Rocky Flats Site, Colorado, Quarterly Report of Site Surveillance and Maintenance Activities
First Quarter Calendar Year 2019
Document number (including revision number)
LMS/RFS/S25989

Errata Sheet

This Errata Sheet reflects the following changes:

Description of change

Executive Summary:
Add the following sentences after the first paragraph: The annual Site inspection was conducted on March 26, 2019. The majority of items encountered were debris or trash on the surface. These items were either picked up during the inspection or subsequently removed.

Section 2.1: Insert new section, Section 2.1, and renumber accordingly:
Annual inspection and monitoring of evidence of significant erosion and violation of ICs is required in accordance with RFLMA Attachment 2, Sections 5.3.4 and 5.3.6.

The inspection is to focus on the following:

- Evidence of significant erosion in the COU and the proximity of any erosion to the subsurface features identified in RFLMA Attachment 2, Figure 3 and Figure 4. This monitoring included observation for precursor evidence of significant erosion, such as cracks, rills, slumping, subsidence, and sediment deposition.
- The effectiveness of ICs as determined by evidence of violation of the controls.
- Evidence of adverse biological conditions, such as unexpected morbidity or mortality.

As part of the IC inspection, verification that the Notice of Environmental Use Restriction remains in the Administrative Record and on file in Jefferson County records is required annually. This verification was conducted on March 19, 2019. In addition, it was verified that physical controls (i.e., signs placed along the COU fence) were in place.

The annual inspection was scheduled so that surface features could be observed after snow cover had melted, when the surface was dry, and before vegetation growth could obscure land surface features. The inspection was conducted on March 26, 2019.

To conduct this work, knowledgeable DOE, CDPHE, EPA, and LMS contractor staff members (the inspection team) walked down the COU surface to observe conditions. The COU was divided into Areas A through E, as shown on the maps included in Appendix C. These areas include the locations of the subsurface features in RFLMA Attachment 2, Figure 3 and Figure 4, and they afford adequate viewing of the surface at these locations (e.g., sloping areas). Inspection

team members used maps to inspect their assigned areas. Reference points, such as monitoring wells and roads, were used to orient the inspection team members within designated inspection areas.

Appendix C of this report also includes the completed inspection checklists.

Team members used marker flags to identify areas where conditions showed potential evidence of the three categories listed above to make their location available for follow-up by site subject matter experts or to mark debris to be removed later. Areas that required evaluation were documented in the Site Observation Log for evaluation and follow-up.

Most items encountered were debris or trash (e.g., rebar, wire bundle, grounding rod, concrete slab) on the surface; these items were either picked up during the inspection or subsequently removed. One 8-foot by 2-foot area exhibited a 1-foot-deep subsidence, coinciding with the south side of former Building 371 (southeast corner). Site field operations subject matter experts evaluated this area and concluded it was not significant. This and other observations were added to the Site's Geographic Information System database for further observation.

No evidence of violations of institutional or physical controls was observed, and no adverse biological conditions were noted during the inspection.

Appendix C: Add new Appendix C.

J. Boylan for L. Kaiser

Linda Kaiser
Rocky Flats Site Lead
Navarro Research and Engineering, Inc.

Appendix C

Inspection Checklists

Annual Site Inspection Check List (see RFLMA Attachment 2, Sections 5.3.4, 5.3.6, and 5.4.3)

Date 3/26/19 Inspection Area: A

Inspection performed by (print each name): April Tischer, John Baylan, Dana Santi, Lindsey Masters

Check all boxes that apply, put ID# on flag and place flag marker in location of observation for follow up.								
Flag ID#	Evidence of Soil Erosion or Deposition	Evidence of Cracks, Rills, Gullies	Evidence of Sink Holes or Burrows	Evidence of Depressions or Subsidence	Evidence of Institutional Control Violation[1]	Problem with signs or other physical controls[2]	Adverse biological condition	Photo(s) taken?[3]
A.1			✓ (sink)	✓				✓
A.2			✓ (sink)	✓				✓
A.3		✓	✓ (")	✓				✓
A.4		✓	✓	✓				✓
A5			✓	✓				✓
A6								✓
A.7								✓
A.8								✓

Notes (Reference Flag ID#):

#A.2 - GPS can't find satellites; no log; N of road & in close proximity to #A.1. Status says "GNSS is disconnected."
(will troubleshoot GPS at lunch.)

A5 - wire bundle

A.7 - rubber embedded in ground

A.8 - (4") pipe & copper grounding rod flush w/ ground, continues north

*Known areas of subsidence marked for Bldg 371, S. side, (1') relief, ~8'x2' (photo taken) ✓

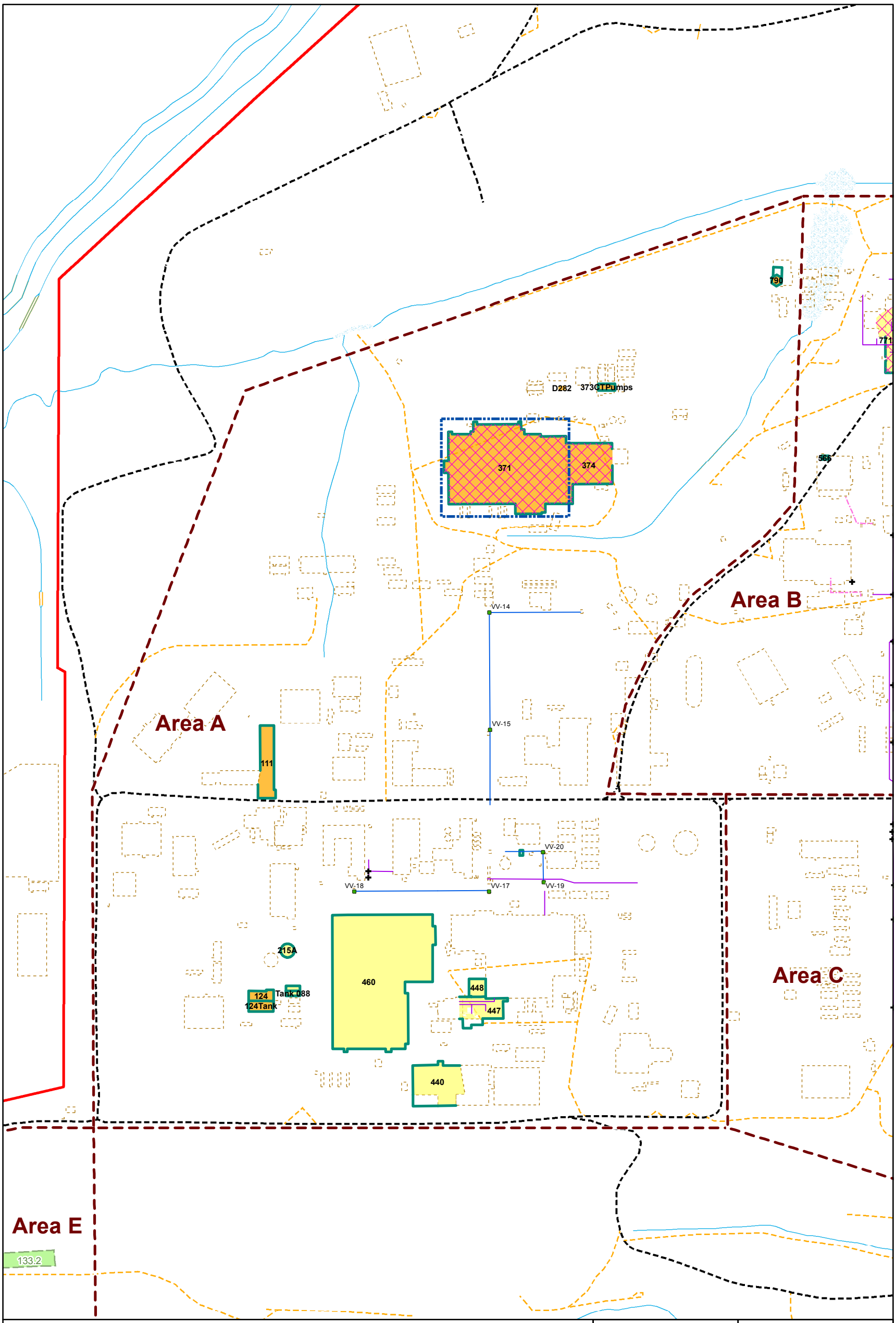
A.9 - SE corner of Bldg 371, wire

[1] Indicate the RFLMA IC# (RFLMA Attachment 2, Table 1–7) for which violation is indicated.
[2] These are required to be inspected quarterly per RFLMA Attachment 2 Section 5.3.5, and completion is documented separately—documented here if problem noted during Annual Inspection.
[3] If photo taken, show location and orientation of photo on Area map.

3/26/19 ~~A.10 - drainage line/dip~~

Page 1 of ___

A.10 - animal burrow, ~4" diameter, appears fresh & active, N. side between wells



Annual Inspection Areas
OPWL manway - removed
NPWL valve vault (removed to below 6 feet from surface and backfilled; not contaminated)
NPWL grouted and left in place clean closed
NPWL grouted and left in place not part of RCRA unit 374.3
OPWL grouted and left in place
Former Building Area
Contaminated below 6 ft.
Foundation remaining (includes caissons and/or grade beams)
Slab remaining
Basement slab remaining
Removed Buildings and Structures
IHSS Location
Central Operable Unit Fence
Authorized (Unpaved)
ATV ONLY
Wetland / Marsh
Streams
Culvert/Pipeline

0 100 200 FEET

N

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OFFICE OF LEGACY MANAGEMENT

Work Performed by
Navarro Research & Engineering, Inc.
Under DOE Contract Number DE-LM0000421

Area A
Rocky Flats Site

DATE PREPARED: October 9, 2019

FILE NAME: S1930300-03

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Annual Site Inspection Check List (see RFLMA Attachment 2, Sections 5.3.4, 5.3.6, and 5.4.3)

Date March 26, 2019 Inspection Area: B

Inspection performed by (print each name): Jeremy Wehner, Jordan Lukkes, Nathan Krohn, Linda Karsen, Patty Gallo, Judy Nelson, Andy Keim

Check all boxes that apply, put ID# on flag and place flag marker in location of observation for follow up.								
Flag ID#	Evidence of Soil Erosion or Deposition	Evidence of Cracks, Rills, Gullies	Evidence of Sink Holes or Burrows	Evidence of Depressions or Subsidence	Evidence of Institutional Control Violation[1]	Problem with signs or other physical controls[2]	Adverse biological condition	Photo(s) taken?[3]
See GPS/ pics								

Notes (Reference Flag ID#):

[1] Indicate the RFLMA IC# (RFLMA Attachment 2, Table 1–7) for which violation is indicated.
[2] These are required to be inspected quarterly per RFLMA Attachment 2 Section 5.3.5, and completion is documented separately—documented here if problem noted during Annual Inspection.
[3] If photo taken, show location and orientation of photo on Area map.

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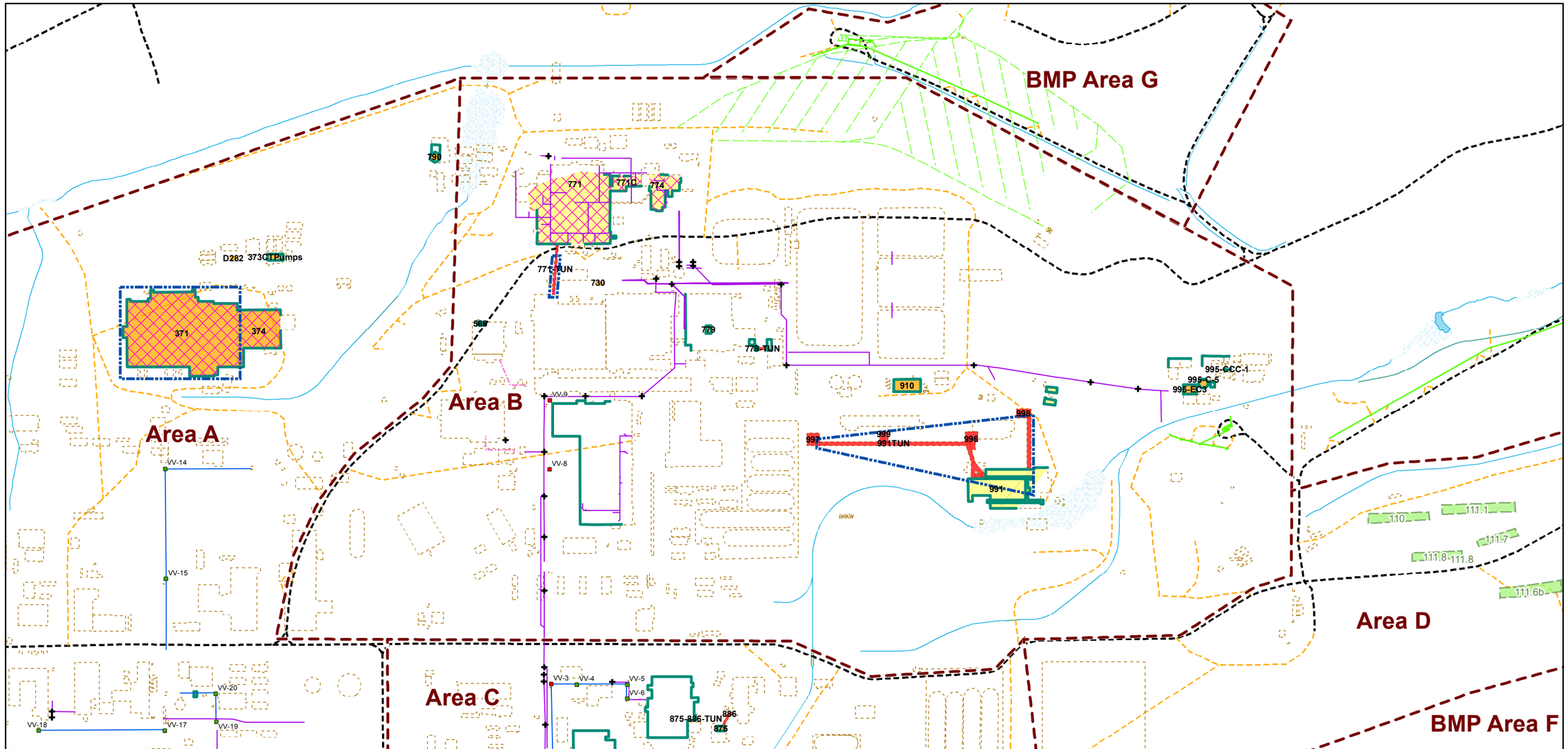

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Annual Site Inspection Check List (see RFLMA Attachment 2, Sections 5.3.4, 5.3.6, and 5.4.3)

Date 3-26-19

Inspection Area: AREA C

Inspection performed by (print each name): JEFF WALTERS, MICHELLE HANSON, JERRY MATTSON, BEN GONZALES

Check all boxes that apply, put ID# on flag and place flag marker in location of observation for follow up.								
Flag ID#	Evidence of Soil Erosion or Deposition	Evidence of Cracks, Rills, Gullies	Evidence of Sink Holes or Burrows	Evidence of Depressions or Subsidence	Evidence of Institutional Control Violation[1]	Problem with signs or other physical controls[2]	Adverse biological condition	Photo(s) taken?[3]
C1-1								3 LOOKING N
C1-2								3 LOOKING S
C1-3								3 LOOKING W
C1-4								3 LOOKING N
C1-5								3 LOOKING S
C1-6								3 LOOKING W

Notes (Reference Flag ID#):

C1-1: ABANDONED WELL PAD. NO WELL UNDERNEATH. PHOTO'S ON BEN G PHONE. WILL EMAIL TO MICHELLE

C1-2: PART OF A CONCRETE SLAB WITH REBAR. PHOTO'S ON BEN G PHONE.

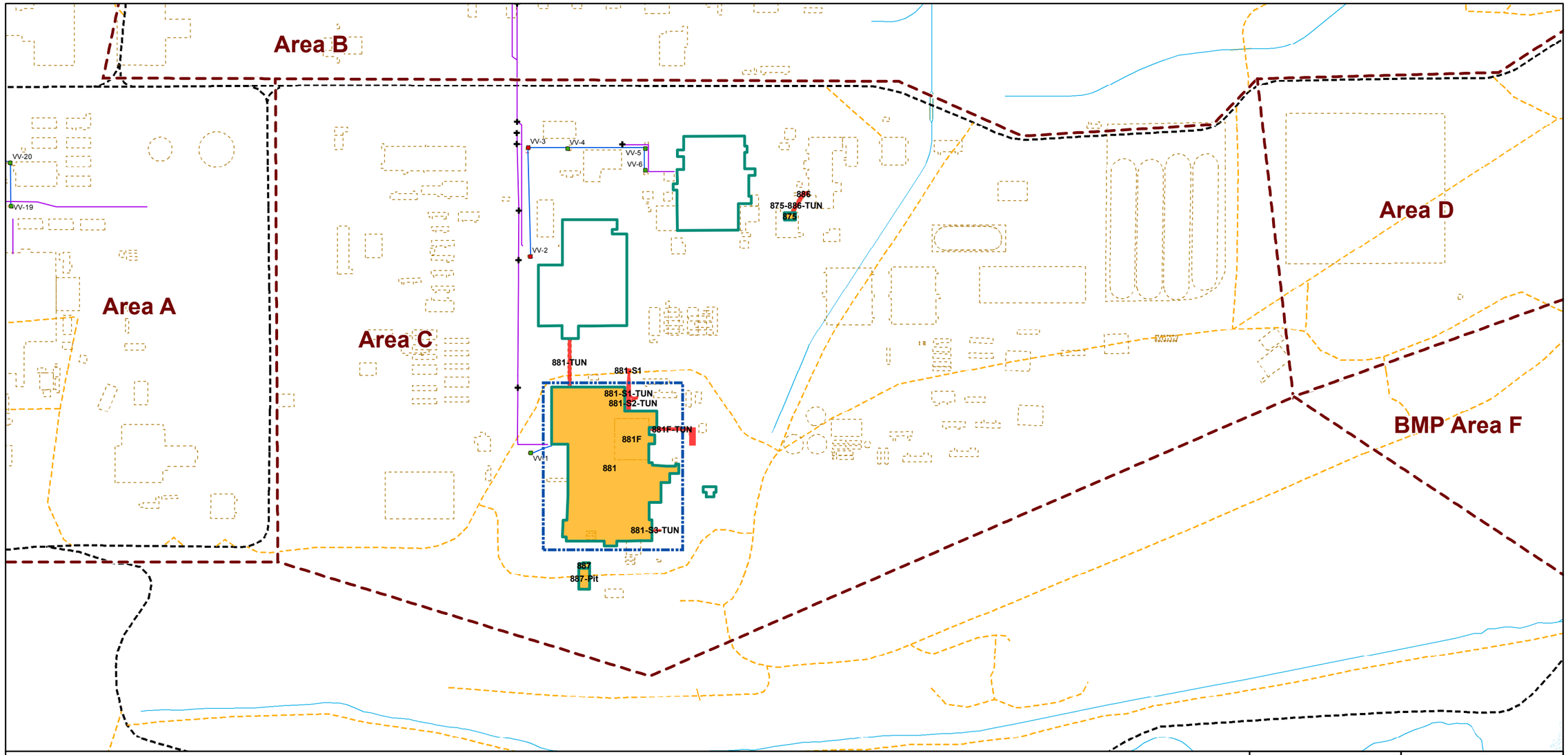
C1-3: FENCE LINE RUNNING EAST/WEST. FENCE POSTS ARE ~ 6' APART. WE GPS'D JUST ONE LINE BETWEEN 2 CUT OFF POST TO GIVE AN IDEA OF WHERE THE FENCE LINE IS.

C1-4: APPEARS TO BE AN OLD CULVERT CUT IN HALF

C1-5: APPEARS TO BE AN ABANDONED WELL.

C1-6: VERTICAL REBAR TIED TO HORIZONTAL REBAR PROTRUDING FROM GROUND

[1] Indicate the RFLMA IC# (RFLMA Attachment 2, Table 1–7) for which violation is indicated.
[2] These are required to be inspected quarterly per RFLMA Attachment 2 Section 5.3.5, and completion is documented separately—documented here if problem noted during Annual Inspection.
[3] If photo taken, show location and orientation of photo on Area map.



Annual Inspection Areas
OPWL manway - removed
NPWL valve vault (removed to below 6 feet from surface and backfilled; not contaminated)
NPWL valve vault (removed to below 6 feet from surface and flowfilled/backfilled; radionuclide, contaminated)
OPWL grouted and left in place
NPWL grouted and left in place clean closed
Former Building Area
Contaminated below 6 ft.
Foundation remaining (includes caissons and/or grade beams)
Basement slab remaining
Tunnel remaining (slab, walls, foundations, ceiling)
Removed Buildings and Structures
Central Operable Unit Fence
Authorized (Unpaved)
ATV ONLY
Wetland / Marsh
Streams
Culvert/Pipeline

N

SCALE IN FEET
100 0 100 200 300

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Work Performed by
Navarro Research & Engineering, Inc.
Under DOE Contract Number DE-LM0000421

Area C
Rocky Flats Site

DATE PREPARED: October 9, 2019

FILE NAME: S1930500-03

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Annual Site Inspection Check List (see RFLMA Attachment 2, Sections 5.3.4, 5.3.6, and 5.4.3)

Date 3-26-19 Inspection Area: Area D

Inspection performed by (print each name): V. Moritz, J. Nelson, P. Gallo, A. Keim

Check all boxes that apply, put ID# on flag and place flag marker in location of observation for follow up.								
Flag ID#	Evidence of Soil Erosion or Deposition	Evidence of Cracks, Rills, Gullies	Evidence of Sink Holes or Burrows	Evidence of Depressions or Subsidence	Evidence of Institutional Control Violation[1]	Problem with signs or other physical controls[2]	Adverse biological condition	Photo(s) taken?[3]
See GPS								

Notes (Reference Flag ID#):

[1] Indicate the RFLMA IC# (RFLMA Attachment 2, Table 1–7) for which violation is indicated.
[2] These are required to be inspected quarterly per RFLMA Attachment 2 Section 5.3.5, and completion is documented separately—documented here if problem noted during Annual Inspection.
[3] If photo taken, show location and orientation of photo on Area map.

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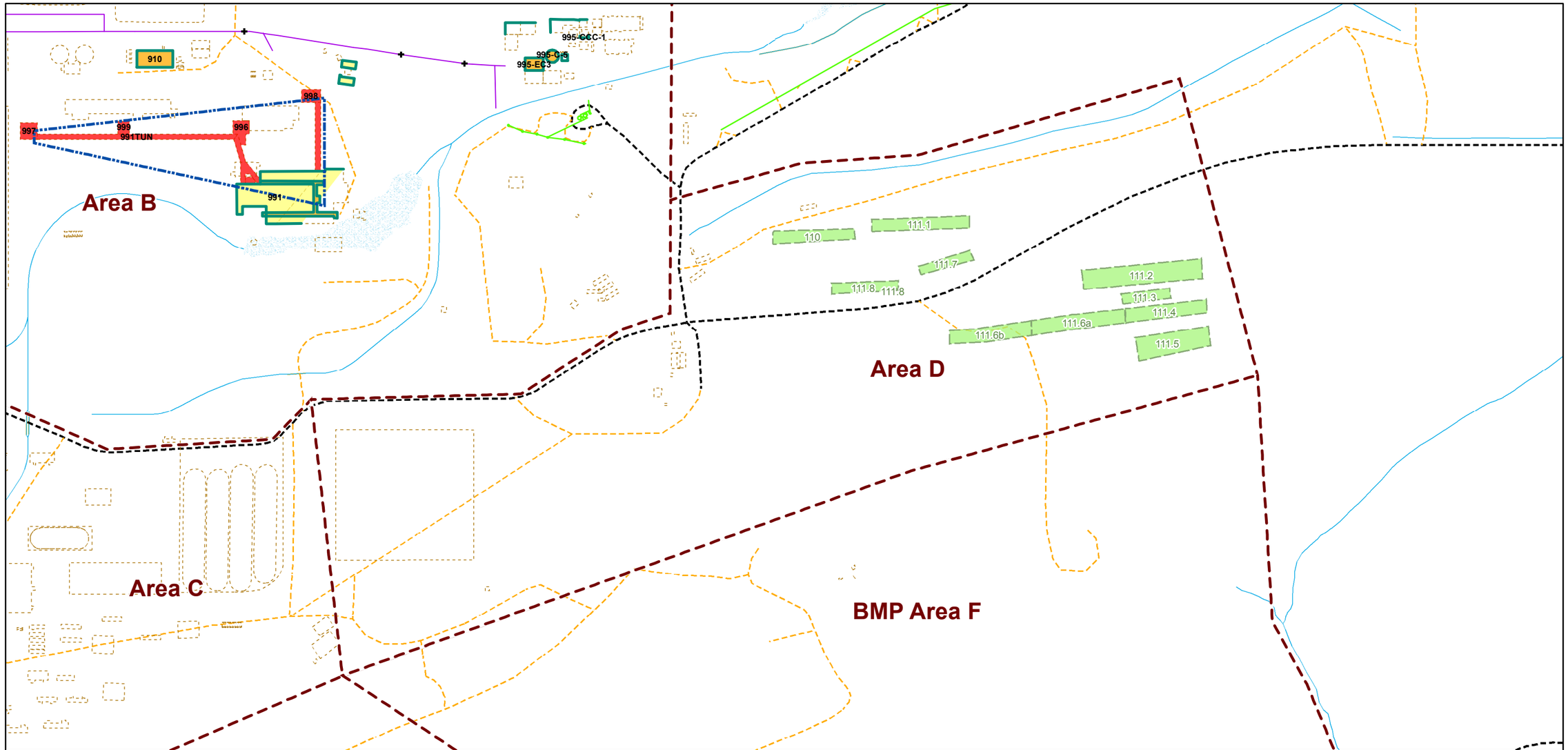

Annual Inspection Areas
Treatment Systems
OPWL manway - removed
OPWL grouted and left in place
Former Building
Foundation remaining (includes caissons and/or grade beams)
Slab remaining
Basement slab remaining
Tunnel remaining (slab, walls, foundations, ceiling)
Removed Buildings and Structures
IHSS Location
Central Operable Unit Fence
Authorized (Unpaved)
ATV ONLY
Wetland / Marsh
Streams
Culvert/Pipeline

N

SCALE IN FEET
100 0 100 200 300

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Area D
Rocky Flats Site

DATE PREPARED: October 9, 2019

FILE NAME: S1930600-03

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Annual Site Inspection Check List (see RFLMA Attachment 2, Sections 5.3.4, 5.3.6, and 5.4.3)

Date 3/29/2019 Inspection Area: E

Inspection performed by (print each name): Chuck Brown + Jacqline Brewer

Check all boxes that apply, put ID# on flag and place flag marker in location of observation for follow up.								
Flag ID#	Evidence of Soil Erosion or Deposition	Evidence of Cracks, Rills, Gullies	Evidence of Sink Holes or Burrows	Evidence of Depressions or Subsidence	Evidence of Institutional Control Violation[1]	Problem with signs or other physical controls[2]	Adverse biological condition	Photo(s) taken?[3]

Notes (Reference Flag ID#): N/A, nothing found to flag.

[1] Indicate the RFLMA IC# (RFLMA Attachment 2, Table 1–7) for which violation is indicated.
[2] These are required to be inspected quarterly per RFLMA Attachment 2 Section 5.3.5, and completion is documented separately—documented here if problem noted during Annual Inspection.
[3] If photo taken, show location and orientation of photo on Area map.

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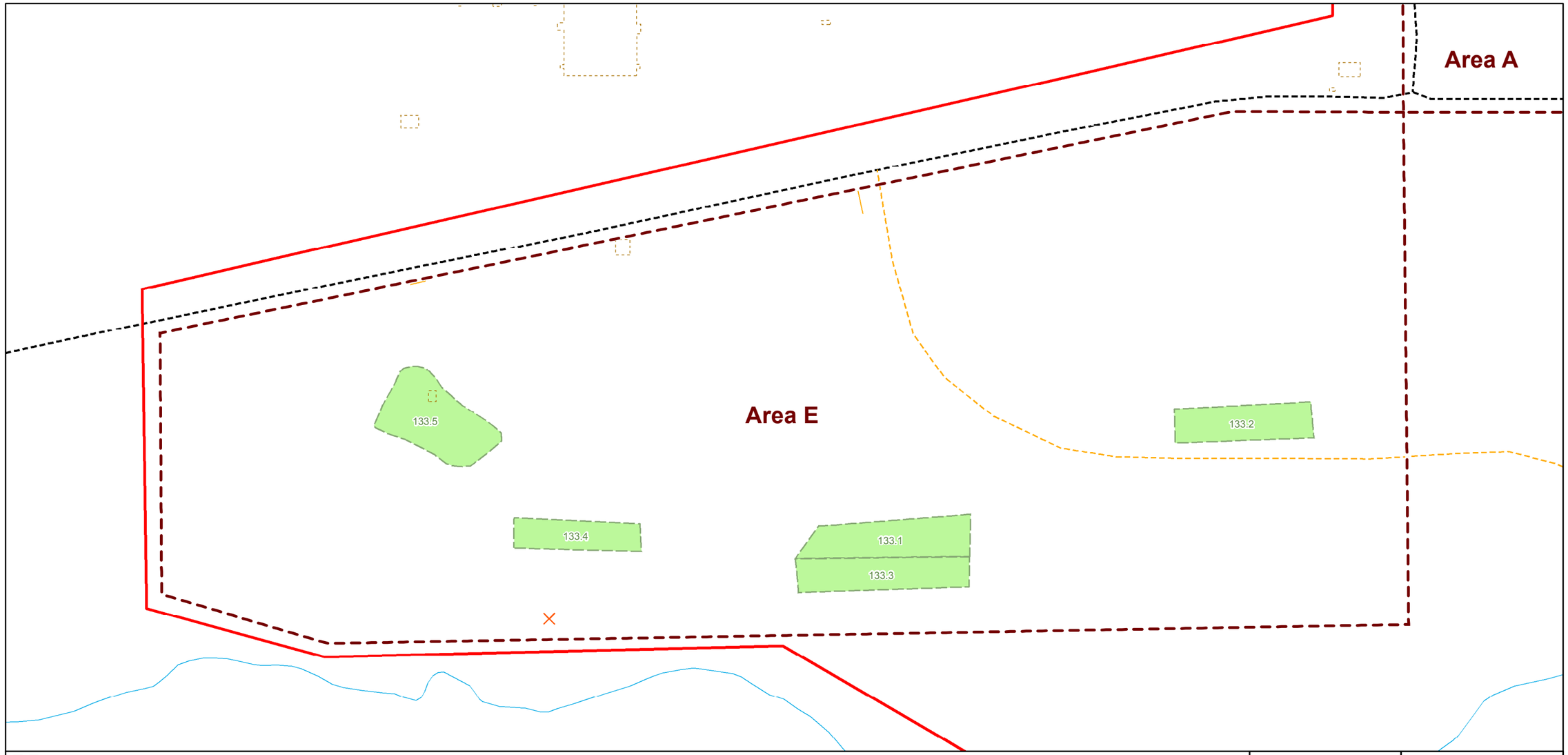

Annual Inspection Areas
Ash Pit Marker *Ash Pit Marker*
Removed Buildings and Structures
IHSS Location
Central Operable Unit Fence
Authorized (Unpaved)
ATV ONLY
Streams
Culvert/Pipeline

N

SCALE IN FEET
100 0 100

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Under DOE Contract Number DE-LM0000421

Area E
Rocky Flats Site

DATE PREPARED: October 9, 2019

FILE NAME: S1930700-03

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Rocky Flats Site, Colorado, Quarterly Report of Site Surveillance and Maintenance Activities First Quarter Calendar Year 2019

July 2019

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Abbreviations

Am	americium
AMP	Adaptive Management Plan
AOC	Area of Concern
BMP	best management practice
CAD/ROD	Corrective Action Decision/Record of Decision
COU	Central Operable Unit
CY	calendar year
DOE	U.S. Department of Energy
EPC	East Perimeter Channel
ESSD	East Subsurface Drain
ETPTS	East Trenches Plume Treatment System
ICs	institutional controls
ITS	Interceptor Trench System
ITSS	Interceptor Trench System Sump
LM	Office of Legacy Management
µg/L *or* ug/L	micrograms per liter
mg/L	milligrams per liter
MSPCS	Mound Site Plume Collection System
N	nitrogen
NWCS	North Walnut Creek Slump
OLF	Original Landfill
pCi/L	picocuries per liter
PLF	Present Landfill
PLFTS	Present Landfill Treatment System
POC	Point of Compliance
POE	Point of Evaluation
Pu	plutonium
RCRA	Resource Conservation and Recovery Act
RFLMA	*Rocky Flats Legacy Management Agreement*
RFSOG	*Rocky Flats Site, Colorado, Site Operations Guide*
SPPTS	Solar Ponds Plume Treatment System

Executive Summary

This report for the first quarter (January 1–March 31) of calendar year 2019 includes information on the remedy-related surveillance, monitoring, and maintenance activities conducted at the Rocky Flats Site, Colorado. The maintenance and inspection of the two Site landfills and four groundwater collection or treatment systems, inspection of the perimeter signs of the Central Operable Unit, erosion control and revegetation activities, and water monitoring are summarized.

