LMS/RFS/S18555

Rocky Flats Site, Colorado

Surface Water Configuration Adaptive Management Plan Annual Report

Calendar Year 2017

February 2018

U.S. DEPARTMENT OF ENERGY | Legacy Management

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Abbreviations

Am	americium
AMP	Adaptive Management Plan
AOC	area of concern
cfs	cubic feet per second
COU	Central Operable Unit
CY	calendar year
DOE	U.S. Department of Energy
FONSI	Finding of No Significant Impact
µg/L	micrograms per liter (sometimes expressed as ug/L)
N	nitrogen
NO_2	nitrite
NO_3	nitrate
pCi/L	picocuries per liter
POC	point of compliance
POE	point of evaluation
Pu	plutonium
RFLMA	*Rocky Flats Legacy Management Agreement*
SID	South Interceptor Ditch
SPIN	SPPTS influent sampling location
SPOUT	SPPTS effluent sampling location
SPPTS	Solar Ponds Plume Treatment System
TSS	total suspended solids

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1.0 Introduction

The proposed action assessed in the *Rocky Flats Site, Colorado, Surface Water Configuration Environmental Assessment* (DOE 2011) and the resulting Finding of No Significant Impact (FONSI) is to breach the remaining retention pond dams at the Rocky Flats Site, Colorado, (Site) to allow surface water flow to return to approximately the same conditions that were present before construction of the retention ponds. Based on extensive water quality monitoring data and a thorough environmental review, and as stated in the FONSI, the U.S. Department of Energy (DOE) Office of Legacy Management has determined that the proposed action does not present a significant impact on the environment under the National Environmental Policy Act evaluation criteria.

Some members of the public have commented that additional information must be collected before DOE implements the final steps of the proposed action. The additional information will help to reduce uncertainty as to whether completion of the proposed action will adversely impact the quality of water flowing from the Site and into downstream communities. In response to the requests, DOE worked with neighboring community representatives and other interested stakeholders to develop and implement an Adaptive Management Plan (AMP) (DOE 2017) to provide additional information. The AMP group is composed of these representatives and stakeholders. The resulting AMP reflects DOE's long-term commitment to implementing the activities this plan describes.

The AMP provides for a monitoring and data evaluation program to assist in deciding whether to implement the final steps of the proposed action (which includes breaching the terminal dams during the planned time frame of 2018–2020) or to delay the completion of the proposed action to gather additional information for evaluation. The terminal dams will be operated in a flow-through condition during the period leading up to the completion of the proposed action, which will provide data similar to what can be expected post-breach. In addition to the AMP monitoring program, the AMP identifies certain performance indicators that DOE will consider in deciding whether to adjust the time frame for completing the proposed action.

This AMP annual report for calendar year (CY) 2017 is provided in accordance with the reporting requirements described in Section 5.0 of the AMP. Table 11, located at the end of this report, includes all validated analytical data available as of January 26, 2018, including any validated data that had not been tabulated in previous AMP reports.

In addition, to make data exchange as timely as possible, the monitoring summary sections below include all analytical data available as of January, 26, 2018, including unvalidated analytical data (which are preliminary and subject to revision). Therefore, the evaluations in the monitoring summary sections that follow are not limited to the validated 2017 data tabulated in Table 11. Instead, the evaluations also consider any available unvalidated data, if appropriate.

The following monitoring objectives are addressed in this report:

- Pre-discharge monitoring
- Targeted groundwater monitoring
- Monitoring to evaluate flow-through operations at terminal ponds A-4., B-5, and C-2

- Storm-event monitoring
- Continuous flow-paced composite sampling to evaluate uranium transport
- Grab sampling for uranium in North and South Walnut Creeks
- Grab sampling for nitrate + nitrite as nitrogen in Walnut Creek

2.0 AMP Highlights: Fourth Quarter CY 2017

- During the quarter, 78 samples were collected in support of AMP monitoring objectives.
- Two informal emails were transmitted to AMP participants that provided notification that composite samples had been retrieved from the points of compliance (POCs) (i.e., from WOMPOC on Woman Creek at the Central Operable Unit [COU] boundary, and from WALPOC on Walnut Creek at the COU boundary).

3.0 Water Quality Monitoring

AMP monitoring objectives, locations, and sampling criteria are itemized in Table 2 of the AMP. Additional field implementation protocols for the AMP monitoring objectives can be found in Appendix I of the *Rocky Flats Site, Colorado, Site Operations Guide* (DOE 2013).

3.1 Predischarge Monitoring

This monitoring objective is intended to evaluate whether pond water from Ponds A-4, B-5, or C-2 would be expected to meet water quality standards at downstream monitoring locations prior to opening a valve to initiate a period of flow-through discharge. Predischarge samples would be collected at sampling locations A4 POND on North Walnut Creek, B5 POND on South Walnut Creek, and C2 POND on Woman Creek prior to opening a valve. These locations are shown in Figure 1.

Since Ponds A-4, B-5, and C-2 were operated in flow-through mode for all of CY 2017 (i.e., the valves were open throughout the year), no predischarge samples were collected.

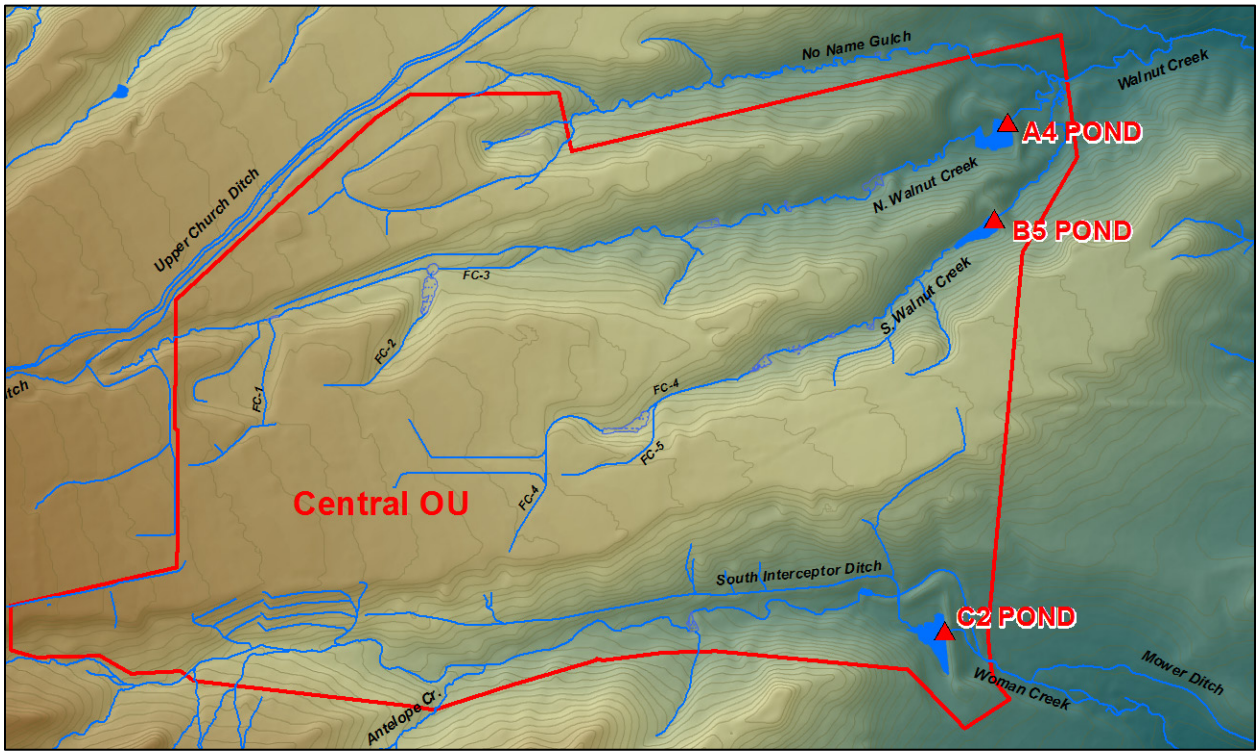


Figure 1. Predischarge Monitoring Locations

3.2 Targeted Groundwater Monitoring

The AMP targeted groundwater monitoring wells (Figure 2) are the same as the *Rocky Flats Legacy Management Agreement* (2007) (RFLMA) area of concern (AOC) wells. They are located within a drainage and are downgradient of a contaminant plume or group of contaminant plumes. Water quality data are collected to determine whether plumes are discharging to surface water. These AOC wells are sampled semiannually in the second and fourth calendar quarters.

Data from these wells are evaluated in the RFLMA-required annual report (DOE forthcoming)[1], according to the flowchart in Figure 7 in Attachment 2 to the RFLMA (DOE 2007).

[1] At the time of publication of this document, it was anticipated that the *Annual Report of Site Surveillance and Maintenance Activities at the Rocky Flats Site, Colorado, Calendar Year 2017* (DOE forthcoming) would be published in April 2018.

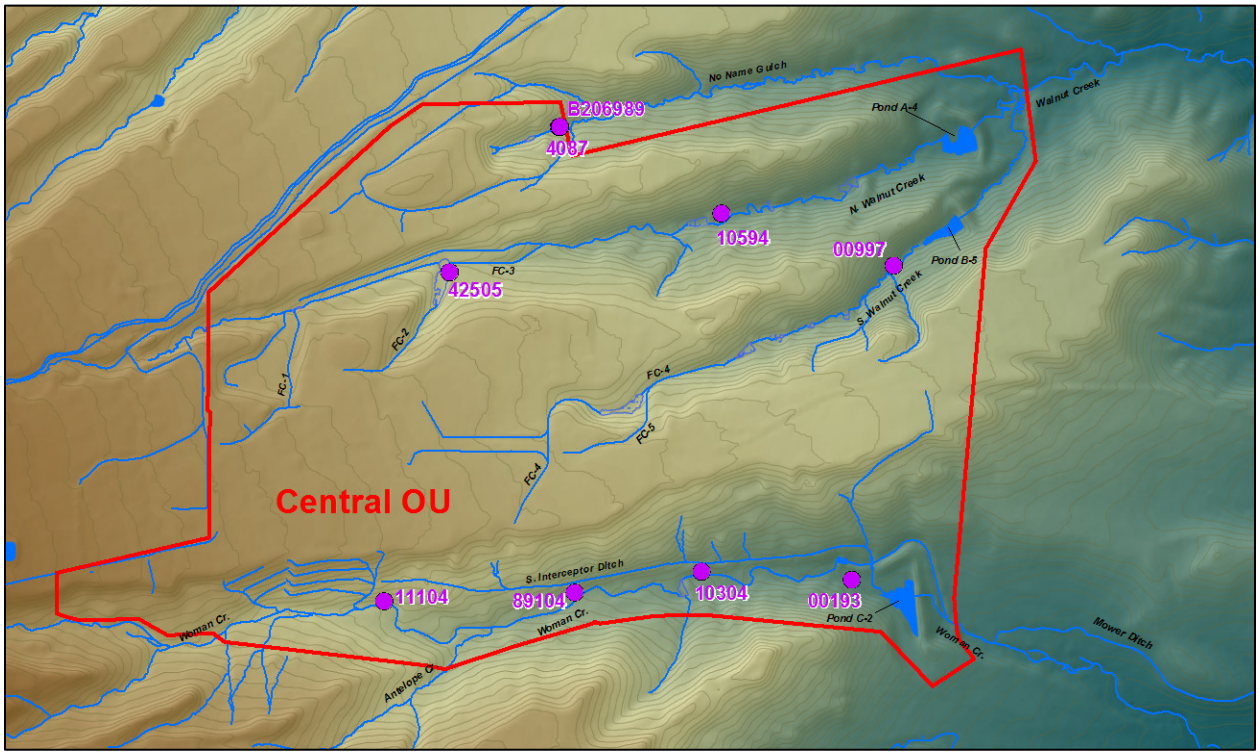
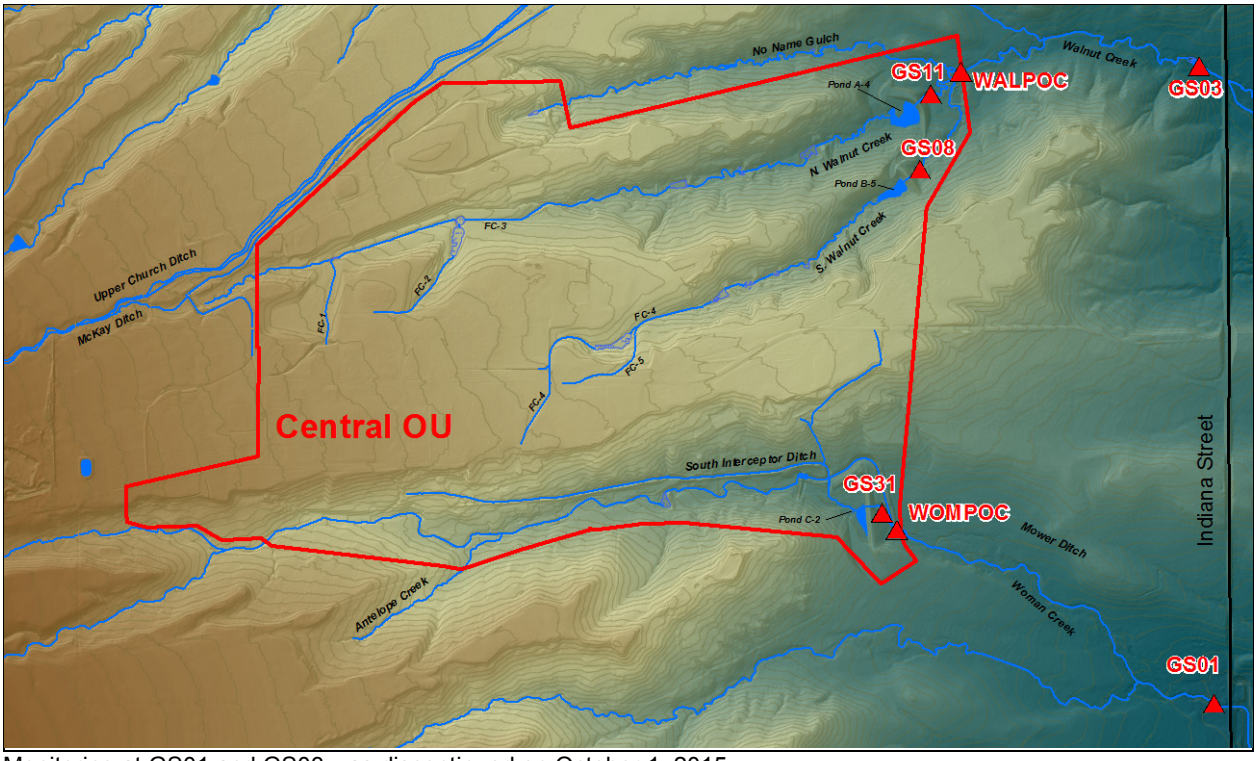


Figure 2. Targeted Groundwater Monitoring Locations

3.3 Monitoring to Evaluate Flow-Through Operations at Terminal Ponds A-4, B-5, and C-2

This objective involves collecting water quality data during flow-through operations to simulate post-breach conditions to determine if water leaving the COU will meet water quality standards after the terminal dams are breached. Samples for plutonium, americium, and uranium analyses are collected as continuous flow-paced composites during all flow conditions; grab samples are collected for nitrate + nitrite as nitrogen analyses. The specific locations are shown in Figure 3.



Monitoring at GS01 and GS03 was discontinued on October 1, 2015.

Figure 3. Flow-Through Operations Monitoring Locations

The two locations at the COU boundary, WALPOC and WOMPOC, became POCs on September 28, 2011, and September 9, 2011, respectively. At that time, locations GS03 and GS01 were also being operated as POCs, and continued to be operated as POCs until September 28, 2013, and September 9, 2013, respectively. Following those dates and at the request of the AMP participants, GS03 and GS01 were operated as AMP monitoring locations for 2 years. Monitoring at both locations was discontinued on October 1, 2015.

Flow-through operation of Ponds A-4 and B-5 began on September 12, 2011; that was also the first day of flow at WALPOC. Flow-through operation of Pond C-2 began on November 7, 2011. WOMPOC first began measuring flow from Woman Creek on October 14, 2011.

During CY 2017, Pond A-4 (GS11) discharged continuously from May 1, 2017, to June 21, 2017; GS11 was dry the remainder of the year. Pond B-5 (GS08) discharged continuously January 1, 2017, to June 16, 2017; it was dry until November 26, 2017, and then flowed continuously for the remainder of the year. As of January 26, 2018, GS08 is flowing and GS11 is dry (i.e., there is water in Pond A-4, but the water level is below the outlet pipe).

Pond C-2 (GS31) discharged intermittently January through April 2017, discharged nearly continuously from April 29, 2017, to June 10, 2017, and was then dry for all but the last 5 days of the year. Discharge from Pond C-2 resumed on December 27, 2017.

Table 1 summarizes the flow and sampling conditions for each location as of late January 2018.

Table 1. Flow and Sampling Detail for Flow-Through Monitoring Locations

Location	Latest Flow[a]	Latest Available Composite Sample Results	Current Composite Sample Start Date (in progress)
GS08	Currently flowing	5/31/2017–6/15/2017	6/15/2017
GS11	6/21/2017	5/23/2017–1/3/2018	1/3/2018
WALPOC	Currently flowing	5/31/2017–6/21/2017[b]	1/12/2018
GS31	Currently flowing	5/22/2017–1/5/2018	1/5/2018
WOMPOC	Currently flowing	10/6/2017–11/2/2017[c]	1/4/2018

Note:
[a] As of January 22, 2018.
[b] Due to low flows in Walnut Creek, the composite sample for the period 6/21/2017 to 1/12/2018 did not contain enough water to perform the laboratory analysis for plutonium, americium, and uranium.
[c] Analytical results for the 11/2/2017–1/4/2018 composite sample are pending.

3.3.1 Walnut Creek Evaluation

Table 2 presents long-term volume-weighted averages in Walnut Creek for the postclosure batch release period (October 2005 to September 2011) and the period since flow-through pond operations began (September 2011 to the present). Figure 4 through Figure 11 present the 30-day and 12-month rolling averages for each location, analyte, and time period.[2,3]

The plots show that plutonium and americium activities are generally comparable for the periods before and after initiation of flow-through operations at all locations except GS08. Some increased variability is noted after the initiation of flow-through operations, but activities remain well below the 0.15 picocurie per liter (pCi/L) water quality standard at all locations except GS08.

At GS08, two composite samples (7/6/2015–8/31/2015 and 8/31/2015–10/12/2015) showed higher than normal plutonium and americium activities (Figure 4 through Figure 7). While activity at these levels has not been observed since closure, similar activities were observed several times during the closure process. Plutonium and americium activities at GS08 have remained at more normal levels since October 2015.

Uranium and nitrate concentrations are variable in Walnut Creek due to the seasonal variation in groundwater seepage and direct runoff from storm events. At the locations listed above in

[2] The RFLMA standards shown on these plots are for reference only. The RFLMA-required evaluation is location-specific (i.e., at particular POCs, points of evaluations [POEs]) and is not part of this AMP report. Evaluation of sampling results as required by the RFLMA is routinely presented in other reports in accordance with the RFLMA reporting requirements.
[3] Due to the interruptions in automated sampling and the corresponding lack of analytical data for some periods during the September 2013 flood, for comparison purposes, the start of the high runoff (which began late in the day on September 11, 2013) through its end on September 13, 2013, is not included in the evaluation in this section. Additionally, some data are estimated to enable the comparison herein; under RFLMA data evaluation protocols, these estimated data would not be included.

Table 1, normally more than half the annual flow is measured during the March through May period. Runoff during this period reduces the proportion of groundwater in creek flows. Since uranium and nitrate at the Site are generally associated with groundwater seepage to the creeks, the normal spring runoff also reduces uranium and nitrate concentrations.

Uranium and nitrate increases were also noted for several months following the September 2013 flood event. This extreme event resulted in extensive creek scour and increased groundwater recharge. This water subsequently increased the volumes of groundwater reaching the creeks from seepage, thereby sustaining high baseflow for an extended period. An extensive geochemistry study was conducted to examine the transport mechanisms associated with uranium and nitrate at the Site and the effects of the September 2013 flood. The report can be found at:
https://www.lm.doe.gov/Rocky_Flats/RFS_Evaluation_of_Water_Quality_Variability_April_2015.pdf.

Concentrations of both uranium and nitrate in surface water also generally increase in the winter months. Both constituents are associated with groundwater sources, therefore when there is little runoff and groundwater makes up a larger portion of the surface water flow, uranium and nitrate concentrations increase. Also, natural biological activity that consumes nitrate slows down in the lower temperature winter months, increasing concentrations. Since geochemical conditions are naturally more oxidizing in the winter and nitrate can act as an additional oxidizer, uranium can become more mobile and its concentrations can increase. These phenomena were investigated in depth and described in the geochemistry study listed above.

During batch operations, water was accumulated in the ponds for several months, effectively mixing water with differing concentrations into a homogeneous volume. Therefore, flow-through 12-month rolling averages show month-to-month variability more comparable to that of batch operations. Conversely, flow-through 30-day averages show increased day-to-day variability since water is no longer batched and mixed prior to discharge.

