Pile)

Preliminary investigation fieldwork was performed at the 600 Area BLM Off-Site Soil Pile in November and December 2015. NASA submitted the *NASA WSTF SWMU 16 (600 Area BLM Off-Site Soil Pile) Investigation Report* on February 25, 2016 (NASA, 2016a). NMED disapproved three revisions of the report prior to 2020. NMED provided the *Approval with Modifications 600 Area Bureau of Land Management Off-Site Soil Pile (SWMU 16) Revised Investigation Report* on May 6, 2021 (NMED, 2021k). The Approval with Modifications required submittal of an Accelerated Corrective Measures work plan no later than September 30, 2021. NASA submitted the *Response to Approval with Modifications of NASA WSTF SWMU 16 (600 Area BLM Off-Site Soil Pile) Investigation Report* on July 20, 2021 (NASA, 2021r) and then submitted the *Accelerated Corrective Measures Work Plan for the NASA WSTF SWMU 16 (600 Area BLM Off-Site Soil Pile)* on September 28, 2021 (NASA, 2021x, p9).

2.8 SWMUs 18–20 (700 Area High Energy Blast Facility, 800 Area Below Grade Storage Tank, and 800 Area Oxidizer Burner)

NMED reviewed the *Response to Disapproval of Revised SWMU 19 (800 Area Below Grade Storage Tank) Investigation Report* (NASA, 2019g) and issued the *Approval with Modifications Revised 800 Area Below Grade Storage Tank (SWMU 19) Investigation Report* on August 27, 2020 (NMED, 2020i).

2.9 SWMUs 21–27 (Septic Tanks)

NMED disapproved NASA's July 23, 2019, *Response to Disapproval of NASA WSTF Septic Tanks (SWMUs 21-27) Investigation Report* (NASA, 2019h, the revised IR) on January 29, 2021 and directed NASA to address six comments no later than May 30, 2021 (NMED 2021c). NASA addressed the six comments and submitted the *Response to Second Disapproval of NASA White Sands Test Facility (WSTF) Septic Tanks (SWMUs 21–27) Investigation Report* on May 18, 2021 (NASA, 2021k, Response Table).

2.10 SWMUs 29-31 (Small Arms Firing Ranges)

Leading up to 2020, NASA completed additional fieldwork required to respond to NMED's February 21, 2019, *Second Disapproval of Small Arms Firing Ranges (SWMUs 29-31) Remedy Completion Report.* NMED (NMED, 2019a) approved NASA's October 28, 2019 request to extend the due date for submittal of the disapproval response and revised remedy completion report from December 31, 2019 to February 28, 2020 (NASA, 2019l). NASA determined that additional time was required to complete the planned human and ecological health risk assessment for the three SWMUs and submitted the *Second Request for Extension of Time for NASA WSTF Small Arms Firing Ranges (SWMUs 29-31) Response to Second Disapproval Remedy Completion Report* on January 29, 2020 (NASA, 2020a). NMED approved the request on March 21, 2020 (NMED, 2020d), extending the due date for submittal of the report from February 28, 2020 to April 24, 2020. NASA prepared the response to NMED's February 21, 2019 *Second Disapproval of Small Arms Firing Ranges (SWMUs 29–31) Remedy Completion Report* (March 30, 2018) and submitted the *Response to Second Disapproval Small Arms Firing Ranges (SWMUs 29-31) Remedy Completion Report and Risk Assessment Report* on August 3, 2020 (NASA, 2020k).

2.11 SWMU 33 (300 Area Test Stand 302 Cooling Water Pond)

Anticipating closure of Test Stand 302 apart from a full closure, NASA submitted the *300 Area Test Stand 302 Cooling Water Pond (SWMU 33) Investigation Work Plan (IWP) and Historical Information Summary (HIS)* (NASA, 2020l) on August 17, 2020.

2.12 SWMU 47 (500 Area Fuel Storage Area)

NASA submitted the 500 Area Fuel Storage (SWMU 47) Investigation Work Plan on September 26, 2018 (NASA, 2018c). NMED disapproved the work plan on August 8, 2019 (NMED, 2019d) and directed NASA to address 14 comments and submit a revised work plan by November 25, 2019. NASA submitted the *Response to Disapproval of 500 Area (SWMU 47) Investigation Work Plan* on November 21, 2019 (NASA, 2019m). NMED disapproved the revised work plan on March 19, 2021 and directed NASA to address five comments and submit a revised IWP no later than July 31, 2021 (NMED, 2021h). NASA addressed NMED's comments and submitted the *Response to Second Disapproval of 500 Area Fuel Storage (SWMU 47) Investigation Work Plan* on June 29, 2021 (NASA, 20210, Response Table).

2.13 SWMU 49 (700 Area Landfill)

NASA submitted the *NASA White Sands Test Facility (WSTF) SWMU 49 (700 Area Landfill) Phase I Investigation Work Plan (IWP) and Historical Information Summary (HIS)* on December 28, 2017 (NASA, 2017b). NMED disapproved the work plan (NMED, 2018b) and directed NASA to address eight comments and submit a revised work plan by May 31, 2019. NASA submitted the *Response to NMED Disapproval SWMU 49 (700 Area Landfill) Phase I Investigation Work Plan and Historical Information Summary* on March 28, 2019 (NASA, 2019b). NMED approved the work plan with modification on June 6, 2019 (NMED, 2019c). The planned investigation includes Phase 1A and Phase 1B soil vapor sampling and surface geophysics. In November 2019 and December 2019, NASA deployed 159 passive soil vapor samplers and completed the Phase 1A soil vapor survey. NASA and the subcontracted geophysics firm performed the EMI and magnetic gradient field surveys between February 24 and 28, 2020.