The Present Landfill quarterly inspection was conducted on February 19, 2019, and a weather-related inspection was conducted on March 18, 2019. No issues were identified during the inspections.

The Original Landfill monthly inspections were conducted on January 17, February 15, and March 18, 2019. The March 18 inspection was combined with a weather-related inspection. During the January inspection, a few small holes measuring 0.5 to 2 inches in diameter were discovered along the old scarp line between berms 1A and 2 and were photographed, located on a map, and filled in. The holes did not reappear in the subsequent inspections in February and March. The Seep 10 siphon was not operated in January and February; it was restarted on March 27. The temporary groundwater intercept system was not operated during this period.

Routine maintenance was performed at the East Trenches Plume Treatment System, the Mound Site Plume Collection System, and the Solar Ponds Plume Treatment System. At the Present Landfill Treatment System, routine maintenance generally consists of an inspection of the system for any problems. No problems were observed.

During the first quarter of 2019, water monitoring met the targeted monitoring objectives required by the *Rocky Flats Legacy Management Agreement* (RFLMA). RFLMA Attachment 2, Table 1 was revised in late 2018 and implemented on January 1, 2019, as described in Contact Record 2018-05. During the first quarter of 2019, 13 flow-paced, composite surface water samples, 9 surface water grab samples, 14 treatment system grab samples, and 10 groundwater samples were collected (in accordance with RFLMA protocols) and submitted for analyses.

Point of Evaluation (POE) monitoring location SW027, at the end of the South Interceptor Ditch at the inlet to Pond C-2, was reportable for plutonium during the first quarter of 2019. The 12-month rolling averages for plutonium exceeded the RFLMA standard of 0.15 picocurie per liter, resulting in a reportable condition at SW027 from June 2018 through March 2019. This reportable condition was triggered by results from only a single composite sample collected on May 3–4, 2018. Because of the relatively small volumes of water monitored at SW027 in 2018, only one sample could be collected. There has been no flow, and therefore, no additional samples have been collected at location SW027 during 2019 through March.

All other analyte concentrations at RFLMA POE locations GS10, SW027, and SW093 remained below reportable condition levels throughout the first quarter of 2019. All analyte concentrations at RFLMA Point of Compliance locations WALPOC and WOMPOC remained below reportable condition levels throughout the first quarter of 2019.

RFLMA-required groundwater monitoring during the first quarter of 2019 was conducted at the 10 Resource Conservation and Recovery Act monitoring wells. Results were generally consistent with previous data and will be evaluated as part of the annual report for 2019.

Groundwater monitoring data presented in this quarterly report will be evaluated as part of the annual report for 2019.

1.0 Introduction

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) is responsible for implementing the final response action selected in the *Corrective Action Decision/Record of Decision for Rocky Flats Plant (USDOE) Peripheral Operable Unit and Central Operable Unit* (CAD/ROD) (DOE et al. 2006), issued on September 29, 2006, and amended on September 21, 2011 (DOE et al. 2011), for the Rocky Flats Site, Colorado (the Site). The Peripheral Operable Unit was transferred from DOE to the U.S. Department of Interior in July 2007, to establish the Rocky Flats National Wildlife Refuge. DOE implements the monitoring and maintenance requirements of the CAD/ROD for the Central Operable Unit (COU) as described in the *Rocky Flats Legacy Management Agreement* (DOE et al. 2007) (RFLMA). The RFLMA was executed on March 14, 2007. Attachment 2 to the RFLMA has been revised since, most recently in 2018. Results of that 2018 revision were implemented beginning January 1, 2019.

RFLMA Attachment 2 specifies remedy performance standards; monitoring, inspection, and maintenance requirements; criteria for evaluating the results of monitoring and inspection; and reporting for the COU remedy. These requirements include environmental monitoring; maintenance of erosion controls, access controls (signs), landfill covers, and groundwater collection and treatment systems; and operation of the groundwater collection and treatment systems. The RFLMA also requires that the institutional controls (ICs), in the form of use restrictions as established in the CAD/ROD, be maintained.

This report is required in accordance with Section 7.0, "Periodic Reporting Requirements," of RFLMA Attachment 2. The purpose of this report is to inform the regulatory agencies and stakeholders of the remedy-related surveillance, monitoring, and maintenance activities conducted at the Site during the first quarter (January 1–March 31) of calendar year (CY) 2019. LM provides periodic communications through several means, including this report, web-based tools, and public meetings.

LM maintains the *Rocky Flats Site, Colorado, Site Operations Guide* (DOE 2018) (RFSOG) as the primary document to guide the work performed to satisfy the requirements of the RFLMA and to implement best management practices (BMPs) at the Site. Several other Site-specific documents provide additional details regarding the requirements described in RFLMA Attachment 2, including all aspects of the surveillance, monitoring, and maintenance activities, as well as the data evaluation protocols.

The monitoring data and summaries of the monitoring and maintenance activities for past quarters are available in the quarterly reports. Extensive discussion and evaluation of the surveillance, monitoring, and maintenance activities are presented each calendar year in the annual reports of Site surveillance and maintenance activities.

This report summarizes the following activities:

- Maintenance and inspection of the Present Landfill (PLF) and the Original Landfill (OLF)
- Maintenance and inspection of the groundwater collection and treatment systems
- Inspection of signs posted at the perimeter of the COU

- Erosion control and revegetation activities
- Routine water monitoring (in accordance with the RFLMA)

2.0 Site Operations and Maintenance

2.1 Landfills

2.1.1 Present Landfill

The PLF is inspected quarterly in accordance with the requirements of the *Present Landfill Monitoring and Maintenance Plan and Post-Closure Plan, U.S. Department of Energy Rocky Flats, Colorado, Site* (DOE 2014) and Attachment 2 of the RFLMA (DOE et al. 2007).

2.1.1.1 Inspection Results

The routine PLF inspection for the first quarter of 2019 was performed on February 14, 2019, and a weather-related inspection was conducted on March 18, 2019. No issues were identified during the inspections. Copies of the landfill inspection forms are presented in Appendix A.

2.1.1.2 Settlement Monuments

The settlement monuments at the PLF are surveyed annually in accordance with the RFLMA. The December 2018 annual survey of the PLF settlement monuments indicated that vertical settling is within the calculated settlements specified in Figure 3 of the *Present Landfill Monitoring and Maintenance Plan and Post-Closure Plan, U.S. Department of Energy Rocky Flats, Colorado, Site* (DOE 2014). The next settlement monument survey will be conducted near the end of 2019.

2.1.2 Original Landfill

The OLF is inspected monthly in accordance with requirements in the *Rocky Flats Site Original Landfill Monitoring and Maintenance Plan* (DOE 2009) and Attachment 2 of the RFLMA (DOE et al. 2007). Because localized slumping and seep areas have been observed and because of the ongoing slope stability maintenance, investigation, and analysis activities, no reduction in the frequency of inspections was recommended in the *Fourth Five-Year Review Report for the Rocky Flats Site, Jefferson County, Colorado* (DOE 2017b) and previous 5-year reviews.

As discussed in the 2017 second quarter report, the toe of the supporting hillside southeast of the landfill slumped and the boundaries of the slump were nearly identical to the boundaries of the spring 2016 slump. As a temporary stabilizing measure, the material that slumped into the lower portion of the East Perimeter Channel (EPC) was not removed as part of the 2017 maintenance. That material remained in the EPC through the first quarter of 2019, blocking flow in the EPC and creating a new flow path to Woman Creek along a well-vegetated area.

2.1.2.1 Inspection Results

The OLF monthly inspections were conducted on January 17, February 15, and March 18, 2019. The March 18 inspection was combined with a weather-related inspection. During the January inspection, a few small holes measuring 0.5 to 2 inches in diameter were discovered along the old scarp line between berms 1A and 2 and were photographed, located on a map, and filled in; the associated photograph and map are included in Appendix A. The holes did not reappear in the subsequent monthly inspections in February and March. The completed inspection forms are presented in Appendix A.

The meteorological station at the Site recorded a total of 1.43 inches of precipitation during the first quarter of 2019. For comparison, the National Renewable Energy Laboratory tower, near the northwest corner of the Site, reported a total of 3.75 inches of precipitation during the same period. The difference may be due to the fact that the precipitation gage at the Site station is not heated and therefore may not accurately measure precipitation that falls as snow.

Seeps at the OLF are observed during monthly and weather-related inspections. Seep flow during the first quarter of 2019 was consistent with that of previous quarters, except for Seep 10, which was dry during the entire period. This is most likely due to the installation of the sump and siphon line. Estimates for individual seep flow rates are included in the monthly OLF inspection reports (Appendix A).

2.1.2.2 Settlement Monuments

The settlement monuments at the OLF are surveyed quarterly in accordance with the RFLMA. The first quarter 2019 surveys were performed on March 6, 2019. Survey data indicate that vertical settling at each monument is within the calculated settlements specified in Figure 3-1 of the *Rocky Flats Site Original Landfill Monitoring and Maintenance Plan* (DOE 2009). The survey results are presented in Appendix A.

2.1.2.3 Stabilization Activities

As described in previous quarterly reports, maintenance actions were taken to improve surface water and groundwater management at the OLF in an effort to reduce the risk of additional slumping of the eastern supporting hillside. These actions included the repair and upgrade of the East Subsurface Drain (ESSD) (completed in first quarter of 2017) near the northeast corner of the OLF, so that it functions as intended and is less likely to clog. The ESSD was inspected during the first quarter of 2019, with no deficiencies observed. Construction of a temporary groundwater intercept system was completed in the second quarter of 2017 to divert groundwater upgradient of the eastern portion of the landfill hillside. The temporary groundwater intercept system was winterized in October 2018 and was not operated during first quarter of 2019.

The sump and siphon line installed near Seep 10 was not operated in January and February; it was restarted on March 27 for one day. The flow total for March 27, 2019, was approximately 1600 gallons.

The geotechnical slope stability evaluation was completed in September 2018. Design of slope stabilization for the OLF hillside commenced in the fourth quarter of 2018 and continued through the first quarter of 2019.

2.2 Former Building Area Inspections

In accordance with the RFLMA, the COU is monitored for significant erosion annually and following major precipitation events. Particular attention is paid to areas proximate to remaining subsurface features (e.g., former buildings, trenches). In the first quarter of 2019, a weather-related inspection occurred on March 18. Former building areas 371, 771, 881, and 991 are inspected as a BMP on a quarterly basis. The quarterly inspection coincided with the weather-related inspection. No notable changes in depressions and no new areas of subsidence were observed in these areas during the inspection.

2.3 North Walnut Creek Slump

The hillside east of the Solar Ponds Plume Treatment System (SPPTS) is the site of a slump that is monitored as a BMP. This slump is referred to as the North Walnut Creek Slump (NWCS).

Additional slumping was noted on the hillside east of the SPPTS after the heavy precipitation events of 2015. During the spring precipitation of 2016, the slumping became more pronounced. Site staff determined that if there was additional movement, a groundwater monitoring well, the Interceptor Trench System (ITS), ITS Sump (ITSS), and the SPPTS groundwater collection trench could be impacted. A geotechnical engineering firm was hired to evaluate the NWCS and the potential effect on the SPPTS and other components.

In the second quarter of 2017, an interim maintenance project to regrade the NWCS was implemented to promote positive drainage and regrade material encroaching on the groundwater monitoring well and the ITSS. Monitoring continues with periodic maintenance as required. No maintenance was required during the first quarter of 2019.

Geotechnical investigation and analyses were completed in 2018. It was determined that additional geotechnical and groundwater data are needed to complete a full evaluation of the hillside. Planning for that additional investigation and data collection began in first quarter of 2019.

2.4 Site Road Maintenance

No road maintenance was conducted during first quarter of 2019.

2.5 Groundwater Treatment Systems

Four groundwater collection systems and three treatment systems are monitored, operated, and maintained in accordance with requirements defined in the RFLMA and the additional implementation detail in the RFSOG. Three of these systems (the Mound Site Plume Collection System [MSPCS], the East Trenches Plume Treatment System [ETPTS], and the SPPTS) include a groundwater collection trench, which is similar to a French drain with an impermeable membrane on the downgradient side. The fourth system, the PLF Treatment System (PLFTS),

passively treats water from the northern and southern components of the PLF Groundwater Intercept System and water that flows from the PLF seep.

2.5.1 Mound Site Plume Collection System

Routine maintenance performed at the MSPCS during the first quarter of 2019 included inspecting the batteries and other solar-power components; exercising valves; checking water levels in the collection trench and lift station, and cleaning and calibrating the associated pressure transducers; checking flow rates to and from the collection trench and lift station; checking operation of the transfer pump in the lift station; and brushing snow off the solar panels as necessary.

Refer to Section 3.1.9.1 for information on water quality monitoring.

2.5.2 East Trenches Plume Treatment System

Routine maintenance at the ETPTS in the first quarter of 2019 included inspecting the batteries and other solar-power components; exercising valves; adjusting valves and settings to modify water- and air-flow rates and maintain air-stripper operation; greasing the blower motor; replacing the air-stripper door and trays with cleaned units when required due to hard-water scale deposits; checking water levels in the collection trench and influent and effluent tanks, and cleaning and calibrating the associated pressure transducers; cleaning the air-flow sensor and diffuser; checking/clearing lines as needed; and brushing snow off the solar panels as necessary.

In addition, the filter on the inlet to the air-stripper blower was replaced, and railing was installed on a vault to assist safe entry and exit.

Refer to Section 3.1.9.2 for information on water quality monitoring.

2.5.3 Solar Ponds Plume Treatment System

Routine maintenance during the first quarter of 2019 at the SPPTS included inspecting the batteries and other solar-power components; exercising valves; cleaning flow meters, air release valves, and other plumbing components; cleaning and adjusting water-level transducers; flushing lines to clear clogs and maintain flows; and brushing snow off the solar panels as necessary. The stock of nutrient solution for the denitrifying bacteria (MicroC 4125, referred to informally as MCG) was replenished, and MCG dose rates were adjusted periodically. The influent pump was replaced late in the quarter to address slowing influent flow rates, and the sump pump in one of the vaults was replaced due to malfunction.

Refer to Section 3.1.9.3 for information on water quality monitoring.

2.5.4 Present Landfill Treatment System

Routine maintenance activities continued at the PLFTS through the first quarter of 2019. These activities consisted of inspecting the system for potential problems. No issues were identified during the inspection.

Refer to Section 3.1.9.4 for information on water quality monitoring.

2.6 Sign Inspection

"U.S. Department of Energy – No Trespassing" signs are posted at defined intervals around the perimeter of the COU to notify persons that they are at the boundary of the COU. Signs listing the ICs and providing contact information are also posted at COU access points. The signs are required by the remedy as physical controls, are inspected quarterly, and are maintained by repairing or replacing them as needed. Physical controls protect the engineered components of the remedy, including landfill covers, groundwater treatment systems, and monitoring equipment.

The signs were inspected on February 28, 2019. A couple of signs will eventually need to be replaced, as some of the letters are being rubbed off by the elk or are falling off, but the signs are still very legible. No other issues were observed with the signs.

2.7 Erosion Control and Revegetation

Maintenance of the Site erosion control features required continued effort throughout the first quarter of 2019, especially following high-wind or precipitation events. The elk herd at the Site continues to create problems with the erosion controls at some locations. The elk seem to favor areas of bare ground, where they displace straw wattles and other erosion control structures. Erosion controls loosened and displaced by high winds, rain, or elk were repaired or replaced as needed. Erosion controls were installed and maintained for the various projects that were ongoing during the first quarter of 2019.

3.0 Environmental Monitoring

This section summarizes the environmental monitoring conducted in accordance with the RFLMA Attachment 2 (DOE et al. 2007). RFLMA Attachment 2, Table 1, "Surface Water Standards," is used in conjunction with the evaluation flowcharts also found in the attachment, to evaluate analytical data and determine reportable conditions. Reportable conditions, as defined in RFLMA Attachment 2, Section 6.0, "Action Determinations," require consultation between the RFLMA parties (DOE, Colorado Department of Public Health and Environment, and the U.S. Environmental Protection Agency) to determine appropriate actions.

In this report, the term "reportable" means that an analyte concentration at a surface water Point of Compliance (POC) or Point of Evaluation (POE) monitoring location has exceeded a RFLMA Table 1 water quality standard consistent with the evaluation flowcharts in Attachment 2 of the RFLMA. This term can also be applied to groundwater monitoring wells classified as Area of Concern (AOC) wells, also as described in the flowcharts in Attachment 2 of the RFLMA. DOE is required to inform the RFLMA parties and the public of the reportable condition within 15 days of receiving validated data. Within 30 days of receiving validated data, DOE is required to submit a plan and schedule to the regulators for an evaluation to address the occurrence. Note that RFLMA Attachment 2, Table 1 was revised in late 2018 and implemented on January 1, 2019 (see Contact Record 2018-05). Revisions included updating surface water standards and practical quantitation limits, and refining the list of analytes based on closure

decisions and postclosure analytical data. This first quarter 2019 report is the first to reflect these updates.

In this report, "plutonium" or "Pu" refers to plutonium-239,240 or ^{239}Pu + ^{240}Pu; "americium" or "Am" refers to americium-241 or ^{241}Am; and "nitrate" refers to nitrate + nitrite as nitrogen (N). In addition, the terms "activity" and "concentration" are used interchangeably for both plutonium and americium to represent the amount of radioactivity or radioactive material per unit of water (i.e., picocuries per liter [pCi/L]).

3.1 Water Monitoring

This section includes:

- A discussion of the routine analytical results for the POC, POE, PLF, and OLF surface water monitoring objectives and identification of any reportable conditions.
- Summaries of the routine groundwater monitoring at AOC wells, Sentinel wells, Evaluation wells, and Resource Conservation and Recovery Act (RCRA) wells; treatment system monitoring; Surface Water Support monitoring; and performance monitoring at the Site.

RFLMA Attachment 2 and the RFSOG offer details about the monitoring locations, sampling criteria, and evaluation protocols for the water monitoring objectives mentioned in the following sections. Appendix B of this report provides analytical water quality data for the first quarter of 2019. The annual report for 2019 will provide a more detailed interpretation and discussion of the water quality data.

3.1.1 Water Monitoring Highlights

During the first quarter of 2019, water monitoring met the targeted monitoring objectives required by the RFLMA. The routine RFLMA network consists of 8 automated gaging stations, 11 surface water grab sampling locations, 7 groundwater treatment system locations, and 88 groundwater monitoring well locations. Additional locations are occasionally sampled in support of investigations in response to reportable conditions. During the first quarter, 13 flow-paced, composite surface water samples, 9 surface water grab samples, 14 treatment system grab samples, and 10 groundwater samples were collected (in accordance with RFLMA protocols) and submitted for analysis.[1] Figure 1 shows monitoring locations that were sampled during the quarter.

POE monitoring location SW027, at the end of the South Interceptor Ditch at the inlet to Pond C-2, was reportable for plutonium during the first quarter of 2019. The 12-month rolling averages for plutonium exceeded the RFLMA standard of 0.15 pCi/L, resulting in a reportable condition at SW027 from June 2018 through March 2019.

All other analyte concentrations at RFLMA POE locations GS10, SW027, and SW093 remained below reportable condition levels throughout the first quarter of 2019. All analyte concentrations

[1] Composite samples consist of multiple aliquots ("grabs") of identical volume. Each grab is delivered by the automatic sampler to the composite container at each predetermined flow volume or time interval. During the first quarter of 2019, the 13 flow-paced composites comprised 466 individual grabs.

at RFLMA POC locations WALPOC and WOMPOC remained below reportable condition levels throughout the first quarter of 2019.

RFLMA-required groundwater monitoring during the first quarter of 2019 was conducted at the 10 RCRA monitoring wells. Results were generally consistent with previous data and will be evaluated as part of the annual report for 2019.

3.1.2 POC Monitoring

The following sections include summary tables and plots showing the applicable 30-day and 12-month rolling averages for the POC analytes.

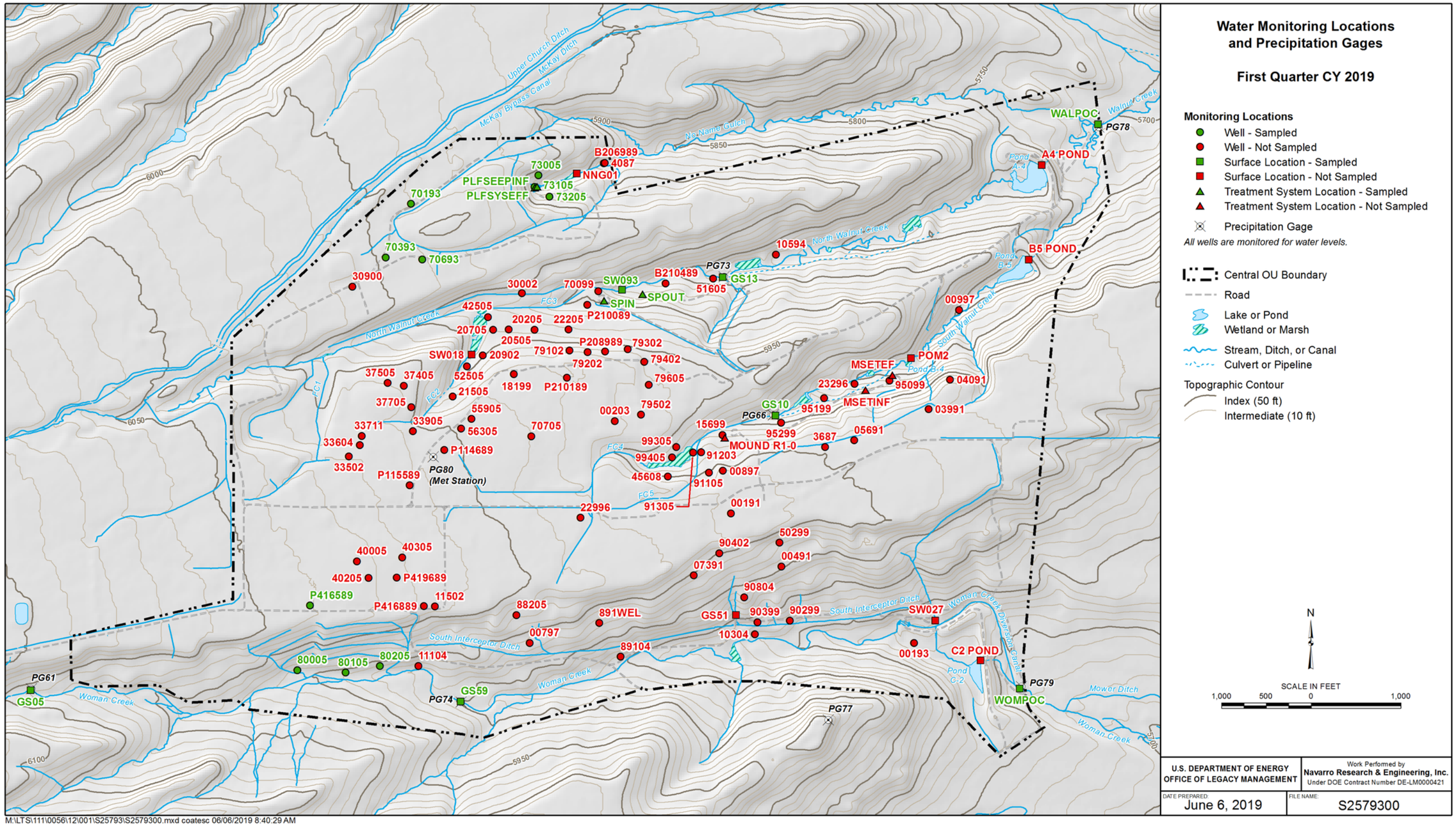

Figure 1. Rocky Flats Site Water Monitoring Locations and Precipitation Gages

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3.1.2.1 Monitoring Location WALPOC

Monitoring location WALPOC is on Walnut Creek at the eastern COU boundary. Figure 2 through Figure 7 show no occurrences of reportable conditions for 12-month rolling or 30-day averages through March 31, 2019, for americium, plutonium (in pCi/L), uranium (in micrograms per liter [µg/L]), or nitrate + nitrite as nitrogen (in milligrams per liter [mg/L]). The methods for calculating the 30-day and 12-month rolling averages are detailed in the annual report.