Table 2. Volume-Weighted Averages for Walnut Creek Flow-Through Monitoring Locations

Walnut Creek: October 2005–September 2011 (Batch Release)

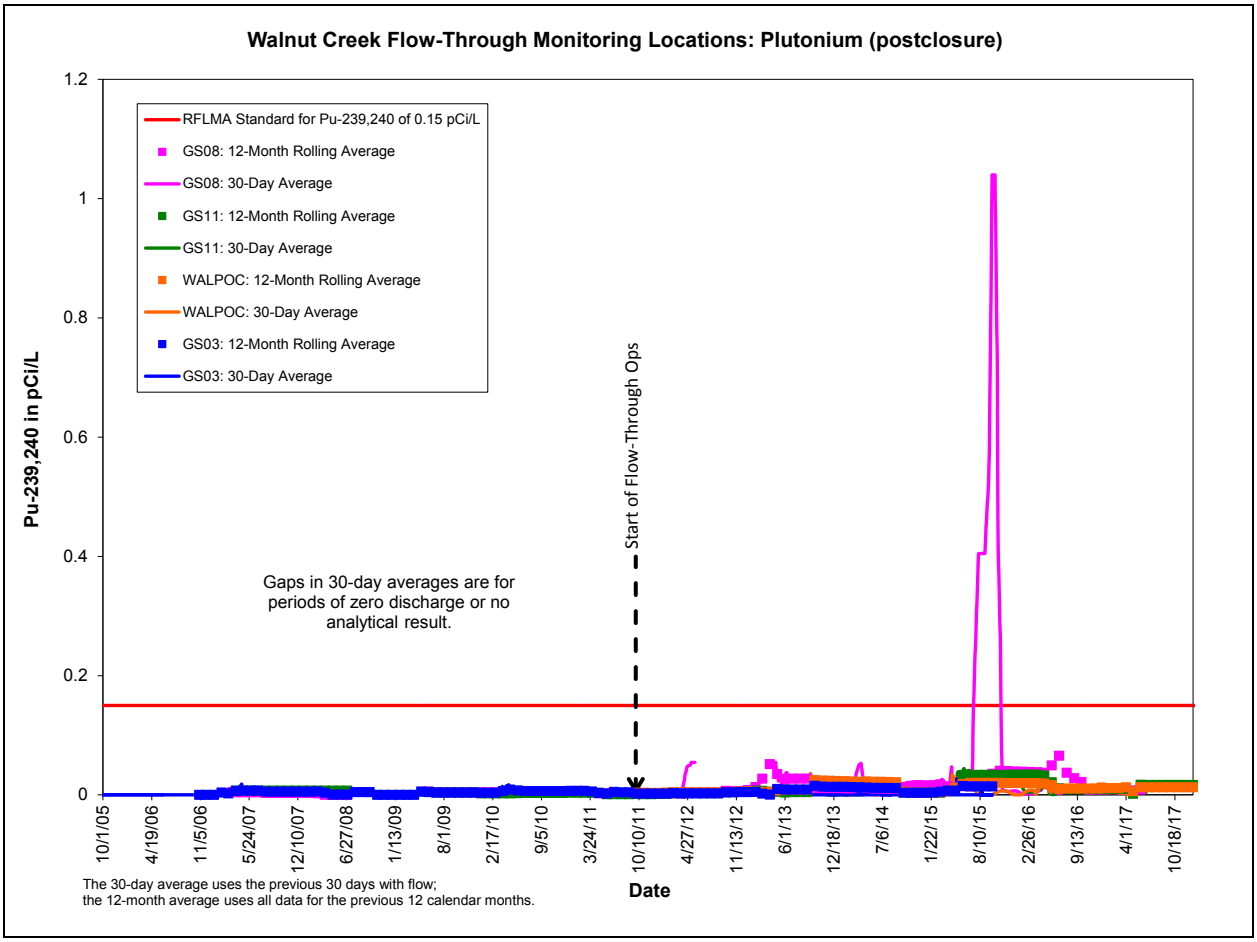
		Uranium (ug/L)		Pu-239,240 (pCi/L)		Am-241 (pCi/L)		NO3+NO2 as N (mg/L)	
	Location Code	Volume-Weighted Average	Sample Count	Volume-Weighted Average	Sample Count	Volume-Weighted Average	Sample Count	Volume-Weighted Average	Sample Count
Upstream	GS08 / GS11	8.8 / 7.6	33 / 36	0.004 / 0.004	33 / 36	0.003 / 0.003	33 / 36	2.79 [GS11 only]	36
Downstream	GS03	4.9	68	0.006	68	0.004	68	0.94	43

Walnut Creek: September 2011–Present (Flow-Through)

		Uranium (ug/L)		Pu-239,240 (pCi/L)		Am-241 (pCi/L)		NO3+NO2 as N (mg/L)	
	Location Code	Volume-Weighted Average	Sample Count	Volume-Weighted Average	Sample Count	Volume-Weighted Average	Sample Count	Volume-Weighted Average	Sample Count
Upstream	GS08 / GS11	9.4 / 10.1	63 / 49	0.025 / 0.022	63 / 49	0.015 / 0.012	63 / 49	5.93 [GS11 only]	47
⬇	WALPOC	9.6	79	0.018	79	0.012	79	2.75	78
Downstream	GS03	5.6	44	0.016	43	0.011	43	2.04	40

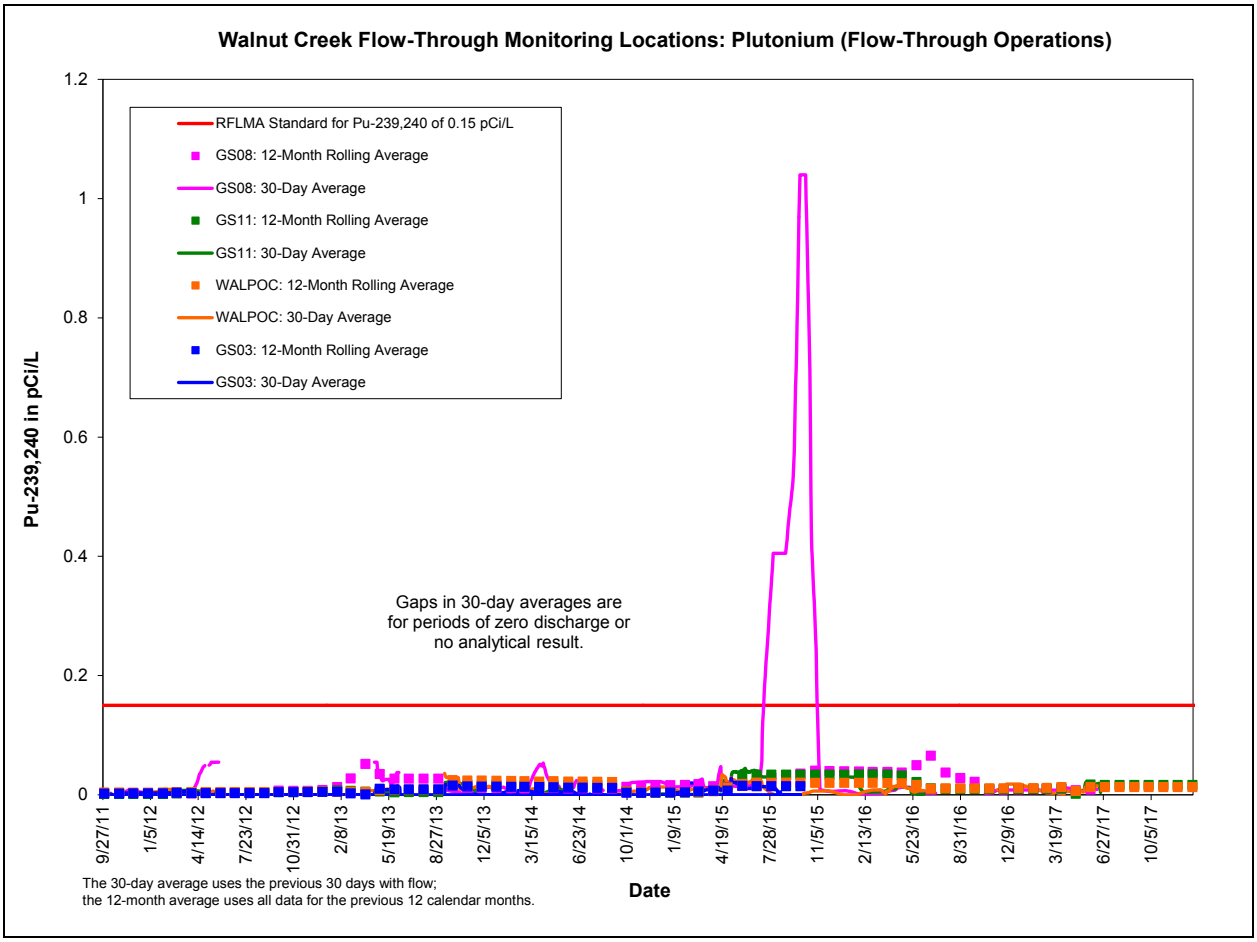
Notes:
Sample counts vary because composite sampling periods vary with water availability.
Summary includes all data available as of January 19, 2018; some recent data are not validated (i.e., are preliminary and subject to revision).
No Name Gulch is a tributary to Walnut Creek, just upstream of WALPOC; any water that flows in No Name Gulch and reaches Walnut Creek could affect water quality at WALPOC.
Monitoring at GS03 was discontinued on October 1, 2015.

Abbreviations: Am = americium; ug/L = µg/L = micrograms per liter; mg/L = milligrams per liter; N = nitrogen; NO_2 = nitrite; NO_3 = nitrate; Pu = plutonium



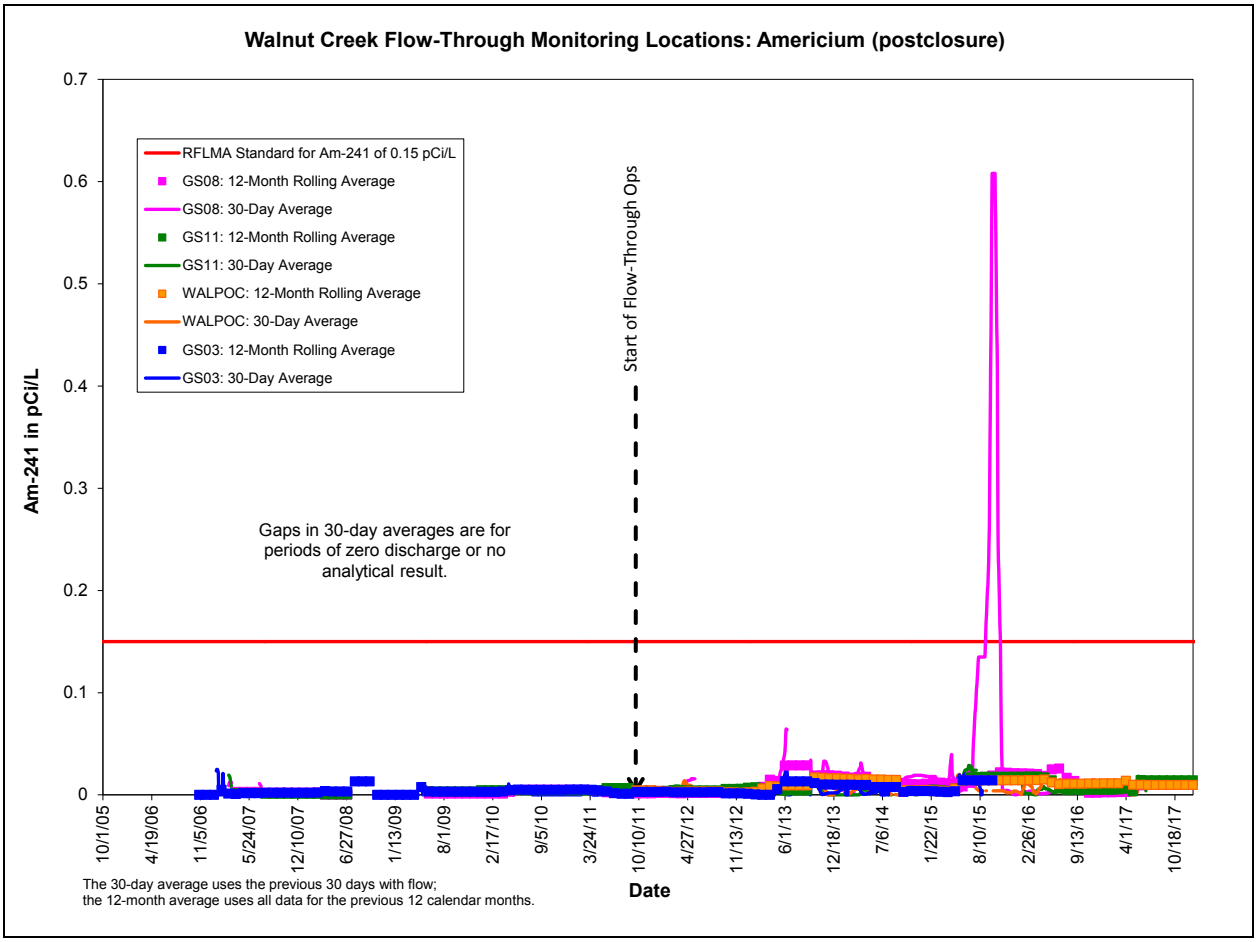
Notes:
Monitoring at GS03 was discontinued on October 1, 2015.
The composite sample started on June 15, 2017, at GS08 is still in progress.

Figure 4. Running Plutonium Averages at Walnut Creek Flow-Through Locations: Postclosure Period



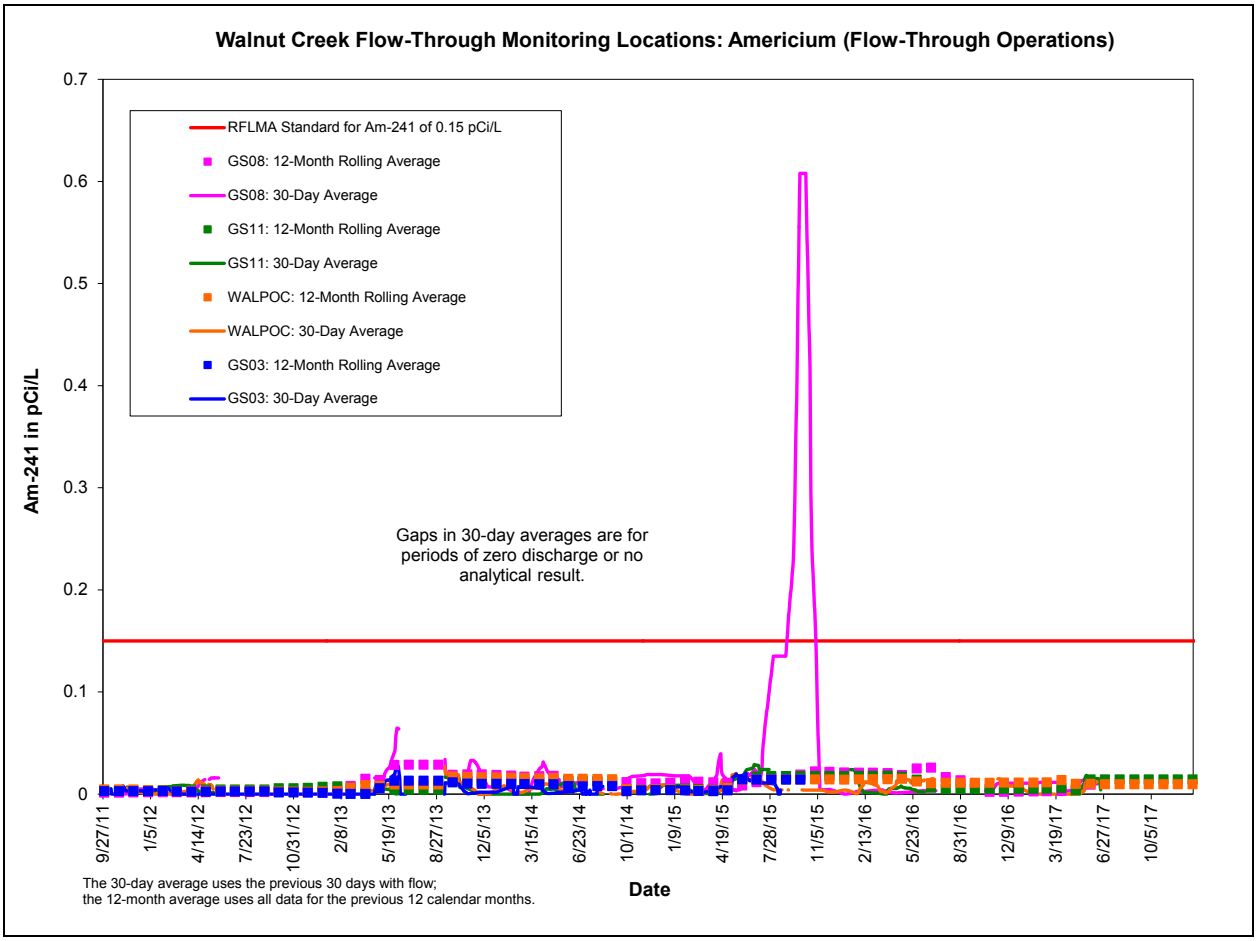
Notes:
Monitoring at GS03 was discontinued on October 1, 2015.
The composite sample started on June 15, 2017, at GS08 is still in progress.

Figure 5. Running Plutonium Averages at Walnut Creek Flow-Through Locations: Flow-Through Period



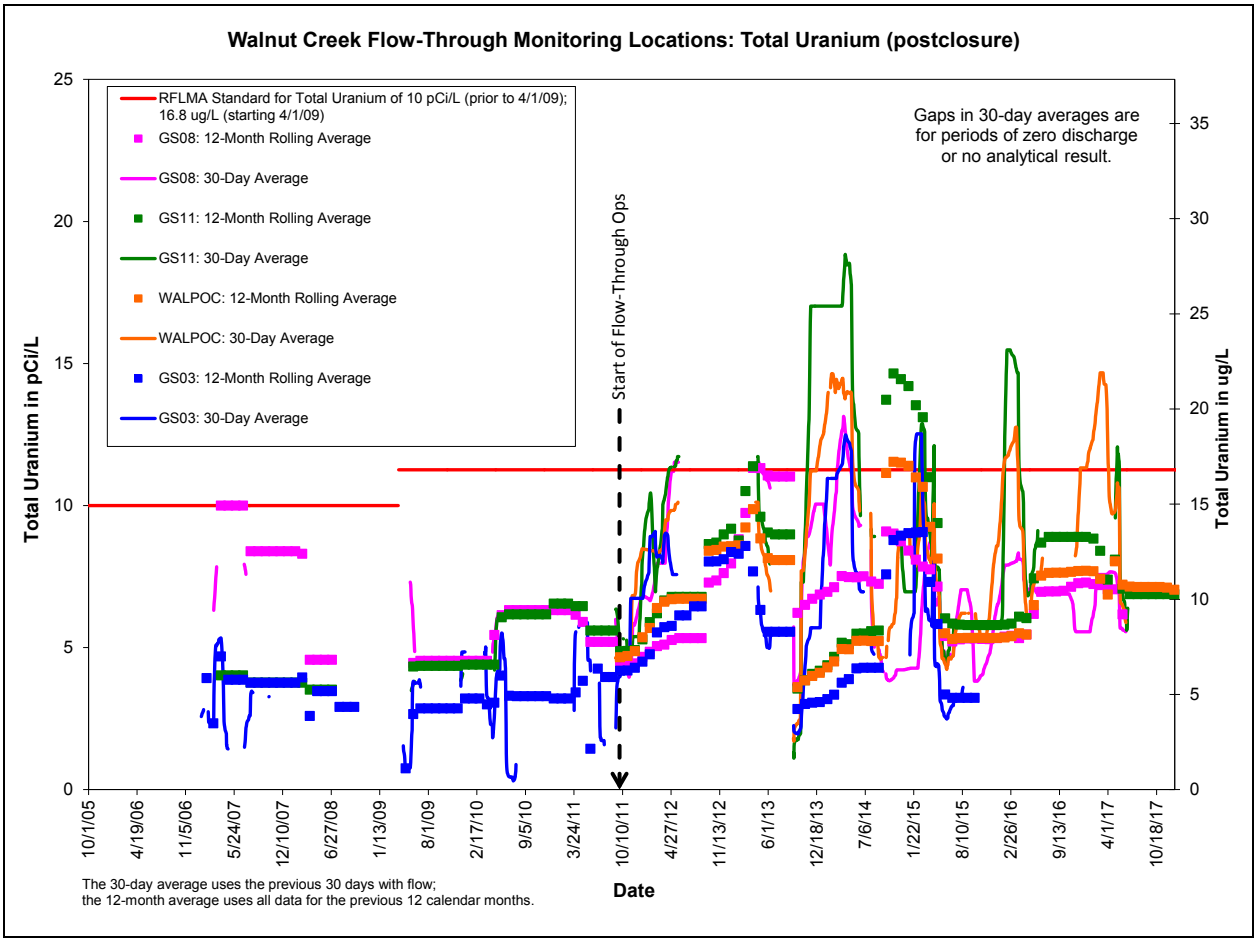
Notes:
Monitoring at GS03 was discontinued on October 1, 2015.
The composite sample started on June 15, 2017, at GS08 is still in progress.

Figure 6. Running Americium Averages at Walnut Creek Flow-Through Locations: Postclosure Period



Notes:
Monitoring at GS03 was discontinued on October 1, 2015.
The composite sample started on June 15, 2017, at GS08 is still in progress.