Because of project delays created by the COVID-19 pandemic, NASA submitted a *Request for Extension of Time for Submittal of the SWMU 49 (700 Area Landfill) Phase I Investigation Report* on May 4, 2020 (NASA, 2020h). NMED approved the request on July 1, 2020 (NMED, 2020g), extending the date for submittal of the Phase 1 investigation report to March 31, 2021. Meanwhile, NASA completed procurement of the ground penetrating radar and passive seismic surveys as described in the NMED-approved landfill investigation work plan. Due to the ongoing pandemic, NASA submitted a *Second Request for Extension of Time for Submittal of the SWMU 49 (700 Area Landfill) Phase I Investigation Report* on February 3, 2021 (NASA, 2021b). NMED approved the request on March 15, 2021 (NMED, 2021d), extending the due date for submittal of the Phase 1 investigation report to April 29, 2022.

2.14 SWMU 50 (First TDRSS Diesel Release)

NASA submitted the *First Tracking Data Relay Satellite System (TDRSS) Diesel Release (SWMU 50) Investigation Report* on March 14, 2019 (NASA, 2019a). NMED disapproved the report on July 8, 2020 (NMED, 2020n) and directed NASA to address 17 NMED comments and submit a revised report no later than October 30, 2020. NASA submitted the *Response to Disapproval of First Tracking Data Relay Satellite System (TDRSS) Diesel Release (SWMU 50) Investigation Report and Risk Screen Evaluation Report* on November 9, 2020 (NASA, 2020p).

2.15 SWMU 52 (Second TDRSS UST)

On August 11, 2020, NASA discovered a diesel fuel leak in the area of the SWMU 52 Underground Storage Tank (UST), which is located north of WSTF at the White Sands Complex. NASA initiated a preliminary investigation and confirmed that the leak originated from a puncture in the return fuel line between emergency generator and the UST. NASA informed the NMED HWB of the release via email on August 13, 2020 and in writing in the August 17, 2020 *NASA White Sands Test Facility Hazardous Waste Operating Permit SWMU 52 Incident Notification* (NASA, 2020m). NASA submitted the *Second TDRSS Underground Storage Tank (SWMU 52) Release Assessment Report* to NMED HWB on February 18, 2021 (NASA, 2021c).

Parallel activities are performed with notifications and approvals provided to the NMED Petroleum Storage Tank Bureau (PSTB). During August and September 2020, White Sands Complex personnel coordinated corrective action for this release through the NMED PSTB. On September 21, 2020, NASA submitted the *NASA White Sands Test Facility Hazardous Waste Operating Permit SWMU 52 Incident Update* (NASA, 2020n. p7). The update summarized corrective action performed to date, including the removal of 32 yd^3 of diesel-contaminated soil from the area of the leak. NASA then submitted the *Second TDRSS UST Minimum Site Assessment Work Plan* (NASA, 2020p) to the PSTB on November 18, 2020. The work plan described an investigation to determine the extent and magnitude of soil contamination caused by the diesel release. On February 4, 2021 (NMED PSTB, 2021), the NMED PSTB approved NASA's *Second TDRSS UST Minimum Site Assessment Work Plan* of November 18, 2020 (NASA, 2020q, pp3-6). NASA submitted the *Second TDRS UST Minimum Site Assessment Report* to the NMED PSTB on June 25, 2021 (NASA, 2021m). The HWB was copied. The work conducted for the investigation and report had been under a PSTB-approved Minimum Site Investigation Work Plan (NMED PSTB, 2021).

In December 2020, NASA completed shipping the remaining petroleum contaminated soil previously removed from the release location soil to the Valencia Regional Landfill and Recycling Facility for bioremediation and disposal. In total, approximately 214 yd^3 of contaminated soil was removed from the release area. NASA drilled five boreholes for characterization of the release from March 22 through March 26, 2021 in accordance with the work plan.

The NMED HWB disapproved the *Second TDRS UST Minimum Site Assessment Report* on March 1, 2022 and directed NASA to address four NMED comments and submit a revised report no later than May 6, 2022 (NMED, 2022b).

2.16 Newly Identified SWMU

NASA identified the location of a former 500 Area oxidizer as a potential new SWMU. On October 16, 2019, NASA submitted the *Fifteen-Day Notification of a Newly Identified SWMU within the WSTF 500 Area* (NASA, 2019k). NMED acknowledged receipt of NASA's fifteen-day notification on November 13, 2019 (NMED, 2019f) and directed NASA to provide a Release Assessment Report no later than May 29,

2020. NASA researched historical information on the newly identified SWMU and submitted the *500 Area Newly Identified SMWU Release Assessment Report* on June 22, 2020 (NASA, 2020j, p4). NMED approved the report on December 20, 2021 and directed NASA to prepare and submit an investigation work plan for the unit no later than August 31, 2022 (NMED, 2021t).

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