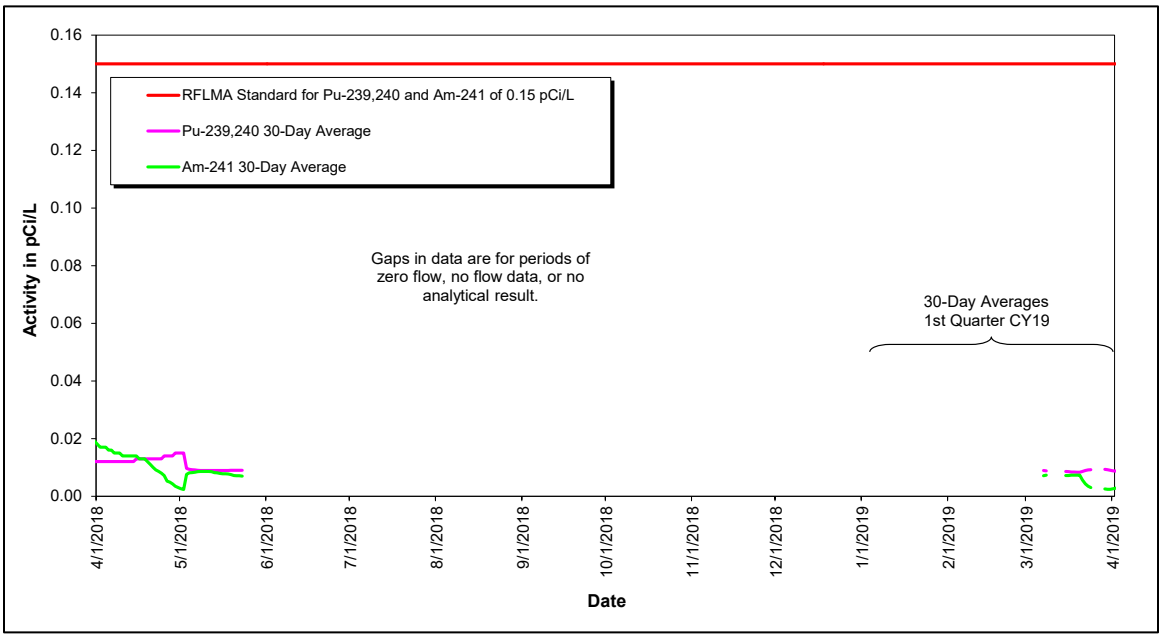

Figure 2. Volume-Weighted 30-Day Average Plutonium and Americium Activities at WALPOC: Year Ending First Quarter 2019

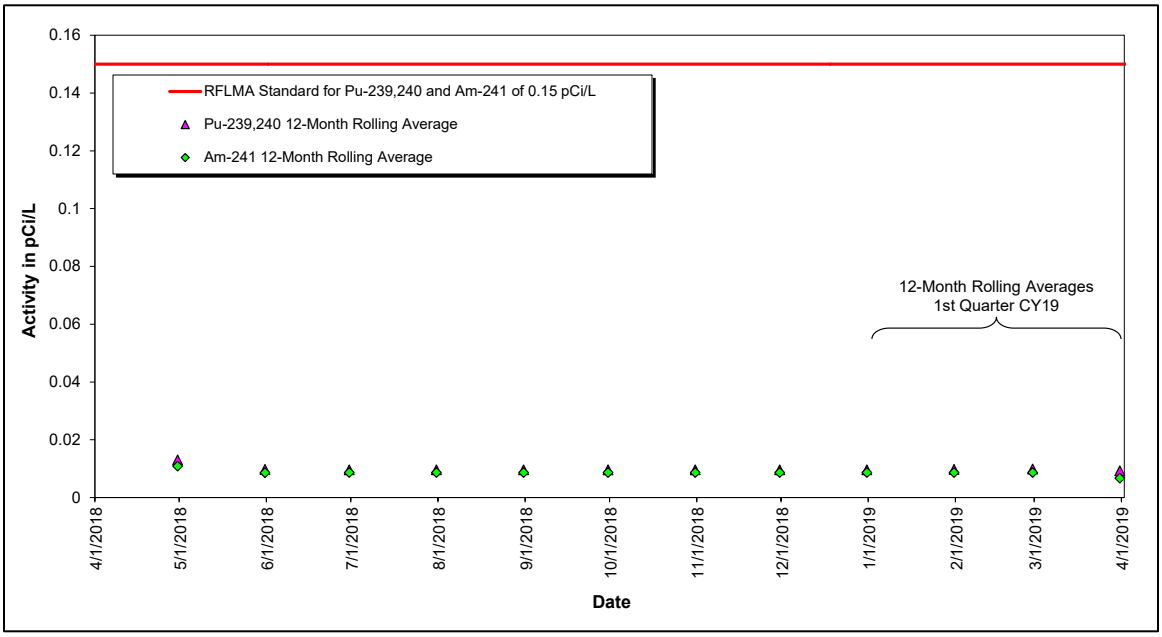

Figure 3. Volume-Weighted 12-Month Rolling Average Plutonium and Americium Activities at WALPOC: Year Ending First Quarter 2019

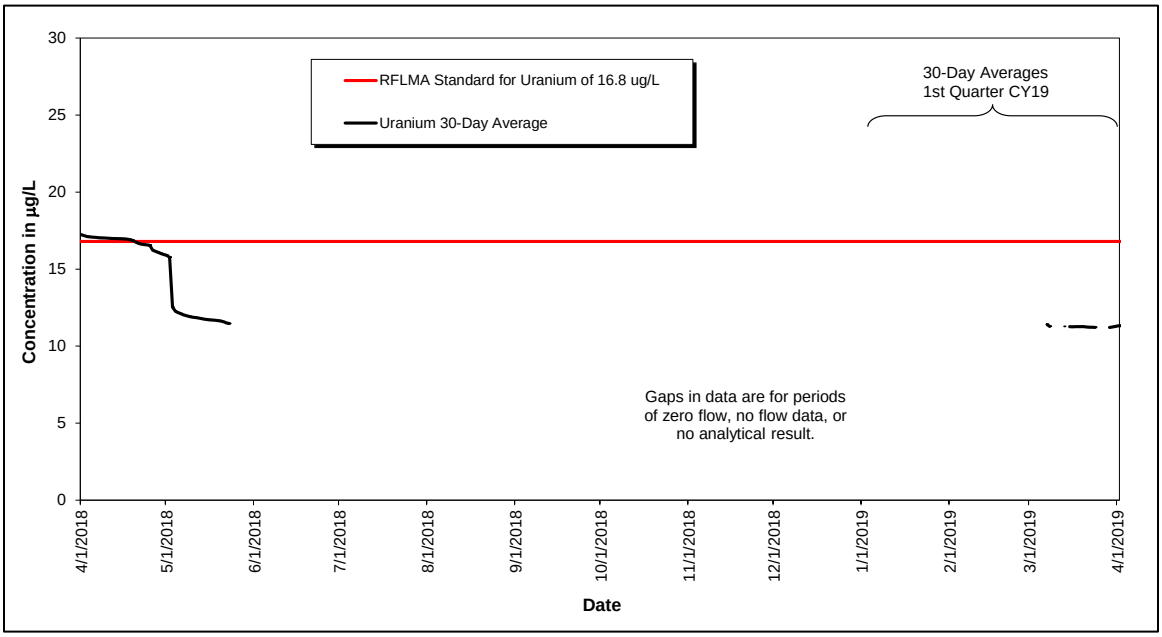

Figure 4. Volume-Weighted 30-Day Average Uranium Concentrations at WALPOC: Year Ending First Quarter 2019

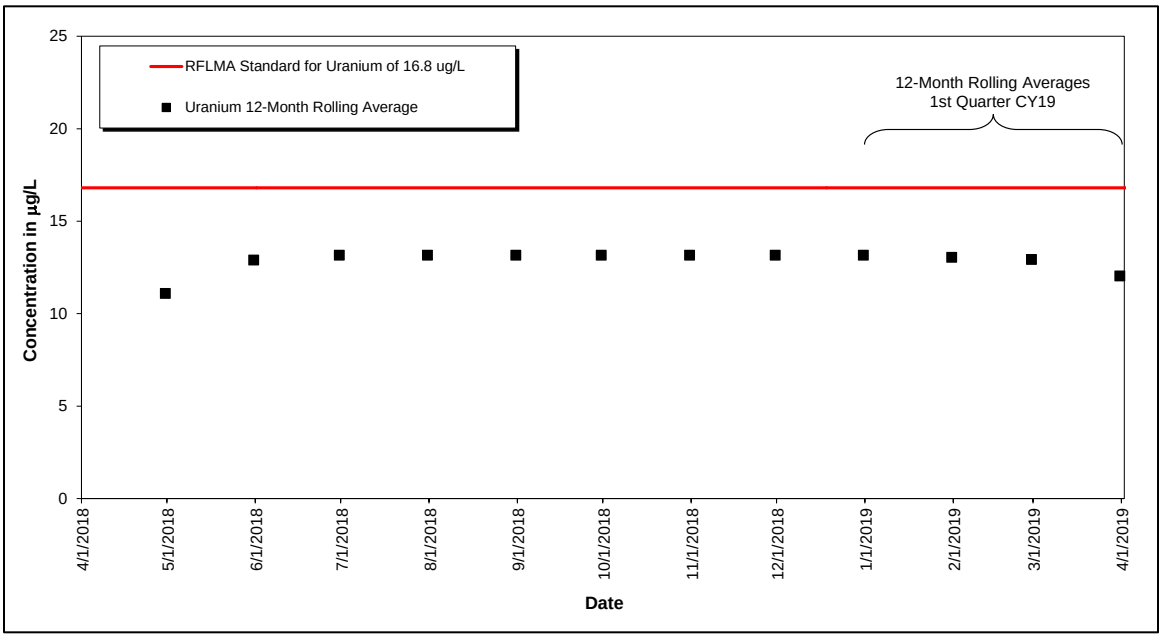

Figure 5. Volume-Weighted 12-Month Rolling Average Uranium Concentrations at WALPOC: Year Ending First Quarter 2019

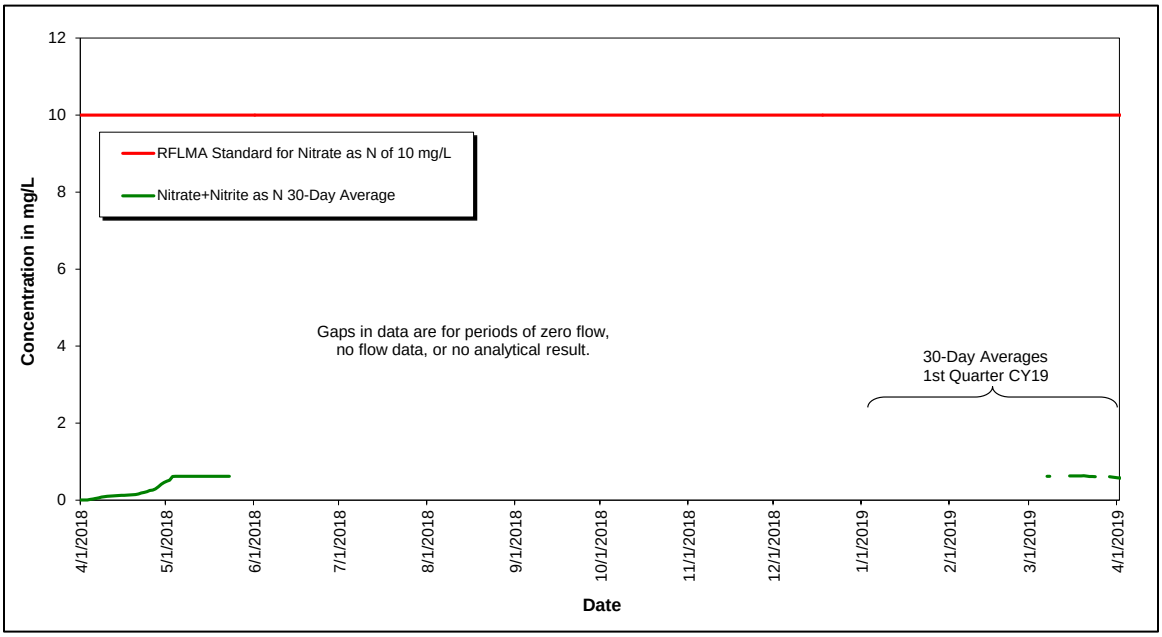

Figure 6. Volume-Weighted 30-Day Average Nitrate + Nitrite as Nitrogen Concentrations at WALPOC: Year Ending First Quarter 2019

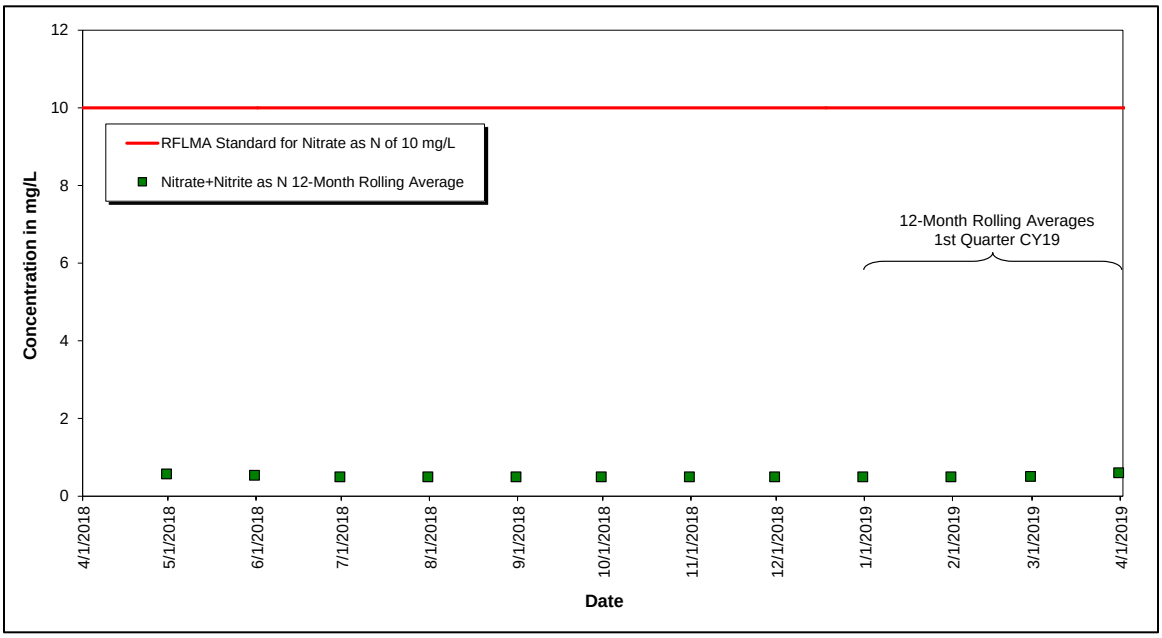

Figure 7. Volume-Weighted 12-Month Rolling Average Nitrate + Nitrite as Nitrogen Concentrations at WALPOC: Year Ending First Quarter 2019

3.1.2.2 Monitoring Location WOMPOC

Monitoring location WOMPOC is on Woman Creek at the eastern COU boundary. Figure 8 through Figure 11 show no occurrences of a reportable condition for 12-month rolling or 30-day averages for the quarter. The methods for calculating the 30-day and 12-month rolling averages are detailed in the annual report.

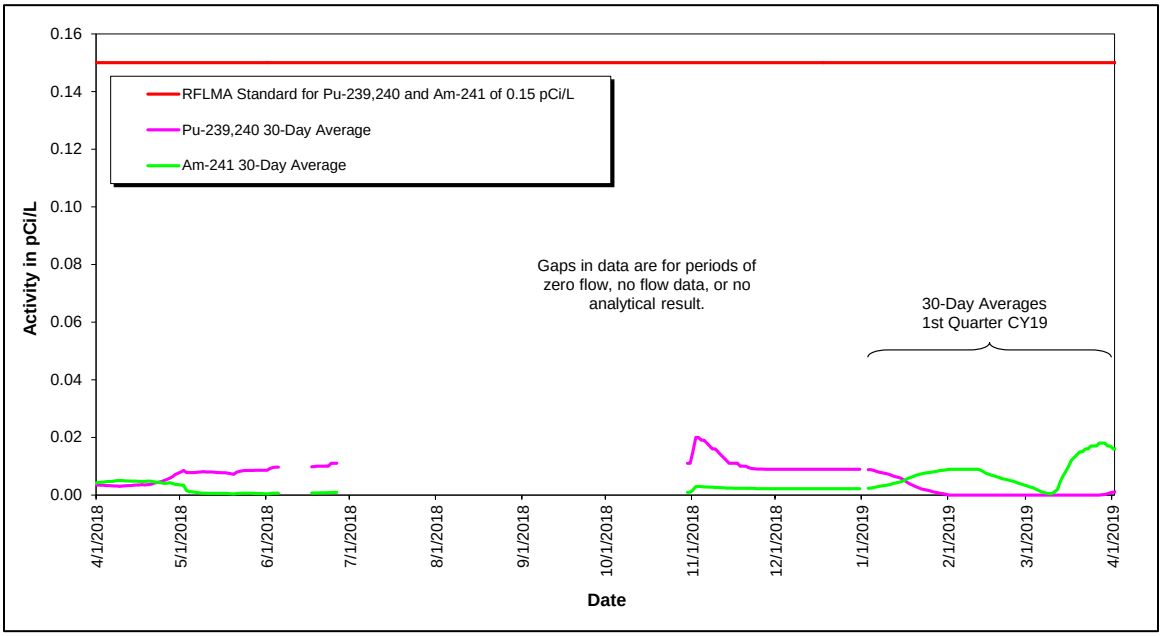

Figure 8. Volume-Weighted 30-Day Average Plutonium and Americium Activities at WOMPOC: Year Ending First Quarter 2019

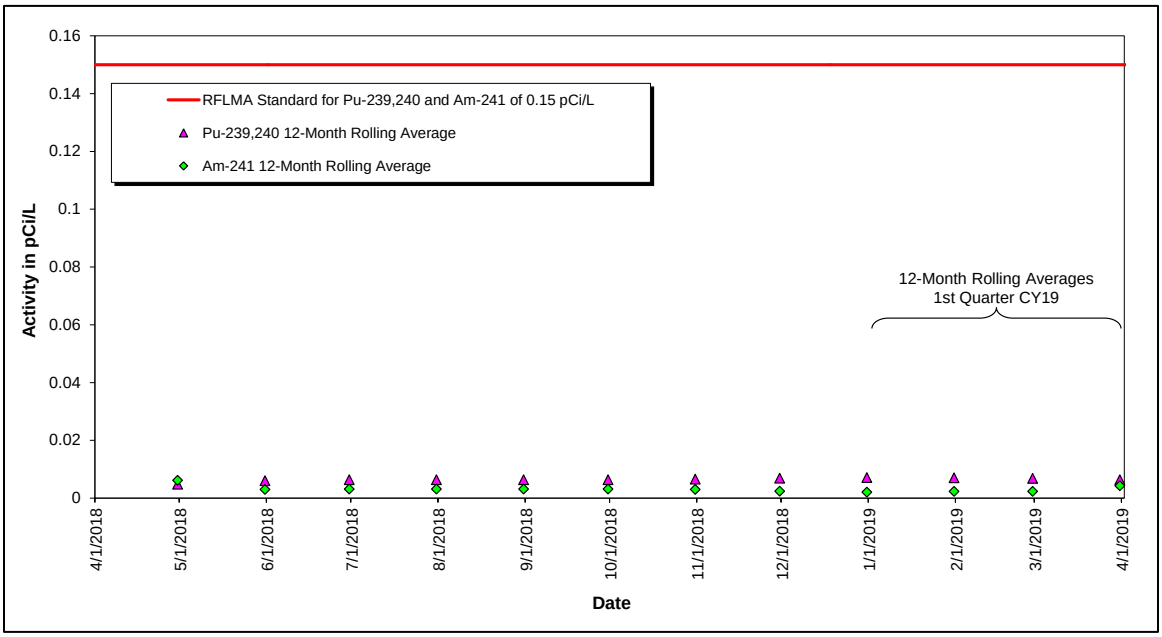

Figure 9. Volume-Weighted 12-Month Rolling Average Plutonium and Americium Activities at WOMPOC: Year Ending First Quarter 2019

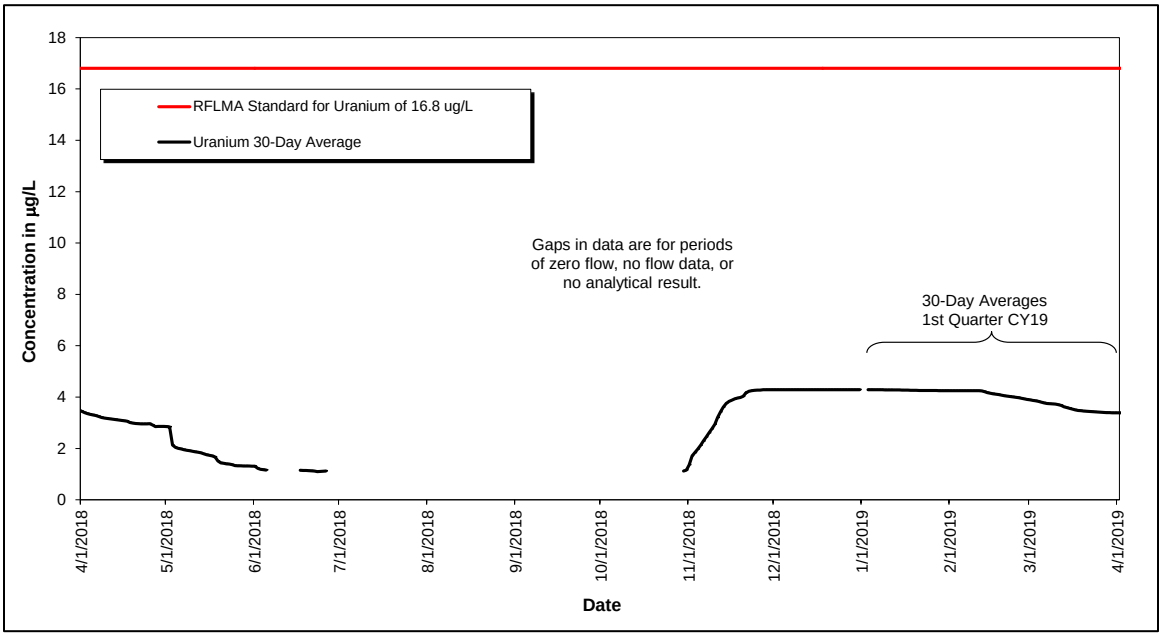

Figure 10. Volume-Weighted 30-Day Average Uranium Concentrations at WOMPOC: Year Ending First Quarter 2019

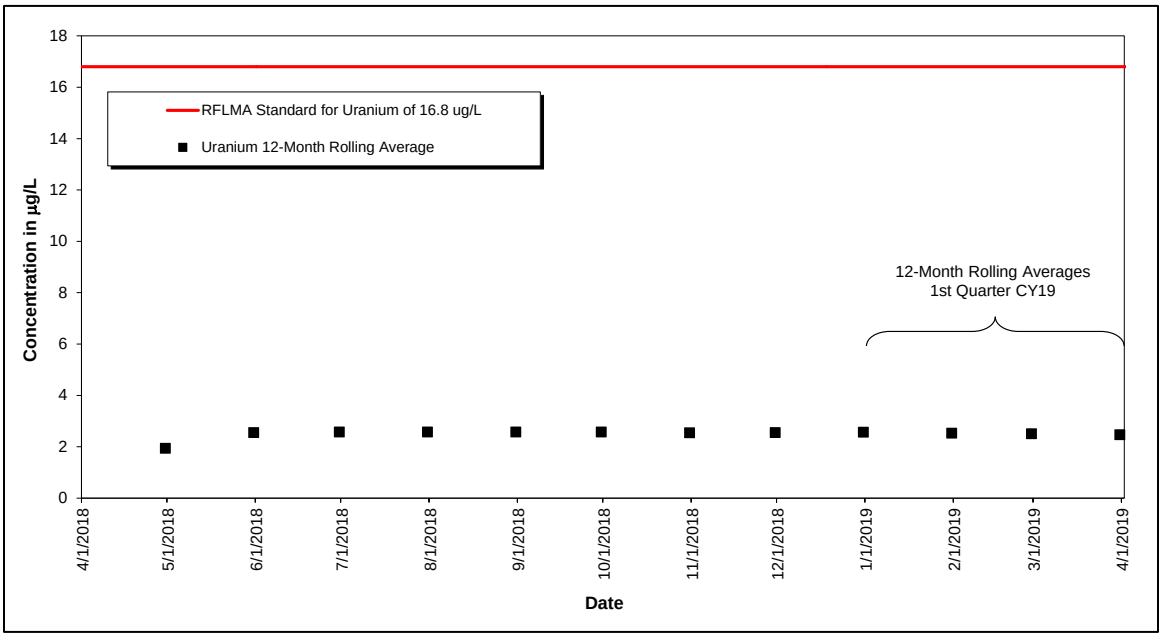

Figure 11. Volume-Weighted 12-Month Rolling Average Uranium Concentrations at WOMPOC: Year Ending First Quarter 2019

3.1.3 POE Monitoring

The following sections include summary plots showing the applicable 12-month rolling averages for the POE analytes.

3.1.3.1 Monitoring Location GS10

Monitoring location GS10 is on South Walnut Creek just upstream of the B-Series ponds. Figure 12 and Figure 13 show no occurrences of a reportable condition for 12-month rolling averages for plutonium, americium, or uranium values during the quarter. The method for calculating the 12-month rolling averages is detailed in the annual report.

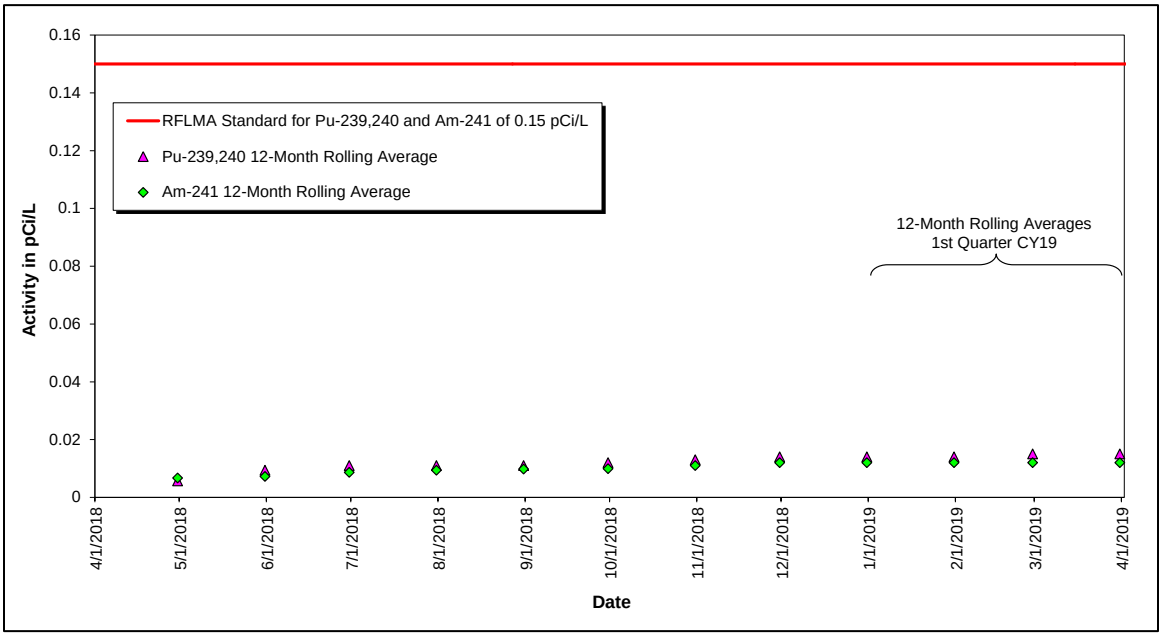

Figure 12. Volume-Weighted 12-Month Rolling Average Plutonium and Americium Activities at GS10: Year Ending First Quarter 2019

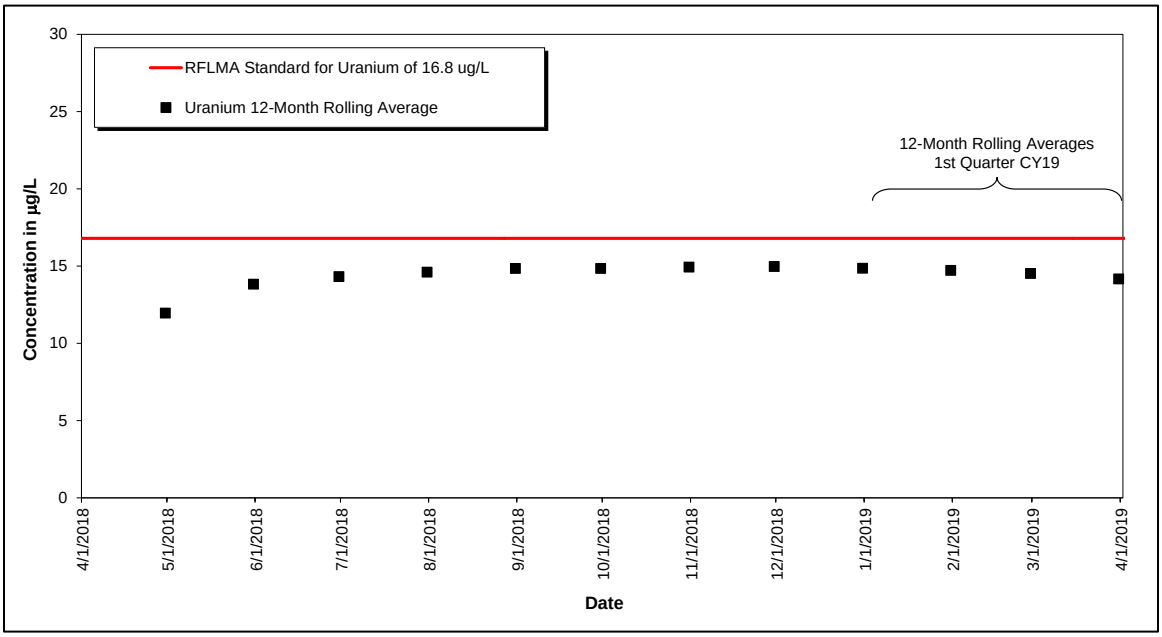

Figure 13. Volume-Weighted 12-Month Rolling Average Uranium Concentrations at GS10: Year Ending First Quarter 2019

3.1.3.2 Monitoring Location SW027

Monitoring location SW027 is at the end of the South Interceptor Ditch at the inlet to Pond C-2. Figure 14 shows that the 12-month rolling average for plutonium exceeded the RFLMA standard of 0.15 pCi/L, resulting in a reportable condition at SW027 from June 2018 through March 2019. These 12-month rolling average values include results from only a single composite sample collected on May 3–4, 2018. Due to the relatively small volumes of water monitored at SW027 in 2018, only one sample could be collected. There has been no flow at SW027 during 2019 through March. All other analytes were not reportable during the current quarter.

Details regarding the 2018 reportable condition for plutonium at location SW027 can be found in RFLMA Contact Record 2019-01 (https://www.lm.doe.gov/Rocky_Flats/ContactRecords.aspx).

Figure 15 shows water quality data for plutonium and americium from October 2005 through March 2019. This figure shows the recent reportable values in comparison to the entire postclosure period.

Table 1 lists the americium, plutonium, and uranium results for composite samples collected at location SW027 during 2017 through 2019.

Downstream monitoring at WOMPOC continues to show plutonium and americium concentrations well below 0.15 pCi/L for the entire period of reportable conditions for americium and plutonium at location SW027 (Table 2). The latest available 30-day average and 12-month rolling plutonium and americium concentrations at WOMPOC calculated from flow-paced composite samples are shown in Figure 8 and Figure 9, respectively.