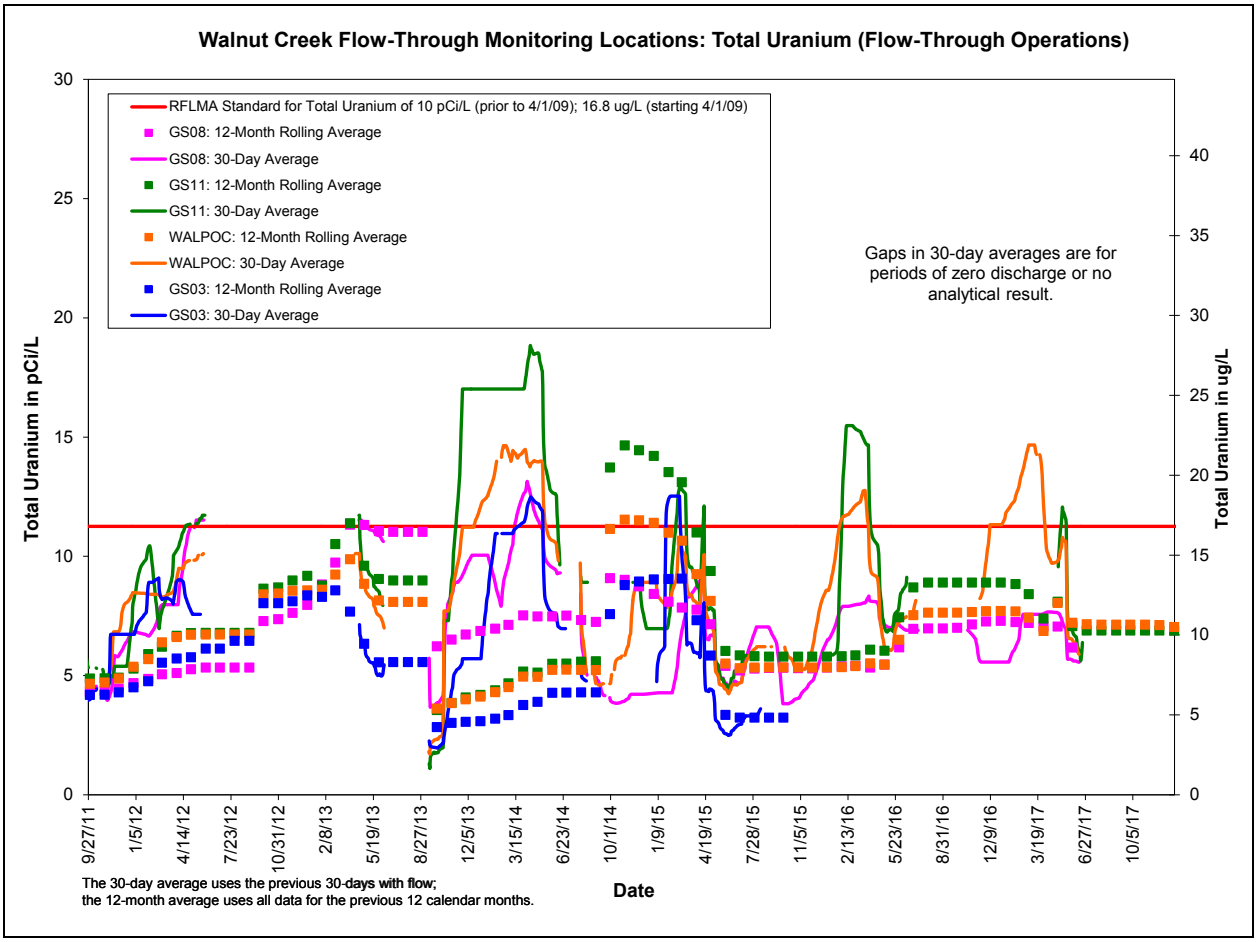
Figure 7. Running Americium Averages at Walnut Creek Flow-Through Locations: Flow-Through Period



Notes:
Monitoring at GS03 was discontinued on October 1, 2015.
After April 1, 2009, the µg/L results are shown as pCi/L using the conversion 1 µg/L = 0.67 pCi/L.
The composite sample started on June 15, 2017, at GS08 is still in progress.

Abbreviation:
ug/L = µg/L = micrograms per liter

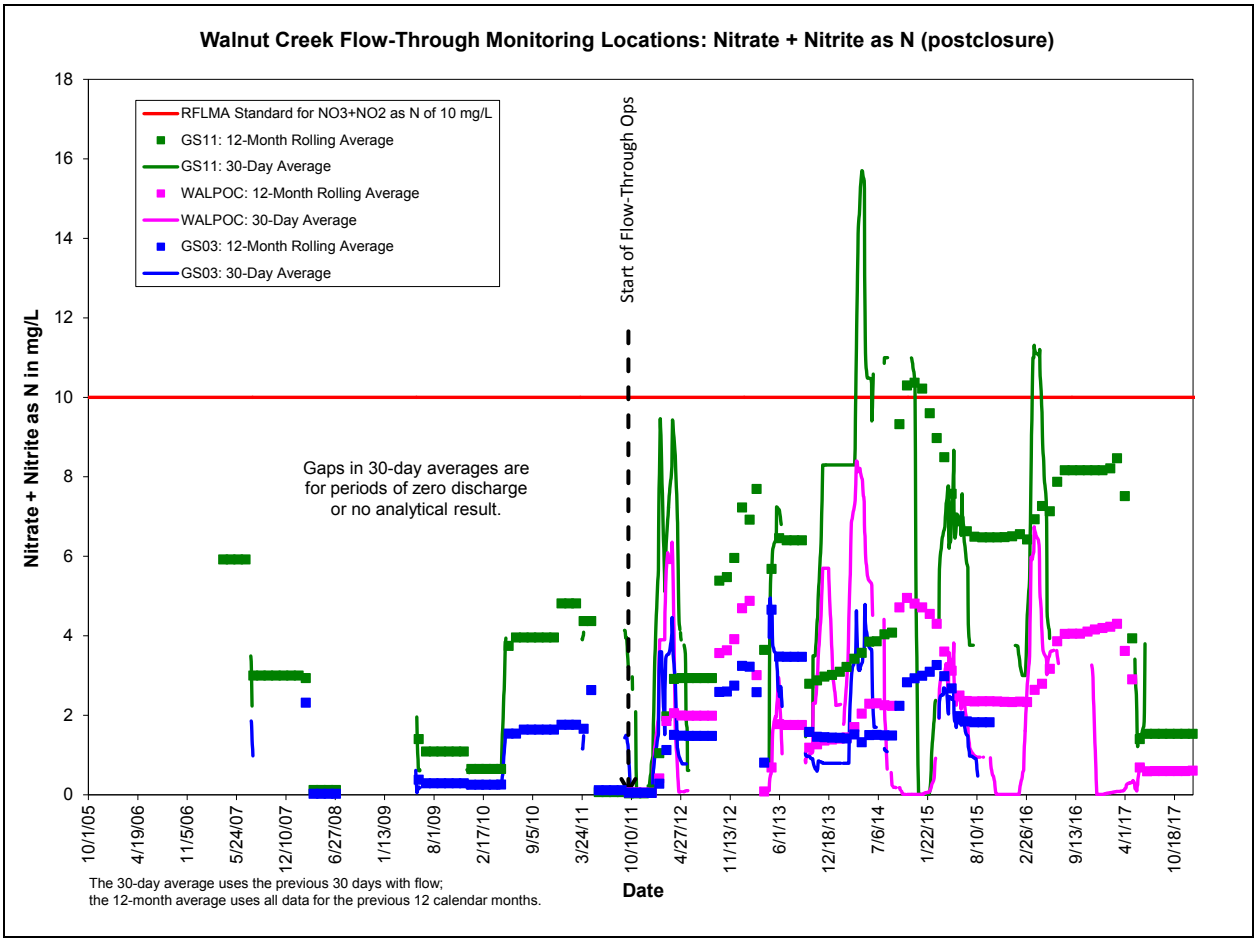
Figure 8. Running Uranium Averages at Walnut Creek Flow-Through Locations: Postclosure Period



Notes:
Monitoring at GS03 was discontinued on October 1, 2015.
After April 1, 2009, the µg/L results are shown as pCi/L using the conversion 1 µg/L = 0.67 pCi/L.
The composite sample started on June 15, 2017, at GS08 is still in progress.

Abbreviation:
ug/L = µg/L = micrograms per liter

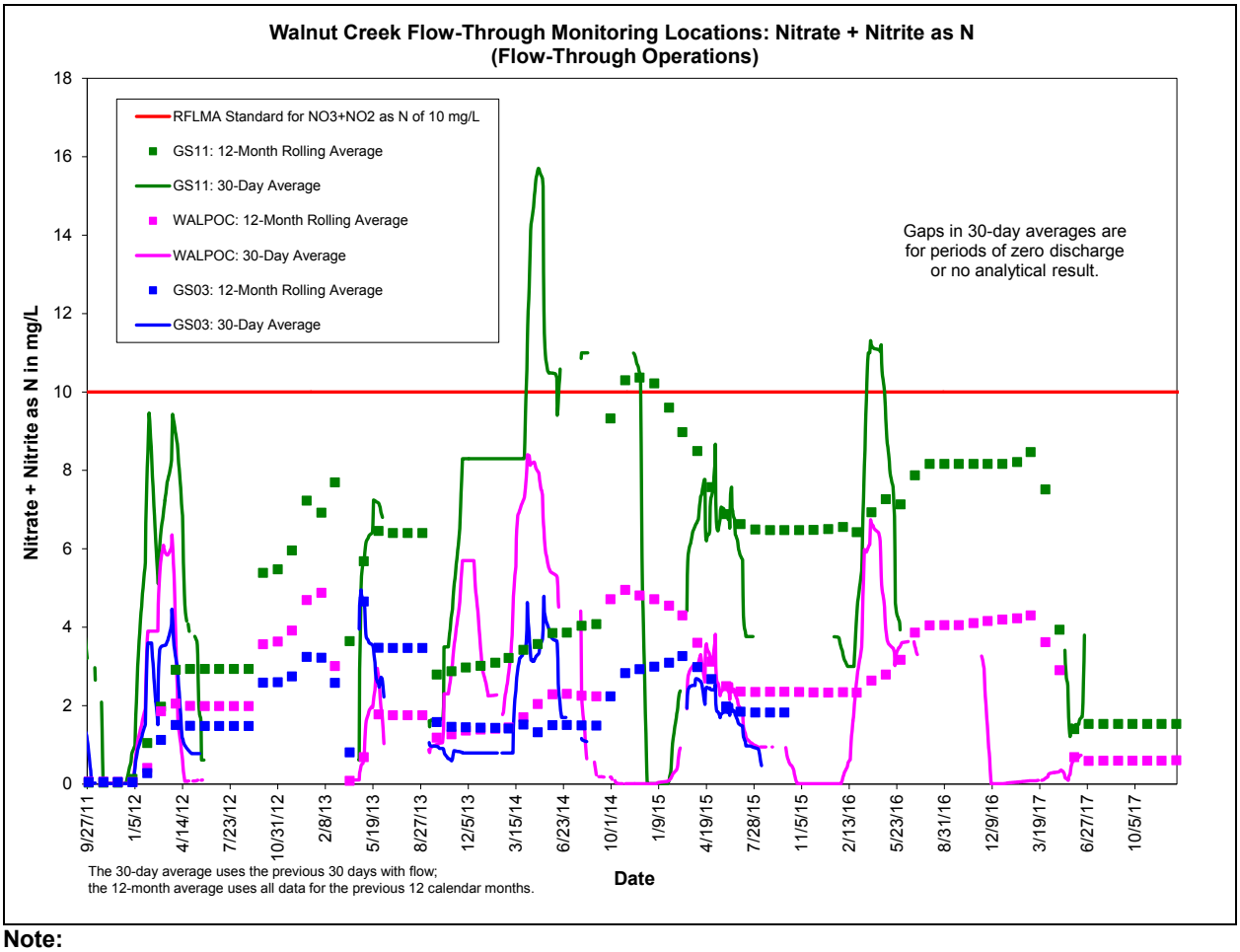
Figure 9. Running Uranium Averages at Walnut Creek Flow-Through Locations: Flow-Through Period



Note:
Monitoring at GS03 was discontinued on October 1, 2015.

Abbreviations:
mg/L = milligrams per liter
N = nitrogen
NO2 = nitrite
NO3 = nitrate

Figure 10. Running Nitrate + Nitrite as Nitrogen Averages at Walnut Creek Flow-Through Locations: Postclosure Period



Note:
Monitoring at GS03 was discontinued on October 1, 2015.

Abbreviations:
mg/L = milligrams per liter
N = nitrogen
NO2 = nitrite
NO3 = nitrate

Figure 11. Running Nitrate + Nitrite as Nitrogen Averages at Walnut Creek Flow-Through Locations: Flow-Through Period

3.3.2 Woman Creek Evaluation

Table 3 presents long-term volume-weighted averages in Woman Creek for the postclosure batch release period (October 2005 to November 2011) and the period since flow-through pond operations began (November 2011 to the present). Figure 12 through Figure 17 present the 30-day and 12-month rolling averages for each location, analyte, and time period.[4]

[4] The RFLMA standards shown on these plots are for reference only. The RFLMA-required evaluation is location-specific (i.e., POCs and POEs) and is not part of this AMP report. Evaluation of sampling results as required by RFLMA is routinely presented in other reports in accordance with the RFLMA reporting requirements.

For uranium, the plots show that water quality is comparable and remains below the applicable standard for batch and flow-through conditions. As discussed for Walnut Creek, flow-through 12-month rolling averages show month-to-month variability comparable to that of batch operations. Conversely, flow-through 30-day averages show increased day-to-day variability since water is no longer being batched and mixed prior to discharge.

For GS31 (outlet from Pond C-2), the significantly higher plutonium and americium activities in 2015 are associated with the high runoff during the spring of 2015. These activities are a result of runoff from the South Interceptor Ditch (SID) passing through Pond C-2. This runoff also resulted in reportable 12-month rolling plutonium activities at point of evaluation (POE) SW027. A detailed discussion of the reportable condition and subsequent mitigating response can be found in the RFLMA quarterly reports for 2015. Note that plutonium and americium activities at GS31 in 2016 and 2017 are reduced (as indicated by the 30-day average) and activities at the downstream POC (WOMPOC) remain well below the 0.15 pCi/L standard.

Table 3. Volume-Weighted Averages for Woman Creek Flow-Through Monitoring Locations

Woman Creek: October 2005–November 2011 (Batch Release)

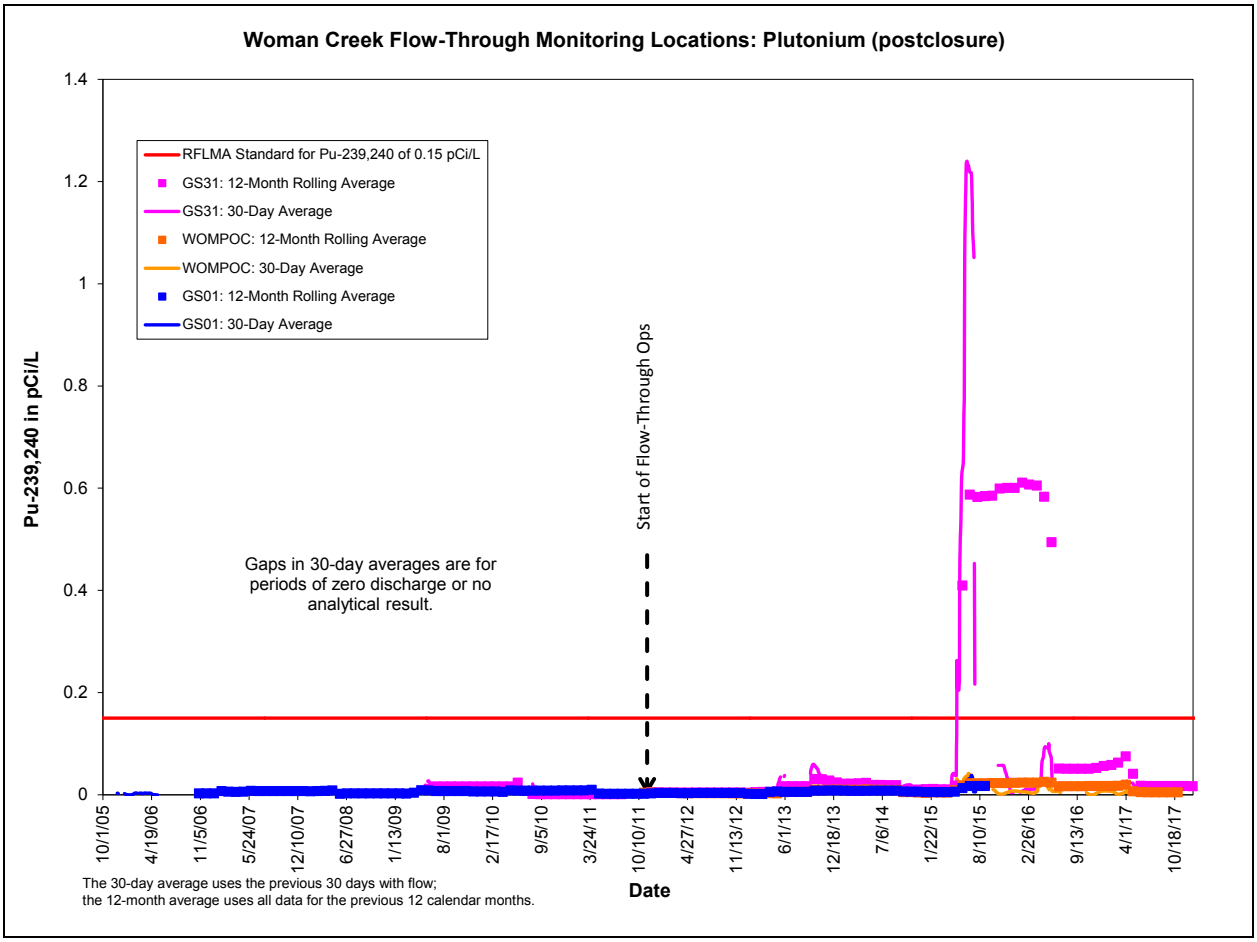
		Uranium (ug/L)		Pu-239,240 (pCi/L)		Am-241 (pCi/L)	
	Location Code	Volume-Weighted Average	Sample Count	Volume-Weighted Average	Sample Count	Volume-Weighted Average	Sample Count
Upstream	GS31	4.1	12	0.007	12	0.004	12
Downstream	GS01	2.3	95	0.007	95	0.004	95

Woman Creek: November 2011–Present (Flow-Through)

		Uranium (ug/L)		Pu-239,240 (pCi/L)		Am-241 (pCi/L)	
	Location Code	Volume-Weighted Average	Sample Count	Volume-Weighted Average	Sample Count	Volume-Weighted Average	Sample Count
Upstream	GS31	6.7	38	0.272	38	0.048	38
⬇	WOMPOC	2.0	99	0.017	99	0.007	99
Downstream	GS01	2.1	45	0.014	45	0.007	45

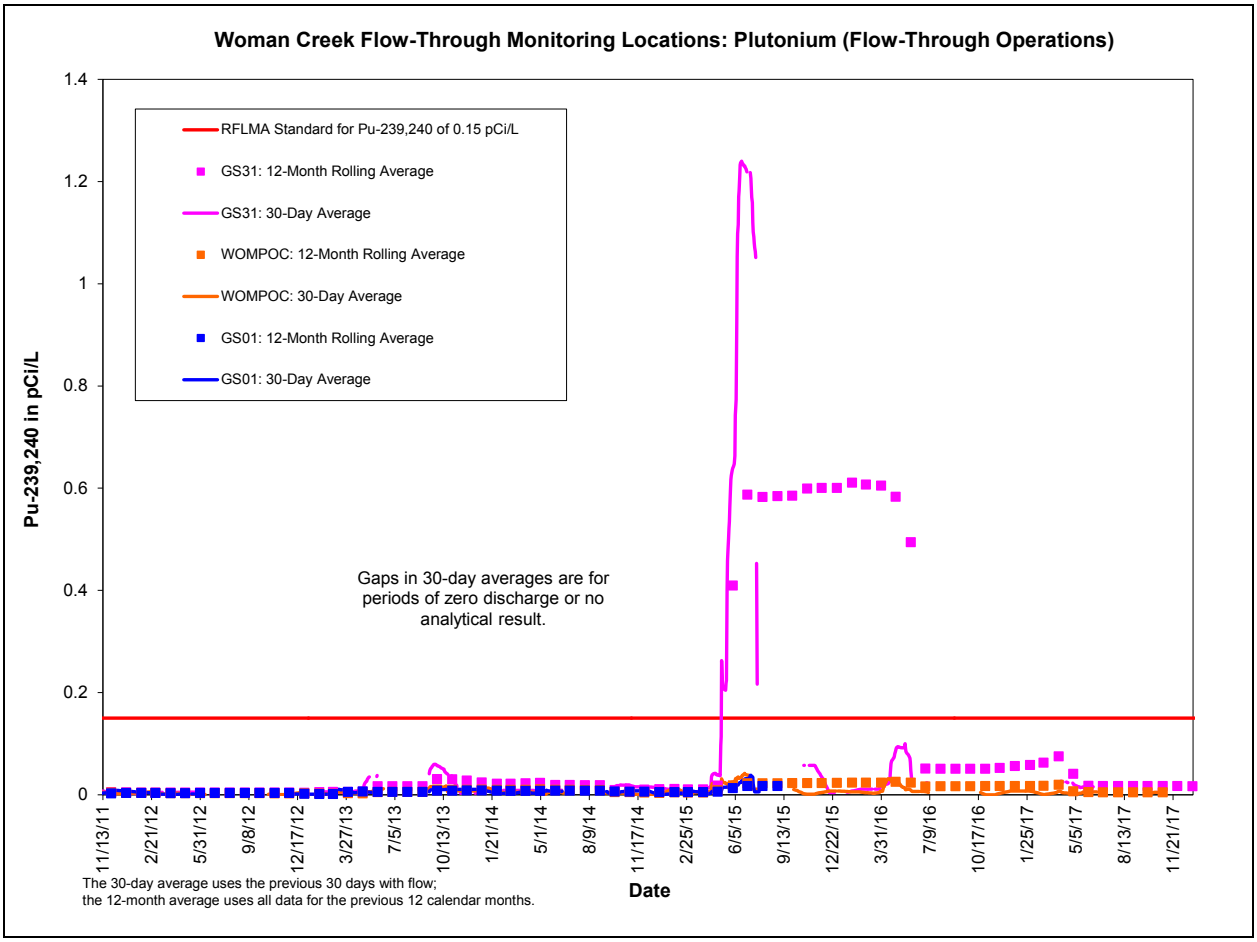
Notes:
Sample counts vary because composite sampling periods vary with water availability.
Monitoring at GS01 was discontinued on October 1, 2015.