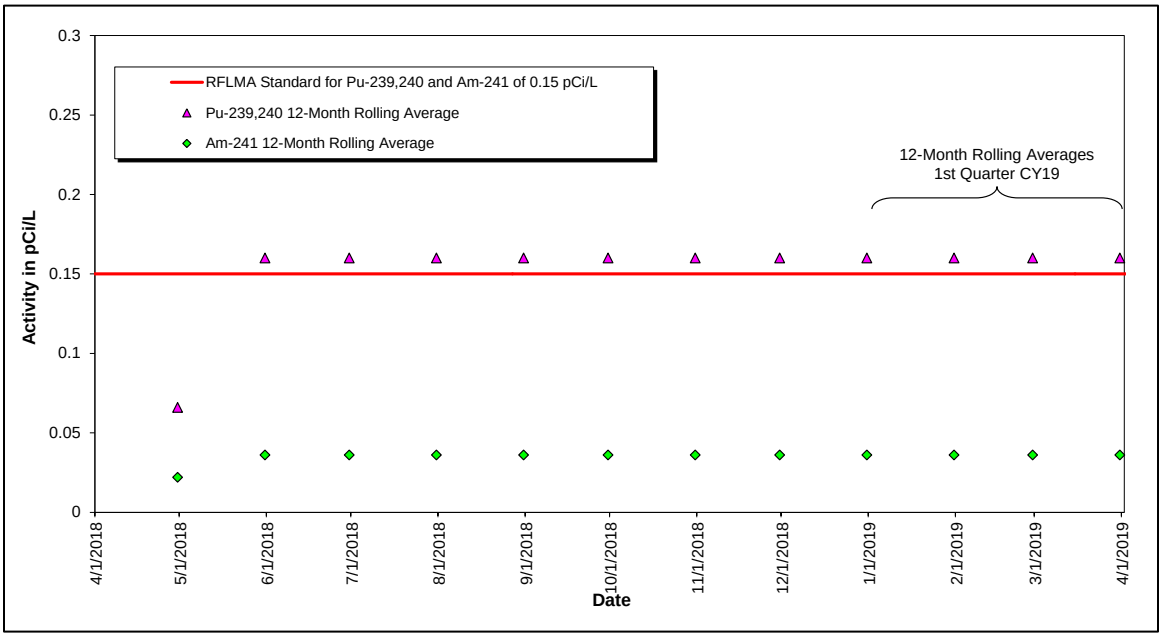

Figure 14. Volume-Weighted 12-Month Rolling Average Plutonium and Americium Activities at SW027: Year Ending First Quarter 2019

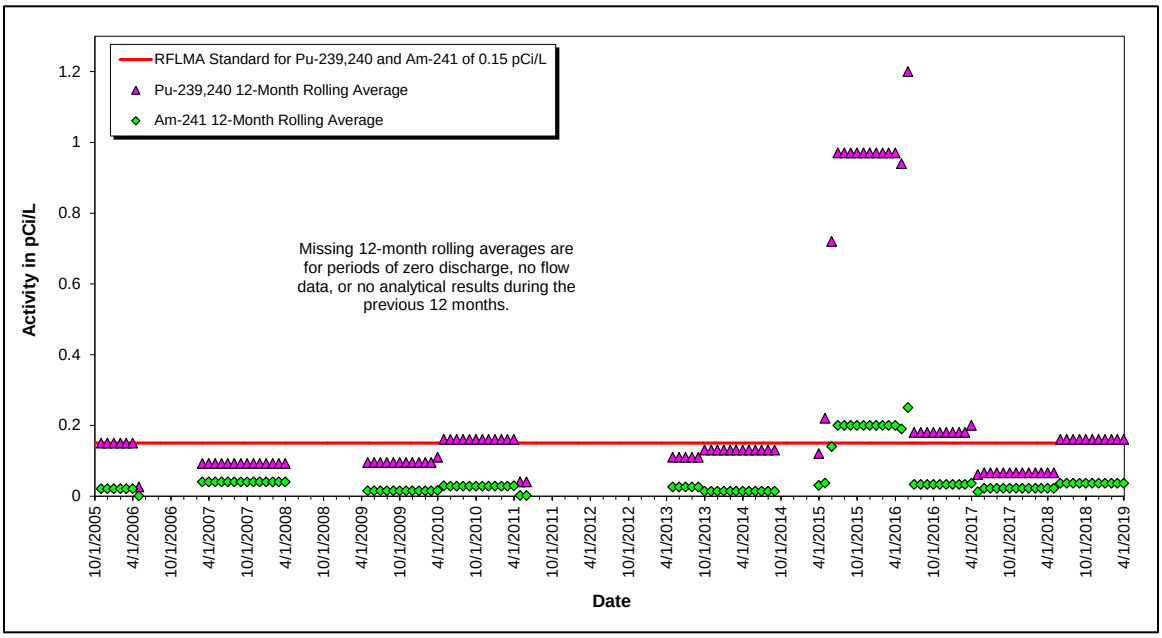

Figure 15. Volume-Weighted 12-Month Rolling Average Plutonium and Americium Concentrations at SW027: Postclosure Period

Table 1. 2017–2018 Composite Sampling Results at Location SW027

Start Date and Time	End Date and Time	Americium Result (pCi/L)	Plutonium Result (pCi/L)	Uranium Result (µg/L)
6/3/2016 11:41	1/17/2017 15:19	NSQ[a]	NSQ[a]	NSQ[a]
1/17/2017 15:19	5/23/2017 14:58	0.022	0.066	5.15
5/23/2017 14:58	5/3/2018 9:01	NSQ[b]	NSQ[b]	NSQ[b]
5/3/2018 9:01	5/4/2018 12:28	0.036	0.159	2.26
5/4/2018 12:28	1/3/2019 16:00	NSQ[c]	NSQ[c]	NSQ[c]
1/3/2019 16:00	In progress	NA	NA	NA

Notes:

[a] During this period, no grab samples were collected, due to no flow at SW027.

[b] During this period, an insufficient quantity of water was collected for analysis, due to unanticipated changes in flow rates. The collected sample volume was discarded in order to modify the sampling pace and close out 2017. The flow volume for this period represented less than 5% of the total 2017 flow volume. There was no flow from 1/1/2018 through 5/2/2018.

[c] During this period, an insufficient quantity of water was collected for analysis, due to unanticipated changes in flow rates. The collected sample volume was discarded in order to modify the sampling pace and close out 2018. The flow volume for this period represented approximately 6% of the total 2018 flow volume.

Abbreviations:

NA = not available

NSQ = nonsufficient quantity for analysis

Table 2. 2017–2019 Composite Sampling Results at WOMPOC

Start Date and Time	End Date and Time	Americium Result (pCi/L)	Plutonium Result (pCi/L)	Uranium Result (µg/L)
11/22/2016 11:26	1/3/2017 13:57	0.001	0.007	3.72
1/3/2017 13:57	1/31/2017 11:57	0.006	0.000	3.50
1/31/2017 11:54	3/1/2017 13:11	0.000	0.000	4.06
3/1/2017 13:11	3/27/2017 11:02	0.004	0.006	4.15
3/27/2017 11:02	4/3/2017 11:17	0.000	0.007	3.89
4/3/2017 11:17	4/6/2017 11:11	0.000	0.003	3.23
4/6/2017 11:11	4/19/2017 11:48	0.003	0.000	3.00
4/19/2017 11:48	5/4/2017 14:12	0.006	0.000	3.08
5/4/2017 14:12	5/11/2017 15:11	0.002	0.004	1.29
5/11/2017 15:11	5/17/2017 14:43	0.005	0.004	1.30
5/17/2017 14:43	5/19/2017 16:05	0.011	0.006	1.37
5/19/2017 16:05	5/23/2017 15:14	0.010	0.007	0.67
5/23/2017 15:14	5/31/2017 9:57	0.001	0.001	1.39
5/31/2017 9:57	6/21/2017 12:26	0.000	0.000	1.96
6/21/2017 12:26	10/6/2017 15:03	0.003	0.006	3.02
10/6/2017 15:03	11/2/2017 16:02	0.005	0.005	2.82
11/2/2017 16:02	1/4/2018 15:28	0.013	0.003	4.41
1/4/2018 15:27	2/5/2018 10:38	0.004	0.002	4.58
2/5/2018 10:38	3/2/2018 10:47	0.003	0.003	5.06
3/2/2018 10:47	3/20/2018 12:52	0.002	0.006	4.43
3/20/2018 12:52	3/29/2018 11:24	0.004	0.003	3.35
3/29/2018 11:24	4/10/2018 12:48	0.007	0.002	2.71
4/10/2018 12:48	4/26/2018 10:33	0.000	0.010	3.16
4/26/2018 10:33	5/3/2018 14:57	0.008	0.014	2.10
5/3/2018 14:57	5/14/2018 14:10	0.000	0.007	1.53
5/14/2018 14:10	5/21/2018 13:48	0.000	0.006	0.92
5/21/2018 13:48	7/2/2018 11:13	0.003	0.021	1.57
7/2/2018 11:13	1/3/2019 12:35	0.002	0.009	4.29
1/3/2019 12:33	2/12/2019 13:12	0.009	0.000	4.25
2/12/2019 13:12	3/11/2019 13:48	0.000	0.000	3.70
3/11/2019 13:48	3/28/2019 13:30	0.026	0.000	3.28
3/28/2019 13:30	4/9/2019 11:50	0.002	0.005	3.44
4/9/2019 11:50	4/18/2019 11:59	0.000	0.000	2.88
4/18/2019 11:59	5/3/2019 11:11	0.007	0.000	3.62
5/3/2019 11:11	5/13/2019 12:02	0.007	0.002	2.08
5/13/2019 12:02	5/24/2019 10:45	0.004	0.004	1.83
5/24/2019 10:45	5/29/2019 13:33	0.011	0.009	1.71
5/29/2019 13:33	6/6/2019 13:38	Analysis pending	Analysis pending	Analysis pending
6/6/2019 13:38	6/10/2019 10:53	Analysis pending	Analysis pending	Analysis pending
6/10/2019 10:53	6/26/2019 11:12	Analysis pending	Analysis pending	Analysis pending
6/26/2019 11:12	In progress	NA	NA	NA

Abbreviation:
NA = not available

Figure 16 shows that the 12-month rolling average for uranium at location SW027 was not reportable during the quarter.

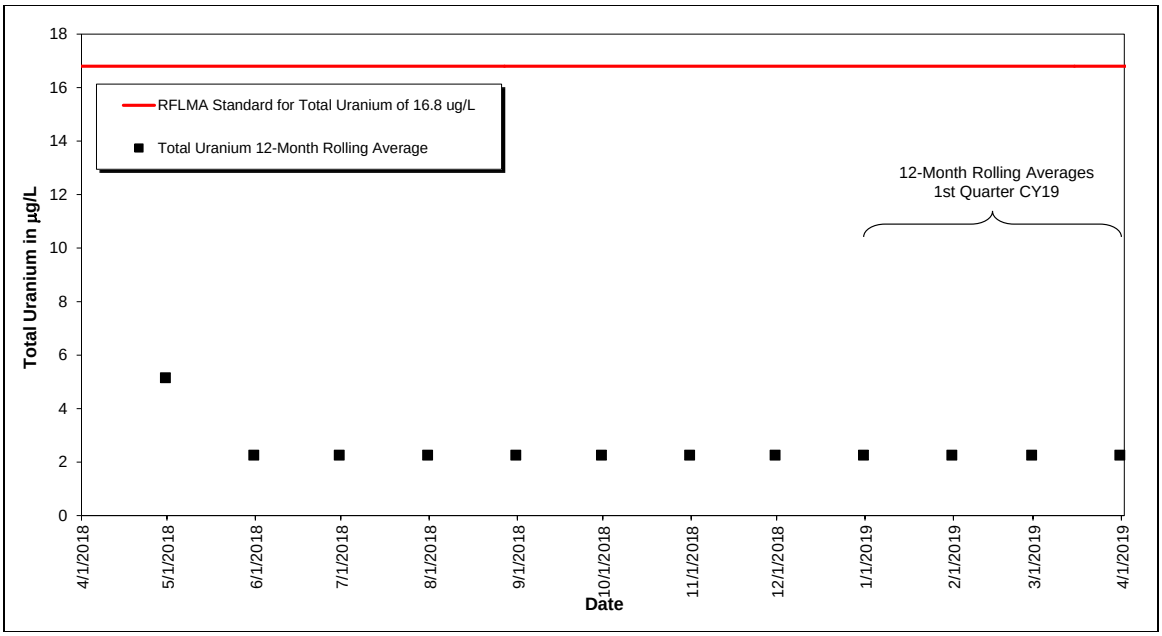

Figure 16. Volume-Weighted 12-Month Rolling Average Uranium Concentrations at SW027: Year Ending First Quarter 2019

3.1.3.3 Monitoring Location SW093

Monitoring location SW093 is on North Walnut Creek, 1300 feet upstream of former Pond A-1. Figure 17 and Figure 18 show no occurrences of a reportable condition for 12-month rolling averages for plutonium, americium, or uranium values for the quarter. The method for calculating the 12-month rolling averages is detailed in the annual report.

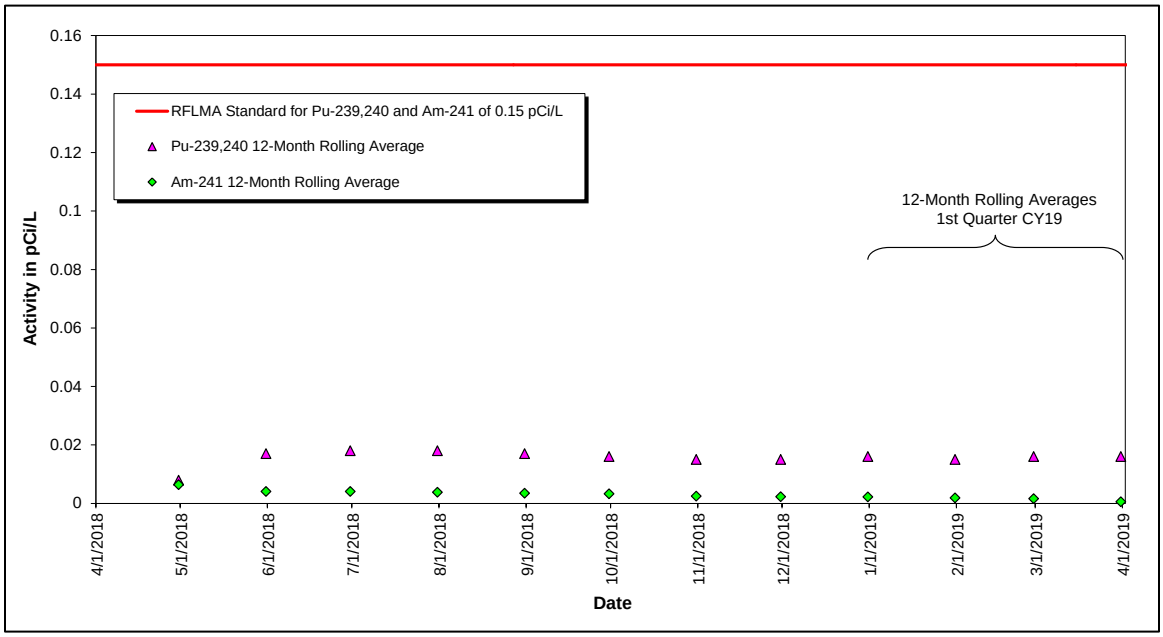

Figure 17. Volume-Weighted 12-Month Rolling Average Plutonium and Americium Activities at SW093: Year Ending First Quarter 2019

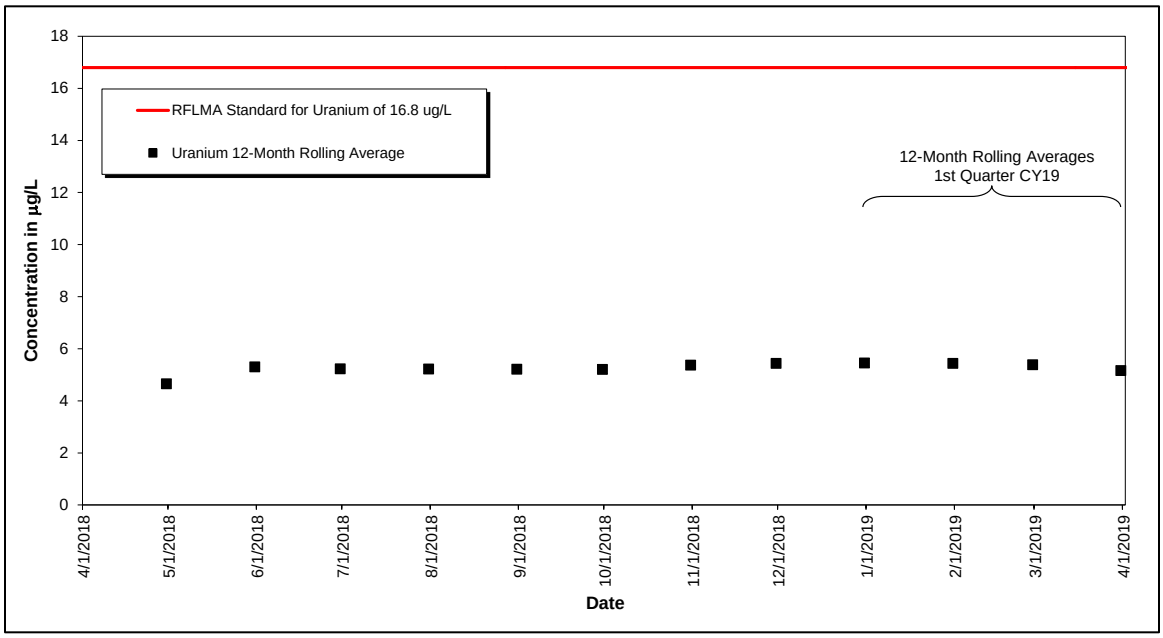

Figure 18. Volume-Weighted 12-Month Rolling Average Uranium Concentrations at SW093: Year Ending First Quarter 2019

3.1.4 AOC Wells and Surface Water Support Location SW018

None of the AOC wells or Surface Water Support location SW018 were scheduled for RFLMA monitoring in the first quarter of 2019.

3.1.5 Sentinel Wells

None of the Sentinel wells were scheduled for RFLMA monitoring in the first quarter of 2019.

3.1.6 Evaluation Wells

None of the Evaluation wells were scheduled for RFLMA monitoring in the first quarter of 2019.

3.1.7 PLF Monitoring

The six RCRA wells at the PLF were sampled during the first quarter of 2019. Analytical results (Appendix B) were generally consistent with those of past samples and will be discussed and statistically evaluated as part of the annual report for 2019. Section 3.1.9.4 discusses monitoring at the PLFTS.

3.1.8 OLF Monitoring

The four RCRA wells at the OLF were sampled during the first quarter of 2019. Analytical results (Appendix B) were generally consistent with those of past samples and will be discussed and statistically evaluated as part of the annual report for 2019.

During the first quarter of 2019, when routine surface water sampling was performed in Woman Creek downstream of the OLF (GS59), the mean concentrations for all analytes were below the applicable surface water standards.

3.1.9 Groundwater Treatment System Monitoring

As described in Section 2.5, contaminated groundwater is intercepted and treated in the onsite groundwater treatment systems. The MSPCS (which is discussed in this section for consistency and convenience, even though treatment is no longer performed here), ETPTS, and SPPTS each include a groundwater intercept trench. The PLFTS treats water from the northern and southern components of the Groundwater Intercept System and water that flows from the PLF seep.

3.1.9.1 Mound Site Plume Collection System

The MSPCS monitoring locations were not scheduled for routine RFLMA sampling in the first quarter of 2019.

3.1.9.2 East Trenches Plume Treatment System

The ETPTS monitoring locations were not scheduled for routine RFLMA sampling in the first quarter of 2019.

3.1.9.3 Solar Ponds Plume Treatment System

The SPPTS monitoring locations were not scheduled for routine RFLMA sampling in the first quarter of 2019.

Nonroutine samples were collected during this quarter to support multiple objectives, one of which was to monitor the effects of converting the "Big Box lagoon" from a full-scale, interim test nitrate treatment component to the formal nitrate treatment component. This conversion project was completed in November 2018 and required the water in the lagoon be removed to complete the work. Results of these nonroutine samples indicated that nitrate concentrations in SPPTS effluent increased slightly from mid-January through early March. This is interpreted to be a response to the cold temperatures to which the denitrifying bacteria had been exposed (i.e., the effectiveness of the bacteria decreased as the temperature dropped), particularly during the conversion project when the water was stored in an aboveground steel container prior to being returned to the Big Box. Satisfactory treatment was restored in early March.

Samples were also collected to support the Surface Water Adaptive Management Plan (DOE 2017a) (AMP). Further discussion will be provided in the RFLMA and AMP annual reports for 2019.

3.1.9.4 PLF Treatment System

During collection of the January 2019 quarterly samples at the PLFTS influent (monitoring location PLFSEEPINF), the flow rate was 1.29 gallons per minute. The routine quarterly effluent samples (monitoring location PLFSYSEFF) were collected on January 8, 2019. All analyte concentrations in the effluent samples were below the RFLMA standards for the quarter.

3.1.10 Predischarge Monitoring

No predischarge samples were collected at Ponds A-4, B-5, or C-2 during the first quarter of 2019. All three ponds were continuously operated in a flow-through configuration.

4.0 Adverse Biological Conditions

No evidence of adverse biological conditions (e.g., unexpected mortality or morbidity) was observed during monitoring and maintenance activities in the first quarter of 2019.

5.0 Ecological Monitoring

During the first quarter of 2019, very few ecological field activities were conducted because it was winter. Most of the time was spent analyzing data and writing various reports. Observations of prairie dog towns in the Rocky Flats National Wildlife Refuge and in the COU continued to document that no active prairie dog towns are present within the COU.

6.0 References

DOE (U.S. Department of Energy), 2009. *Rocky Flats Site Original Landfill Monitoring and Maintenance Plan*, LMS/RFS/S05516, Office of Legacy Management, September.

DOE (U.S. Department of Energy), 2014. *Present Landfill Monitoring and Maintenance Plan and Post-Closure Plan, U.S. Department of Energy Rocky Flats, Colorado, Site*, LMS/RFS/S03965, Office of Legacy Management, December.

DOE (U.S. Department of Energy), 2017a. *Surface Water Configuration Adaptive Management Plan for the Rocky Flats, Colorado, Site*, LMS/RFS/S07698, Office of Legacy Management, May.

DOE (U.S. Department of Energy), 2017b. *Fourth Five-Year Review Report for the Rocky Flats Site, Jefferson County, Colorado*, LMS/RFS/S15528, Office of Legacy Management, June.

DOE (U.S. Department of Energy), 2018. *Rocky Flats Site, Colorado, Site Operations Guide*, LMS/RFS/S03037, Office of Legacy Management, July.

DOE (U.S. Department of Energy), EPA (U.S. Environmental Protection Agency), and CDPHE (Colorado Department of Public Health and Environment), 2006. *Corrective Action Decision/Record of Decision for Rocky Flats Plant (USDOE) Peripheral Operable Unit and Central Operable Unit*, EPA/541/R-06/197, September 29.

DOE (U.S. Department of Energy), EPA (U.S. Environmental Protection Agency), and CDPHE (Colorado Department of Public Health and Environment), 2007. *Rocky Flats Legacy Management Agreement*, executed on March 14, Attachment 2 updated December 2018, available at https://www.lm.doe.gov/Rocky_Flats/RFLMA.pdf.

DOE (U.S. Department of Energy), EPA (U.S. Environmental Protection Agency), and CDPHE (Colorado Department of Public Health and Environment), 2011. *Corrective Action Decision/Record of Decision Amendment for Rocky Flats Plant (USDOE) Central Operable Unit*, September 21.

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Appendix A

Landfill Inspection Forms and Survey Data

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Original Landfill – Monitoring and Maintenance Plan Inspection Form

Inspector: Nathan Krohn

Date: 1/17/2019 Time: 1130

Precipitation: MET* 0.20 inches NREL* 0.87 inches Weather: Partly Cloudy, 50°F

Report Type: ☒ Monthly ☐ Weather-related

Reviewed by: Jeremy Wehner Review date: 1/22/2019

*Since last report

Subsidence/Consolidation

Region	Visible Cracks	Visible Depressions	Visible Ponding	Within Waste Footprint	Other (Describe Below)
Berm 1 Basin - West	No	No	No	No	
Berm 1 Basin - East	↓	↓	↓	↓	
Berm 2 Basin	↓	↓	↓	↓	See comments below.
Berm 3 Basin	↓	↓	↓	↓	
Berm 4 Basin	↓	↓	↓	↓	
Berm 5 Basin	↓	↓	↓	↓	
Berm 6 Basin	↓	↓	↓	↓	
Berm 7 Basin	↓	↓	↓	↓	
Buttress fill	↓	↓	↓	↓	

Settlement monuments—inspect integrity. Intact: Yes

Maintenance required, comments, and photo log:

Several holes were found along an old scarp (Approx. 30 feet). Do not appear to be animal burrows / created by animals, but could have been / be inhabited. They range in size from 0.5 inches to 2.5 inches. The aformentioned scarp is located half the distance between berms 1A and 2, on the landfill's cover.

NK
1/22/19

Original Landfill – Monitoring and Maintenance Plan Inspection Form

Slope Stability

Region	Visible Cracks	Visible Seeps	Visible Block or Circular Failure	Other (Describe Below)
Cover– West	No	Yes	No	See Seep Evaluation
Cover– East	↓	Yes	↓	See Seep Evaluation
Buttress fill side slope	↓	No	↓	
West perimeter channel side slopes	↓	↓	↓	
East perimeter channel side slopes	↓	↓	↓	

Maintenance required, comments, and photo log:

Soil Cover and Buttress

Region	Visible Erosion	Visible Gullies	Visible Animal Burrows	Other (Describe Below)
Cover– West	No	No	No	
Cover– East	↓	↓	↓	
Buttress fill	↓	↓	↓	
Buttress fill side slope	↓	↓	↓	

Maintenance required, comments, and photo log:

No maintenance required.

Original Landfill – Monitoring and Maintenance Plan Inspection Form

Seep Evaluation

Seep	Visible Saturation	Visible Flow	Approximate Flow	Description
Seep 1*	Yes	No	NA	
Seep 2/3*		Yes	< 1 GPM	
Seep 4*		No	NA	
Seep 5*				
Seep 6*				
Seep 7*				
Seep 8a				
Seep 8b				
Seep 8c				
Seep 9				
Seep 10				
Seep 10a	NA	NA	NA	Not an official seep yet.
Seep 8	Yes	Yes	< 1 GPM	

Maintenance required, comments, and photo log:
All seeps have saturated soils due to recent, and in some cases, ongoing snowmelt.

* Indicates seep was observed during or shortly after OLF closure in 2005.

NOTE: A seep is defined as an area where water percolates to the land surface or an area persistently moist whose source, as observed in multiple inspections, is confirmed to be groundwater and not surface water.

Original Landfill – Monitoring and Maintenance Plan Inspection Form

Water Management Structures

Channels

Structure	Visible Excessive Erosion, Gullying, or Undermining	Visible Settlement, Subsidence, or Depressions	Visible Breaching or Bank Failure	Visible Animal Burrows	Visible Sediment Build-Up or Other Blockage	Comments
Diversion Berm 1	No	No	No	No	No	
Diversion Berm 2	↓	↓	↓	↓	↓	
Diversion Berm 3	↓	↓	↓	↓	↓	
Diversion Berm 4	↓	↓	↓	↓	↓	
Diversion Berm 5	↓	↓	↓	↓	↓	
Diversion Berm 6	↓	↓	↓	↓	↓	
Diversion Berm 7	↓	↓	↓	↓	↓	
West perimeter channel	No	No	No	No	No	
East perimeter channel	No	No	Yes	No	Yes	See comments

Drains/Outfalls

Structure	Visible Excessive Erosion, or Gullying	Visible Sediment Build-Up or Other Blockage	Is Water Draining or Flowing from Structure?	Comments
East Subsurface Drain – Solid pipe	No	No	No	See comments
East Subsurface Drain – Perforated pipe	↓	↓	↓	
French Drain (SID)	↓	↓	↓	

Maintenance required, comments, and photo log:

The East Subsurface Drain Outfall (ESSD) is wet from snowmelt. The GWI system that feeds into the ESSD is only being operated once a month for maintenance of the pumps.

The breaching and blockage of the lower portion of the East Perimeter Channel (EPC) is an ~~continuing~~ ongoing NK issue that will be resolved during the 2019 OLF Stabilization Project. Surface water flow is directed to a well-vegetated area. There is currently no surface water flow in the EPC.

Original Landfill – Monitoring and Maintenance Plan Inspection Form

"Run-On" Control		
Area	**Adversely Affecting OLF**	**Comments**
Run-on to the OLF (any direction)	No	
	↓	
Maintenance required and photo log:		
No maintenance required.		

Violations of Institutional Controls		
Item		**Comments**
Evidence of unauthorized[1] excavations of cover and immediate vicinity of cover?	No	
Evidence of unauthorized[1] construction of roads, trails, or buildings on cover?	↓	
Evidence of unauthorized[1] drilling of wells or use of groundwater?		
Damage to groundwater monitoring wells at OLF (upgradient or downgradient)?		
Other observations, maintenance required, comments, and photo log:		
No violations observed.		
If "Yes" is marked on any item in the Institutional Controls section, immediately notify your supervisor.		

[1] Unauthorized means not approved by RFLMA parties (DOE, EPA, CDPHE) through the consultative process. Actions covered under an approved soil disturbance review plan are authorized actions.

Original Landfill – Monitoring and Maintenance Plan Inspection Form

Action Items

Deficiency	Action	Date Completed	Comments
0.5" - 2.0" holes found along scarp(old) between berms 1A and 2.	Took photos, measured, located on map, and kicked in. ⊕ will continue to monitor	1/17/19	
	NK		

Signatures

Inspector signature: Nathan Knox Date: 1/17/2019

Reviewer signature: J. P. W. Date: 1/22/2019

Attachment 1: January 2019

Monthly Report of the Original Landfill Inspection at the Rocky Flats Site, Colorado

The monthly inspection of the Original Landfill (OLF) at the Rocky Flats Site, Colorado, was completed on January 17, 2019. The weather was partly cloudy and 50 °F during the inspection. The Rocky Flats Site meteorological tower recorded 0.20 inch of precipitation between this inspection and the prior inspection, which was performed December 12, 2018. For comparison, the National Renewable Energy Laboratory (NREL) M2 tower, near the northwest corner of the site, recorded 0.87 inch during the same period. The NREL M2 tower has a heated rain gauge, which is able to accurately measure precipitation in the form of snow.

Inspection forms are completed to document current conditions at the OLF. Previously repaired items are not checkmarked as evidence of deficiency unless further action is warranted.

Figure 1 provides the locations of OLF key features and the approximate location and direction from which inspection photographs (**Figures 2–9**) were taken.

The toe of the regraded 2017 slump area continues to block the lower segment of the East Perimeter Channel (EPC) leading to the EPC outfall (**Figure 2**). This configuration forces surface water flow in the EPC toward the EPC side slope, which directs the surface water flow downgradient of the EPC to a well-vegetated area on the south-facing hill slope. There is currently no surface water flowing in the EPC. A decision was made to leave slumped material in the lower part of the EPC because removing it would increase the risk of additional slumping. The EPC outfall will be redesigned during the OLF Slope Stabilization Project.

Three small holes were discovered along a previously reported scarp located between berms 1A and 2, within the waste footprint (**Figure 3)**. The diameter of two of the holes was approximately 0.5 inch, while the third hole measured approximately 1 inch × 2.5 inches. These appear to be created from settlement along the scarp line, as there is no evidence of animal activity. All three holes were measured, photographed, located on a map using GPS coordinates, and filled in during this inspection.

There are no observable deficiencies in western berms 1–3 (**Figures 4 and 5**) or eastern berms 4–7 (**Figures 6–8**).

Because of recent and ongoing snowmelt, all seeps have saturated soils. Seeps 2/3, 8, and 9 have standing water, and seeps 2/3 and 8 are flowing at less than 1 gallon per minute. Seep 7 has high levels of naturally occurring iron, which gives the soil a distinct reddish-orange appearance (**Figure 9)**.

The East Subsurface Drain (ESSD) outfall was saturated from snowmelt during this inspection. Neither erosion nor sedimentation was observed in the immediate area.

The revegetation of recently disturbed areas on the OLF is managed and monitored under the *Erosion Control Plan for the Rocky Flats Property Central Operable Unit* (DOE 2007)[1] and under sitewide vegetation and revegetation plans, as appropriate.

Non-RFLMA Monitoring

The Temporary Groundwater Intercept (GWI) system, which feeds into the ESSD, was shut down for the winter season on October 11, 2018. The Temporary Seep 10 Siphon system, which feeds into the seep 2/3 drainage system, has not been restarted since October 29, 2018, due to freezing temperatures and an insufficient amount of water within the sump.