Abbreviation:
ug/L = µg/L = micrograms per liter



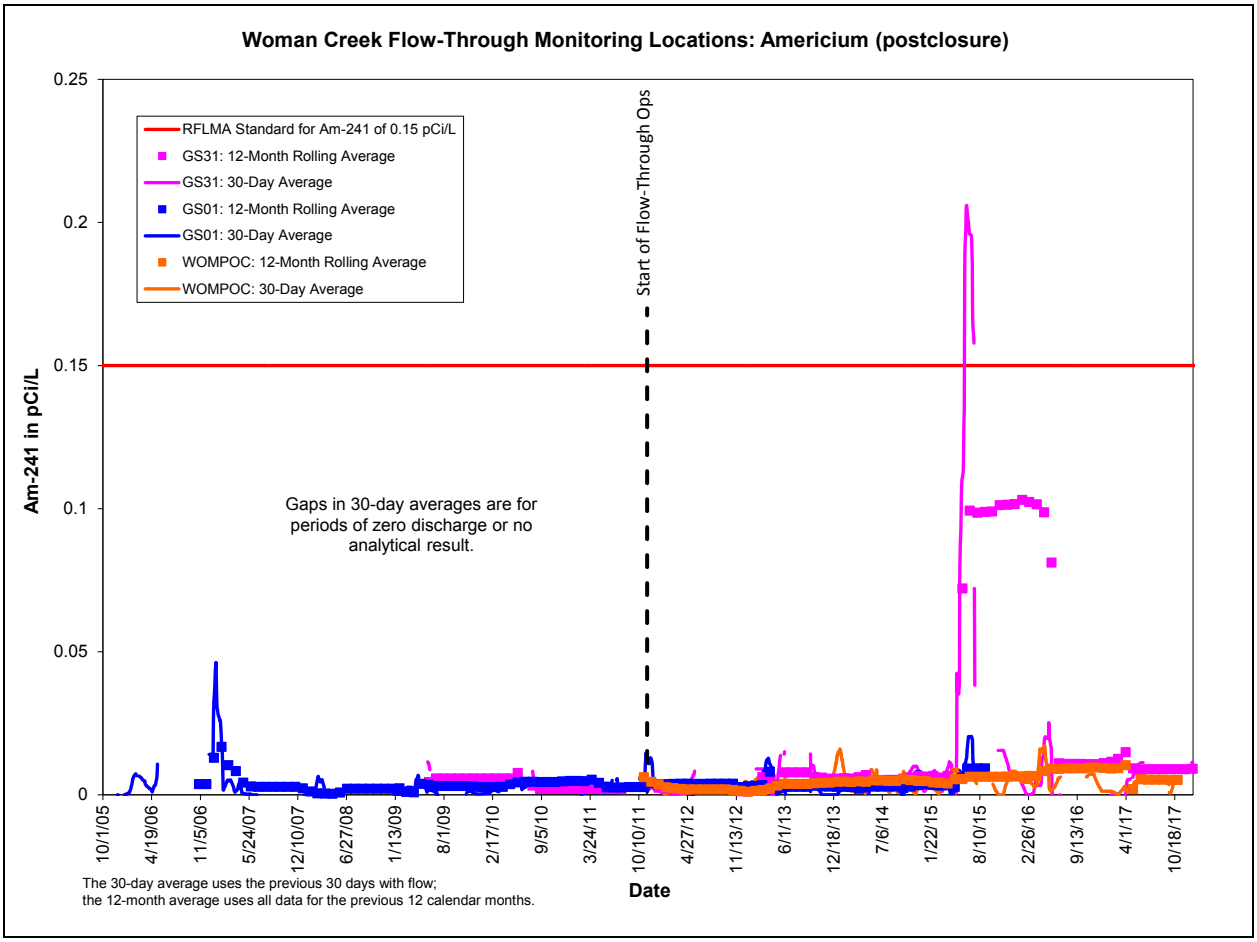
Notes:
Monitoring at GS01 was discontinued on October 1, 2015.
Results are pending for the composite sample started on November 2, 2017, at WOMPOC.

Figure 12. Running Plutonium Averages at Woman Creek Flow-Through Locations: Postclosure Period



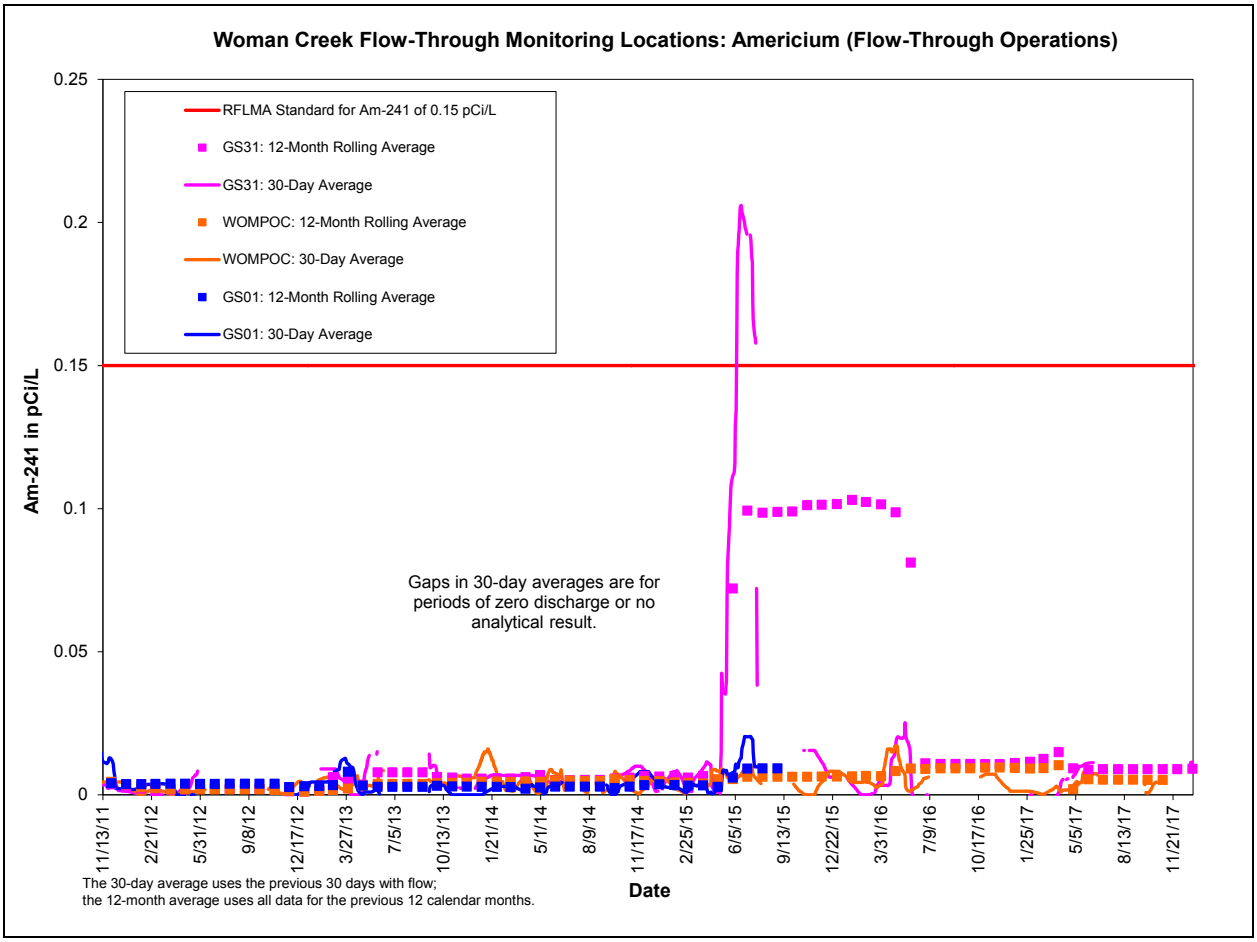
Notes:
Monitoring at GS01 was discontinued on October 1, 2015.
Results are pending for the composite sample started on November 2, 2017, at WOMPOC.

Figure 13. Running Plutonium Averages at Woman Creek Flow-Through Locations: Flow-Through Period



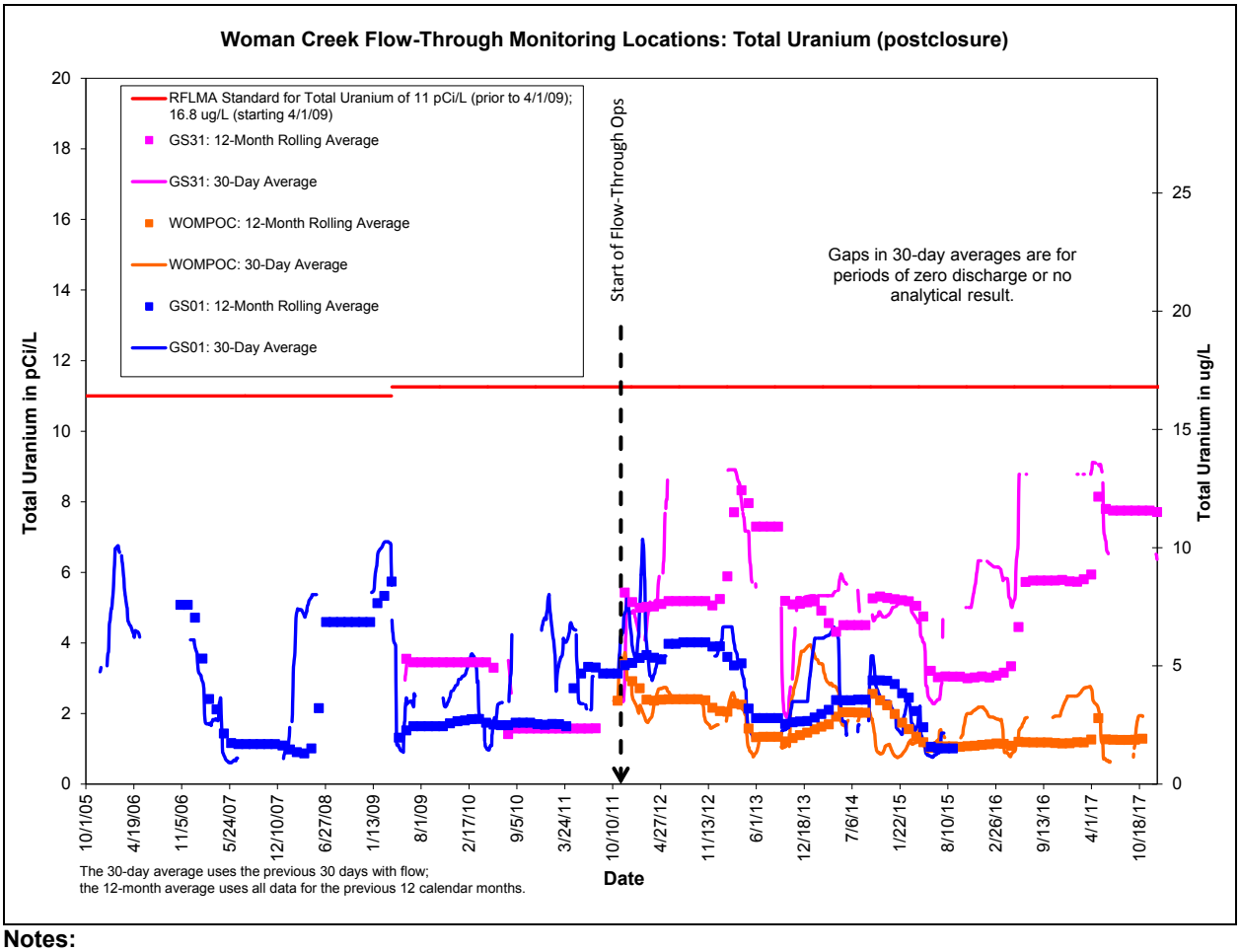
Notes:
Monitoring at GS01 was discontinued on October 1, 2015.
Results are pending for the composite sample started on November 2, 2017, at WOMPOC.

Figure 14. Running Americium Averages at Woman Creek Flow-Through Locations: Postclosure Period



Notes:
Monitoring at GS01 was discontinued on October 1, 2015.
Results are pending for the composite sample started on November 2, 2017, at WOMPOC.

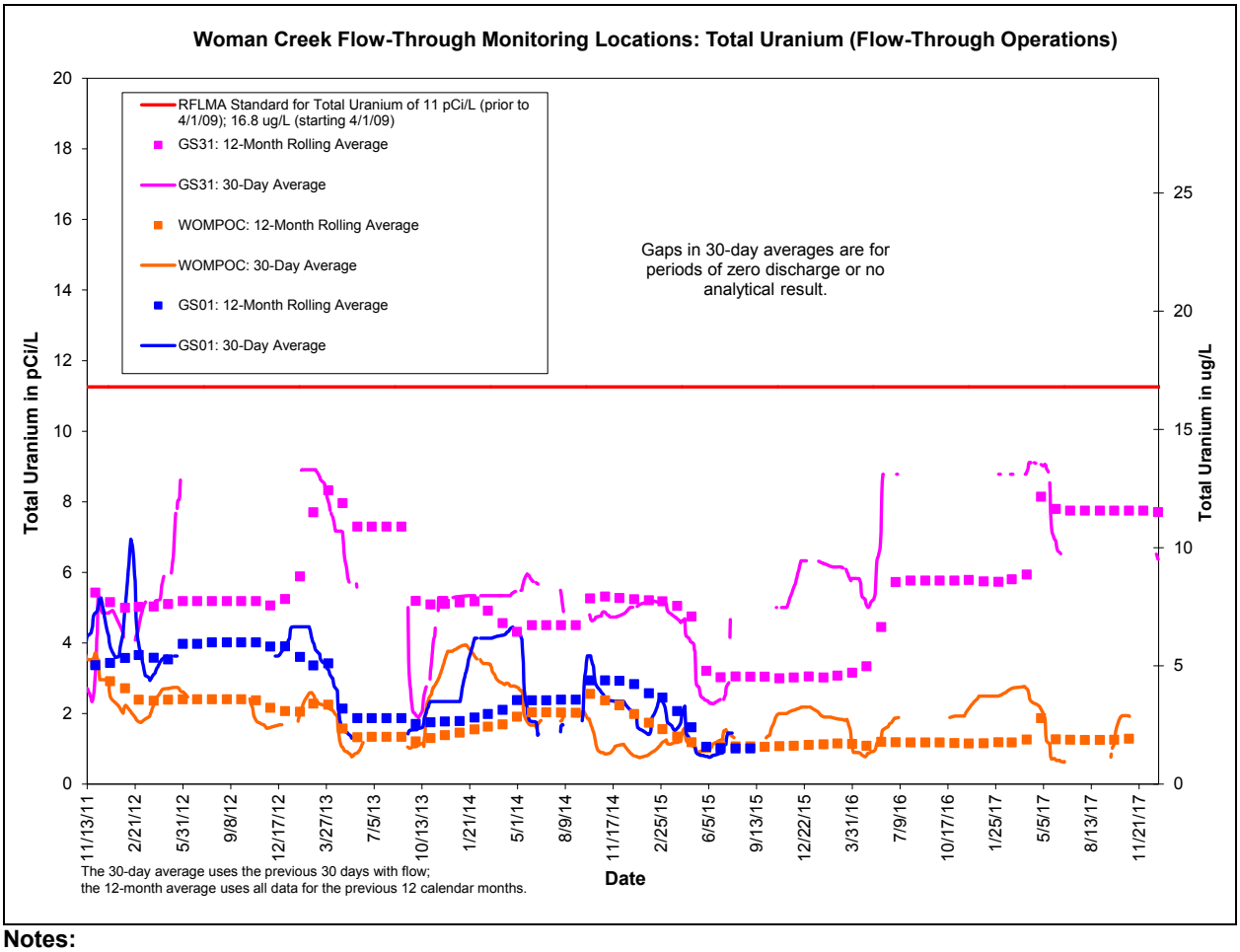
Figure 15. Running Americium Averages at Woman Creek Flow-Through Locations: Flow-Through Period



Notes:
Monitoring at GS01 was discontinued on October 1, 2015.
Results are pending for the composite sample started on November 2, 2017, at WOMPOC.
After April 1, 2009, the µg/L results are shown as pCi/L using the conversion 1 µg/L = 0.67 pCi/L.

Abbreviation:
ug/L = µg/L = micrograms per liter

Figure 16. Running Uranium Averages at Woman Creek Flow-Through Locations: Postclosure Period



Notes:
Monitoring at GS01 was discontinued on October 1, 2015.
Results are pending for the composite sample started on November 2, 2017, at WOMPOC.
After April 1, 2009, the µg/L results are shown as pCi/L using the conversion 1 µg/L = 0.67 pCi/L.

Abbreviation:
ug/L = µg/L = micrograms per liter

Figure 17. Running Uranium Averages at Woman Creek Flow-Through Locations: Flow-Through Period

3.4 Storm-Event Monitoring

This objective involves collecting water quality data to assess actinide and solids transport during runoff periods resulting from precipitation events. The intent is to develop correlations between flow rate and actinide concentrations and to further describe short-term, event-driven variability. In addition, these data can be used to assess the effectiveness of ongoing revegetation and erosion control practices.

Location GS31 below the Pond C-2 outlet (Figure 18 and Figure 19) is used for storm-event monitoring. Storm-event monitoring equipment at GS31 was installed in spring 2012 to specifically evaluate water quality when runoff passes through Pond C-2 while being operated in a flow-through configuration. Samples are collected as time-paced sequential grabs using an automated sampler with a 24-bottle carousel. The first storm-event monitoring samples were collected in September 2013.

During 2017, only one significant runoff event occurred at GS31 when SW027 was contributing flow to Pond C-2. Unfortunately, an equipment failure resulted in no samples being collected. Therefore, this section has no new data after CY 2016. Hydrographs with sample events are given in Figure 20 through Figure 25. Analytical results are listed in Table 4.

Various correlations are plotted in Figure 26 through Figure 29 for the relatively few results available. Good correlations are observed for plutonium, americium, and uranium in relation to flow rate. Figure 27 shows increasing plutonium and americium activity with increasing flowrate. Since plutonium and americium move in association with suspended solids (i.e., soil particles), this correlation is expected because increased flow rate generally results in increased total suspended solids (TSS). However, Figure 29 shows no relationship between flow rate and TSS. Therefore, the increased activity may depend on the origin of the runoff for specific events. In other words, if an area with higher residual contamination, like the 903 Lip Area, contributes a higher proportion of runoff during large runoff events, then an increase in activity would consequently be observed for higher flow rates.

Figure 28, in contrast, shows a decrease in uranium concentration with an increase in flow rate. This water quality effect is observed at locations on the Site as naturally occurring uranium from groundwater sources is diluted during runoff events.