Summary of January Inspection Findings

The toe of the regraded 2017 slump area continues to fully block the lower segment of the EPC, redirecting surface water to the south-facing hill slope in a well-vegetated area. Three small holes were discovered along a previously reported scarp between berms 1A and 2, but there are no new berm deficiencies. All seeps have saturated soils from snowmelt. The Temporary GWI system and the Seep 10 siphon are shut down for the winter. The ESSD outfall was saturated from snowmelt. Neither erosion nor sedimentation was observed in the immediate area.

[1] DOE (U.S. Department of Energy), 2007. *Erosion Control Plan for the Rocky Flats Property Central Operable Unit*, DOE-LM/1497-2007, Office of Legacy Management, July.

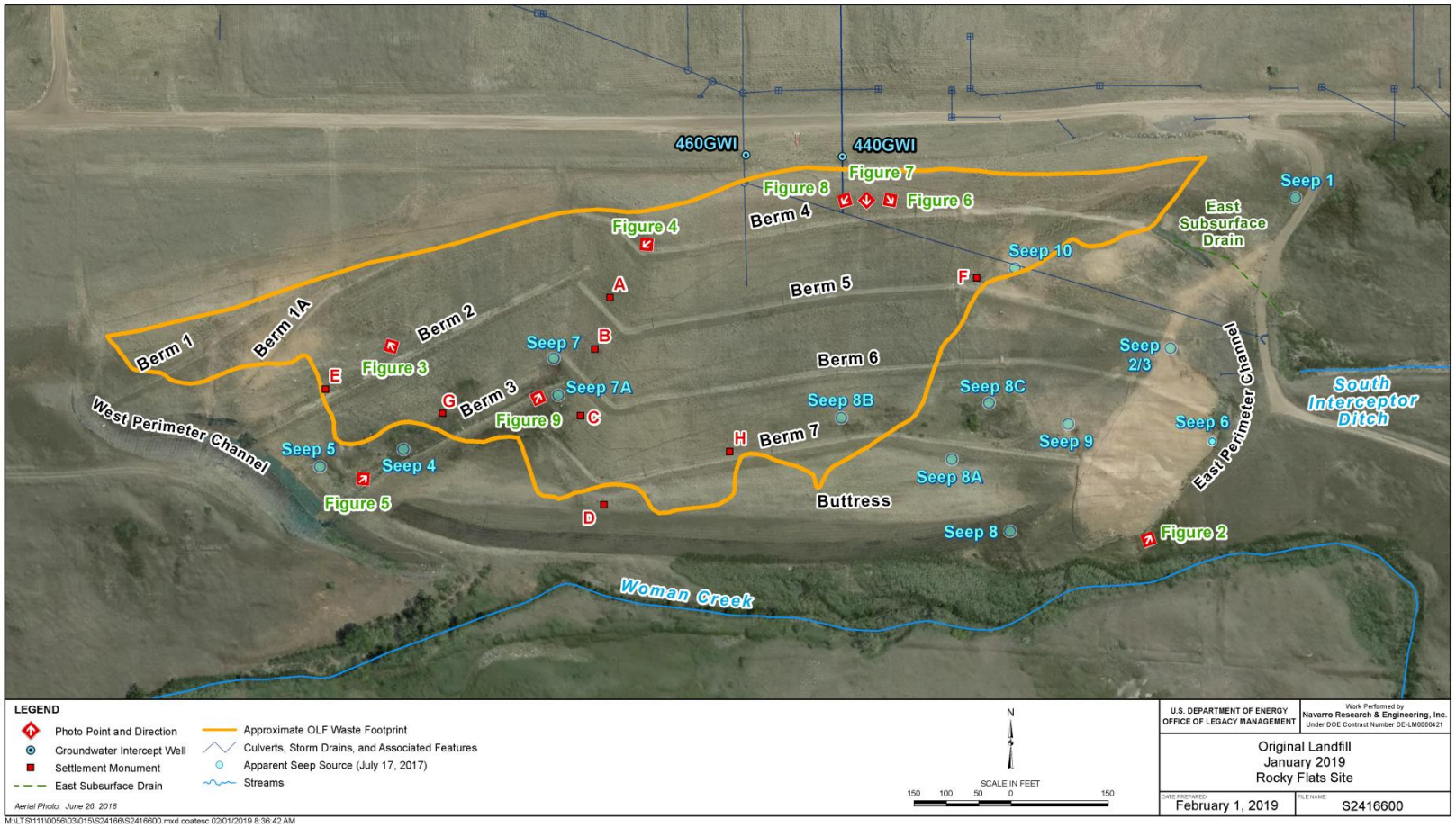

Figure 1: OLF key features and the location and direction for all report photographs, Rocky Flats Site, Colorado

Figure 2: Looking north to the toe of the regraded 2017 slump area blocking the lower segment of the EPC

Figure 3: Looking at the biggest (approx.1" × 2.5") of three holes found along a previously reported scarp between berms 1A and 2

Figure 4: Looking west at berms 1, 1A, and 2, which are in good condition

Figure 5: Looking east at berm 3, which is in good condition

Figure 6: Looking southeast at berms 4–7, which are in good condition

Figure 7: Looking south at berms 4–7, which are in good condition

Figure 8: Looking southwest at berms 4–7, which are in good condition

Figure 9: Looking north to the saturated soil at seep 7, which looks reddish-orange from high mineral levels of iron contained within the soil

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Original Landfill – Monitoring and Maintenance Plan Inspection Form

Inspector: Nathan Krohn Date: 2/15/2019 Time: 10:00 AM

Precipitation: MET* 0.10 inches NREL* 0.60 inches Weather: Cloudy, 50°F Report Type: ☒ Monthly ☐ Weather-related

Reviewed by: Jeremy Wehner Review date: 2/19/2019

*Since last report

Subsidence/Consolidation

Region	Visible Cracks	Visible Depressions	Visible Ponding	Within Waste Footprint	Other (Describe Below)
Berm 1 Basin - West	No	No	No	No	
Berm 1 Basin - East	↓	↓	↓	↓	
Berm 2 Basin	↓	↓	↓	↓	
Berm 3 Basin	↓	↓	↓	↓	
Berm 4 Basin	↓	↓	↓	↓	
Berm 5 Basin	↓	↓	↓	↓	
Berm 6 Basin	↓	↓	↓	↓	
Berm 7 Basin	↓	↓	↓	↓	
Buttress fill	↓	↓	↓	↓	

Settlement monuments—inspect integrity. Intact: Yes

Maintenance required, comments, and photo log:

No issues with subsidence/consolidation.
The holes along the berm 2 basin scarp, reported last month, have not ~~reported~~ reappeared NK 2/15/19
and will continue to be monitored.

Original Landfill – Monitoring and Maintenance Plan Inspection Form

Slope Stability

Region	Visible Cracks	Visible Seeps	Visible Block or Circular Failure	Other (Describe Below)
Cover– West	No	Yes	No	See Seep Evaluation
Cover– East	↓	↓	↓	See Seep Evaluation
Buttress fill side slope	↓	No	↓	
West perimeter channel side slopes	↓	↓	↓	
East perimeter channel side slopes	↓	↓	↓	

Maintenance required, comments, and photo log:

No issues with slope stability.

Soil Cover and Buttress

Region	Visible Erosion	Visible Gullies	Visible Animal Burrows	Other (Describe Below)
Cover– West	No	No	No	
Cover– East	↓	↓	↓	
Buttress fill	↓	↓	↓	
Buttress fill side slope	↓	↓	↓	

Maintenance required, comments, and photo log:

No issues with soil cover or buttress.

Original Landfill – Monitoring and Maintenance Plan Inspection Form

Seep Evaluation				
Seep	**Visible Saturation**	**Visible Flow**	**Approximate Flow**	**Description**
Seep 1*	No	—		
Seep 2/3*	Yes	Yes	Less than 1 GPM	
Seep 4*	↓	No		
Seep 5*	No	—		
Seep 6*	Yes	No		
Seep 7*	Yes	No		
Seep 8a	No	—		
Seep 8b	Yes	No		
Seep 8c	No	—		
Seep 9	Yes	No		
Seep 10	No	—		
Seep 10a	NA	NA	NA	Not an official seep yet.
Seep 8	Yes	Yes	Less than 1 GPM	

Maintenance required, comments, and photo log:

No issues.

* Indicates seep was observed during or shortly after OLF closure in 2005.

NOTE: A seep is defined as an area where water percolates to the land surface or an area persistently moist whose source, as observed in multiple inspections, is confirmed to be groundwater and not surface water.

Original Landfill – Monitoring and Maintenance Plan Inspection Form

Water Management Structures

Channels

Structure	Visible Excessive Erosion, Gullying, or Undermining	Visible Settlement, Subsidence, or Depressions	Visible Breaching or Bank Failure	Visible Animal Burrows	Visible Sediment Build-Up or Other Blockage	Comments
Diversion Berm 1	No	No	No	No	↓	
Diversion Berm 2	↓	↓	↓	↓	↓	
Diversion Berm 3	↓	↓	↓	↓	↓	
Diversion Berm 4	↓	↓	↓	↓	↓	
Diversion Berm 5	↓	↓	↓	↓	↓	
Diversion Berm 6	↓	↓	↓	↓	↓	
Diversion Berm 7	↓	↓	↓	↓	↓	
West perimeter channel	↓	↓	↓	↓	↓	
East perimeter channel	↓	↓	Yes	↓	Yes	See Comments

Drains/Outfalls

Structure	Visible Excessive Erosion, or Gullying	Visible Sediment Build-Up or Other Blockage	Is Water Draining or Flowing from Structure?	Comments
East Subsurface Drain – Solid pipe	No	No	No	
East Subsurface Drain – Perforated pipe	↓	↓	↓	
French Drain (SID)	↓	↓	↓	

Maintenance required, comments, and photo log:

The breach and blockage of the lower east perimeter is ongoing and will be addressed during the OLF Stabilization project. Channel currently dry. When a flow is present, it is directed to a well-vegetated area. ~~VK~~ NK 2/15/19

Original Landfill – Monitoring and Maintenance Plan Inspection Form

"Run-On" Control

Area	Adversely Affecting OLF	Comments
Run-on to the OLF (any direction)	No	

Maintenance required and photo log:

No issues with run-on.

Violations of Institutional Controls

Item		Comments
Evidence of unauthorized[1] excavations of cover and immediate vicinity of cover?	No	
Evidence of unauthorized[1] construction of roads, trails, or buildings on cover?	↓	
Evidence of unauthorized[1] drilling of wells or use of groundwater?		
Damage to groundwater monitoring wells at OLF (upgradient or downgradient)?		

Other observations, maintenance required, comments, and photo log:

No violations of institutional controls.

If "Yes" is marked on any item in the Institutional Controls section, immediately notify your supervisor.

[1] Unauthorized means not approved by RFLMA parties (DOE, EPA, CDPHE) through the consultative process. Actions covered under an approved soil disturbance review plan are authorized actions.

Original Landfill – Monitoring and Maintenance Plan Inspection Form

Action Items

Deficiency	Action	Date Completed	Comments
No deficiency			

Signatures

Inspector signature: [signature] Date: 2/15/2019

Reviewer signature: [signature] Date: 2/19/2019

Attachment 1: February 2019

Monthly Report of the Original Landfill Inspection at the Rocky Flats Site, Colorado

The monthly inspection of the Original Landfill (OLF) at the Rocky Flats Site, Colorado, was completed on February 15, 2019. The weather was cloudy and 50 °F during the inspection. The Rocky Flats Site meteorological tower recorded 0.10 inch of precipitation between this inspection and the prior inspection, which was performed January 17, 2019. For comparison, the National Renewable Energy Laboratory (NREL) M2 tower, near the northwest corner of the site, recorded 0.60 inch during the same period. The NREL M2 tower has a heated rain gauge, which is able to accurately measure precipitation in the form of snow.

Inspection forms are completed to document current conditions at the OLF. Previously repaired items are not checkmarked as evidence of deficiency unless further action is warranted.

Figure 1 provides the locations of OLF key features and the approximate location and direction from which inspection photographs (**Figures 2–7**) were taken.

The toe of the regraded 2017 slump area continues to block the lower segment of the East Perimeter Channel (EPC) leading to the EPC outfall (**Figure 2**), which forces surface water flow in the EPC over the EPC side slope and downgradient of the EPC to a well-vegetated area on the south-facing hill slope. There was no surface water flowing in the EPC at the time of inspection. A decision was made to leave slumped material in the lower part of the EPC because removing it would increase the risk of additional slumping. The EPC outfall will be redesigned during the OLF Slope Stabilization Project.

There are no observable deficiencies in western berms 1–3 (**Figure 3**) or eastern berms 4–7 (**Figures 4–6**). The three small holes located along the scarp located in the berm 2 basin have not reappeared since being filled in last month.

Seeps 4, 6, and 8b have visible saturation; seeps 7 and 9 have standing water; and seeps 2/3 and 8 are flowing at less than 1 gallon per minute (gpm).

The East Subsurface Drain (ESSD) outfall was dry during this inspection. The combined seep 2/3 and seep 10 siphon drain line outfall was saturated from seep 2/3 flow (**Figure 7**). Neither erosion nor sedimentation was observed in these areas.

The revegetation of recently disturbed areas on the OLF is managed and monitored under the *Erosion Control Plan for the Rocky Flats Property Central Operable Unit* (DOE 2007)[1] and under sitewide vegetation and revegetation plans, as appropriate.

[1] DOE (U.S. Department of Energy), 2007. *Erosion Control Plan for the Rocky Flats Property Central Operable Unit*, DOE-LM/1497-2007, Office of Legacy Management, July.

Non-RFLMA Monitoring

The Temporary Groundwater Intercept (GWI) system, which feeds into the ESSD, was shut down for the winter season on October 11, 2018. The Temporary Seep 10 Siphon system, which feeds into the seep 2/3 drainage system, has not been restarted since October 29, 2018, due to freezing temperatures and an insufficient amount of water within the sump.

Summary of February Inspection Findings

The toe of the regraded 2017 slump area continues to fully block the lower segment of the EPC, redirecting surface water to the south-facing hill slope in a well-vegetated area. There was no surface water flowing in the EPC at the time of inspection. Three small holes along a scarp in the berm 2 basin have not reappeared from last month. There are no new berm deficiencies. Seeps 2/3 and 8 are flowing at less than 1 gpm. The Temporary GWI system and the Seep 10 siphon are shut down for the winter. The ESSD outfall was dry during this inspection. The combined seep 2/3 and seep 10 siphon drain line outfall was saturated from seep 2/3 flow. Neither erosion nor sedimentation was observed in these areas.

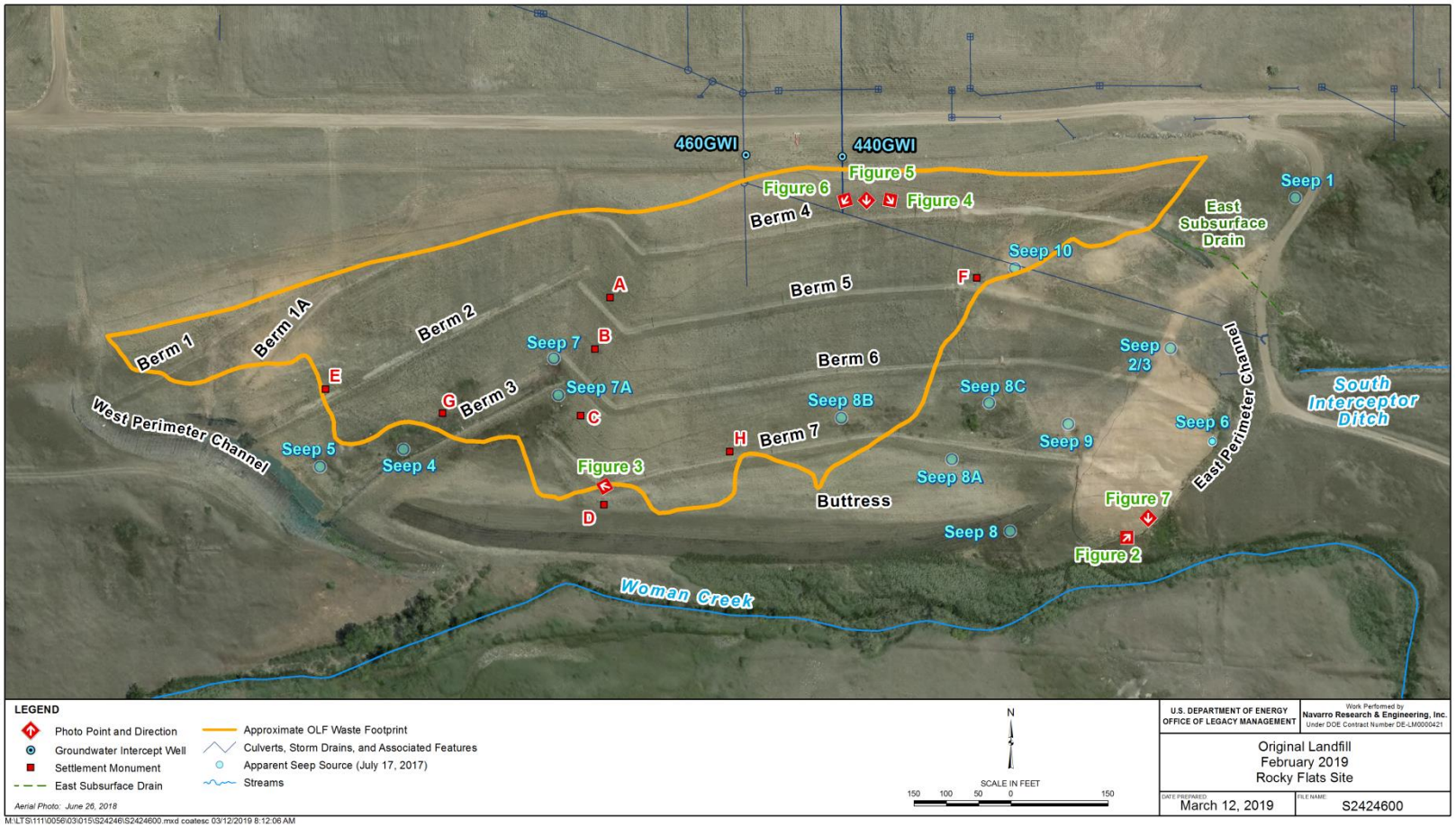

Figure 1: OLF key features and the location and direction for all report photographs, Rocky Flats Site, Colorado

Figure 2: Looking northeast to the toe of the regraded 2017 slump area blocking the lower segment of the EPC

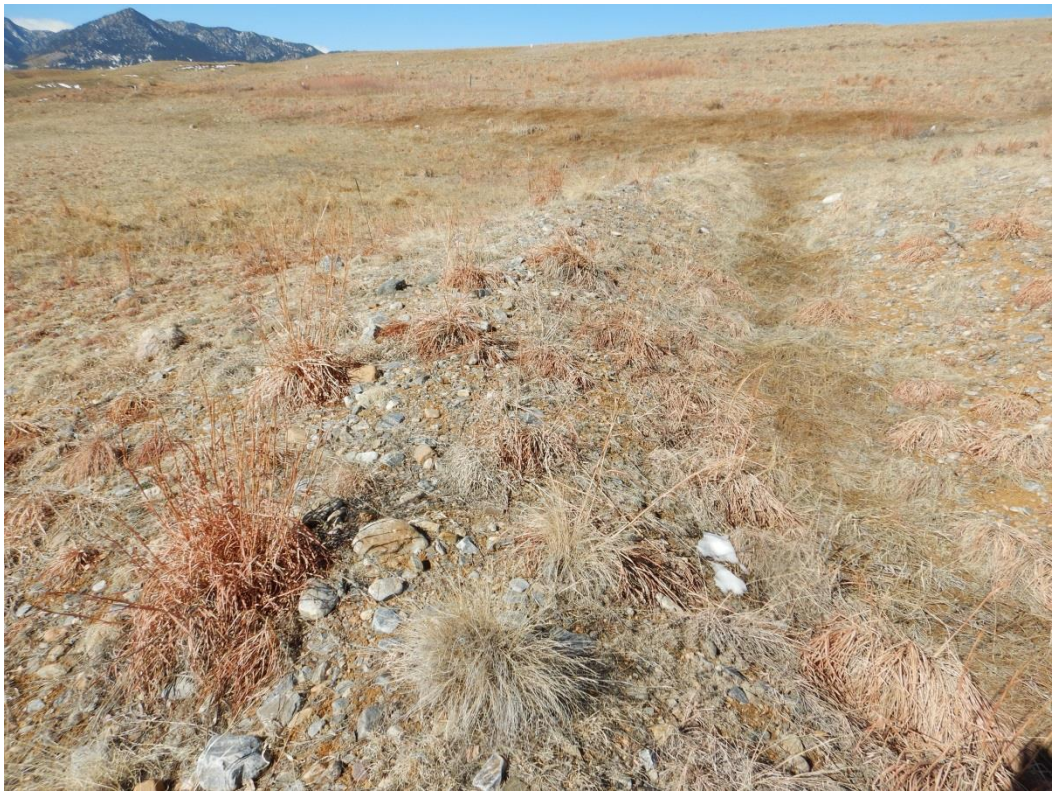

Figure 3: Looking northwest to berms 1–3, and the uppermost end of berm 7, which are in good condition

Figure 4: Looking southeast at berms 4–7, which are in good condition

Figure 5: Looking south at berms 4–7, which are in good condition

Figure 6: Looking southwest at berms 4–7, which are in good condition

Figure 7: Looking south to the combined seep 2/3 and seep 10 siphon drain line outfall, which is saturated from seep 2/3 flow

Note: Neither erosion nor sedimentation was observed in the immediate area.

Original Landfill – Monitoring and Maintenance Plan Inspection Form

Inspector: Nathan Krohn Date: 3/18/2019 Time: 1400

Precipitation: MET* 0.70 inches NREL* 1.49 inches Weather: Partly Cloudy, 40° Report Type: ☒ Monthly ☒ Weather-related

Reviewed by: Jeremy Wehner Review date: 3/20/2019

*Since last report

Subsidence/Consolidation

Region	Visible Cracks	Visible Depressions	Visible Ponding	Within Waste Footprint	Other (Describe Below)
Berm 1 Basin - West	No	No	No	No	
Berm 1 Basin - East	↓	↓	↓	↓	
Berm 2 Basin					
Berm 3 Basin					
Berm 4 Basin					
Berm 5 Basin					
Berm 6 Basin					
Berm 7 Basin					
Buttress fill					

Settlement monuments—inspect integrity. Intact: yes

Maintenance required, comments, and photo log:

This monthly inspection coincides with a weather-related inspection for a ~1 inch precipitation event on March 13, 2019.

No issues with subsidence/consolidation.

Precipitation totals recorded above represent monthly precipitation.

Storm totals/precipitation event totals are as follows: MET = 0.95 inch NREL = 0.94 inch

Original Landfill – Monitoring and Maintenance Plan Inspection Form

Slope Stability

Region	Visible Cracks	Visible Seeps	Visible Block or Circular Failure	Other (Describe Below)
Cover– West	No	Yes	No	See Seep Evaluation
Cover– East	↓	Yes	↓	See Seep Evaluation
Buttress fill side slope	↓	No	↓	
West perimeter channel side slopes	↓	↓	↓	
East perimeter channel side slopes	↓	↓	↓	

Maintenance required, comments, and photo log:

No issues with slope stability

Soil Cover and Buttress

Region	Visible Erosion	Visible Gullies	Visible Animal Burrows	Other (Describe Below)
Cover– West	No	No	No	
Cover– East	↓	↓	↓	
Buttress fill	↓	↓	↓	
Buttress fill side slope	↓	↓	↓	

Maintenance required, comments, and photo log:

No issues with soil cover and buttress

Original Landfill – Monitoring and Maintenance Plan Inspection Form

Seep Evaluation

Seep	Visible Saturation	Visible Flow	Approximate Flow	Description
Seep 1*	Yes	No		
Seep 2/3*		Yes	< 1 GPM	
Seep 4*		NO		
Seep 5*				
Seep 6*				
Seep 7*				
Seep 8a				
Seep 8b				
Seep 8c				
Seep 9				
Seep 10				
Seep 10a	NA	NA	NA	Not an official seep yet.
Seep 8	Yes	Yes	1-2 GPM	

Maintenance required, comments, and photo log:

All seeps are saturated due to ongoing snowmelt.

* Indicates seep was observed during or shortly after OLF closure in 2005.

NOTE: A seep is defined as an area where water percolates to the land surface or an area persistently moist whose source, as observed in multiple inspections, is confirmed to be groundwater and not surface water.

Original Landfill – Monitoring and Maintenance Plan Inspection Form

Water Management Structures

Channels

Structure	Visible Excessive Erosion, Gullying, or Undermining	Visible Settlement, Subsidence, or Depressions	Visible Breaching or Bank Failure	Visible Animal Burrows	Visible Sediment Build-Up or Other Blockage	Comments
Diversion Berm 1	No	No	No	No	No	
Diversion Berm 2	↓	↓	↓	↓	↓	
Diversion Berm 3	↓	↓	↓	↓	↓	
Diversion Berm 4	↓	↓	↓	↓	↓	
Diversion Berm 5	↓	↓	↓	↓	↓	
Diversion Berm 6	↓	↓	↓	↓	↓	
Diversion Berm 7	↓	↓	↓	↓	↓	
West perimeter channel	↓	↓	↓	↓	↓	
East perimeter channel	↓	↓	Yes	↓	Yes	

Drains/Outfalls

Structure	Visible Excessive Erosion, or Gullying	Visible Sediment Build-Up or Other Blockage	Is Water Draining or Flowing from Structure?	Comments
East Subsurface Drain – Solid pipe	No	No	No	
East Subsurface Drain – Perforated pipe	↓	↓	↓	
French Drain (SID)	↓	↓	↓	

Maintenance required, comments, and photo log:

No issues with channels or drains/outfalls.
The breach and blockage of the lower EPC is ongoing and will be addressed during the OLF Stabilization project.

Original Landfill – Monitoring and Maintenance Plan Inspection Form

"Run-On" Control

Area	Adversely Affecting OLF	Comments
Run-on to the OLF (any direction)	No	
	↓	

Maintenance required and photo log:

No issues with run-on controls.

Violations of Institutional Controls

Item		Comments
Evidence of unauthorized[1] excavations of cover and immediate vicinity of cover?	No	
Evidence of unauthorized[1] construction of roads, trails, or buildings on cover?	No	
Evidence of unauthorized[1] drilling of wells or use of groundwater?	No	
Damage to groundwater monitoring wells at OLF (upgradient or downgradient)?	No	

Other observations, maintenance required, comments, and photo log:

No violations of institutional controls

If "Yes" is marked on any item in the Institutional Controls section, immediately notify your supervisor.

[1] Unauthorized means not approved by RFLMA parties (DOE, EPA, CDPHE) through the consultative process. Actions covered under an approved soil disturbance review plan are authorized actions.

Original Landfill – Monitoring and Maintenance Plan Inspection Form

Action Items

Deficiency	Action	Date Completed	Comments
No deficiencies			

Signatures

Inspector signature: [signature] Date: 3/18/2019

Reviewer signature: [signature] Date: 3/20/2019

Attachment 1: March 2019

Monthly Report of the Original Landfill Inspection at the Rocky Flats Site, Colorado

The monthly inspection of the Original Landfill (OLF) at the Rocky Flats Site, Colorado, was completed on March 18, 2019. The weather was partly cloudy and 40 °F during the inspection. The Rocky Flats Site meteorological tower recorded 0.70 inch of precipitation between this inspection and the prior inspection, which was performed February 15, 2019. For comparison, the National Renewable Energy Laboratory (NREL) M2 tower, near the northwest corner of the site, recorded 1.49 inches during the same period. The NREL M2 tower has a heated rain gauge, which is able to accurately measure precipitation in the form of snow.

A weather-related inspection was performed simultaneously after a precipitation event of 0.94 inch (NREL) on March 13, 2019. This combined inspection was delayed until the first working day in which the site was accessible, due to significant snow and drifts, low site temperatures, and poor site road conditions.

Inspection forms are completed to document current conditions at the OLF. Previously repaired items are not checkmarked as evidence of deficiency unless further action is warranted.

Figure 1 provides the locations of OLF key features and the approximate location and direction from which inspection photographs (**Figures 2–6**) were taken.

The toe of the regraded 2017 slump area continues to block the lower segment of the East Perimeter Channel (EPC) leading to the EPC outfall (**Figure 2**), which forces surface water flow in the EPC over the EPC side slope and downgradient of the EPC to a well-vegetated area on the south-facing hill slope. There was no surface water flowing in the EPC at the time of inspection. A decision was made to leave slumped material in the lower part of the EPC because removing it would increase the risk of additional slumping. The EPC outfall will be redesigned during the OLF Slope Stabilization Project.

There are no observable deficiencies in western berms 1–3 (**Figure 3**) or eastern berms 4–7 (**Figures 4–6**). Berm channels still have snow cover from the previous week's snow storm. There is no new visible movement along any previously reported scarp since last month.

All seep locations have some degree of saturation from ongoing snowmelt. Seep 8 is flowing at 1–2 gallon per minute (gpm), and seep 2/3 is flowing at less than 1 gpm.

The East Subsurface Drain (ESSD) outfall was lightly saturated from ongoing snow melt. The combined seep 2/3 and seep 10 siphon drain line outfall was saturated from seep 2/3 flow. Neither erosion nor sedimentation was observed in these areas.

The revegetation of recently disturbed areas on the OLF is managed and monitored under the *Erosion Control Plan for the Rocky Flats Property Central Operable Unit* (DOE 2007)[1] and under sitewide vegetation and revegetation plans, as appropriate.

Non-RFLMA Monitoring

The Temporary Groundwater Intercept (GWI) system, which feeds into the ESSD, was shut down for the winter season on October 11, 2018, and had not been restarted at the time of inspection. The temporary seep 10 siphon system, which feeds into the seep 2/3 drainage system, has not been restarted since October 29, 2018, due to freezing temperatures and an insufficient amount of water within the sump.

Summary of March Inspection Findings

The toe of the regraded 2017 slump area continues to fully block the lower segment of the EPC, redirecting surface water to the south-facing hill slope in a well-vegetated area. There was no surface water flowing in the EPC at the time of inspection. There are no new berm deficiencies. Snow remains in the berm channels from the previous week's snow storm. Seep 8 is flowing at 1–2 gpm and seep 2/3 is flowing at less than 1 gpm. The ESSD outfall was lightly saturated from ongoing snowmelt. The temporary GWI system and the seep 10 siphon are shut down for the winter and have not been restarted at the time of inspection. The combined seep 2/3 and seep 10 siphon drain line outfall was saturated from seep 2/3 flow. Neither erosion nor sedimentation was observed in these areas.

[1] DOE (U.S. Department of Energy), 2007. *Erosion Control Plan for the Rocky Flats Property Central Operable Unit*, DOE-LM/1497-2007, Office of Legacy Management, July.