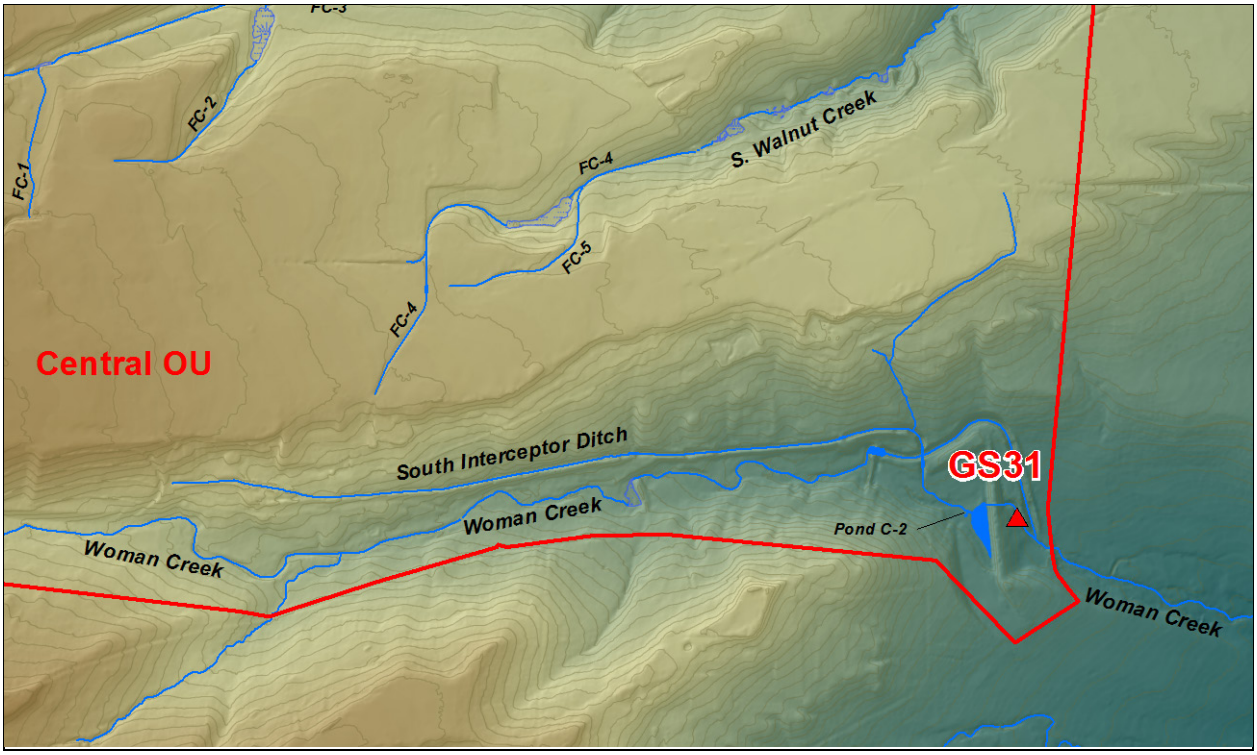


Figure 18. Storm-Event Monitoring Location GS31

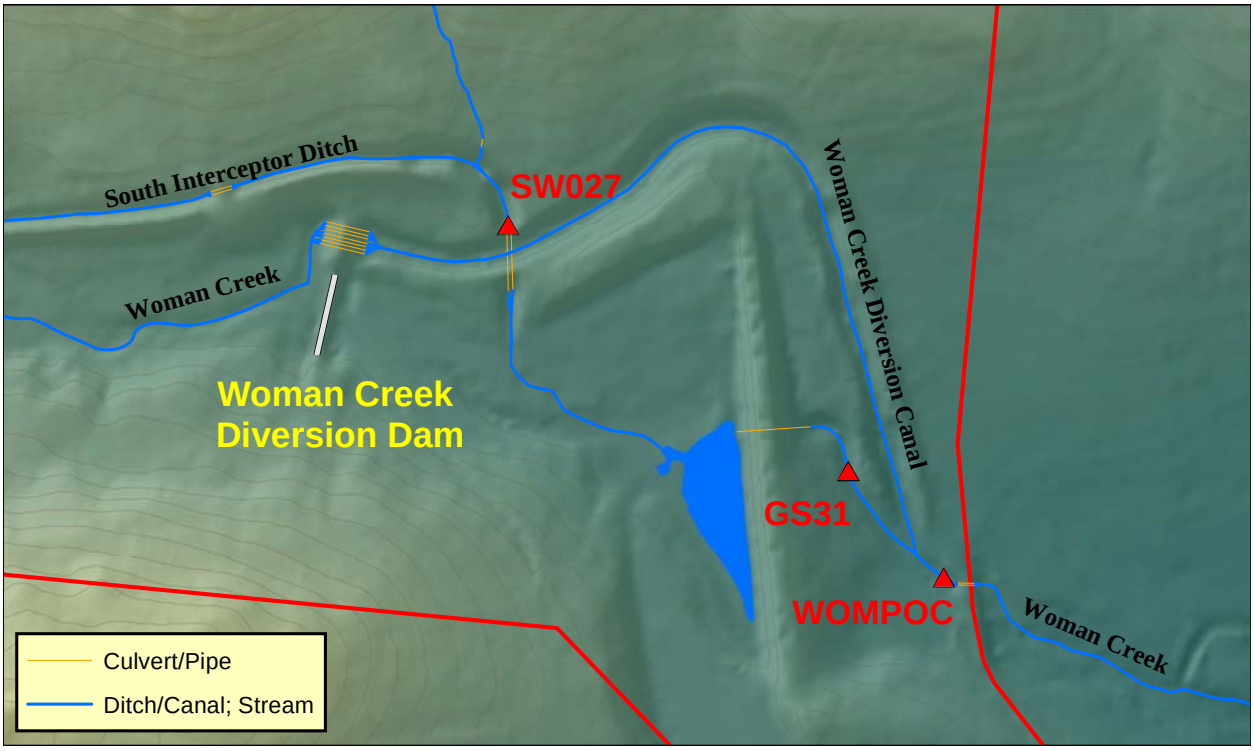


Figure 19. Detail Map for Storm-Event Monitoring Location GS31

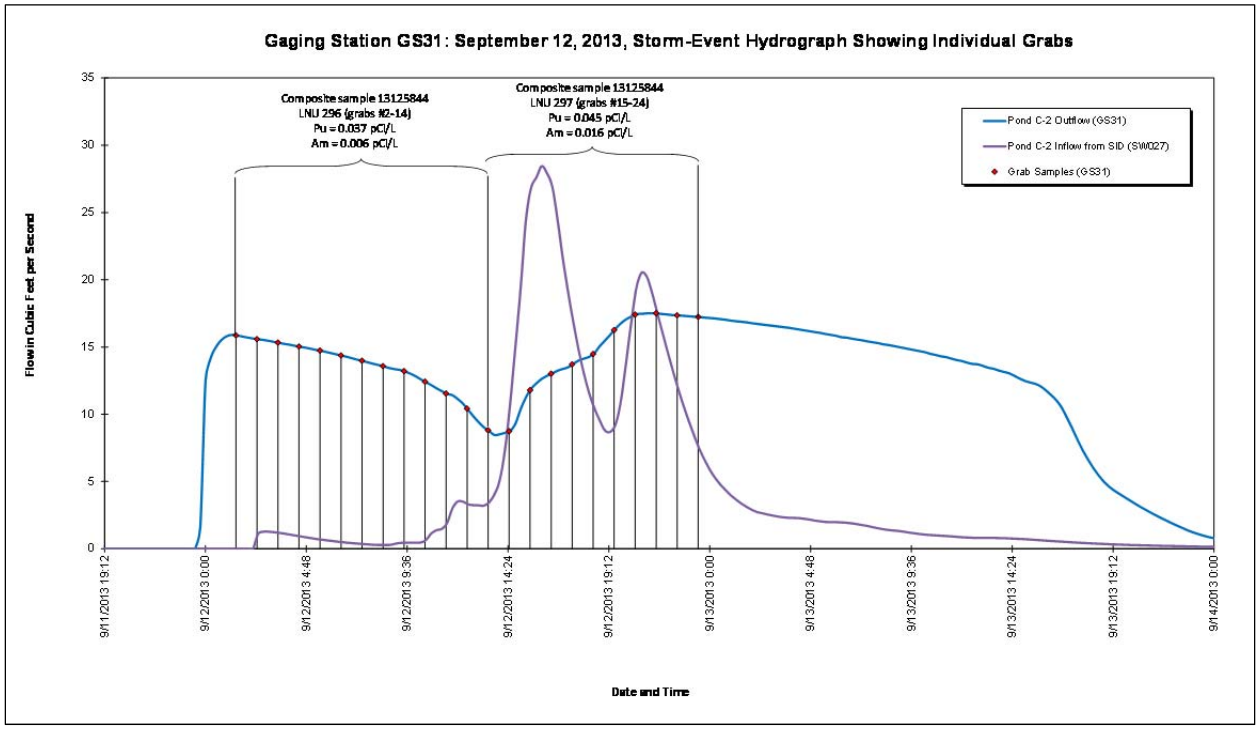


Figure 20. Storm-Event Hydrograph at GS31: September 12, 2013

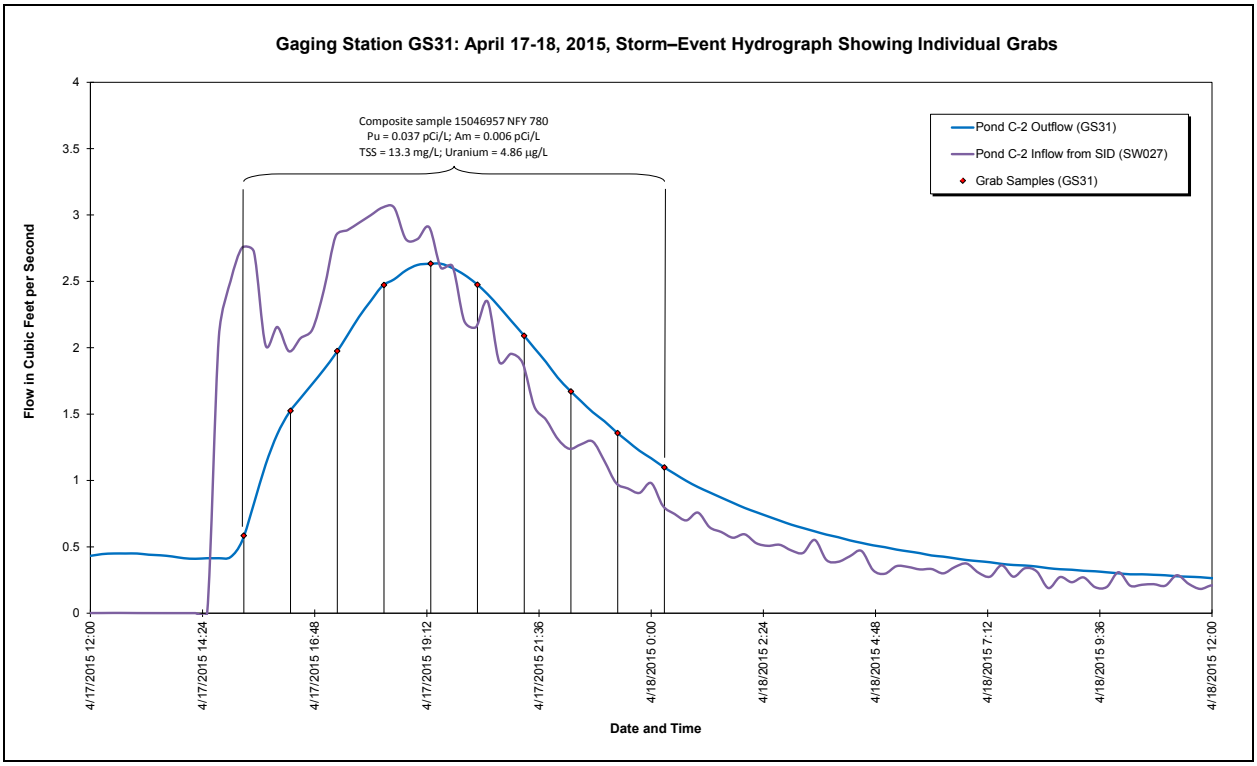


Figure 21. Storm-Event Hydrograph at GS31: April 17–18, 2015

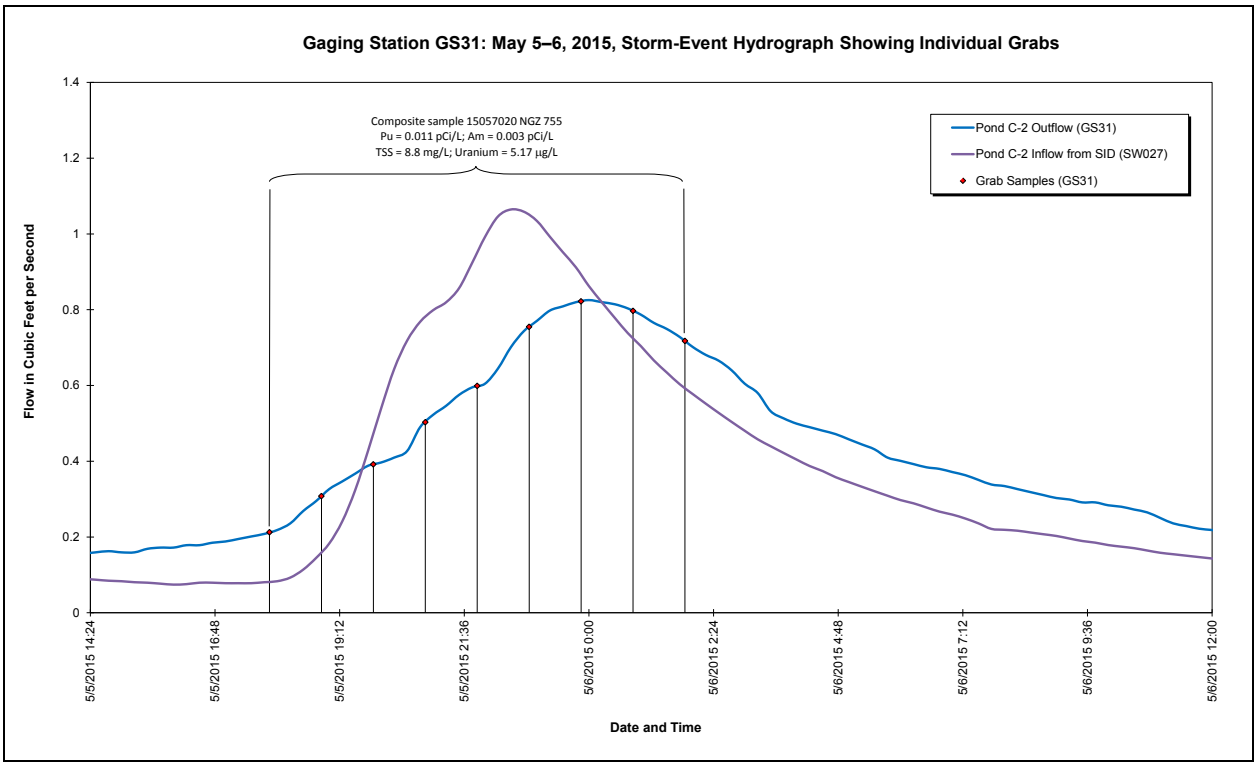


Figure 22. Storm-Event Hydrograph at GS31: May 5–6, 2015

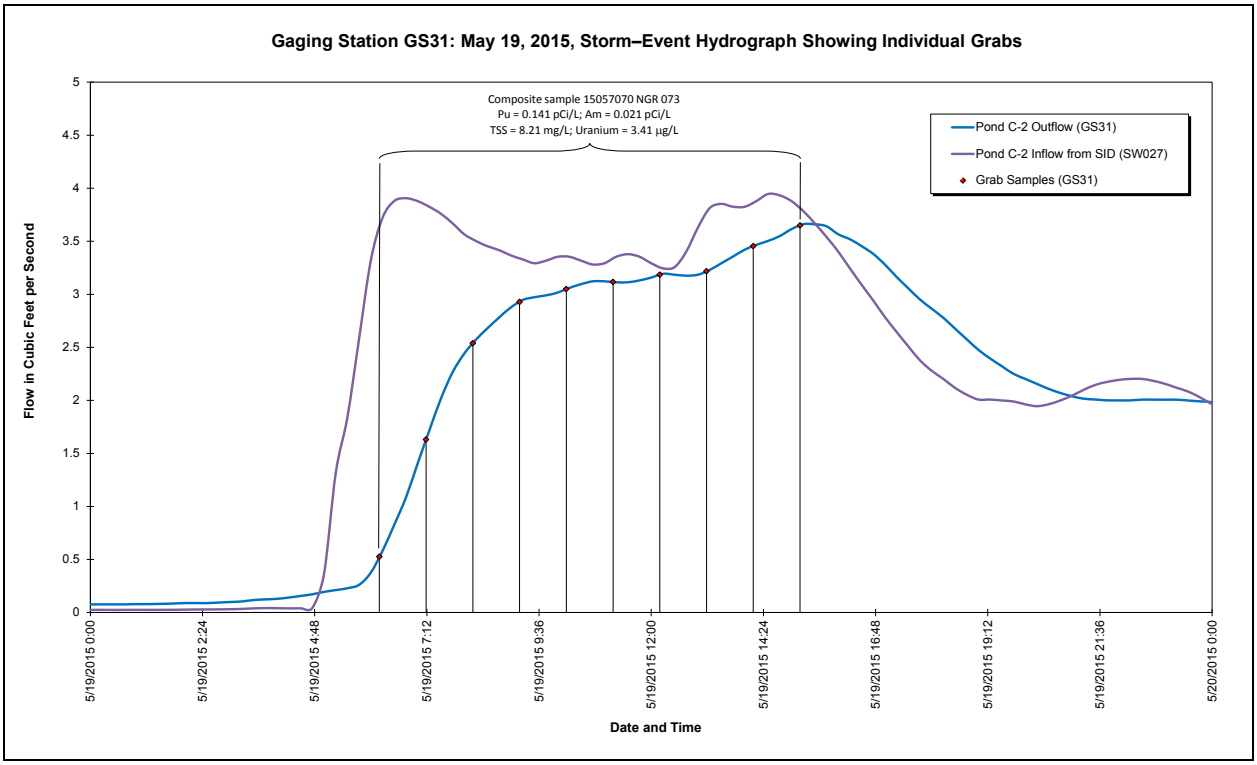


Figure 23. Storm-Event Hydrograph at GS31: May 19, 2015

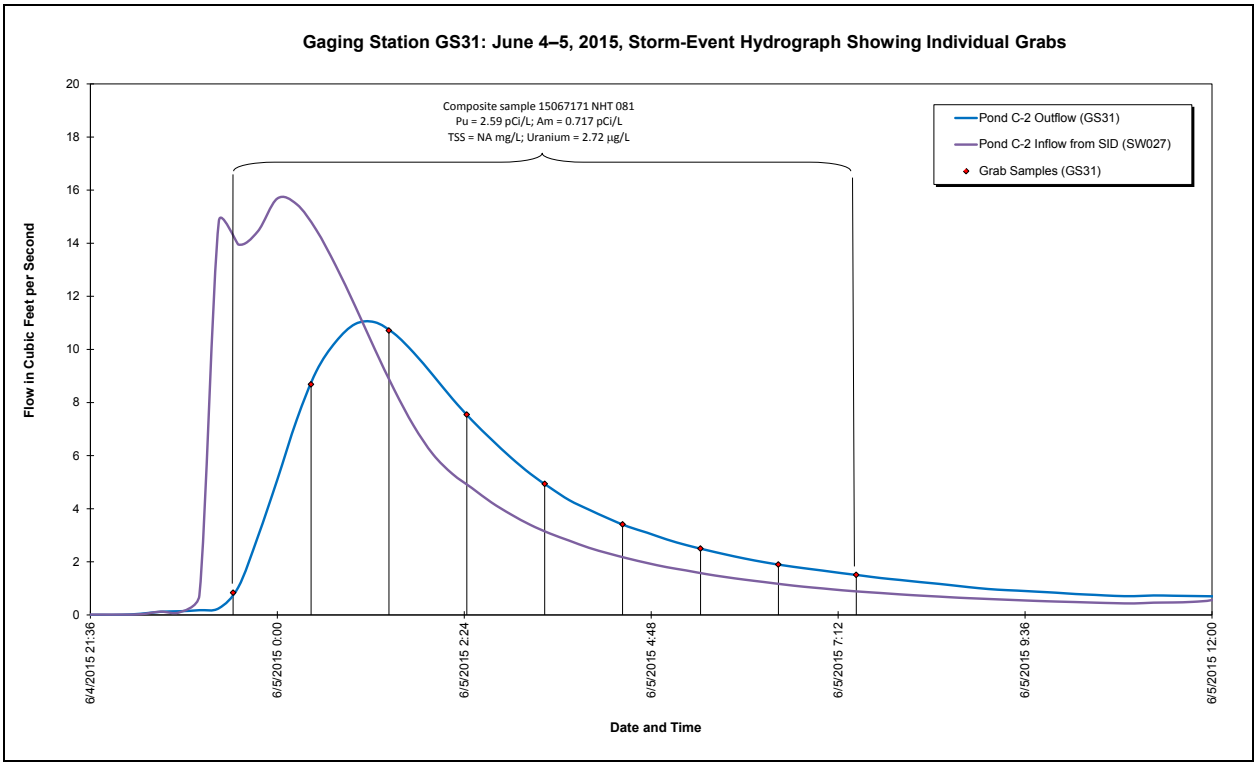


Figure 24. Storm-Event Hydrograph at GS31: June 4–5, 2015

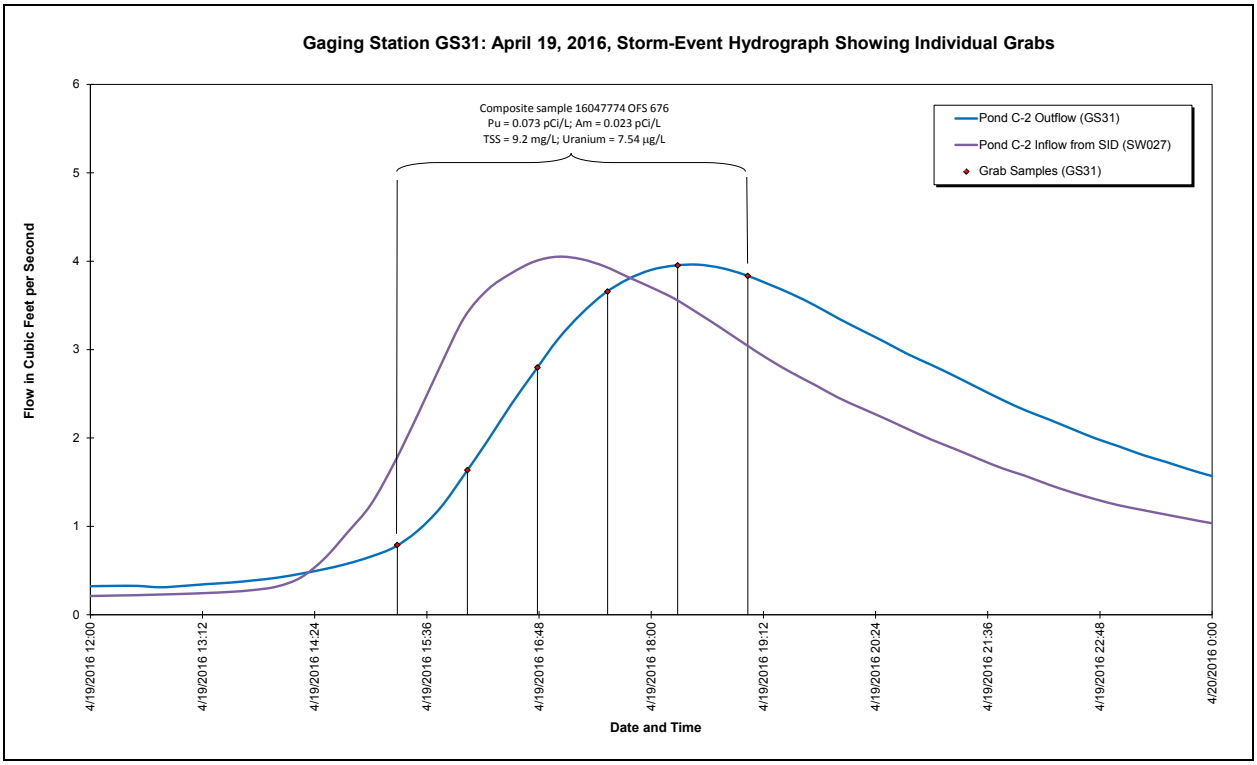


Figure 25. Storm-Event Hydrograph at GS31: April 19, 2016

Table 4. GS31 Storm-Event Sample Results

Sampling Date	Pu-239, 240 [pCi/L]	Am-241 [pCi/L]	Uranium [µg/L]	TSS [mg/L]	Flow Rate [cfs]
9/12/2013[a]	0.037	0.006	1.41	NA	13.5
9/12/2013[b]	0.045	0.016	1.11	NA	14.7
4/17/2015	0.090	0.008	4.86	13.3	1.79
5/5/2015	0.011	0.003	5.17	8.8	0.57
5/19/2015	0.141	0.021	3.41	8.2	2.73
6/4/2015	2.590	0.717	2.72	NA	4.67
4/16/2016	0.073	0.023	7.54	9.2	2.78

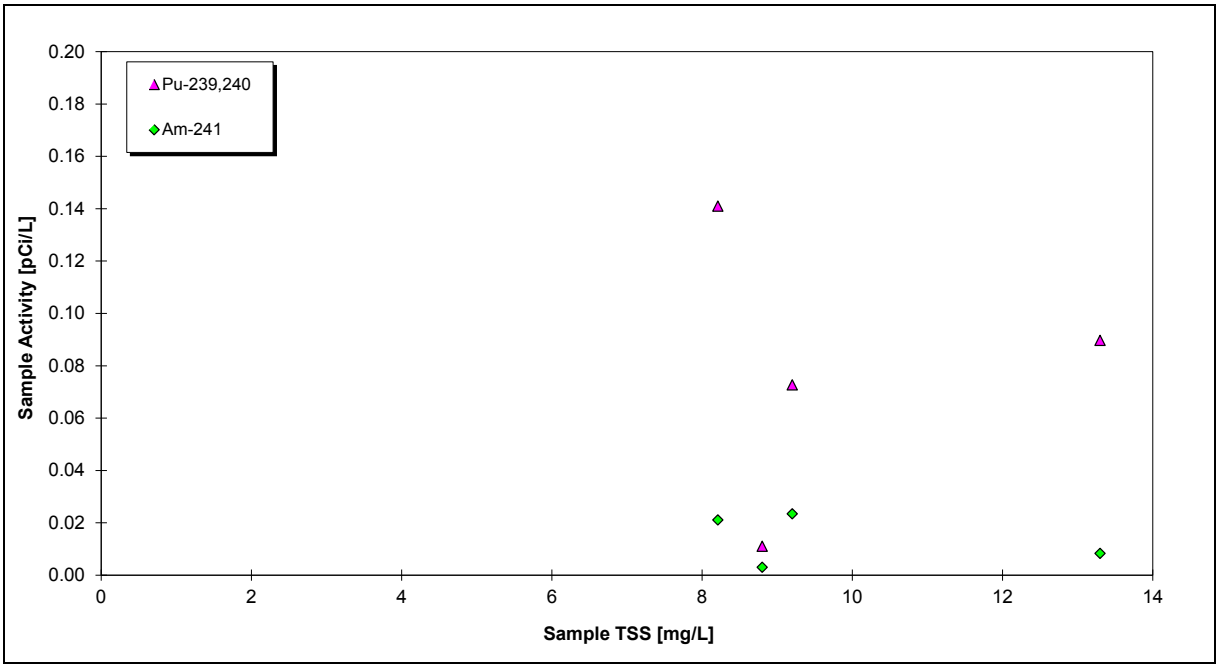
Notes:

[a] Sample includes significant quantities of water that flooded over the Woman Creek diversion dam into Pond C-2 when flows from the SID were minimal (see Figure 20).

[b] Sample includes significant quantities of water that flooded over the Woman Creek diversion dam into Pond C-2 when flows from the SID were also significant (see Figure 20).

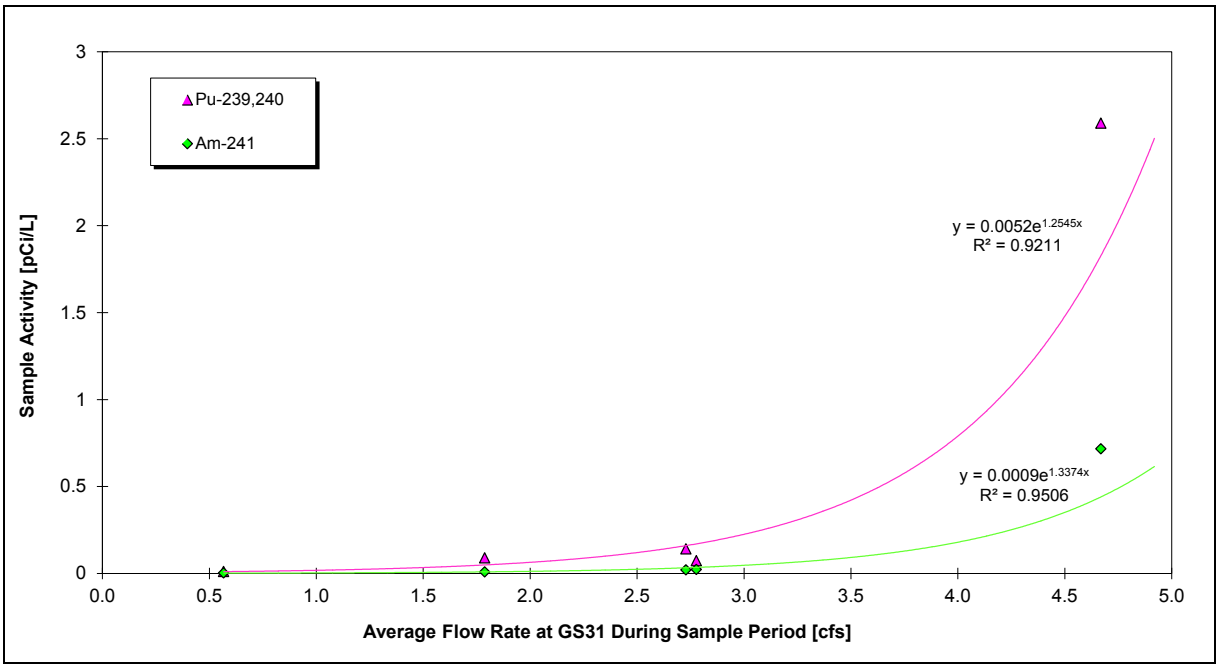
Abbreviations:

cfs = cubic feet per second
µg/L = micrograms per liter
mg/L = milligrams per liter



Abbreviation:
mg/L = milligrams per liter

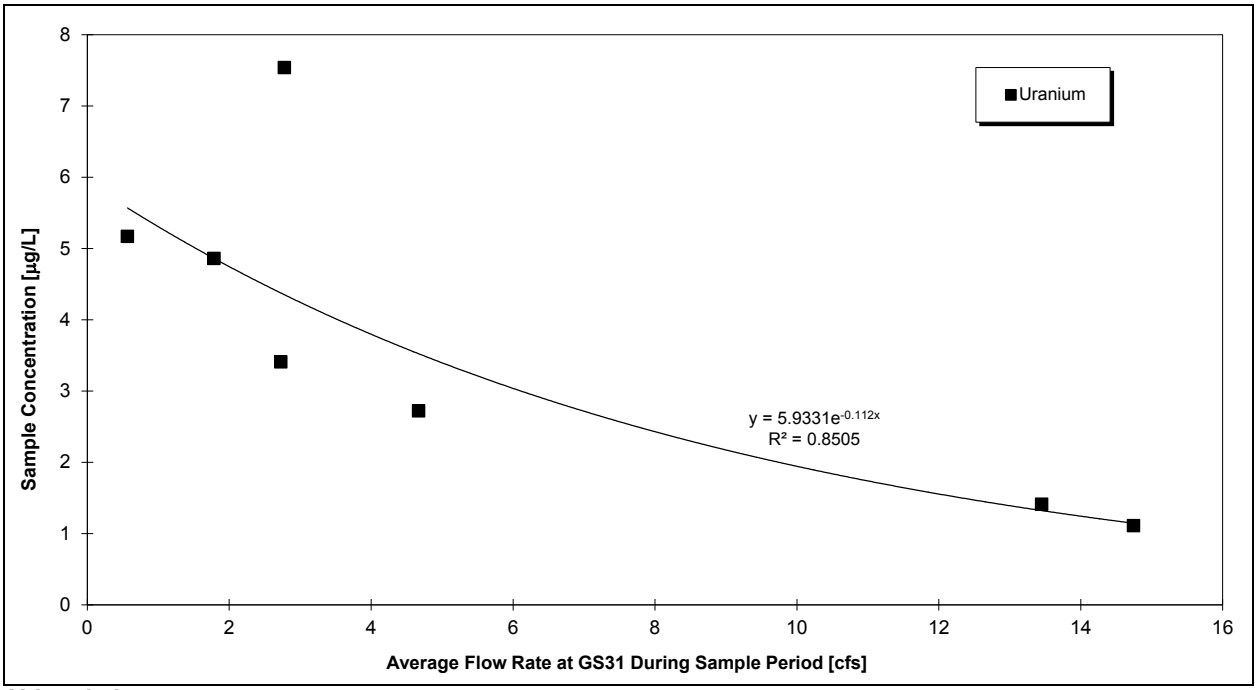
Figure 26. Plutonium and Americium Activity Versus Total Suspended Solids for GS31 Storm-Event Samples



Note:
The 2013 results are not shown since they were significantly diluted by Woman Creek water that flooded over the Woman Creek Diversion into Pond C-2.

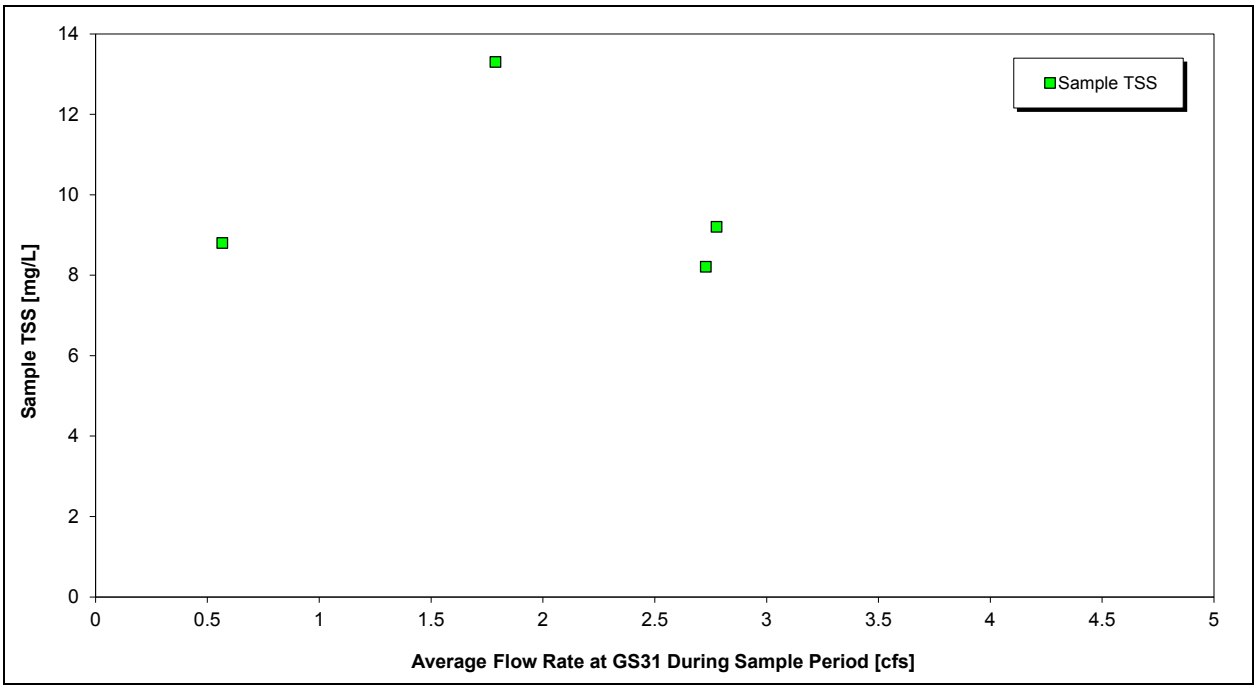
Abbreviation:
cfs = cubic feet per second

Figure 27. Plutonium and Americium Activity Versus Average Sample Flow Rate for GS31 Storm-Event Samples



Abbreviations:
cfs = cubic feet per second
µg/L = micrograms per liter

Figure 28. Uranium Concentration Versus Average Sample Flow Rate for GS31 Storm-Event Samples

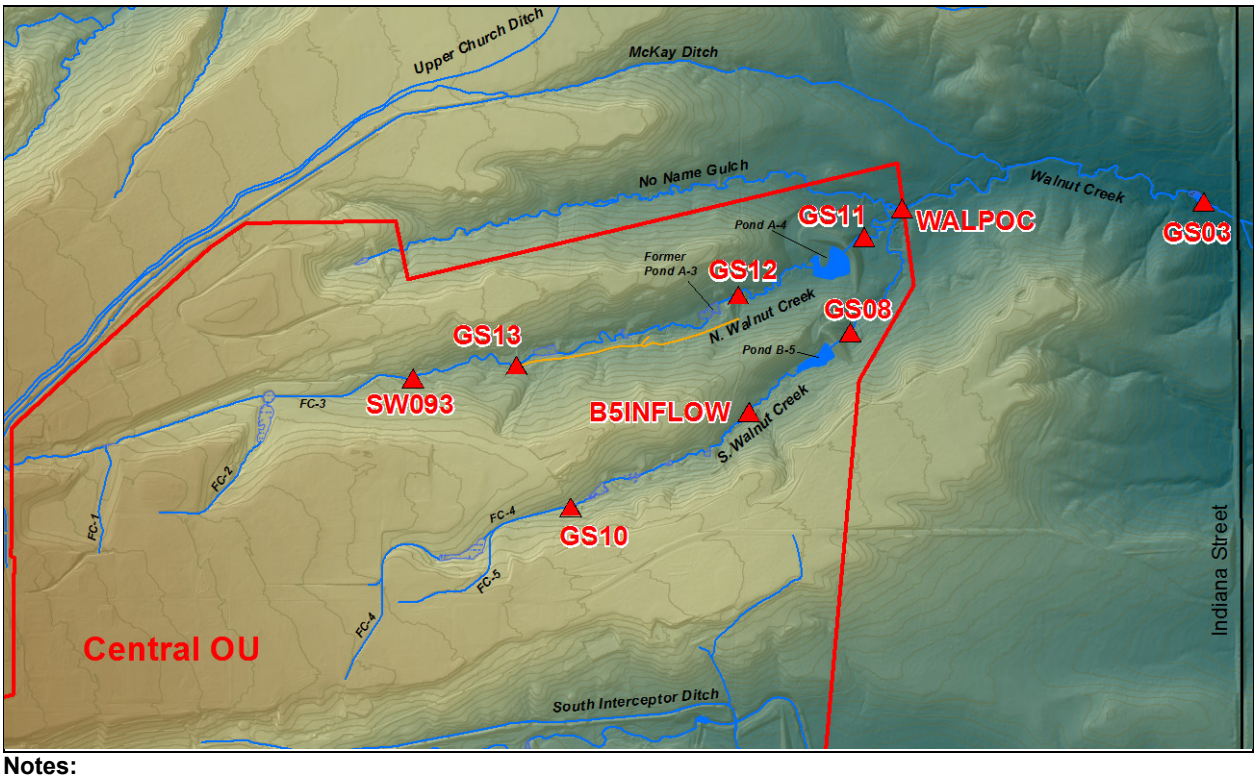


Abbreviations:
cfs = cubic feet per second;
mg/L = milligrams per liter

Figure 29. Total Suspended Solids Versus Average Sample Flow Rate for GS31 Storm-Event Samples

3.5 Continuous Flow-Paced Composite Sampling to Evaluate Uranium Transport

This monitoring objective is intended to evaluate the in-stream transport of uranium, specifically for Ponds A-4 and B-5, by assessing correlations, patterns, variability, and loading. With the exception of location GS03, the monitoring locations currently being used to support this objective are shown in Figure 30. Samples are collected as continuous flow-paced composites during all flow conditions. Sampling for this monitoring objective began on March 10, 2010, in North Walnut Creek and on June 16, 2010, in South Walnut Creek. Monitoring location WALPOC began operation on September 9, 2011. Monitoring at GS03 was discontinued on October 1, 2015. Therefore, this evaluation uses three time periods: March 10, 2010, to October 1, 2015; June 16, 2010, to October 1, 2015; and September 9, 2011, to the present.



Notes:
The orange line shows the location of the A-Series Bypass Pipeline. See text for additional information.
Monitoring at GS03 was discontinued on October 1, 2015.

Figure 30. Continuous Flow-Paced Composite Sampling Locations in Walnut Creek

Starting on October 13, 2011, water in North Walnut Creek was diverted around Pond A-3 and former Ponds A-1 and A-2 to support the Dam A-3 breach construction. This diverted water was routed through the A-Series Bypass Pipeline from GS13 to just below Pond A-3 (near GS12) until March 21, 2012. During this period, it is assumed that the quality and quantity of water when it entered the pipeline were the same as when it exited the pipeline.[5] Therefore, data

[5] This assumption was confirmed by grab samples taken at GS13 and A4INFLOW during use of the pipeline; A4INFLOW is located just upstream of Pond A-4.

collected at both GS13 and GS12 during this period have been combined to effectively summarize water quality *entering* Pond A-4, and not water quality *exiting* Pond A-3.

Table 5 through Table 7 show summary statistics for the three time periods described above. The data show long-term concentrations below the uranium standard (16.8 micrograms per liter [µg/L]) at all locations. In addition, all locations show concentrations well below the 30 µg/L drinking water maximum contaminant level for uranium. Figure 31 uses proportional symbols to map the uranium concentrations since September 9, 2011 (see Table 7 for values).[6]

Table 5. Summary Statistics for Uranium Continuous Flow-Paced Composite Sampling: March 10, 2010, to October 1, 2015

South Walnut Creek

	Location Code	Volume-Weighted Average (µg/L)	Sample Count
Upstream	GS10*	13.7	104
Downstream	GS08	8.9	61

North Walnut Creek

Volume-Weighted Average (µg/L)	Sample Count	Location Code	
6.6	90	SW093*	**Upstream**
10.2	76	GS13*	⬇
12.8	80	GS12 (A-4 inflow)	⬇
9.2	53	GS11	**Downstream**

Walnut Creek

Location Code	Volume-Weighted Average	Sample Count
GS03	5.5	74

Notes:
* Data for GS10, SW093, and GS13 are currently acquired through the routine RFLMA-required monitoring at these locations.
Sample counts vary because composite sampling periods vary with water availability.
Monitoring at GS03 was discontinued on October 1, 2015.

[6] Due to interruptions in automated sampling and the corresponding lack of analytical data for some periods during the September 2013 flood, for comparison purposes, the start of the high runoff (which began late in the day on September 11, 2013) through its end on September 13, 2013, is not included in the evaluation in this section. Additionally, some data are estimated to enable the comparison herein; under normal RFLMA data evaluation protocols, these estimated data would not be included.

Table 6. Summary Statistics for Uranium Continuous Flow-Paced Composite Sampling: June 16, 2010, to October 1, 2015

South Walnut Creek

	Location Code	Volume-Weighted Average (µg/L)	Sample Count
Upstream	GS10*	13.7	95
⬇	B5INFLOW	10.3	62
Downstream	GS08	8.8	51

North Walnut Creek

Volume-Weighted Average (µg/L)	Sample Count	Location Code	
6.5	77	SW093*	Upstream
10.5	65	GS13*	⬇
13.1	67	GS12 (A-4 inflow)	⬇
9.1	44	GS11	Downstream

Walnut Creek

Location Code	Volume-Weighted Average	Sample Count
GS03	5.4	58

Notes:

* Data for GS10, SW093, and GS13 are currently acquired through the routine RFLMA-required monitoring at these locations.

Sample counts vary because composite sampling periods vary with water availability.

Monitoring at GS03 was discontinued on October 1, 2015.