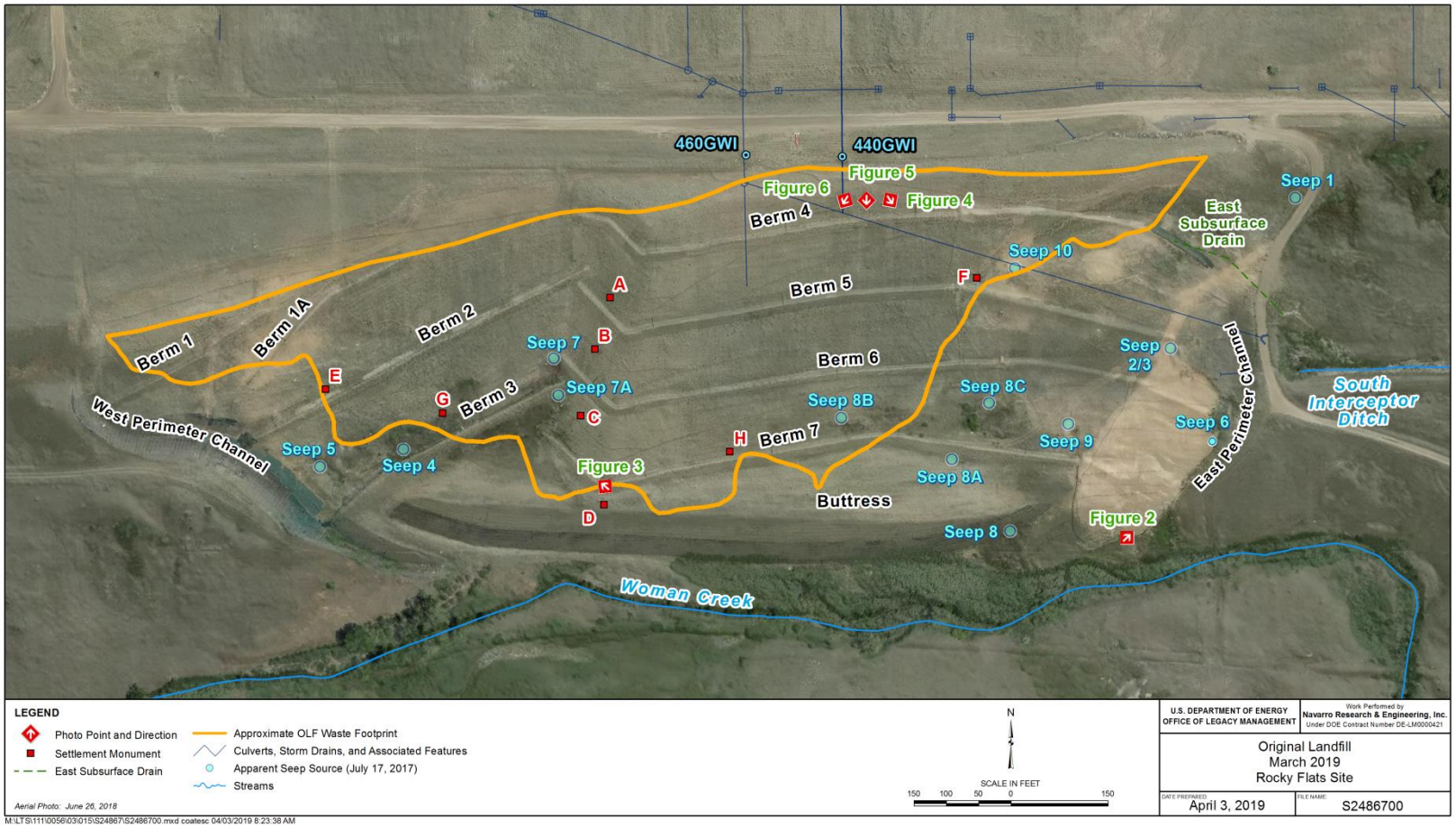

Figure 1: OLF key features and the locations and direction of report figure photographs, Rocky Flats Site, Colorado

Figure 2: Looking northeast to the toe of the regraded 2017 slump area blocking the lower segment of the EPC, which is currently covered in snow

Figure 3: Looking northwest to berms 1–3, and the uppermost end of berm 7, both of which are in good condition

Figure 4: Looking southeast at berms 4–7, which are in good condition

Figure 5: Looking south at berms 4–7, which are in good condition

Figure 6: Looking southwest at berms 4–7, which are in good condition

Rocky Flats Site
Original Landfill - Settlement Plates Monitoring
Quarterly Survey March 6, 2019 Comparison to Previous December 3, 2018

03-06-19 OBSERVATIONS					DELTA	DELTA	DELTA	12-03-18 OBSERVATIONS				
POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION	NORTHING	EASTING	ELEVATION	POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
66552	747913.46	2082234.07	6004.99	N RIM PIPE AA	-0.01	0.01	-0.01	66302	747913.45	2082234.08	6004.98	N RIM PIPE AA
66553	747644.91	2081851.22	5975.37	N RIM PIPE BB	-0.03	0.00	-0.01	66303	747644.88	2081851.22	5975.37	N RIM PIPE BB
66556	747883.18	2081665.97	6019.52	N RIM PIPE CC	0.00	0.00	0.02	66306	747883.18	2081665.97	6019.54	N RIM PIPE CC
66557	747803.30	2081642.34	6006.06	N RIM PIPE DD	0.00	0.00	-0.01	66307	747803.29	2081642.34	6006.05	N RIM PIPE DD
66558	747700.66	2081620.52	5988.52	N RIM PIPE EE	0.00	0.01	0.00	66308	747700.66	2081620.53	5988.52	N RIM PIPE EE
66560	747703.31	2081407.63	5997.13	N RIM PIPE FF	-0.03	0.00	0.02	66310	747703.28	2081407.63	5997.15	N RIM PIPE FF
66559	747563.06	2081656.30	5974.13	N RIM PIPE GG	0.00	0.01	0.01	66309	747563.06	2081656.31	5974.14	N RIM PIPE GG
66561	747738.32	2081227.52	6012.57	N RIM PIPE HH	-0.04	0.00	0.01	66311	747738.28	2081227.52	6012.58	N RIM PIPE HH

DELTAS ARE CALCULATED AS THE DIFFERENCE BETWEEN THE 03-06-19 OBSERVATION AND THE 12-03-18 OBSERVATION

POINTS ARE GRID BASED COLORADO STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NAD 27, NGVD 29

Page A-39

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Appendix B

Analytical Results for Water Samples—First Quarter CY 2019

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RFLMA Data

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	SAMPLE CODE	CAS	ANALYTE	FILTRATION STATUS	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
70193	WL	1/30/2019	RFS01-10.1901010-001	71-55-6	1,1,1-Trichloroethane	N	0.16	ug/L	U	F	0.16		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	79-34-5	1,1,2,2-Tetrachloroethane	N	0.21	ug/L	U	F	0.21		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	79-00-5	1,1,2-Trichloroethane	N	0.27	ug/L	U	F	0.27		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	75-35-4	1,1-Dichloroethene	N	0.23	ug/L	U	F	0.23		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	120-82-1	1,2,4-Trichlorobenzene	N	0.21	ug/L	U	F	0.21		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	95-50-1	1,2-Dichlorobenzene	N	0.15	ug/L	U	F	0.15		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	107-06-2	1,2-Dichloroethane	N	0.13	ug/L	U	F	0.13		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	78-87-5	1,2-Dichloropropane	N	0.18	ug/L	U	F	0.18		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	541-73-1	1,3-Dichlorobenzene	N	0.13	ug/L	U	F	0.13		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	106-46-7	1,4-Dichlorobenzene	N	0.16	ug/L	U	F	0.16		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	7440-38-2	Arsenic	Y	0.33	ug/L	U	F	0.33		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	71-43-2	Benzene	N	0.16	ug/L	U	F	0.16		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	7440-41-7	Beryllium	Y	0.08	ug/L	U	F	0.08		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	7440-42-8	Boron	Y	19	ug/L		F	4.4		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	75-25-2	Bromoform	N	0.19	ug/L	U	F	0.19		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	7440-43-9	Cadmium	Y	0.27	ug/L	U	F	0.27		FJQ
70193	WL	1/30/2019	RFS01-10.1901010-001	56-23-5	Carbon tetrachloride	N	0.19	ug/L	U	F	0.19		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	108-90-7	Chlorobenzene	N	0.17	ug/L	U	F	0.17		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	67-66-3	Chloroform	N	0.16	ug/L	U	F	0.16		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	74-87-3	Chloromethane	N	0.3	ug/L	U	F	0.3		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	7440-47-3	Chromium	Y	0.5	ug/L	U	F	0.5		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	156-59-2	cis-1,2-Dichloroethene	N	0.15	ug/L	U	F	0.15		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	7440-50-8	Copper	Y	0.56	ug/L	U	F	0.56		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	100-41-4	Ethylbenzene	N	0.16	ug/L	U	F	0.16		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	87-68-3	Hexachlorobutadiene	N	0.36	ug/L	U	F	0.36		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	7439-92-1	Lead	Y	0.18	ug/L	U	F	0.18		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	7439-97-6	Mercury	Y	0.027	ug/L	U	F	0.027		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	75-09-2	Methylene chloride	N	0.32	ug/L	U	F	0.32		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	91-20-3	Naphthalene	N	0.22	ug/L	U	F	0.22		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	7440-02-0	Nickel	Y	0.3	ug/L	U	F	0.3		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	7782-49-2	Selenium	Y	6	ug/L		F	0.7		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	7440-22-4	Silver	Y	0.033	ug/L	U	F	0.033		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	100-42-5	Styrene	N	0.17	ug/L	U	F	0.17		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	127-18-4	Tetrachloroethene	N	0.2	ug/L	U	F	0.2		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	108-88-3	Toluene	N	0.17	ug/L	U	F	0.17		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	1330-20-7	Total Xylenes	N	0.19	ug/L	U	F	0.19		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	156-60-5	trans-1,2-Dichloroethene	N	0.15	ug/L	U	F	0.15		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	79-01-6	Trichloroethene	N	0.16	ug/L	U	F	0.16		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	7440-61-1	Uranium	Y	0.087	ug/L	J	F	0.05		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	75-01-4	Vinyl chloride	N	0.1	ug/L	U	F	0.1		FQ
70193	WL	1/30/2019	RFS01-10.1901010-001	7440-66-6	Zinc	Y	2	ug/L	U	F	2		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	71-55-6	1,1,1-Trichloroethane	N	0.16	ug/L	U	F	0.16		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	79-34-5	1,1,2,2-Tetrachloroethane	N	0.21	ug/L	U	F	0.21		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	79-00-5	1,1,2-Trichloroethane	N	0.27	ug/L	U	F	0.27		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	75-35-4	1,1-Dichloroethene	N	1.8	ug/L		F	0.23		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	120-82-1	1,2,4-Trichlorobenzene	N	0.21	ug/L	U	F	0.21		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	95-50-1	1,2-Dichlorobenzene	N	0.15	ug/L	U	F	0.15		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	107-06-2	1,2-Dichloroethane	N	0.13	ug/L	U	F	0.13		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	78-87-5	1,2-Dichloropropane	N	0.18	ug/L	U	F	0.18		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	541-73-1	1,3-Dichlorobenzene	N	0.13	ug/L	U	F	0.13		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	106-46-7	1,4-Dichlorobenzene	N	0.16	ug/L	U	F	0.16		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	7440-38-2	Arsenic	Y	0.33	ug/L	U	F	0.33		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	71-43-2	Benzene	N	0.16	ug/L	U	F	0.16		FQ

RFLMA Data

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	SAMPLE CODE	CAS	ANALYTE	FILTRATION STATUS	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
70393	WL	1/30/2019	RFS01-10.1901010-002	7440-41-7	Beryllium	Y	0.12	ug/L	J	F	0.08		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	7440-42-8	Boron	Y	5.3	ug/L	J	F	4.4		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	75-25-2	Bromoform	N	0.19	ug/L	U	F	0.19		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	7440-43-9	Cadmium	Y	0.27	ug/L	U	F	0.27		FJQ
70393	WL	1/30/2019	RFS01-10.1901010-002	56-23-5	Carbon tetrachloride	N	0.19	ug/L	U	F	0.19		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	108-90-7	Chlorobenzene	N	0.17	ug/L	U	F	0.17		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	67-66-3	Chloroform	N	0.16	ug/L	U	F	0.16		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	74-87-3	Chloromethane	N	0.3	ug/L	U	F	0.3		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	7440-47-3	Chromium	Y	0.5	ug/L	U	F	0.5		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	156-59-2	cis-1,2-Dichloroethene	N	0.15	ug/L	U	F	0.15		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	7440-50-8	Copper	Y	0.56	ug/L	U	F	0.56		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	100-41-4	Ethylbenzene	N	0.16	ug/L	U	F	0.16		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	87-68-3	Hexachlorobutadiene	N	0.36	ug/L	U	F	0.36		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	7439-92-1	Lead	Y	0.18	ug/L	U	F	0.18		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	7439-97-6	Mercury	Y	0.027	ug/L	U	F	0.027		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	75-09-2	Methylene chloride	N	0.32	ug/L	U	F	0.32		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	91-20-3	Naphthalene	N	0.22	ug/L	U	F	0.22		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	7440-02-0	Nickel	Y	1.1	ug/L	J	F	0.3		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	7782-49-2	Selenium	Y	1	ug/L	J	F	0.7		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	7440-22-4	Silver	Y	0.033	ug/L	U	F	0.033		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	100-42-5	Styrene	N	0.17	ug/L	U	F	0.17		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	127-18-4	Tetrachloroethene	N	1.3	ug/L		F	0.2		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	108-88-3	Toluene	N	0.17	ug/L	U	F	0.17		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	1330-20-7	Total Xylenes	N	0.19	ug/L	U	F	0.19		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	156-60-5	trans-1,2-Dichloroethene	N	0.15	ug/L	U	F	0.15		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	79-01-6	Trichloroethene	N	6.5	ug/L		F	0.16		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	7440-61-1	Uranium	Y	0.19	ug/L		F	0.05		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	75-01-4	Vinyl chloride	N	0.1	ug/L	U	F	0.1		FQ
70393	WL	1/30/2019	RFS01-10.1901010-002	7440-66-6	Zinc	Y	2	ug/L	U	F	2		FQ
70693	WL	1/30/2019	RFS01-10.1901010-003	71-55-6	1,1,1-Trichloroethane	N	0.45	ug/L	J	F	0.16		F
70693	WL	1/30/2019	RFS01-10.1901010-003	79-34-5	1,1,2,2-Tetrachloroethane	N	0.21	ug/L	U	F	0.21		F
70693	WL	1/30/2019	RFS01-10.1901010-003	79-00-5	1,1,2-Trichloroethane	N	0.27	ug/L	U	F	0.27		F
70693	WL	1/30/2019	RFS01-10.1901010-003	75-35-4	1,1-Dichloroethene	N	1.6	ug/L		F	0.23		F
70693	WL	1/30/2019	RFS01-10.1901010-003	120-82-1	1,2,4-Trichlorobenzene	N	0.21	ug/L	U	F	0.21		F
70693	WL	1/30/2019	RFS01-10.1901010-003	95-50-1	1,2-Dichlorobenzene	N	0.15	ug/L	U	F	0.15		F
70693	WL	1/30/2019	RFS01-10.1901010-003	107-06-2	1,2-Dichloroethane	N	0.13	ug/L	U	F	0.13		F
70693	WL	1/30/2019	RFS01-10.1901010-003	78-87-5	1,2-Dichloropropane	N	0.18	ug/L	U	F	0.18		F
70693	WL	1/30/2019	RFS01-10.1901010-003	541-73-1	1,3-Dichlorobenzene	N	0.13	ug/L	U	F	0.13		F
70693	WL	1/30/2019	RFS01-10.1901010-003	106-46-7	1,4-Dichlorobenzene	N	0.16	ug/L	U	F	0.16		F
70693	WL	1/30/2019	RFS01-10.1901010-003	7440-38-2	Arsenic	Y	0.33	ug/L	U	F	0.33		F
70693	WL	1/30/2019	RFS01-10.1901010-003	71-43-2	Benzene	N	0.16	ug/L	U	F	0.16		F
70693	WL	1/30/2019	RFS01-10.1901010-003	7440-41-7	Beryllium	Y	0.08	ug/L	U	F	0.08		F
70693	WL	1/30/2019	RFS01-10.1901010-003	7440-42-8	Boron	Y	26	ug/L		F	4.4		F
70693	WL	1/30/2019	RFS01-10.1901010-003	75-25-2	Bromoform	N	0.19	ug/L	U	F	0.19		F
70693	WL	1/30/2019	RFS01-10.1901010-003	7440-43-9	Cadmium	Y	0.27	ug/L	U	F	0.27		FJ
70693	WL	1/30/2019	RFS01-10.1901010-003	56-23-5	Carbon tetrachloride	N	0.48	ug/L	J	F	0.19		F
70693	WL	1/30/2019	RFS01-10.1901010-003	108-90-7	Chlorobenzene	N	0.17	ug/L	U	F	0.17		F
70693	WL	1/30/2019	RFS01-10.1901010-003	67-66-3	Chloroform	N	0.16	ug/L	U	F	0.16		F
70693	WL	1/30/2019	RFS01-10.1901010-003	74-87-3	Chloromethane	N	0.3	ug/L	U	F	0.3		F
70693	WL	1/30/2019	RFS01-10.1901010-003	7440-47-3	Chromium	Y	0.5	ug/L	U	F	0.5		F
70693	WL	1/30/2019	RFS01-10.1901010-003	156-59-2	cis-1,2-Dichloroethene	N	0.15	ug/L	U	F	0.15		F
70693	WL	1/30/2019	RFS01-10.1901010-003	7440-50-8	Copper	Y	0.56	ug/L	U	F	0.56		F
70693	WL	1/30/2019	RFS01-10.1901010-003	100-41-4	Ethylbenzene	N	0.16	ug/L	U	F	0.16		F

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70693	WL	1/30/2019	RFS01-10.1901010-003	87-68-3	Hexachlorobutadiene	N	0.36	ug/L	U	F	0.36		F
70693	WL	1/30/2019	RFS01-10.1901010-003	7439-92-1	Lead	Y	0.18	ug/L	U	F	0.18		F
70693	WL	1/30/2019	RFS01-10.1901010-003	7439-97-6	Mercury	Y	0.027	ug/L	U	F	0.027		F
70693	WL	1/30/2019	RFS01-10.1901010-003	75-09-2	Methylene chloride	N	0.32	ug/L	U	F	0.32		F
70693	WL	1/30/2019	RFS01-10.1901010-003	91-20-3	Naphthalene	N	0.22	ug/L	U	F	0.22		F
70693	WL	1/30/2019	RFS01-10.1901010-003	7440-02-0	Nickel	Y	0.54	ug/L	J	F	0.3		F
70693	WL	1/30/2019	RFS01-10.1901010-003	7782-49-2	Selenium	Y	0.71	ug/L	J	F	0.7		F
70693	WL	1/30/2019	RFS01-10.1901010-003	7440-22-4	Silver	Y	0.033	ug/L	U	F	0.033		F
70693	WL	1/30/2019	RFS01-10.1901010-003	100-42-5	Styrene	N	0.17	ug/L	U	F	0.17		F
70693	WL	1/30/2019	RFS01-10.1901010-003	127-18-4	Tetrachloroethene	N	0.82	ug/L	J	F	0.2		F
70693	WL	1/30/2019	RFS01-10.1901010-003	108-88-3	Toluene	N	0.17	ug/L	U	F	0.17		F
70693	WL	1/30/2019	RFS01-10.1901010-003	1330-20-7	Total Xylenes	N	0.19	ug/L	U	F	0.19		F
70693	WL	1/30/2019	RFS01-10.1901010-003	156-60-5	trans-1,2-Dichloroethene	N	0.15	ug/L	U	F	0.15		F
70693	WL	1/30/2019	RFS01-10.1901010-003	79-01-6	Trichloroethene	N	2.6	ug/L		F	0.16		F
70693	WL	1/30/2019	RFS01-10.1901010-003	7440-61-1	Uranium	Y	0.05	ug/L	U	F	0.05		F
70693	WL	1/30/2019	RFS01-10.1901010-003	75-01-4	Vinyl chloride	N	0.1	ug/L	U	F	0.1		F
70693	WL	1/30/2019	RFS01-10.1901010-003	7440-66-6	Zinc	Y	2	ug/L	U	F	2		F
73005	WL	1/31/2019	RFS01-10.1901010-004	71-55-6	1,1,1-Trichloroethane	N	0.16	ug/L	U	F	0.16		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	79-34-5	1,1,2,2-Tetrachloroethane	N	0.21	ug/L	U	F	0.21		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	79-00-5	1,1,2-Trichloroethane	N	0.27	ug/L	U	F	0.27		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	75-35-4	1,1-Dichloroethene	N	0.23	ug/L	U	F	0.23		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	120-82-1	1,2,4-Trichlorobenzene	N	0.21	ug/L	U	F	0.21		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	95-50-1	1,2-Dichlorobenzene	N	0.15	ug/L	U	F	0.15		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	107-06-2	1,2-Dichloroethane	N	0.13	ug/L	U	F	0.13		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	78-87-5	1,2-Dichloropropane	N	0.18	ug/L	U	F	0.18		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	541-73-1	1,3-Dichlorobenzene	N	0.13	ug/L	U	F	0.13		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	106-46-7	1,4-Dichlorobenzene	N	0.16	ug/L	U	F	0.16		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	7440-38-2	Arsenic	Y	0.33	ug/L	U	F	0.33		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	71-43-2	Benzene	N	0.16	ug/L	U	F	0.16		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	7440-41-7	Beryllium	Y	0.08	ug/L	U	F	0.08		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	7440-42-8	Boron	Y	39	ug/L		F	4.4		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	75-25-2	Bromoform	N	0.19	ug/L	U	F	0.19		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	7440-43-9	Cadmium	Y	0.27	ug/L	U	F	0.27		FJQ
73005	WL	1/31/2019	RFS01-10.1901010-004	56-23-5	Carbon tetrachloride	N	0.19	ug/L	U	F	0.19		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	108-90-7	Chlorobenzene	N	0.17	ug/L	U	F	0.17		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	67-66-3	Chloroform	N	0.16	ug/L	U	F	0.16		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	74-87-3	Chloromethane	N	0.3	ug/L	U	F	0.3		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	7440-47-3	Chromium	Y	0.93	ug/L	J	F	0.5		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	156-59-2	cis-1,2-Dichloroethene	N	0.15	ug/L	U	F	0.15		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	7440-50-8	Copper	Y	0.68	ug/L	J	F	0.56		FJQ
73005	WL	1/31/2019	RFS01-10.1901010-004	100-41-4	Ethylbenzene	N	0.16	ug/L	U	F	0.16		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	87-68-3	Hexachlorobutadiene	N	0.36	ug/L	U	F	0.36		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	7439-92-1	Lead	Y	0.18	ug/L	U	F	0.18		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	7439-97-6	Mercury	Y	0.027	ug/L	U	F	0.027		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	75-09-2	Methylene chloride	N	0.32	ug/L	U	F	0.32		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	91-20-3	Naphthalene	N	0.22	ug/L	U	F	0.22		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	7440-02-0	Nickel	Y	1.1	ug/L	J	F	0.3		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	7782-49-2	Selenium	Y	7.9	ug/L		F	0.7		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	7440-22-4	Silver	Y	0.033	ug/L	U	F	0.033		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	100-42-5	Styrene	N	0.17	ug/L	U	F	0.17		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	127-18-4	Tetrachloroethene	N	0.2	ug/L	U	F	0.2		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	108-88-3	Toluene	N	0.17	ug/L	U	F	0.17		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	1330-20-7	Total Xylenes	N	0.19	ug/L	U	F	0.19		FQ

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73005	WL	1/31/2019	RFS01-10.1901010-004	156-60-5	trans-1,2-Dichloroethene	N	0.15	ug/L	U	F	0.15		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	79-01-6	Trichloroethene	N	0.16	ug/L	U	F	0.16		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	7440-61-1	Uranium	Y	42	ug/L		F	0.05		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	75-01-4	Vinyl chloride	N	0.1	ug/L	U	F	0.1		FQ
73005	WL	1/31/2019	RFS01-10.1901010-004	7440-66-6	Zinc	Y	2.9	ug/L	J	F	2		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	71-55-6	1,1,1-Trichloroethane	N	0.16	ug/L	U	F	0.16		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	79-34-5	1,1,2,2-Tetrachloroethane	N	0.21	ug/L	U	F	0.21		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	79-00-5	1,1,2-Trichloroethane	N	0.27	ug/L	U	F	0.27		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	75-35-4	1,1-Dichloroethene	N	0.23	ug/L	U	F	0.23		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	120-82-1	1,2,4-Trichlorobenzene	N	0.21	ug/L	U	F	0.21		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	95-50-1	1,2-Dichlorobenzene	N	0.15	ug/L	U	F	0.15		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	107-06-2	1,2-Dichloroethane	N	0.13	ug/L	U	F	0.13		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	78-87-5	1,2-Dichloropropane	N	0.18	ug/L	U	F	0.18		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	541-73-1	1,3-Dichlorobenzene	N	0.13	ug/L	U	F	0.13		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	106-46-7	1,4-Dichlorobenzene	N	0.16	ug/L	U	F	0.16		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	7440-38-2	Arsenic	Y	0.33	ug/L	U	F	0.33		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	71-43-2	Benzene	N	0.16	ug/L	U	F	0.16		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	7440-41-7	Beryllium	Y	0.08	ug/L	U	F	0.08		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	7440-42-8	Boron	Y	130	ug/L		F	4.4		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	75-25-2	Bromoform	N	0.19	ug/L	U	F	0.19		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	7440-43-9	Cadmium	Y	0.27	ug/L	U	F	0.27		FJQ
73105	WL	1/31/2019	RFS01-10.1901010-005	56-23-5	Carbon tetrachloride	N	0.19	ug/L	U	F	0.19		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	108-90-7	Chlorobenzene	N	0.17	ug/L	U	F	0.17		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	67-66-3	Chloroform	N	0.16	ug/L	U	F	0.16		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	74-87-3	Chloromethane	N	0.3	ug/L	U	F	0.3		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	7440-47-3	Chromium	Y	0.5	ug/L	U	F	0.5		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	156-59-2	cis-1,2-Dichloroethene	N	0.15	ug/L	U	F	0.15		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	7440-50-8	Copper	Y	0.56	ug/L	U	F	0.56		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	100-41-4	Ethylbenzene	N	0.16	ug/L	U	F	0.16		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	87-68-3	Hexachlorobutadiene	N	0.36	ug/L	U	F	0.36		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	7439-92-1	Lead	Y	0.18	ug/L	U	F	0.18		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	7439-97-6	Mercury	Y	0.027	ug/L	U	F	0.027		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	75-09-2	Methylene chloride	N	0.32	ug/L	U	F	0.32		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	91-20-3	Naphthalene	N	0.22	ug/L	U	F	0.22		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	7440-02-0	Nickel	Y	3.6	ug/L		F	0.3		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	7782-49-2	Selenium	Y	0.7	ug/L	U	F	0.7		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	7440-22-4	Silver	Y	0.033	ug/L	U	F	0.033		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	100-42-5	Styrene	N	0.17	ug/L	U	F	0.17		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	127-18-4	Tetrachloroethene	N	0.2	ug/L	U	F	0.2		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	108-88-3	Toluene	N	0.17	ug/L	U	F	0.17		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	1330-20-7	Total Xylenes	N	0.19	ug/L	U	F	0.19		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	156-60-5	trans-1,2-Dichloroethene	N	0.15	ug/L	U	F	0.15		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	79-01-6	Trichloroethene	N	0.16	ug/L	U	F	0.16		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	7440-61-1	Uranium	Y	20	ug/L		F	0.05		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	75-01-4	Vinyl chloride	N	0.1	ug/L	U	F	0.1		FQ
73105	WL	1/31/2019	RFS01-10.1901010-005	7440-66-6	Zinc	Y	4	ug/L	J	F	2		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	71-55-6	1,1,1-Trichloroethane	N	0.16	ug/L	U	F	0.16		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	79-34-5	1,1,2,2-Tetrachloroethane	N	0.21	ug/L	U	F	0.21		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	79-00-5	1,1,2-Trichloroethane	N	0.27	ug/L	U	F	0.27		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	75-35-4	1,1-Dichloroethene	N	0.23	ug/L	U	F	0.23		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	120-82-1	1,2,4-Trichlorobenzene	N	0.21	ug/L	U	F	0.21		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	95-50-1	1,2-Dichlorobenzene	N	0.15	ug/L	U	F	0.15		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	107-06-2	1,2-Dichloroethane	N	0.13	ug/L	U	F	0.13		FQ