Table 7. Summary Statistics for Uranium Continuous Flow-Paced Composite Sampling: Starting September 9, 2011

South Walnut Creek

	Location Code	Volume-Weighted Average (µg/L)	Sample Count
Upstream	GS10*	12.9	114
⬇	B5INFLOW	10.7	67
Downstream	GS08	9.2	67

North Walnut Creek

Volume-Weighted Average (µg/L)	Sample Count	Location Code	
6.8	84	SW093*	Upstream
10.0	66	GS13*	⬇
13.4	66	GS12	⬇
9.9	53	GS11	Downstream

Walnut Creek

Location Code	Volume-Weighted Average	Sample Count
WALPOC*	9.5	84

Notes:

* Data for GS10, SW093, GS13, and WALPOC are currently acquired through the routine RFLMA-required monitoring at these locations.

Sample counts vary because composite sampling periods vary with water availability.

Summary includes all data available as of January 23, 2018; some recent data are not validated (i.e., are preliminary and subject to revision).

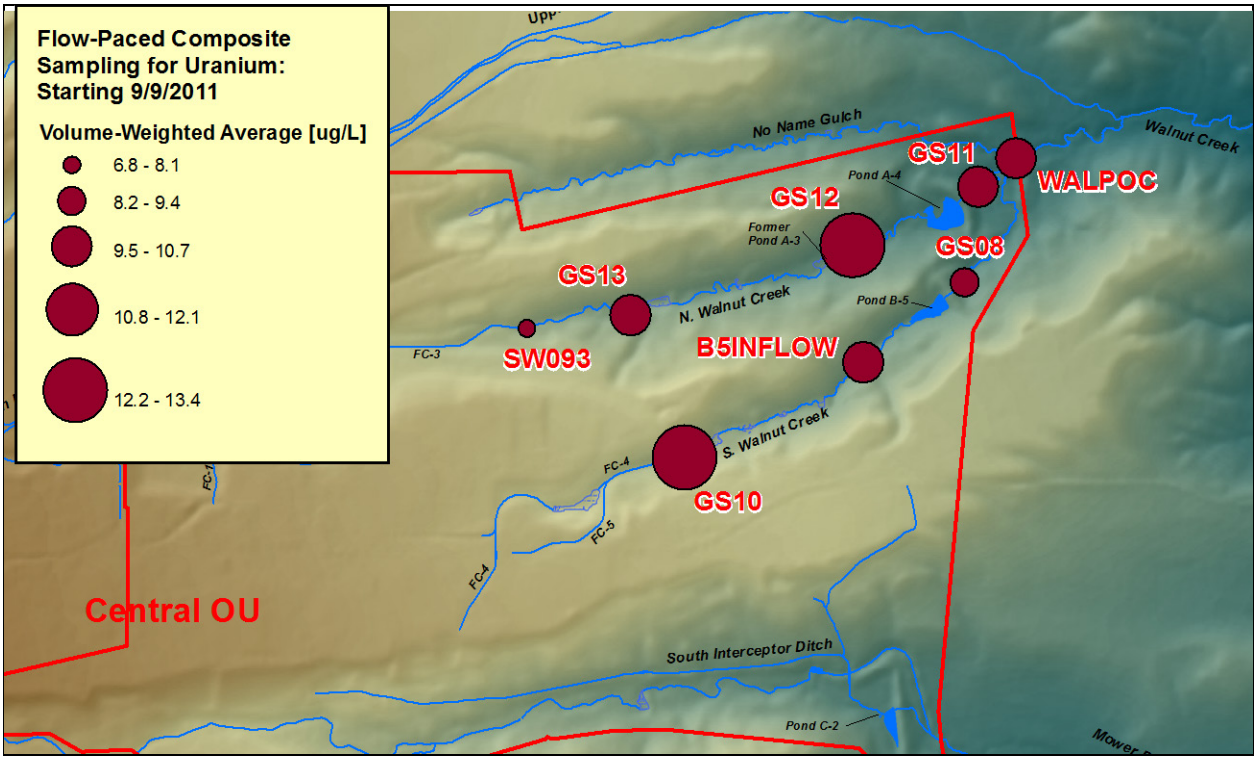
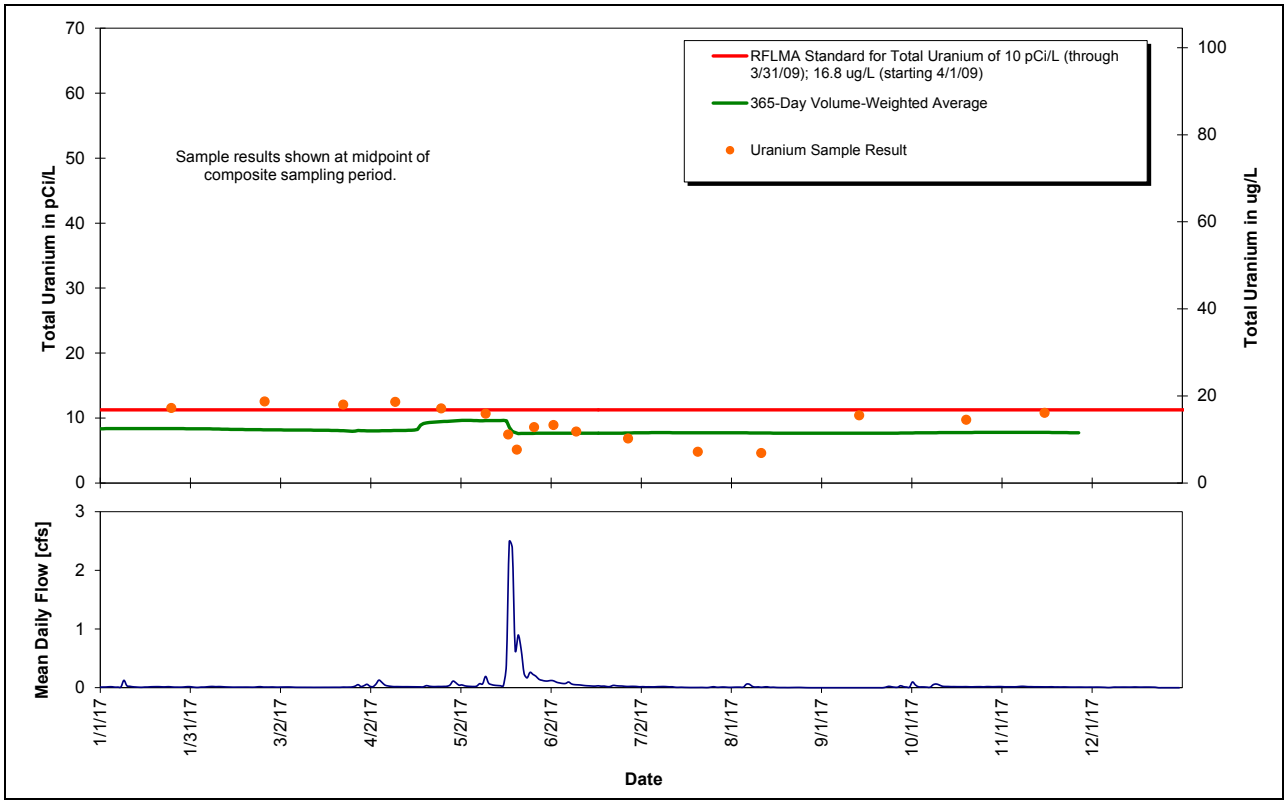


Figure 31. Map Showing Volume-Weighted Average Uranium Concentrations for Samples Collected Since September 9, 2011

Figure 32 through Figure 47 show plots of composite sample results and the 365-day volume-weighted rolling averages at each location.[7] The 365-day rolling average differs from the 12-month rolling average used for RFLMA evaluation in that the 365-day rolling average is calculated for every day, while the 12-month rolling average is calculated only for the last day of each month. The plots also show the corresponding hydrograph at each location showing the mean daily flow in cubic feet per second (cfs). The plots clearly show the significant variability in sample results. In general, the higher concentrations are during periods of baseflow with very little runoff (i.e., winter) and during periods when the natural geochemistry is more favorable for uranium transport.

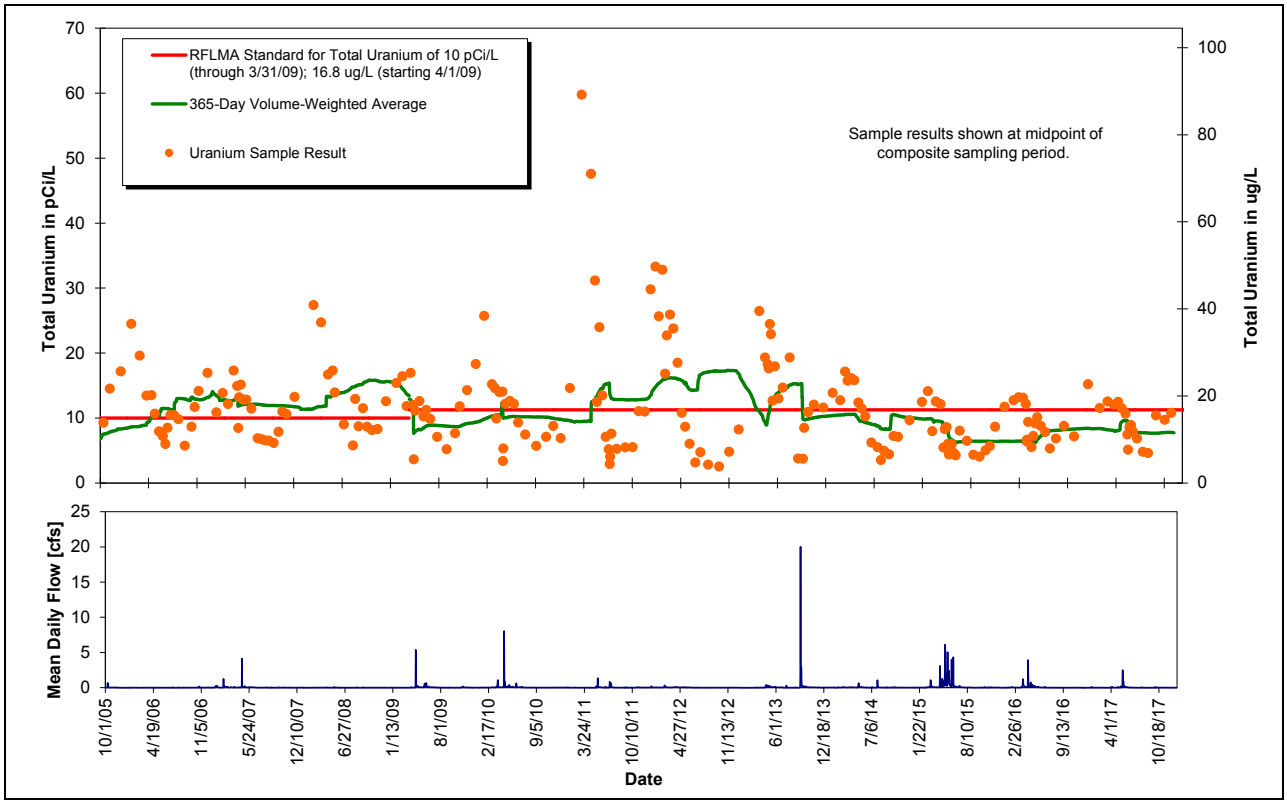
As mentioned earlier, an extensive geochemistry study has been completed that examines the transport mechanisms associated with uranium and nitrate at the Site and the effects of the September 2013 flood. The report can be found at: https://www.lm.doe.gov/Rocky_Flats/RFS_Evaluation_of_Water_Quality_Variability_April_2015.pdf.

[7] The RFLMA standards shown on these plots are for reference only. The RFLMA-required evaluation is location-specific (i.e., POCs, POEs) and is not part of this AMP report. Evaluation of sampling results as required by RFLMA is routinely presented in other reports in accordance with the RFLMA reporting requirements. To show uranium units of both pCi/L and µg/L, the conversion 1 µg = 0.67 pCi is used.



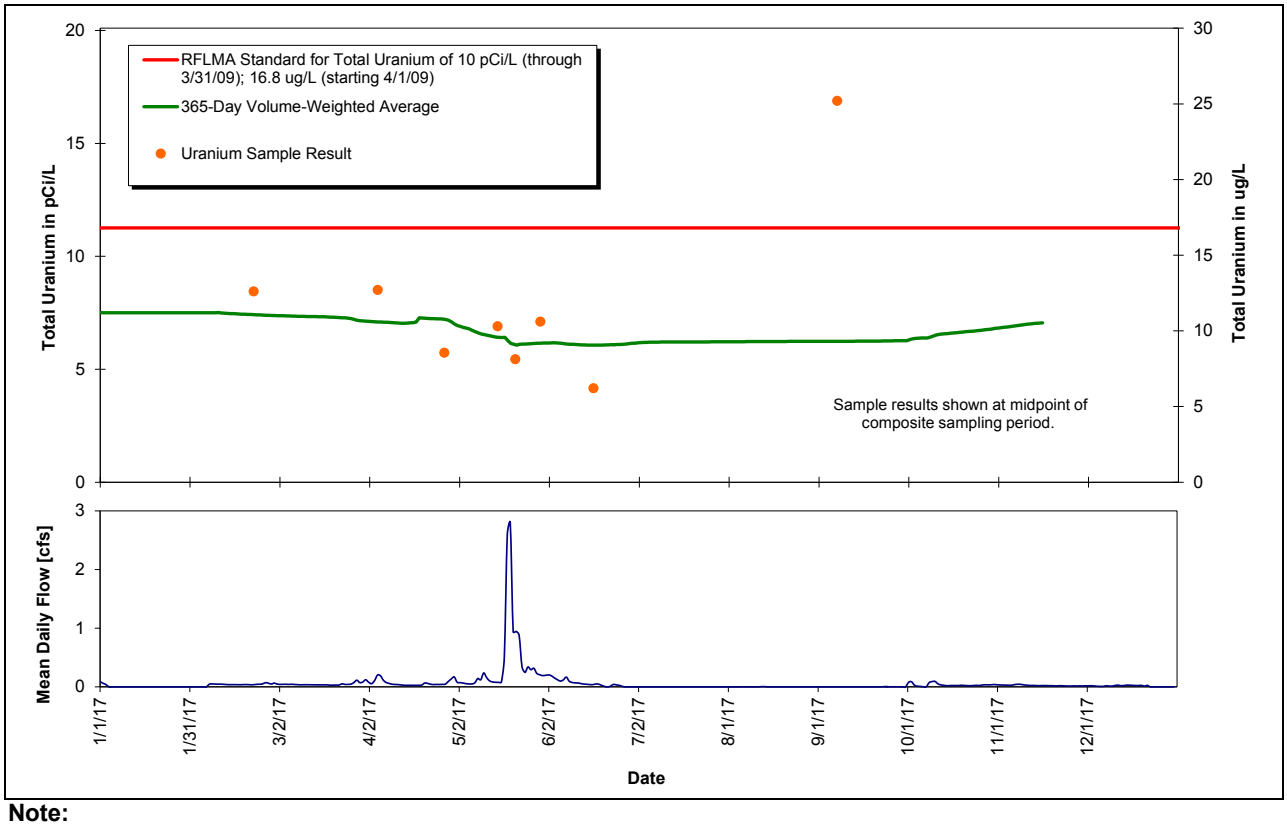
Note:
Analytical results for the composite sample started on November 28, 2017, are pending.

Figure 32. Composite Sample Uranium Results and Rolling 365-Day Averages at GS10: CY 2017



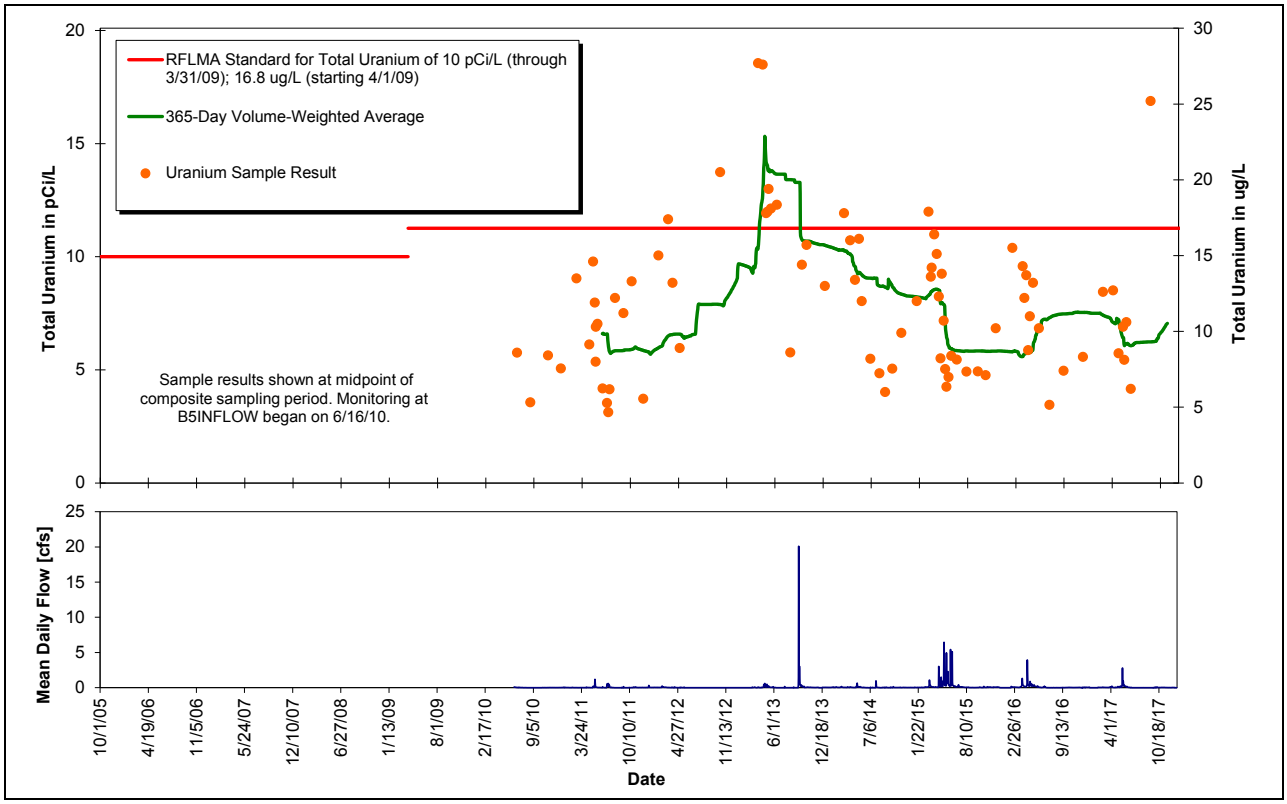
Note:
Analytical results for the composite sample started on November 28, 2017, are pending.

Figure 33. Composite Sample Uranium Results and Rolling 365-Day Averages at GS10: Postclosure



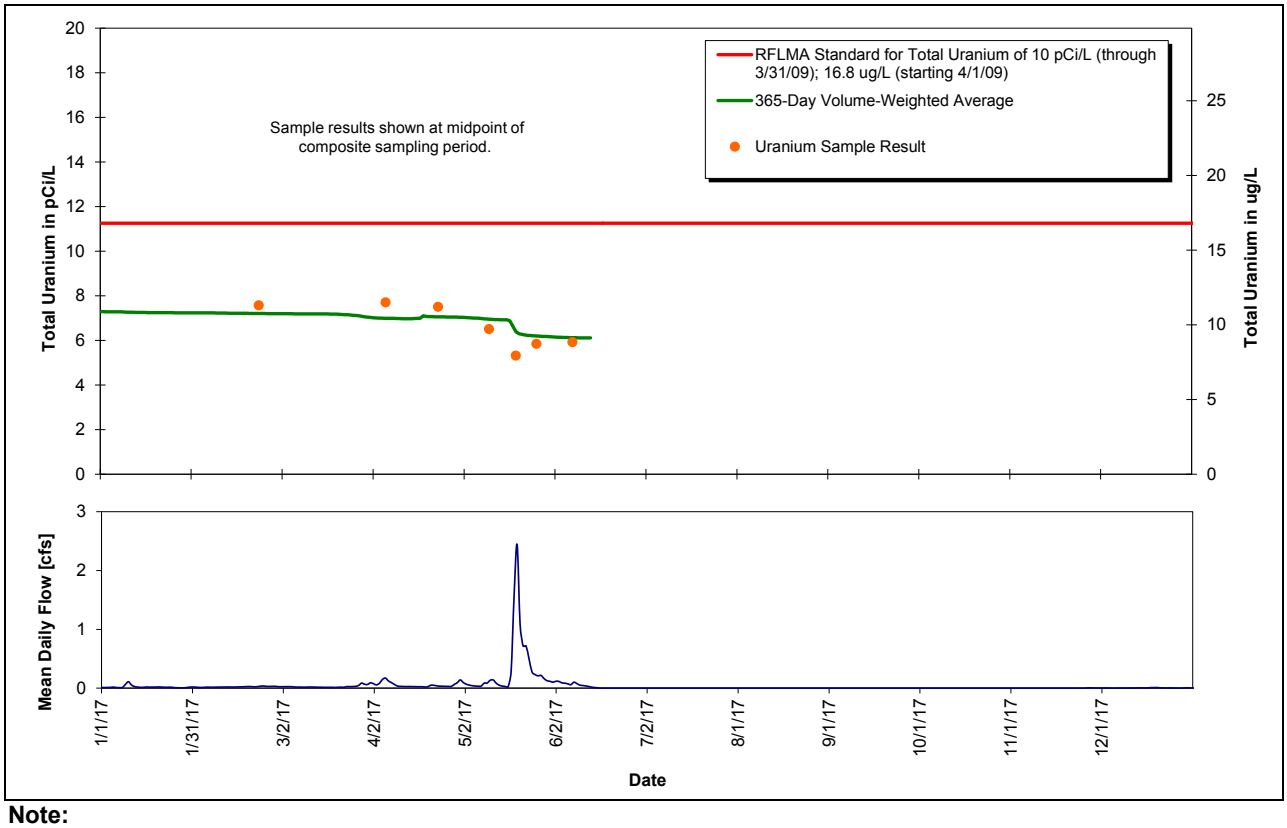
Note:
Analytical results for the composite sample started on November 17, 2017, are pending.