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LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	SAMPLE CODE	CAS	ANALYTE	FILTRATION STATUS	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
73205	WL	1/30/2019	RFS01-10.1901010-006	78-87-5	1,2-Dichloropropane	N	0.18	ug/L	U	F	0.18		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	541-73-1	1,3-Dichlorobenzene	N	0.13	ug/L	U	F	0.13		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	106-46-7	1,4-Dichlorobenzene	N	0.16	ug/L	U	F	0.16		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	7440-38-2	Arsenic	Y	0.72	ug/L	J	F	0.33		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	71-43-2	Benzene	N	0.16	ug/L	U	F	0.16		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	7440-41-7	Beryllium	Y	0.08	ug/L	U	F	0.08		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	7440-42-8	Boron	Y	65	ug/L		F	4.4		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	75-25-2	Bromoform	N	0.19	ug/L	U	F	0.19		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	7440-43-9	Cadmium	Y	0.27	ug/L	U	F	0.27		FJQ
73205	WL	1/30/2019	RFS01-10.1901010-006	56-23-5	Carbon tetrachloride	N	0.19	ug/L	U	F	0.19		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	108-90-7	Chlorobenzene	N	0.17	ug/L	U	F	0.17		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	67-66-3	Chloroform	N	0.16	ug/L	U	F	0.16		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	74-87-3	Chloromethane	N	0.3	ug/L	U	F	0.3		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	7440-47-3	Chromium	Y	0.5	ug/L	U	F	0.5		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	156-59-2	cis-1,2-Dichloroethene	N	0.15	ug/L	U	F	0.15		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	7440-50-8	Copper	Y	1.1	ug/L	J	F	0.56		FJQ
73205	WL	1/30/2019	RFS01-10.1901010-006	100-41-4	Ethylbenzene	N	0.16	ug/L	U	F	0.16		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	87-68-3	Hexachlorobutadiene	N	0.36	ug/L	U	F	0.36		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	7439-92-1	Lead	Y	0.18	ug/L	U	F	0.18		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	7439-97-6	Mercury	Y	0.027	ug/L	U	F	0.027		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	75-09-2	Methylene chloride	N	0.32	ug/L	U	F	0.32		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	91-20-3	Naphthalene	N	0.22	ug/L	U	F	0.22		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	7440-02-0	Nickel	Y	1.8	ug/L	J	F	0.3		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	7782-49-2	Selenium	Y	310	ug/L		F	0.7		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	7440-22-4	Silver	Y	0.033	ug/L	U	F	0.033		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	100-42-5	Styrene	N	0.17	ug/L	U	F	0.17		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	127-18-4	Tetrachloroethene	N	0.2	ug/L	U	F	0.2		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	108-88-3	Toluene	N	0.17	ug/L	U	F	0.17		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	1330-20-7	Total Xylenes	N	0.19	ug/L	U	F	0.19		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	156-60-5	trans-1,2-Dichloroethene	N	0.15	ug/L	U	F	0.15		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	79-01-6	Trichloroethene	N	0.16	ug/L	U	F	0.16		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	7440-61-1	Uranium	Y	110	ug/L		F	0.05		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	75-01-4	Vinyl chloride	N	0.1	ug/L	U	F	0.1		FQ
73205	WL	1/30/2019	RFS01-10.1901010-006	7440-66-6	Zinc	Y	2.2	ug/L	J	F	2		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	71-55-6	1,1,1-Trichloroethane	N	0.16	ug/L	U	F	0.16		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	79-34-5	1,1,2,2-Tetrachloroethane	N	0.21	ug/L	U	F	0.21		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	79-00-5	1,1,2-Trichloroethane	N	0.27	ug/L	U	F	0.27		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	75-35-4	1,1-Dichloroethene	N	0.23	ug/L	U	F	0.23		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	120-82-1	1,2,4-Trichlorobenzene	N	0.21	ug/L	U	F	0.21		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	95-50-1	1,2-Dichlorobenzene	N	0.15	ug/L	U	F	0.15		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	107-06-2	1,2-Dichloroethane	N	0.13	ug/L	U	F	0.13		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	78-87-5	1,2-Dichloropropane	N	0.18	ug/L	U	F	0.18		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	541-73-1	1,3-Dichlorobenzene	N	0.13	ug/L	U	F	0.13		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	106-46-7	1,4-Dichlorobenzene	N	0.16	ug/L	U	F	0.16		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	91-58-7	2-Chloronaphthalene	N	0.25	ug/L	U	F	0.25		FQ
80005	WL	1/23/2019	RFS01-10.1901010-008	83-32-9	Acenaphthene	N	0.01	ug/L	U	F	0.01		FQ
80005	WL	1/23/2019	RFS01-10.1901010-008	120-12-7	Anthracene	N	0.013	ug/L	U	F	0.013		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	7440-38-2	Arsenic	Y	0.33	ug/L	U	F	0.33		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	71-43-2	Benzene	N	0.16	ug/L	U	F	0.16		FQ
80005	WL	1/23/2019	RFS01-10.1901010-008	50-32-8	Benzo(a)pyrene	N	0.0049	ug/L	U	F	0.0049		FQ
80005	WL	1/23/2019	RFS01-10.1901010-008	191-24-2	Benzo(g,h,i)Perylene	N	0.0034	ug/L	U	F	0.0034		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	7440-41-7	Beryllium	Y	0.08	ug/L	U	F	0.08		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	108-60-1	Bis(2-chloroisopropyl) ether	N	0.27	ug/L	U	F	0.27		FQ

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80005	WL	1/23/2019	RFS01-10.1901010-007	117-81-7	Bis(2-ethylhexyl) phthalate	N	0.53	ug/L	U	F	0.53		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	7440-42-8	Boron	Y	49	ug/L		F	4.4		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	75-25-2	Bromoform	N	0.19	ug/L	U	F	0.19		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	7440-43-9	Cadmium	Y	0.27	ug/L	U	F	0.27		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	56-23-5	Carbon tetrachloride	N	0.19	ug/L	U	F	0.19		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	108-90-7	Chlorobenzene	N	0.17	ug/L	U	F	0.17		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	67-66-3	Chloroform	N	0.16	ug/L	U	F	0.16		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	74-87-3	Chloromethane	N	0.3	ug/L	U	F	0.3		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	7440-47-3	Chromium	Y	0.5	ug/L	U	F	0.5		FQ
80005	WL	1/23/2019	RFS01-10.1901010-008	218-01-9	Chrysene	N	0.0066	ug/L	J	F	0.003		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	156-59-2	cis-1,2-Dichloroethene	N	0.15	ug/L	U	F	0.15		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	7440-50-8	Copper	Y	0.56	ug/L	U	F	0.56		FQ
80005	WL	1/23/2019	RFS01-10.1901010-008	53-70-3	Dibenz(a,h)anthracene	N	0.0046	ug/L	U	F	0.0046		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	84-66-2	Diethyl phthalate	N	0.36	ug/L	U	F	0.36		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	131-11-3	Dimethyl phthalate	N	0.2	ug/L	U	F	0.2		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	84-74-2	Di-n-butyl phthalate	N	1.1	ug/L	U	F	1.1		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	100-41-4	Ethylbenzene	N	0.16	ug/L	U	F	0.16		FQ
80005	WL	1/23/2019	RFS01-10.1901010-008	206-44-0	Fluoranthene	N	0.0067	ug/L	J	F	0.0043		FQ
80005	WL	1/23/2019	RFS01-10.1901010-008	86-73-7	Fluorene	N	0.018	ug/L	U	F	0.018		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	87-68-3	Hexachlorobutadiene	N	0.36	ug/L	U	F	0.36		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	67-72-1	Hexachloroethane	N	2	ug/L	U	F	2		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	78-59-1	Isophorone	N	0.2	ug/L	U	F	0.2		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	7439-92-1	Lead	Y	0.18	ug/L	U	F	0.18		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	7439-97-6	Mercury	Y	0.027	ug/L	U	F	0.027		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	75-09-2	Methylene chloride	N	0.32	ug/L	U	F	0.32		FQ
80005	WL	1/23/2019	RFS01-10.1901010-008	91-20-3	Naphthalene	N	0.0055	ug/L	J	F	0.005		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	7440-02-0	Nickel	Y	0.37	ug/L	J	F	0.3		FQU
80005	WL	1/23/2019	RFS01-10.1901010-008	129-00-0	Pyrene	N	0.0076	ug/L	U	F	0.0076		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	7782-49-2	Selenium	Y	0.7	ug/L	U	F	0.7		FJQ
80005	WL	1/23/2019	RFS01-10.1901010-007	7440-22-4	Silver	Y	0.033	ug/L	J	F	0.033		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	100-42-5	Styrene	N	0.17	ug/L	U	F	0.17		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	127-18-4	Tetrachloroethene	N	0.2	ug/L	U	F	0.2		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	108-88-3	Toluene	N	0.17	ug/L	U	F	0.17		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	1330-20-7	Total Xylenes	N	0.19	ug/L	U	F	0.19		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	156-60-5	trans-1,2-Dichloroethene	N	0.15	ug/L	U	F	0.15		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	79-01-6	Trichloroethene	N	0.16	ug/L	U	F	0.16		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	7440-61-1	Uranium	Y	7	ug/L		F	0.05		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	75-01-4	Vinyl chloride	N	0.1	ug/L	U	F	0.1		FQ
80005	WL	1/23/2019	RFS01-10.1901010-007	7440-66-6	Zinc	Y	2	ug/L	U	F	2		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	71-55-6	1,1,1-Trichloroethane	N	0.16	ug/L	U	F	0.16		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	71-55-6	1,1,1-Trichloroethane	N	0.16	ug/L	U	D	0.16		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	79-34-5	1,1,2,2-Tetrachloroethane	N	0.21	ug/L	U	F	0.21		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	79-34-5	1,1,2,2-Tetrachloroethane	N	0.21	ug/L	U	D	0.21		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	79-00-5	1,1,2-Trichloroethane	N	0.27	ug/L	U	F	0.27		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	79-00-5	1,1,2-Trichloroethane	N	0.27	ug/L	U	D	0.27		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	75-35-4	1,1-Dichloroethene	N	0.23	ug/L	U	F	0.23		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	75-35-4	1,1-Dichloroethene	N	0.23	ug/L	U	D	0.23		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	120-82-1	1,2,4-Trichlorobenzene	N	0.21	ug/L	U	F	0.21		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	120-82-1	1,2,4-Trichlorobenzene	N	0.21	ug/L	U	D	0.21		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	95-50-1	1,2-Dichlorobenzene	N	0.15	ug/L	U	F	0.15		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	95-50-1	1,2-Dichlorobenzene	N	0.15	ug/L	U	D	0.15		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	107-06-2	1,2-Dichloroethane	N	0.13	ug/L	U	F	0.13		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	107-06-2	1,2-Dichloroethane	N	0.13	ug/L	U	D	0.13		FQ

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80105	WL	1/23/2019	RFS01-10.1901010-009	78-87-5	1,2-Dichloropropane	N	0.18	ug/L	U	F	0.18		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	78-87-5	1,2-Dichloropropane	N	0.18	ug/L	U	D	0.18		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	541-73-1	1,3-Dichlorobenzene	N	0.13	ug/L	U	F	0.13		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	541-73-1	1,3-Dichlorobenzene	N	0.13	ug/L	U	D	0.13		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	106-46-7	1,4-Dichlorobenzene	N	0.16	ug/L	U	F	0.16		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	106-46-7	1,4-Dichlorobenzene	N	0.16	ug/L	U	D	0.16		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	91-58-7	2-Chloronaphthalene	N	0.25	ug/L	U	F	0.25		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	91-58-7	2-Chloronaphthalene	N	0.25	ug/L	U	D	0.25		FQ
80105	WL	1/23/2019	RFS01-10.1901010-010	83-32-9	Acenaphthene	N	0.01	ug/L	U	F	0.01		FQ
80105	WL	1/23/2019	RFS01-10.1901010-016	83-32-9	Acenaphthene	N	0.01	ug/L	U	D	0.01		FQ
80105	WL	1/23/2019	RFS01-10.1901010-010	120-12-7	Anthracene	N	0.014	ug/L	U	F	0.014		FQ
80105	WL	1/23/2019	RFS01-10.1901010-016	120-12-7	Anthracene	N	0.014	ug/L	U	D	0.014		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	7440-38-2	Arsenic	Y	0.33	ug/L	U	F	0.33		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	7440-38-2	Arsenic	Y	0.33	ug/L	U	D	0.33		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	71-43-2	Benzene	N	0.16	ug/L	U	F	0.16		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	71-43-2	Benzene	N	0.16	ug/L	U	D	0.16		FQ
80105	WL	1/23/2019	RFS01-10.1901010-010	50-32-8	Benzo(a)pyrene	N	0.0049	ug/L	U	F	0.0049		FQ
80105	WL	1/23/2019	RFS01-10.1901010-016	50-32-8	Benzo(a)pyrene	N	0.0049	ug/L	U	D	0.0049		FQ
80105	WL	1/23/2019	RFS01-10.1901010-010	191-24-2	Benzo(g,h,i)Perylene	N	0.0034	ug/L	U	F	0.0034		FQ
80105	WL	1/23/2019	RFS01-10.1901010-016	191-24-2	Benzo(g,h,i)Perylene	N	0.0034	ug/L	U	D	0.0034		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	7440-41-7	Beryllium	Y	0.08	ug/L	U	F	0.08		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	7440-41-7	Beryllium	Y	0.08	ug/L	U	D	0.08		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	108-60-1	Bis(2-chloroisopropyl) ether	N	0.27	ug/L	U	F	0.27		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	108-60-1	Bis(2-chloroisopropyl) ether	N	0.27	ug/L	U	D	0.27		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	117-81-7	Bis(2-ethylhexyl) phthalate	N	0.53	ug/L	U	F	0.53		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	117-81-7	Bis(2-ethylhexyl) phthalate	N	0.53	ug/L	U	D	0.53		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	7440-42-8	Boron	Y	140	ug/L		F	4.4		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	7440-42-8	Boron	Y	140	ug/L		D	4.4		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	75-25-2	Bromoform	N	0.19	ug/L	U	F	0.19		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	75-25-2	Bromoform	N	0.19	ug/L	U	D	0.19		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	7440-43-9	Cadmium	Y	0.27	ug/L	U	F	0.27		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	7440-43-9	Cadmium	Y	0.27	ug/L	U	D	0.27		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	56-23-5	Carbon tetrachloride	N	0.19	ug/L	U	F	0.19		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	56-23-5	Carbon tetrachloride	N	0.19	ug/L	U	D	0.19		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	108-90-7	Chlorobenzene	N	0.17	ug/L	U	F	0.17		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	108-90-7	Chlorobenzene	N	0.17	ug/L	U	D	0.17		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	67-66-3	Chloroform	N	0.16	ug/L	U	F	0.16		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	67-66-3	Chloroform	N	0.16	ug/L	U	D	0.16		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	74-87-3	Chloromethane	N	0.3	ug/L	U	F	0.3		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	74-87-3	Chloromethane	N	0.3	ug/L	U	D	0.3		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	7440-47-3	Chromium	Y	0.55	ug/L	J	F	0.5		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	7440-47-3	Chromium	Y	0.5	ug/L	U	D	0.5		FQ
80105	WL	1/23/2019	RFS01-10.1901010-010	218-01-9	Chrysene	N	0.0031	ug/L	U	F	0.0031		FQ
80105	WL	1/23/2019	RFS01-10.1901010-016	218-01-9	Chrysene	N	0.003	ug/L	U	D	0.003		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	156-59-2	cis-1,2-Dichloroethene	N	0.15	ug/L	U	F	0.15		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	156-59-2	cis-1,2-Dichloroethene	N	0.15	ug/L	U	D	0.15		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	7440-50-8	Copper	Y	0.56	ug/L	U	F	0.56		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	7440-50-8	Copper	Y	0.56	ug/L	U	D	0.56		FQ
80105	WL	1/23/2019	RFS01-10.1901010-010	53-70-3	Dibenz(a,h)anthracene	N	0.0046	ug/L	U	F	0.0046		FQ
80105	WL	1/23/2019	RFS01-10.1901010-016	53-70-3	Dibenz(a,h)anthracene	N	0.0046	ug/L	U	D	0.0046		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	84-66-2	Diethyl phthalate	N	0.36	ug/L	U	F	0.36		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	84-66-2	Diethyl phthalate	N	0.36	ug/L	U	D	0.36		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	131-11-3	Dimethyl phthalate	N	0.2	ug/L	U	F	0.2		FQ

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80105	WL	1/23/2019	RFS01-10.1901010-015	131-11-3	Dimethyl phthalate	N	0.2	ug/L	U	D	0.2		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	84-74-2	Di-n-butyl phthalate	N	1.1	ug/L	U	F	1.1		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	84-74-2	Di-n-butyl phthalate	N	1.1	ug/L	U	D	1.1		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	100-41-4	Ethylbenzene	N	0.16	ug/L	U	F	0.16		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	100-41-4	Ethylbenzene	N	0.16	ug/L	U	D	0.16		FQ
80105	WL	1/23/2019	RFS01-10.1901010-010	206-44-0	Fluoranthene	N	0.0044	ug/L	U	F	0.0044		FQ
80105	WL	1/23/2019	RFS01-10.1901010-016	206-44-0	Fluoranthene	N	0.0043	ug/L	U	D	0.0043		FQ
80105	WL	1/23/2019	RFS01-10.1901010-010	86-73-7	Fluorene	N	0.018	ug/L	U	F	0.018		FQ
80105	WL	1/23/2019	RFS01-10.1901010-016	86-73-7	Fluorene	N	0.018	ug/L	U	D	0.018		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	87-68-3	Hexachlorobutadiene	N	0.36	ug/L	U	F	0.36		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	87-68-3	Hexachlorobutadiene	N	0.36	ug/L	U	D	0.36		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	67-72-1	Hexachloroethane	N	2	ug/L	U	F	2		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	67-72-1	Hexachloroethane	N	2	ug/L	U	D	2		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	78-59-1	Isophorone	N	0.2	ug/L	U	F	0.2		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	78-59-1	Isophorone	N	0.2	ug/L	U	D	0.2		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	7439-92-1	Lead	Y	1.1	ug/L		F	0.18		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	7439-92-1	Lead	Y	0.18	ug/L	U	D	0.18		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	7439-97-6	Mercury	Y	0.027	ug/L	U	F	0.027		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	7439-97-6	Mercury	Y	0.027	ug/L	U	D	0.027		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	75-09-2	Methylene chloride	N	0.32	ug/L	U	F	0.32		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	75-09-2	Methylene chloride	N	0.32	ug/L	U	D	0.32		FQ
80105	WL	1/23/2019	RFS01-10.1901010-010	91-20-3	Naphthalene	N	0.0051	ug/L	U	F	0.0051		FQ
80105	WL	1/23/2019	RFS01-10.1901010-016	91-20-3	Naphthalene	N	0.0051	ug/L	U	D	0.0051		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	7440-02-0	Nickel	Y	0.3	ug/L	U	F	0.3		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	7440-02-0	Nickel	Y	0.3	ug/L	U	D	0.3		FQ
80105	WL	1/23/2019	RFS01-10.1901010-010	129-00-0	Pyrene	N	0.0078	ug/L	U	F	0.0078		FQ
80105	WL	1/23/2019	RFS01-10.1901010-016	129-00-0	Pyrene	N	0.0077	ug/L	U	D	0.0077		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	7782-49-2	Selenium	Y	0.7	ug/L	U	F	0.7		FJQ
80105	WL	1/23/2019	RFS01-10.1901010-015	7782-49-2	Selenium	Y	0.7	ug/L	U	D	0.7		FJQ
80105	WL	1/23/2019	RFS01-10.1901010-009	7440-22-4	Silver	Y	0.033	ug/L	U	F	0.033		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	7440-22-4	Silver	Y	0.033	ug/L	U	D	0.033		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	100-42-5	Styrene	N	0.17	ug/L	U	F	0.17		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	100-42-5	Styrene	N	0.17	ug/L	U	D	0.17		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	127-18-4	Tetrachloroethene	N	0.2	ug/L	U	F	0.2		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	127-18-4	Tetrachloroethene	N	0.2	ug/L	U	D	0.2		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	108-88-3	Toluene	N	0.17	ug/L	U	F	0.17		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	108-88-3	Toluene	N	0.17	ug/L	U	D	0.17		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	1330-20-7	Total Xylenes	N	0.19	ug/L	U	F	0.19		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	1330-20-7	Total Xylenes	N	0.19	ug/L	U	D	0.19		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	156-60-5	trans-1,2-Dichloroethene	N	0.15	ug/L	U	F	0.15		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	156-60-5	trans-1,2-Dichloroethene	N	0.15	ug/L	U	D	0.15		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	79-01-6	Trichloroethene	N	0.16	ug/L	U	F	0.16		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	79-01-6	Trichloroethene	N	0.16	ug/L	U	D	0.16		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	7440-61-1	Uranium	Y	10	ug/L		F	0.05		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	7440-61-1	Uranium	Y	9.3	ug/L		D	0.05		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	75-01-4	Vinyl chloride	N	0.1	ug/L	U	F	0.1		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	75-01-4	Vinyl chloride	N	0.1	ug/L	U	D	0.1		FQ
80105	WL	1/23/2019	RFS01-10.1901010-009	7440-66-6	Zinc	Y	2	ug/L	U	F	2		FQ
80105	WL	1/23/2019	RFS01-10.1901010-015	7440-66-6	Zinc	Y	2	ug/L	U	D	2		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	71-55-6	1,1,1-Trichloroethane	N	0.16	ug/L	U	F	0.16		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	79-34-5	1,1,2,2-Tetrachloroethane	N	0.21	ug/L	U	F	0.21		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	79-00-5	1,1,2-Trichloroethane	N	0.27	ug/L	U	F	0.27		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	75-35-4	1,1-Dichloroethene	N	0.23	ug/L	U	F	0.23		FQ

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80205	WL	1/25/2019	RFS01-10.1901010-011	120-82-1	1,2,4-Trichlorobenzene	N	0.21	ug/L	U	F	0.21		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	95-50-1	1,2-Dichlorobenzene	N	0.15	ug/L	U	F	0.15		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	107-06-2	1,2-Dichloroethane	N	0.13	ug/L	U	F	0.13		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	78-87-5	1,2-Dichloropropane	N	0.18	ug/L	U	F	0.18		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	541-73-1	1,3-Dichlorobenzene	N	0.13	ug/L	U	F	0.13		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	106-46-7	1,4-Dichlorobenzene	N	0.16	ug/L	U	F	0.16		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	91-58-7	2-Chloronaphthalene	N	0.25	ug/L	U	F	0.25		FQ
80205	WL	1/25/2019	RFS01-10.1901010-012	83-32-9	Acenaphthene	N	0.01	ug/L	U	F	0.01		FQ
80205	WL	1/25/2019	RFS01-10.1901010-012	120-12-7	Anthracene	N	0.013	ug/L	U	F	0.013		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	7440-38-2	Arsenic	Y	0.36	ug/L	J	F	0.33		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	71-43-2	Benzene	N	0.16	ug/L	U	F	0.16		FQ
80205	WL	1/25/2019	RFS01-10.1901010-012	50-32-8	Benzo(a)pyrene	N	0.0049	ug/L	U	F	0.0049		FQ
80205	WL	1/25/2019	RFS01-10.1901010-012	191-24-2	Benzo(g,h,i)Perylene	N	0.0034	ug/L	U	F	0.0034		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	7440-41-7	Beryllium	Y	0.084	ug/L	J	F	0.08		FQU
80205	WL	1/25/2019	RFS01-10.1901010-011	108-60-1	Bis(2-chloroisopropyl) ether	N	0.27	ug/L	U	F	0.27		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	117-81-7	Bis(2-ethylhexyl) phthalate	N	0.55	ug/L	U	F	0.55		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	7440-42-8	Boron	Y	52	ug/L		F	4.4		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	75-25-2	Bromoform	N	0.19	ug/L	U	F	0.19		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	7440-43-9	Cadmium	Y	0.27	ug/L	U	F	0.27		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	56-23-5	Carbon tetrachloride	N	0.19	ug/L	U	F	0.19		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	108-90-7	Chlorobenzene	N	0.17	ug/L	U	F	0.17		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	67-66-3	Chloroform	N	0.16	ug/L	U	F	0.16		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	74-87-3	Chloromethane	N	0.3	ug/L	U	F	0.3		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	7440-47-3	Chromium	Y	0.5	ug/L	U	F	0.5		FQ
80205	WL	1/25/2019	RFS01-10.1901010-012	218-01-9	Chrysene	N	0.003	ug/L	U	F	0.003		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	156-59-2	cis-1,2-Dichloroethene	N	0.15	ug/L	U	F	0.15		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	7440-50-8	Copper	Y	1.1	ug/L	J	F	0.56		FQ
80205	WL	1/25/2019	RFS01-10.1901010-012	53-70-3	Dibenz(a,h)anthracene	N	0.0046	ug/L	U	F	0.0046		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	84-66-2	Diethyl phthalate	N	0.37	ug/L	U	F	0.37		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	131-11-3	Dimethyl phthalate	N	0.21	ug/L	U	F	0.21		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	84-74-2	Di-n-butyl phthalate	N	1.1	ug/L	U	F	1.1		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	100-41-4	Ethylbenzene	N	0.16	ug/L	U	F	0.16		FQ
80205	WL	1/25/2019	RFS01-10.1901010-012	206-44-0	Fluoranthene	N	0.0043	ug/L	U	F	0.0043		FQ
80205	WL	1/25/2019	RFS01-10.1901010-012	86-73-7	Fluorene	N	0.018	ug/L	U	F	0.018		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	87-68-3	Hexachlorobutadiene	N	0.36	ug/L	U	F	0.36		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	67-72-1	Hexachloroethane	N	2.1	ug/L	U	F	2.1		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	78-59-1	Isophorone	N	0.21	ug/L	U	F	0.21		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	7439-92-1	Lead	Y	0.18	ug/L	U	F	0.18		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	7439-97-6	Mercury	Y	0.027	ug/L	U	F	0.027		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	75-09-2	Methylene chloride	N	0.32	ug/L	U	F	0.32		FQ
80205	WL	1/25/2019	RFS01-10.1901010-012	91-20-3	Naphthalene	N	0.005	ug/L	U	F	0.005		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	7440-02-0	Nickel	Y	2.1	ug/L		F	0.3		FQU
80205	WL	1/25/2019	RFS01-10.1901010-012	129-00-0	Pyrene	N	0.0076	ug/L	U	F	0.0076		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	7782-49-2	Selenium	Y	0.89	ug/L	J	F	0.7		FJQ
80205	WL	1/25/2019	RFS01-10.1901010-011	7440-22-4	Silver	Y	0.078	ug/L	J	F	0.033		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	100-42-5	Styrene	N	0.17	ug/L	U	F	0.17		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	127-18-4	Tetrachloroethene	N	0.2	ug/L	U	F	0.2		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	108-88-3	Toluene	N	0.17	ug/L	U	F	0.17		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	1330-20-7	Total Xylenes	N	0.19	ug/L	U	F	0.19		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	156-60-5	trans-1,2-Dichloroethene	N	0.15	ug/L	U	F	0.15		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	79-01-6	Trichloroethene	N	0.16	ug/L	U	F	0.16		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	7440-61-1	Uranium	Y	55	ug/L		F	0.05		FQ
80205	WL	1/25/2019	RFS01-10.1901010-011	75-01-4	Vinyl chloride	N	0.1	ug/L	U	F	0.1		FQ

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80205	WL	1/25/2019	RFS01-10.1901010-011	7440-66-6	Zinc	Y	2	ug/L	U	F	2		FQ
GS05	SL	1/3/2019	RFS01-01.1904013-003	7440-38-2	Arsenic	N	2	ug/L	U	F	2		
GS05	SL	1/3/2019	RFS01-01.1904013-003	7440-41-7	Beryllium	N	0.2	ug/L	U	F	0.2		
GS05	SL	1/3/2019	RFS01-01.1904013-003	7440-42-8	Boron	N	10.4	ug/L	B	F	5.2		
GS05	SL	1/3/2019	RFS01-01.1904013-002	7440-43-9	Cadmium	Y	0.3	ug/L	U	F	0.3		
GS05	SL	1/3/2019	RFS01-01.1904013-003	7440-47-3	Chromium	N	3	ug/L	U	F	3		
GS05	SL	1/3/2019	RFS01-01.1904013-002	7440-50-8	Copper	Y	3.46	ug/L	B	F	0.3		
GS05	SL	1/3/2019	RFS01-01.1904013-002	7439-92-1	Lead	Y	0.5	ug/L	U	F	0.5		
GS05	SL	1/3/2019	RFS01-01.1904013-002	7440-02-0	Nickel	Y	1.61	ug/L	B	F	0.6		
GS05	SL	1/3/2019	RFS01-01.1904013-003	7782-49-2	Selenium	N	2	ug/L	U	F	2		
GS05	SL	1/3/2019	RFS01-01.1904013-002	7440-22-4	Silver	Y	0.3	ug/L	U	F	0.3		
GS05	SL	1/3/2019	RFS01-01.1904013-003	7440-61-1	Uranium	N	0.546	ug/L	B	F	0.067		
GS05	SL	1/3/2019	RFS01-01.1904013-002	7440-66-6	Zinc	Y	3.3	ug/L	U	F	3.3		
GS05	SL	1/8/2019	RFS01-02.1901012-001	71-55-6	1,1,1-Trichloroethane	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	79-34-5	1,1,2,2-Tetrachloroethane	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	79-00-5	1,1,2-Trichloroethane	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	75-35-4	1,1-Dichloroethene	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	120-82-1	1,2,4-Trichlorobenzene	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	95-50-1	1,2-Dichlorobenzene	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	107-06-2	1,2-Dichloroethane	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	78-87-5	1,2-Dichloropropane	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	541-73-1	1,3-Dichlorobenzene	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	106-46-7	1,4-Dichlorobenzene	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	71-43-2	Benzene	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	75-25-2	Bromoform	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	56-23-5	Carbon tetrachloride	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	108-90-7	Chlorobenzene	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	67-66-3	Chloroform	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	74-87-3	Chloromethane	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	156-59-2	cis-1,2-Dichloroethene	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	100-41-4	Ethylbenzene	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	87-68-3	Hexachlorobutadiene	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	7439-97-6	Mercury	N	0.067	ug/L	U	F	0.067		
GS05	SL	1/8/2019	RFS01-02.1901012-001	75-09-2	Methylene chloride	N	1.67	ug/L	U	F	1.67		
GS05	SL	1/8/2019	RFS01-02.1901012-001	91-20-3	Naphthalene	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	100-42-5	Styrene	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	127-18-4	Tetrachloroethene	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	108-88-3	Toluene	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	1330-20-7	Total Xylenes	N	1	ug/L	U	F	1		
GS05	SL	1/8/2019	RFS01-02.1901012-001	156-60-5	trans-1,2-Dichloroethene	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	79-01-6	Trichloroethene	N	0.333	ug/L	U	F	0.333		
GS05	SL	1/8/2019	RFS01-02.1901012-001	75-01-4	Vinyl chloride	N	0.333	ug/L	U	F	0.333		
GS10	SL	1/3/2019	RFS01-13.1904014-001	14596-10-2	Americium-241	N	-0.0109	pCi/L	U	F	0	0.0263	
GS10	SL	1/3/2019	RFS01-13.1904014-001	7440-41-7	Beryllium	N	1	ug/L	U	F	1		
GS10	SL	1/3/2019	RFS01-13.1904014-001	7440-43-9	Cadmium	Y	0.3	ug/L	U	F	0.3		
GS10	SL	1/3/2019	RFS01-13.1904014-001	7440-47-3	Chromium	N	1	ug/L	U	F	1		
GS10	SL	1/3/2019	RFS01-13.1904014-001	PU-239,240	Plutonium-239, 240	N	0.00127	pCi/L	U	F	0	0.0103	
GS10	SL	1/3/2019	RFS01-13.1904014-001	7440-22-4	Silver	Y	0.3	ug/L	U	F	0.3		
GS10	SL	1/3/2019	RFS01-13.1904014-001	7440-61-1	Uranium	N	18.6	ug/L		F	0.067		
GS10	SL	3/28/2019	RFS01-13.1904015-001	14596-10-2	Americium-241	N	4.38E-09	pCi/L	U	F	0	0.0137	
GS10	SL	3/28/2019	RFS01-13.1904015-001	7440-41-7	Beryllium	N	1	ug/L	U	F	1		
GS10	SL	3/28/2019	RFS01-13.1904015-001	7440-43-9	Cadmium	Y	0.3	ug/L	U	F	0.3		
GS10	SL	3/28/2019	RFS01-13.1904015-001	7440-47-3	Chromium	N	1	ug/L	U	F	1		

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GS10	SL	3/28/2019	RFS01-13.1904015-001	PU-239,240	Plutonium-239, 240	N	0.00461	pCi/L	U	F	0	0.0293	
GS10	SL	3/28/2019	RFS01-13.1904015-001	7440-22-4	Silver	Y	0.3	ug/L	U	F	0.3		
GS10	SL	3/28/2019	RFS01-13.1904015-001	7440-61-1	Uranium	N	19.5	ug/L		F	0.067		
GS13	SL	1/3/2019	RFS01-01.1904013-001	7440-61-1	Uranium	N	14.7	ug/L		F	0.067		
GS13	SL	1/14/2019	RFS01-04.1901015-007	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	24	mg/L		F	0.095		
GS13	SL	1/31/2019	RFS01-06.1902014-005	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	16	mg/L		F	0.095		J
GS13	SL	2/14/2019	RFS01-04.1902016-007	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	10	mg/L		F	0.038		
GS13	SL	2/28/2019	RFS01-06.1903015-005	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	15	mg/L		F	0.095		
GS13	SL	3/18/2019	RFS01-04.1903017-007	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	7.2	mg/L	B	F	0.019		
GS13	SL	3/18/2019	RFS01-04.1903017-015	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	7.1	mg/L	B	D	0.019		
GS13	SL	3/28/2019	RFS01-06.1903016-005	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	13	mg/L		F	0.19		
GS59	SL	1/3/2019	RFS01-01.1904012-002	7440-38-2	Arsenic	N	2.4	ug/L	B	F	2		
GS59	SL	1/3/2019	RFS01-01.1904012-002	7440-41-7	Beryllium	N	0.2	ug/L	U	F	0.2		
GS59	SL	1/3/2019	RFS01-01.1904012-002	7440-42-8	Boron	N	7.96	ug/L	B	F	5.2		
GS59	SL	1/3/2019	RFS01-01.1904012-001	7440-43-9	Cadmium	Y	0.3	ug/L	U	F	0.3		
GS59	SL	1/3/2019	RFS01-01.1904012-002	7440-47-3	Chromium	N	3	ug/L	U	F	3		
GS59	SL	1/3/2019	RFS01-01.1904012-001	7440-50-8	Copper	Y	1.36	ug/L	B	F	0.3		
GS59	SL	1/3/2019	RFS01-01.1904012-001	7439-92-1	Lead	Y	0.5	ug/L	U	F	0.5		
GS59	SL	1/3/2019	RFS01-01.1904012-001	7440-02-0	Nickel	Y	0.61	ug/L	B	F	0.6		
GS59	SL	1/3/2019	RFS01-01.1904012-002	7782-49-2	Selenium	N	2	ug/L	U	F	2		
GS59	SL	1/3/2019	RFS01-01.1904012-001	7440-22-4	Silver	Y	0.3	ug/L	U	F	0.3		
GS59	SL	1/3/2019	RFS01-01.1904012-002	7440-61-1	Uranium	N	2.55	ug/L	B	F	0.067		
GS59	SL	1/3/2019	RFS01-01.1904012-001	7440-66-6	Zinc	Y	3.3	ug/L	U	F	3.3		
GS59	SL	1/8/2019	RFS01-02.1901012-002	71-55-6	1,1,1-Trichloroethane	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	79-34-5	1,1,2,2-Tetrachloroethane	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	79-00-5	1,1,2-Trichloroethane	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	75-35-4	1,1-Dichloroethene	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	120-82-1	1,2,4-Trichlorobenzene	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	95-50-1	1,2-Dichlorobenzene	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	107-06-2	1,2-Dichloroethane	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	78-87-5	1,2-Dichloropropane	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	541-73-1	1,3-Dichlorobenzene	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	106-46-7	1,4-Dichlorobenzene	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	71-43-2	Benzene	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	75-25-2	Bromoform	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	56-23-5	Carbon tetrachloride	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	108-90-7	Chlorobenzene	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	67-66-3	Chloroform	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	74-87-3	Chloromethane	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	156-59-2	cis-1,2-Dichloroethene	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	100-41-4	Ethylbenzene	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	87-68-3	Hexachlorobutadiene	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	7439-97-6	Mercury	N	0.067	ug/L	U	F	0.067		
GS59	SL	1/8/2019	RFS01-02.1901012-002	75-09-2	Methylene chloride	N	1.67	ug/L	U	F	1.67		
GS59	SL	1/8/2019	RFS01-02.1901012-002	91-20-3	Naphthalene	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	100-42-5	Styrene	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	127-18-4	Tetrachloroethene	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	108-88-3	Toluene	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	1330-20-7	Total Xylenes	N	1	ug/L	U	F	1		
GS59	SL	1/8/2019	RFS01-02.1901012-002	156-60-5	trans-1,2-Dichloroethene	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	79-01-6	Trichloroethene	N	0.333	ug/L	U	F	0.333		
GS59	SL	1/8/2019	RFS01-02.1901012-002	75-01-4	Vinyl chloride	N	0.333	ug/L	U	F	0.333		
GS59	SL	3/28/2019	RFS01-02.1905014-005	7440-38-2	Arsenic	N	0.33	ug/L	U	D	0.33		J

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GS59	SL	3/28/2019	RFS01-02.1905014-002	7440-38-2	Arsenic	N	0.33	ug/L	U	F	0.33		J
GS59	SL	3/28/2019	RFS01-02.1905014-005	7440-41-7	Beryllium	N	0.08	ug/L	U	D	0.08		
GS59	SL	3/28/2019	RFS01-02.1905014-002	7440-41-7	Beryllium	N	0.11	ug/L	J	F	0.08		
GS59	SL	3/28/2019	RFS01-02.1905014-005	7440-42-8	Boron	N	16	ug/L		D	4.4		
GS59	SL	3/28/2019	RFS01-02.1905014-002	7440-42-8	Boron	N	16	ug/L		F	4.4		
GS59	SL	3/28/2019	RFS01-02.1905014-005	7440-43-9	Cadmium	Y	0.27	ug/L	U	D	0.27		
GS59	SL	3/28/2019	RFS01-02.1905014-002	7440-43-9	Cadmium	Y	0.27	ug/L	U	F	0.27		
GS59	SL	3/28/2019	RFS01-02.1905014-005	7440-47-3	Chromium	N	0.5	ug/L	U	D	0.5		
GS59	SL	3/28/2019	RFS01-02.1905014-002	7440-47-3	Chromium	N	0.5	ug/L	U	F	0.5		
GS59	SL	3/28/2019	RFS01-02.1905014-005	7440-50-8	Copper	Y	2	ug/L		D	0.56		J
GS59	SL	3/28/2019	RFS01-02.1905014-002	7440-50-8	Copper	Y	1.6	ug/L	J	F	0.56		J
GS59	SL	3/28/2019	RFS01-02.1905014-005	7439-92-1	Lead	Y	0.18	ug/L	U	D	0.18		
GS59	SL	3/28/2019	RFS01-02.1905014-002	7439-92-1	Lead	Y	0.18	ug/L	U	F	0.18		
GS59	SL	3/28/2019	RFS01-02.1905014-005	7440-02-0	Nickel	Y	0.8	ug/L	J	D	0.3		
GS59	SL	3/28/2019	RFS01-02.1905014-002	7440-02-0	Nickel	Y	0.79	ug/L	J	F	0.3		
GS59	SL	3/28/2019	RFS01-02.1905014-005	7782-49-2	Selenium	N	0.37	ug/L	U	D	0.37		
GS59	SL	3/28/2019	RFS01-02.1905014-002	7782-49-2	Selenium	N	0.37	ug/L	U	F	0.37		
GS59	SL	3/28/2019	RFS01-02.1905014-005	7440-22-4	Silver	Y	0.033	ug/L	U	D	0.033		
GS59	SL	3/28/2019	RFS01-02.1905014-002	7440-22-4	Silver	Y	0.033	ug/L	U	F	0.033		
GS59	SL	3/28/2019	RFS01-02.1905014-005	7440-61-1	Uranium	N	1.7	ug/L		D	0.05		
GS59	SL	3/28/2019	RFS01-02.1905014-002	7440-61-1	Uranium	N	2	ug/L		F	0.05		
GS59	SL	3/28/2019	RFS01-02.1905014-005	7440-66-6	Zinc	Y	2	ug/L	U	D	2		
GS59	SL	3/28/2019	RFS01-02.1905014-002	7440-66-6	Zinc	Y	2	ug/L	U	F	2		
P416589	WL	1/25/2019	RFS01-10.1901010-013	71-55-6	1,1,1-Trichloroethane	N	0.16	ug/L	U	F	0.16		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	79-34-5	1,1,2,2-Tetrachloroethane	N	0.21	ug/L	U	F	0.21		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	79-00-5	1,1,2-Trichloroethane	N	0.27	ug/L	U	F	0.27		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	75-35-4	1,1-Dichloroethene	N	0.23	ug/L	U	F	0.23		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	120-82-1	1,2,4-Trichlorobenzene	N	0.21	ug/L	U	F	0.21		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	95-50-1	1,2-Dichlorobenzene	N	0.15	ug/L	U	F	0.15		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	107-06-2	1,2-Dichloroethane	N	0.13	ug/L	U	F	0.13		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	78-87-5	1,2-Dichloropropane	N	0.18	ug/L	U	F	0.18		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	541-73-1	1,3-Dichlorobenzene	N	0.13	ug/L	U	F	0.13		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	106-46-7	1,4-Dichlorobenzene	N	0.16	ug/L	U	F	0.16		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	91-58-7	2-Chloronaphthalene	N	0.38	ug/L	U	F	0.38		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-014	83-32-9	Acenaphthene	N	0.012	ug/L	U	F	0.012		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-014	120-12-7	Anthracene	N	0.015	ug/L	U	F	0.015		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	7440-38-2	Arsenic	Y	0.33	ug/L	U	F	0.33		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	71-43-2	Benzene	N	0.16	ug/L	U	F	0.16		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-014	50-32-8	Benzo(a)pyrene	N	0.0056	ug/L	U	F	0.0056		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-014	191-24-2	Benzo(g,h,i)Perylene	N	0.0039	ug/L	U	F	0.0039		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	7440-41-7	Beryllium	Y	0.08	ug/L	U	F	0.08		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	108-60-1	Bis(2-chloroisopropyl) ether	N	0.41	ug/L	U	F	0.41		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	117-81-7	Bis(2-ethylhexyl) phthalate	N	0.82	ug/L	U	F	0.82		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	7440-42-8	Boron	Y	5.5	ug/L	J	F	4.4		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	75-25-2	Bromoform	N	0.19	ug/L	U	F	0.19		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	7440-43-9	Cadmium	Y	0.27	ug/L	U	F	0.27		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	56-23-5	Carbon tetrachloride	N	0.19	ug/L	U	F	0.19		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	108-90-7	Chlorobenzene	N	0.17	ug/L	U	F	0.17		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	67-66-3	Chloroform	N	0.16	ug/L	U	F	0.16		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	74-87-3	Chloromethane	N	0.3	ug/L	U	F	0.3		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	7440-47-3	Chromium	Y	0.5	ug/L	U	F	0.5		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-014	218-01-9	Chrysene	N	0.0046	ug/L	J	F	0.0035		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	156-59-2	cis-1,2-Dichloroethene	N	0.15	ug/L	U	F	0.15		FQ

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P416589	WL	1/25/2019	RFS01-10.1901010-013	7440-50-8	Copper	Y	0.56	ug/L	U	F	0.56		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-014	53-70-3	Dibenz(a,h)anthracene	N	0.0052	ug/L	U	F	0.0052		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	84-66-2	Diethyl phthalate	N	0.56	ug/L	U	F	0.56		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	131-11-3	Dimethyl phthalate	N	0.31	ug/L	U	F	0.31		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	84-74-2	Di-n-butyl phthalate	N	1.7	ug/L	U	F	1.7		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	100-41-4	Ethylbenzene	N	0.16	ug/L	U	F	0.16		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-014	206-44-0	Fluoranthene	N	0.0065	ug/L	J	F	0.0049		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-014	86-73-7	Fluorene	N	0.02	ug/L	U	F	0.02		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	87-68-3	Hexachlorobutadiene	N	0.36	ug/L	U	F	0.36		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	67-72-1	Hexachloroethane	N	3.1	ug/L	U	F	3.1		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	78-59-1	Isophorone	N	0.31	ug/L	U	F	0.31		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	7439-92-1	Lead	Y	0.18	ug/L	U	F	0.18		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	7439-97-6	Mercury	Y	0.027	ug/L	U	F	0.027		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	75-09-2	Methylene chloride	N	0.32	ug/L	U	F	0.32		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-014	91-20-3	Naphthalene	N	0.0058	ug/L	U	F	0.0058		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	7440-02-0	Nickel	Y	6	ug/L		F	0.3		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-014	129-00-0	Pyrene	N	0.0088	ug/L	U	F	0.0088		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	7782-49-2	Selenium	Y	0.7	ug/L	U	F	0.7		FJQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	7440-22-4	Silver	Y	0.26	ug/L	J	F	0.033		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	100-42-5	Styrene	N	0.17	ug/L	U	F	0.17		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	127-18-4	Tetrachloroethene	N	0.2	ug/L	U	F	0.2		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	108-88-3	Toluene	N	0.17	ug/L	U	F	0.17		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	1330-20-7	Total Xylenes	N	0.19	ug/L	U	F	0.19		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	156-60-5	trans-1,2-Dichloroethene	N	0.15	ug/L	U	F	0.15		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	79-01-6	Trichloroethene	N	0.16	ug/L	U	F	0.16		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	7440-61-1	Uranium	Y	1.8	ug/L		F	0.05		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	75-01-4	Vinyl chloride	N	0.1	ug/L	U	F	0.1		FQ
P416589	WL	1/25/2019	RFS01-10.1901010-013	7440-66-6	Zinc	Y	2	ug/L	U	F	2		FQ
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	71-55-6	1,1,1-Trichloroethane	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	79-34-5	1,1,2,2-Tetrachloroethane	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	79-00-5	1,1,2-Trichloroethane	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	75-35-4	1,1-Dichloroethene	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	120-82-1	1,2,4-Trichlorobenzene	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	95-50-1	1,2-Dichlorobenzene	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	107-06-2	1,2-Dichloroethane	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	78-87-5	1,2-Dichloropropane	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	541-73-1	1,3-Dichlorobenzene	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	106-46-7	1,4-Dichlorobenzene	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-004	7440-38-2	Arsenic	N	7.86	ug/L	B	F	2		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	71-43-2	Benzene	N	1.95	ug/L		F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-004	7440-41-7	Beryllium	N	0.2	ug/L	U	F	0.2		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-004	7440-42-8	Boron	N	1360	ug/L		F	104		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	75-25-2	Bromoform	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	7440-43-9	Cadmium	Y	0.3	ug/L	U	F	0.3		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	56-23-5	Carbon tetrachloride	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	108-90-7	Chlorobenzene	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	67-66-3	Chloroform	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	74-87-3	Chloromethane	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-004	7440-47-3	Chromium	N	3.24	ug/L	B	F	3		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	156-59-2	cis-1,2-Dichloroethene	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	7440-50-8	Copper	Y	0.3	ug/L	U	F	0.3		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	100-41-4	Ethylbenzene	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	87-68-3	Hexachlorobutadiene	N	0.333	ug/L	U	F	0.333		

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PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	7439-92-1	Lead	Y	0.5	ug/L	U	F	0.5		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	75-09-2	Methylene chloride	N	1.67	ug/L	U	F	1.67		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	91-20-3	Naphthalene	N	21.6	ug/L		F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	7440-02-0	Nickel	Y	5.8	ug/L	B	F	0.6		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-004	7782-49-2	Selenium	N	2	ug/L	U	F	2		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	7440-22-4	Silver	Y	0.3	ug/L	U	F	0.3		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	100-42-5	Styrene	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	127-18-4	Tetrachloroethene	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	108-88-3	Toluene	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	1330-20-7	Total Xylenes	N	1.18	ug/L	J	F	1		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	156-60-5	trans-1,2-Dichloroethene	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	79-01-6	Trichloroethene	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-004	7440-61-1	Uranium	N	0.067	ug/L	U	F	0.067		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	75-01-4	Vinyl chloride	N	0.333	ug/L	U	F	0.333		
PLFSEEPINF	TS	1/8/2019	RFS01-02.1901012-003	7440-66-6	Zinc	Y	91.1	ug/L	B	F	3.3		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	71-55-6	1,1,1-Trichloroethane	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	79-34-5	1,1,2,2-Tetrachloroethane	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	79-00-5	1,1,2-Trichloroethane	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	75-35-4	1,1-Dichloroethene	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	120-82-1	1,2,4-Trichlorobenzene	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	95-50-1	1,2-Dichlorobenzene	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	107-06-2	1,2-Dichloroethane	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	78-87-5	1,2-Dichloropropane	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	541-73-1	1,3-Dichlorobenzene	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	106-46-7	1,4-Dichlorobenzene	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	91-58-7	2-Chloronaphthalene	N	0.394	ug/L	U	F	0.394		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-007	83-32-9	Acenaphthene	N	1.63	ug/L		F	0.0283		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-007	120-12-7	Anthracene	N	0.387	ug/L		F	0.0283		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-006	7440-38-2	Arsenic	N	6.73	ug/L	B	F	2		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	71-43-2	Benzene	N	0.7	ug/L	J	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-007	50-32-8	Benzo(a)pyrene	N	0.0283	ug/L	U	F	0.0283		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-007	191-24-2	Benzo(g,h,i)Perylene	N	0.0283	ug/L	U	F	0.0283		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-006	7440-41-7	Beryllium	N	0.2	ug/L	U	F	0.2		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	108-60-1	Bis(2-chloroisopropyl) ether	N	2.88	ug/L	U	F	2.88		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	117-81-7	Bis(2-ethylhexyl) phthalate	N	0.288	ug/L	U	F	0.288		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-006	7440-42-8	Boron	N	1100	ug/L		F	104		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	75-25-2	Bromoform	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	7440-43-9	Cadmium	Y	0.3	ug/L	U	F	0.3		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	56-23-5	Carbon tetrachloride	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	108-90-7	Chlorobenzene	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	67-66-3	Chloroform	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	74-87-3	Chloromethane	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-006	7440-47-3	Chromium	N	3	ug/L	U	F	3		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-007	218-01-9	Chrysene	N	0.0283	ug/L	U	F	0.0283		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	156-59-2	cis-1,2-Dichloroethene	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	7440-50-8	Copper	Y	0.3	ug/L	U	F	0.3		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-007	53-70-3	Dibenz(a,h)anthracene	N	0.0283	ug/L	U	F	0.0283		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	84-66-2	Diethyl phthalate	N	0.288	ug/L	U	F	0.288		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	131-11-3	Dimethyl phthalate	N	0.288	ug/L	U	F	0.288		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	84-74-2	Di-n-butyl phthalate	N	0.288	ug/L	U	F	0.288		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	100-41-4	Ethylbenzene	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-007	206-44-0	Fluoranthene	N	0.491	ug/L		F	0.0283		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-007	86-73-7	Fluorene	N	1.44	ug/L		F	0.0283		

RFLMA Data

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	SAMPLE CODE	CAS	ANALYTE	FILTRATION STATUS	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	87-68-3	Hexachlorobutadiene	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	67-72-1	Hexachloroethane	N	2.88	ug/L	U	F	2.88		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	78-59-1	Isophorone	N	3.37	ug/L	U	F	3.37		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	7439-92-1	Lead	Y	0.5	ug/L	U	F	0.5		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	75-09-2	Methylene chloride	N	1.67	ug/L	U	F	1.67		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-007	91-20-3	Naphthalene	N	4.57	ug/L		F	0.0283		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	7440-02-0	Nickel	Y	5.56	ug/L	B	F	0.6		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-007	129-00-0	Pyrene	N	0.283	ug/L		F	0.0283		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-006	7782-49-2	Selenium	N	2	ug/L	U	F	2		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	7440-22-4	Silver	Y	0.3	ug/L	U	F	0.3		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	100-42-5	Styrene	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	127-18-4	Tetrachloroethene	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	108-88-3	Toluene	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	1330-20-7	Total Xylenes	N	1	ug/L	U	F	1		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	156-60-5	trans-1,2-Dichloroethene	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	79-01-6	Trichloroethene	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-006	7440-61-1	Uranium	N	0.582	ug/L	B	F	0.067		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	75-01-4	Vinyl chloride	N	0.333	ug/L	U	F	0.333		
PLFSYSEFF	TS	1/8/2019	RFS01-02.1901012-005	7440-66-6	Zinc	Y	48.8	ug/L	B	F	3.3		
SPIN	TS	1/14/2019	RFS01-04.1901015-005	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	580	mg/L		F	1.9		
SPIN	TS	1/14/2019	RFS01-04.1901015-005	7440-61-1	Uranium	N	63	ug/L		F	0.05		
SPIN	TS	1/31/2019	RFS01-06.1902014-006	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	600	mg/L		F	1.9		J
SPIN	TS	1/31/2019	RFS01-06.1902014-016	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	600	mg/L		D	1.9		J
SPIN	TS	1/31/2019	RFS01-06.1902014-006	7440-61-1	Uranium	N	72	ug/L		F	0.05		
SPIN	TS	1/31/2019	RFS01-06.1902014-016	7440-61-1	Uranium	N	70	ug/L		D	0.05		
SPIN	TS	2/14/2019	RFS01-04.1902016-005	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	520	mg/L		F	1.9		
SPIN	TS	2/14/2019	RFS01-04.1902016-005	7440-61-1	Uranium	N	60	ug/L		F	0.05		
SPIN	TS	2/28/2019	RFS01-06.1903015-006	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	600	mg/L		F	3.8		
SPIN	TS	2/28/2019	RFS01-06.1903015-006	7440-61-1	Uranium	N	82	ug/L		F	0.05		
SPIN	TS	3/18/2019	RFS01-04.1903017-005	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	520	mg/L	B	F	1.9		
SPIN	TS	3/18/2019	RFS01-04.1903017-005	7440-61-1	Uranium	N	66	ug/L		F	0.05		
SPIN	TS	3/28/2019	RFS01-06.1903016-006	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	610	mg/L		F	1.9		
SPIN	TS	3/28/2019	RFS01-06.1903016-006	7440-61-1	Uranium	N	73	ug/L		F	0.05		
SPOUT	TS	1/14/2019	RFS01-04.1901015-006	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	2.4	mg/L		F	0.019		
SPOUT	TS	1/14/2019	RFS01-04.1901015-006	7440-61-1	Uranium	N	61	ug/L		F	0.05		
SPOUT	TS	1/31/2019	RFS01-06.1902014-007	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	16	mg/L		F	0.095		J
SPOUT	TS	1/31/2019	RFS01-06.1902014-007	7440-61-1	Uranium	N	65	ug/L		F	0.05		
SPOUT	TS	2/14/2019	RFS01-04.1902016-006	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	41	mg/L		F	0.19		
SPOUT	TS	2/14/2019	RFS01-04.1902016-006	7440-61-1	Uranium	N	63	ug/L		F	0.05		
SPOUT	TS	2/28/2019	RFS01-06.1903015-007	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	28	mg/L		F	0.19		
SPOUT	TS	2/28/2019	RFS01-06.1903015-007	7440-61-1	Uranium	N	71	ug/L		F	0.05		
SPOUT	TS	3/18/2019	RFS01-04.1903017-006	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	0.073	mg/L	B	F	0.019		U
SPOUT	TS	3/18/2019	RFS01-04.1903017-006	7440-61-1	Uranium	N	54	ug/L		F	0.05		
SPOUT	TS	3/28/2019	RFS01-06.1903016-007	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	0.048	mg/L	J B	F	0.019		U
SPOUT	TS	3/28/2019	RFS01-06.1903016-007	7440-61-1	Uranium	N	33	ug/L		F	0.05		
SW093	SL	1/3/2019	RFS01-01.1904012-003	14596-10-2	Americium-241	N	-0.0689	pCi/L	U	F	0	0.0651	
SW093	SL	1/3/2019	RFS01-01.1904012-003	7440-41-7	Beryllium	N	1	ug/L	U	F	1		
SW093	SL	1/3/2019	RFS01-01.1904012-003	7440-43-9	Cadmium	Y	0.3	ug/L	U	F	0.3		
SW093	SL	1/3/2019	RFS01-01.1904012-003	7440-47-3	Chromium	N	1	ug/L	U	F	1		
SW093	SL	1/3/2019	RFS01-01.1904012-003	PU-239,240	Plutonium-239, 240	N	0.00302	pCi/L	U	F	0	0.0139	
SW093	SL	1/3/2019	RFS01-01.1904012-003	7440-22-4	Silver	Y	0.3	ug/L	U	F	0.3		
SW093	SL	1/3/2019	RFS01-01.1904012-003	7440-61-1	Uranium	N	5.25	ug/L		F	0.067		
SW093	SL	3/28/2019	RFS01-13.1904015-003	14596-10-2	Americium-241	N	0.00268	pCi/L	U	F	0	0.00911	

RFLMA Data

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	SAMPLE CODE	CAS	ANALYTE	FILTRATION STATUS	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
SW093	SL	3/28/2019	RFS01-13.1904015-003	7440-41-7	Beryllium	N	1	ug/L	U	F	1		
SW093	SL	3/28/2019	RFS01-13.1904015-003	7440-43-9	Cadmium	Y	0.3	ug/L	U	F	0.3		
SW093	SL	3/28/2019	RFS01-13.1904015-003	7440-47-3	Chromium	N	1	ug/L	U	F	1		
SW093	SL	3/28/2019	RFS01-13.1904015-003	PU-239,240	Plutonium-239, 240	N	0.00336	pCi/L	U	F	0	0.00728	
SW093	SL	3/28/2019	RFS01-13.1904015-003	7440-22-4	Silver	Y	0.3	ug/L	U	F	0.3		
SW093	SL	3/28/2019	RFS01-13.1904015-003	7440-61-1	Uranium	N	3.28	ug/L		F	0.067		
WALPOC	SL	1/3/2019	RFS01-05.1904016-001	14596-10-2	Americium-241	N	0.0135	pCi/L	U	F	0	0.0237	
WALPOC	SL	1/3/2019	RFS01-05.1904016-001	PU-239,240	Plutonium-239, 240	N	-0.00387	pCi/L	U	F	0	0.0178	
WALPOC	SL	1/3/2019	RFS01-05.1904016-001	7440-61-1	Uranium	N	12.9	ug/L		F	0.067		
WALPOC	SL	3/18/2019	RFS01-04.1903017-016	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	0.22	mg/L	B	F	0.019		
WOMPOC	SL	1/3/2019	RFS01-05.1902010-002	14596-10-2	Americium-241	N	0.0089	pCi/L	U	F	0	0.0105	
WOMPOC	SL	1/3/2019	RFS01-05.1902010-002	PU-239,240	Plutonium-239, 240	N	9.31E-10	pCi/L	U	F	0	0.00758	
WOMPOC	SL	1/3/2019	RFS01-05.1902010-002	7440-61-1	Uranium	N	4.25	ug/L		F	0.067		
WOMPOC	SL	2/12/2019	RFS01-05.1903011-002	14596-10-2	Americium-241	N	-0.00115	pCi/L	U	F	0	0.00505	
WOMPOC	SL	2/12/2019	RFS01-05.1903011-002	PU-239,240	Plutonium-239, 240	N	-0.0206	pCi/L	U	F	0	0.0142	
WOMPOC	SL	2/12/2019	RFS01-05.1903011-002	7440-61-1	Uranium	N	3.7	ug/L		F	0.067		
WOMPOC	SL	3/11/2019	RFS01-13.1904014-002	14596-10-2	Americium-241	N	0.0255	pCi/L	U	F	0	0.0412	
WOMPOC	SL	3/11/2019	RFS01-13.1904014-002	PU-239,240	Plutonium-239, 240	N	-0.00569	pCi/L	U	F	0	0.0116	
WOMPOC	SL	3/11/2019	RFS01-13.1904014-002	7440-61-1	Uranium	N	3.28	ug/L		F	0.067		
WOMPOC	SL	3/28/2019	RFS01-05.1904014-004	14596-10-2	Americium-241	N	0.00174	pCi/L	U	F	0	0.0123	
WOMPOC	SL	3/28/2019	RFS01-05.1904014-004	PU-239,240	Plutonium-239, 240	N	0.00477	pCi/L	U	F	0	0.00935	
WOMPOC	SL	3/28/2019	RFS01-05.1904014-004	7440-61-1	Uranium	N	3.44	+C478:I8		F	0.067		

EXPLANATION

FILTRATION STATUS

N = Sample was not filtered.
Y = Sample was filtered.

UNITS

mg/L; ppm = milligrams per liter
pCi/L = picocuries per liter
ug/L = micrograms per liter
C = degrees celsius
mS/cm = milliSiemens per centimeter
NTU = normal turbidity units
s.u. = standard pH units
uS/cm = microSiemens per centimeter
umhos/cm = microSiemens per centimeter

SAMPLE_TYPE

F = Field Sample
D = Duplicate

DATA_VALIDATION_QUALIFIERS

<NULL>	No qualifiers
F	Low flow sampling method used.

LAB_QUALIFIERS

*	Replicate analysis not within control limits.
+	Correlation coefficient for MSA < 0.995.
>	Result above upper detection limit.
A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic & Radiochemistry: Analyte also found in method blank.
C	Pesticide result confirmed by GC-MS.
D	Analyte determined in diluted sample.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
J	Estimated
M	GFAA duplicate injection precision not met.
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
P	> 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
S	Result determined by method of standard addition (MSA).
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Y	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Z	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

LOCATION_TYPE

RFLMA Data

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	SAMPLE CODE	CAS	ANALYTE	FILTRATION STATUS	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS

G	Possible grout contamination, pH > 9.
J	Estimated value.
L	Less than 3 bore volumes purged prior to sampling.
Q	Qualitative result due to sampling technique
R	Unusable result.
U	Parameter analyzed for but was not detected.
X	Location is undefined.
999	Validation not complete

SL	SURFACE LOCATION
TS	TREATMENT SYSTEM
WL	WELL

COLLECTION_METHOD

G	Grab
C	Composite

Appendix B2
Information for RFLMA Composite Samples with Unavailable Data

Location	Sample Dates*	Status
GS51	1/3/2019 15:45 -->	In Progress
SW027	1/3/2019 16:00 -->	In Progress

* Analytical results are reported with the start date of the composite sampling period
--> Composite sample end date to be determined
NSQ: non-sufficient quantity for analysis