Figure 34. Composite Sample Uranium Results and Rolling 365-Day Averages at B5INFLOW: CY 2017



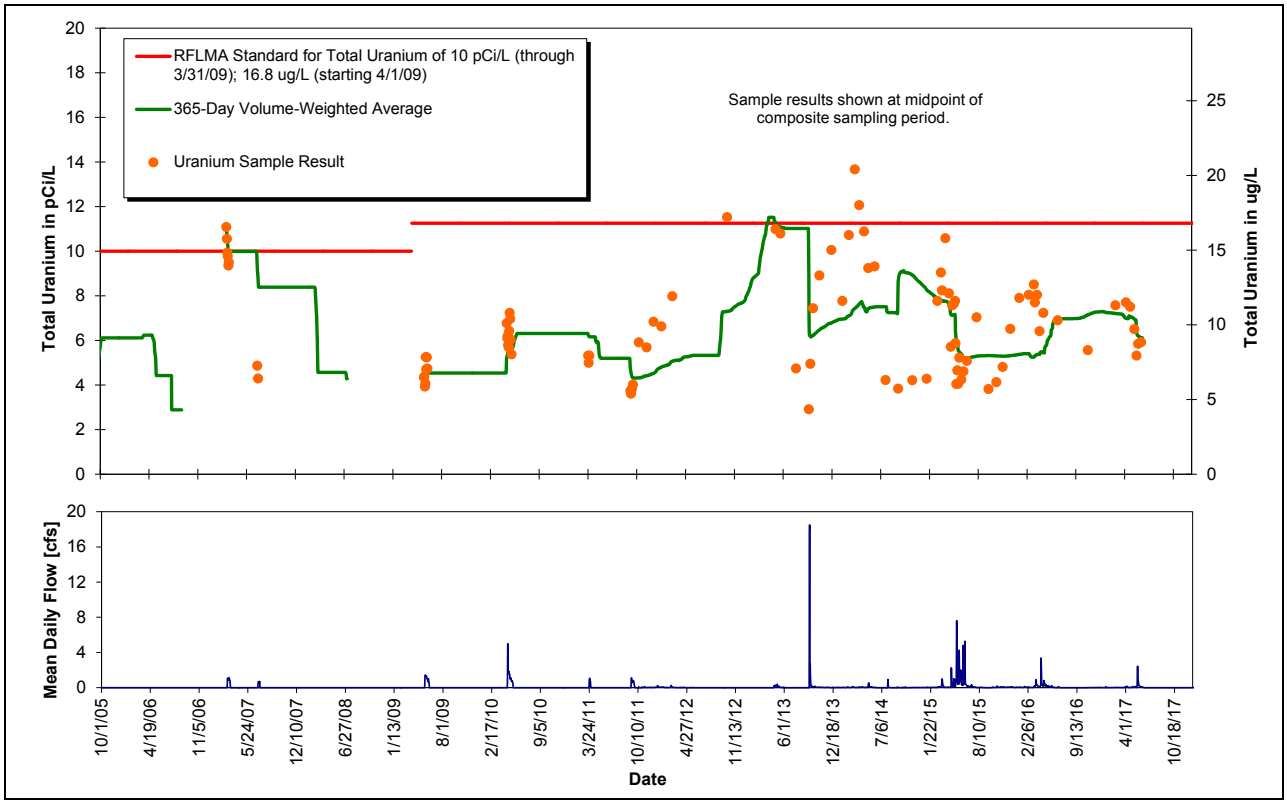
Note:
Analytical results for the composite sample started on November 17, 2017, are pending.

Figure 35. Composite Sample Uranium Results and Rolling 365-Day Averages at B5INFLOW: Postclosure



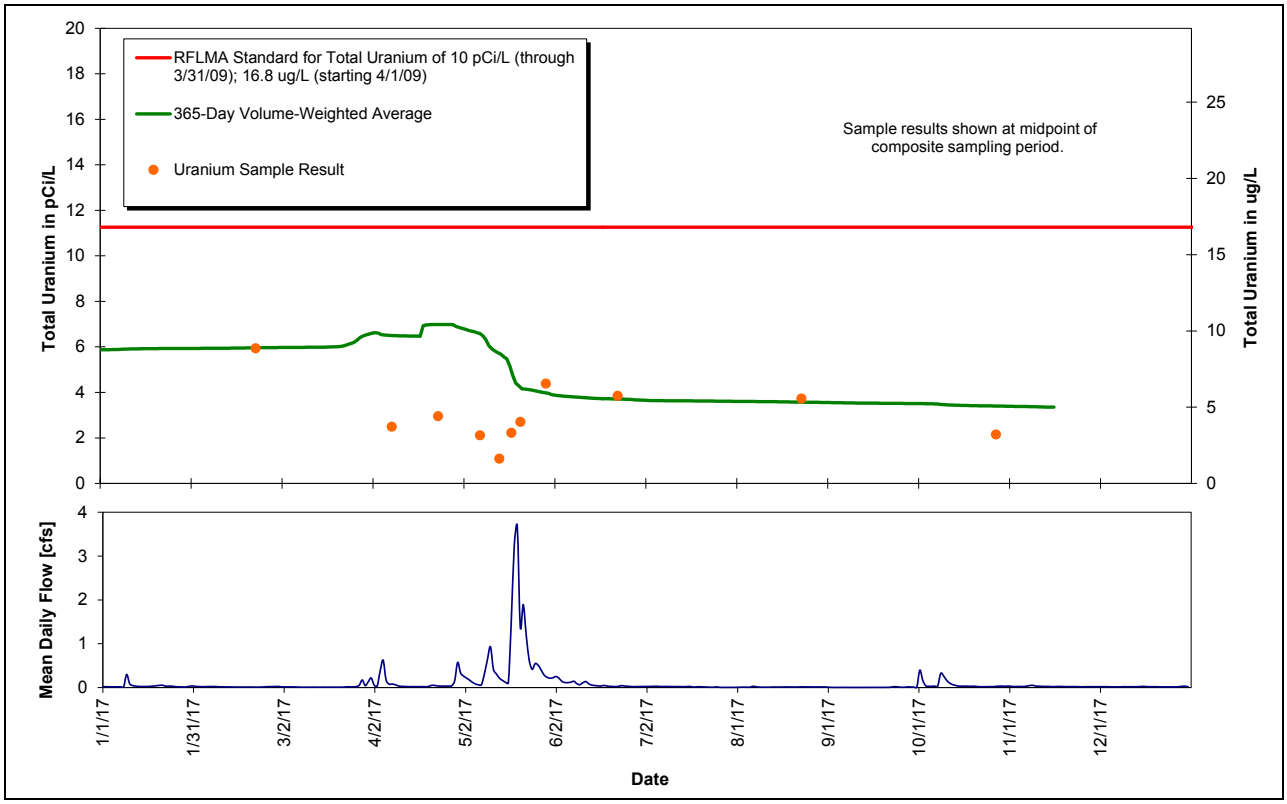
Note:
Analytical results for the composite sample started on June 15, 2017, are pending.

Figure 36. Composite Sample Uranium Results and Rolling 365-Day Averages at GS08: CY 2017



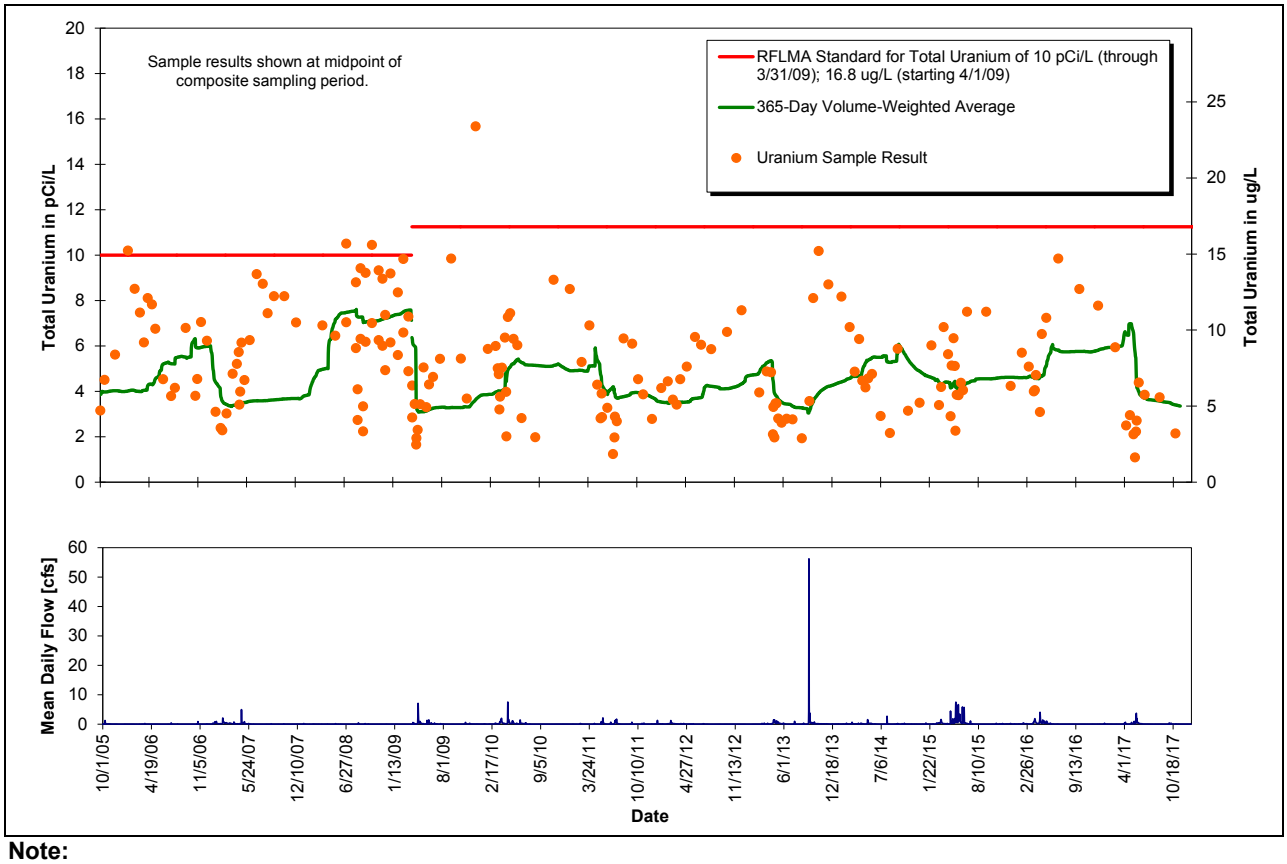
Note:
Analytical results for the composite sample started on June 15, 2017, are pending.

Figure 37. Composite Sample Uranium Results and Rolling 365-Day Averages at GS08: Postclosure



Note:
Analytical results for the composite sample started on November 17, 2017, are pending.

Figure 38. Composite Sample Uranium Results and Rolling 365-Day Averages at SW093: CY 2017



Note:
Analytical results for the composite sample started on November 17, 2017, are pending.

Figure 39. Composite Sample Uranium Results and Rolling 365-Day Averages at SW093: Postclosure

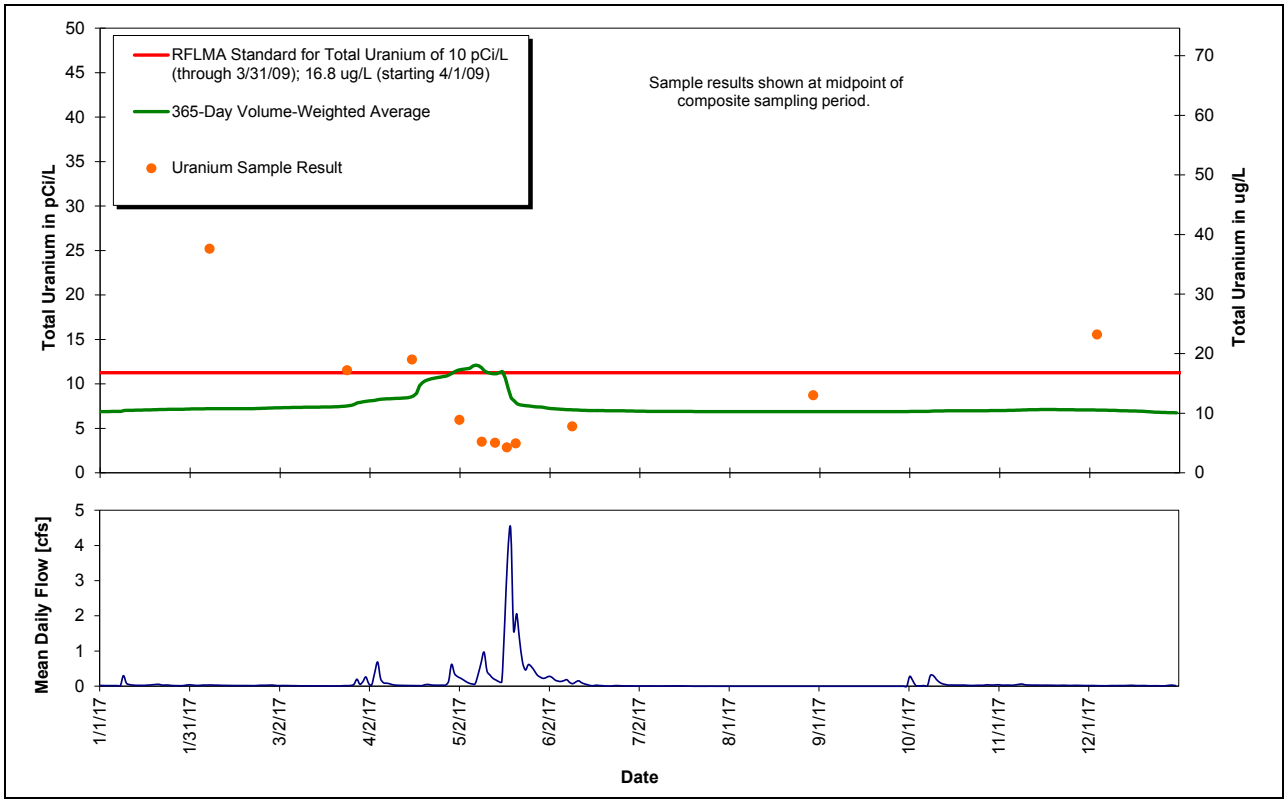


Figure 40. Composite Sample Uranium Results and Rolling 365-Day Averages at GS13: CY 2017

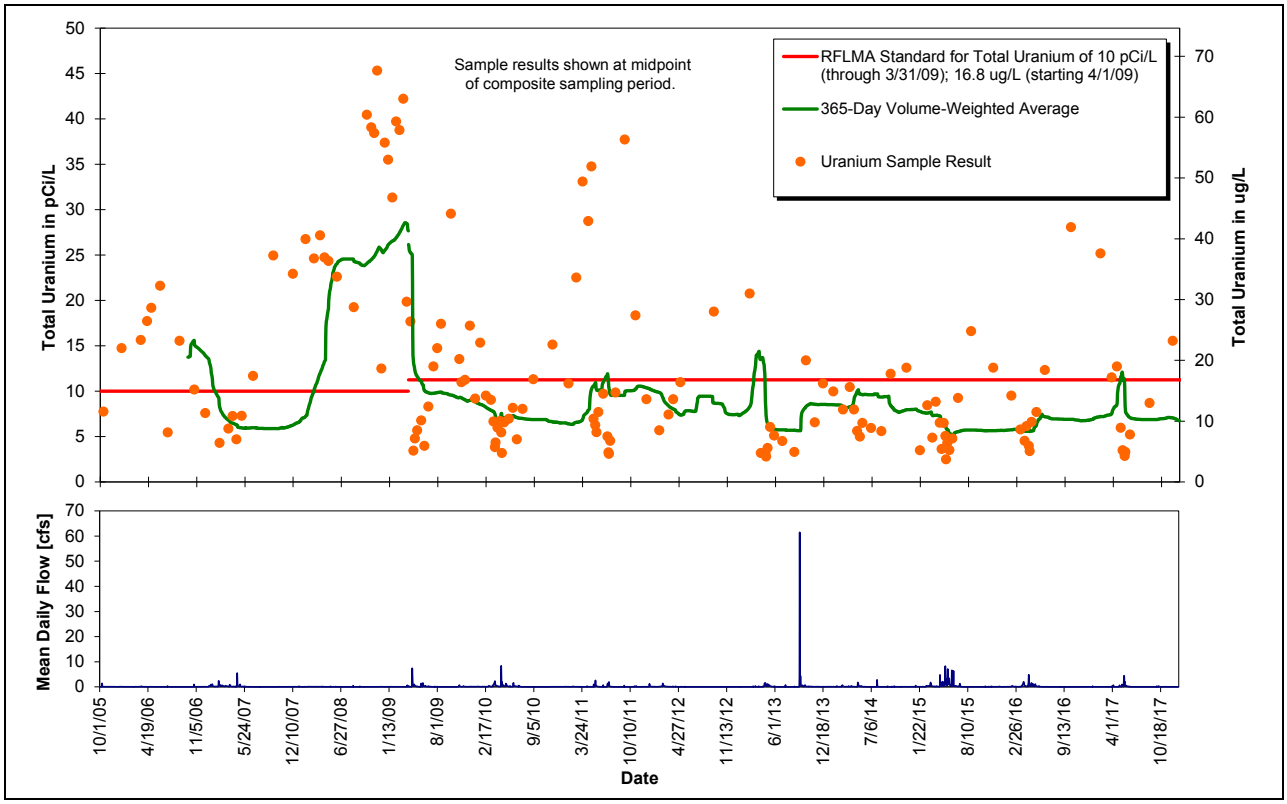
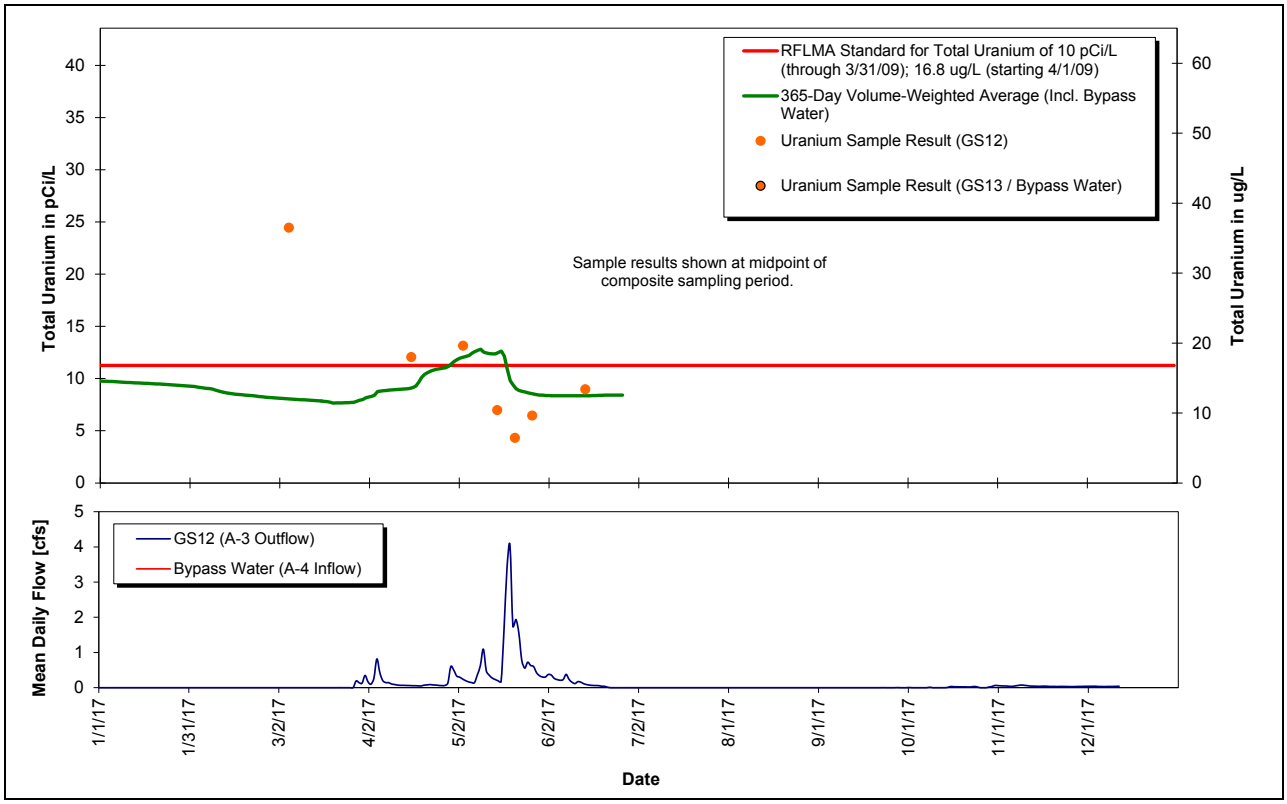
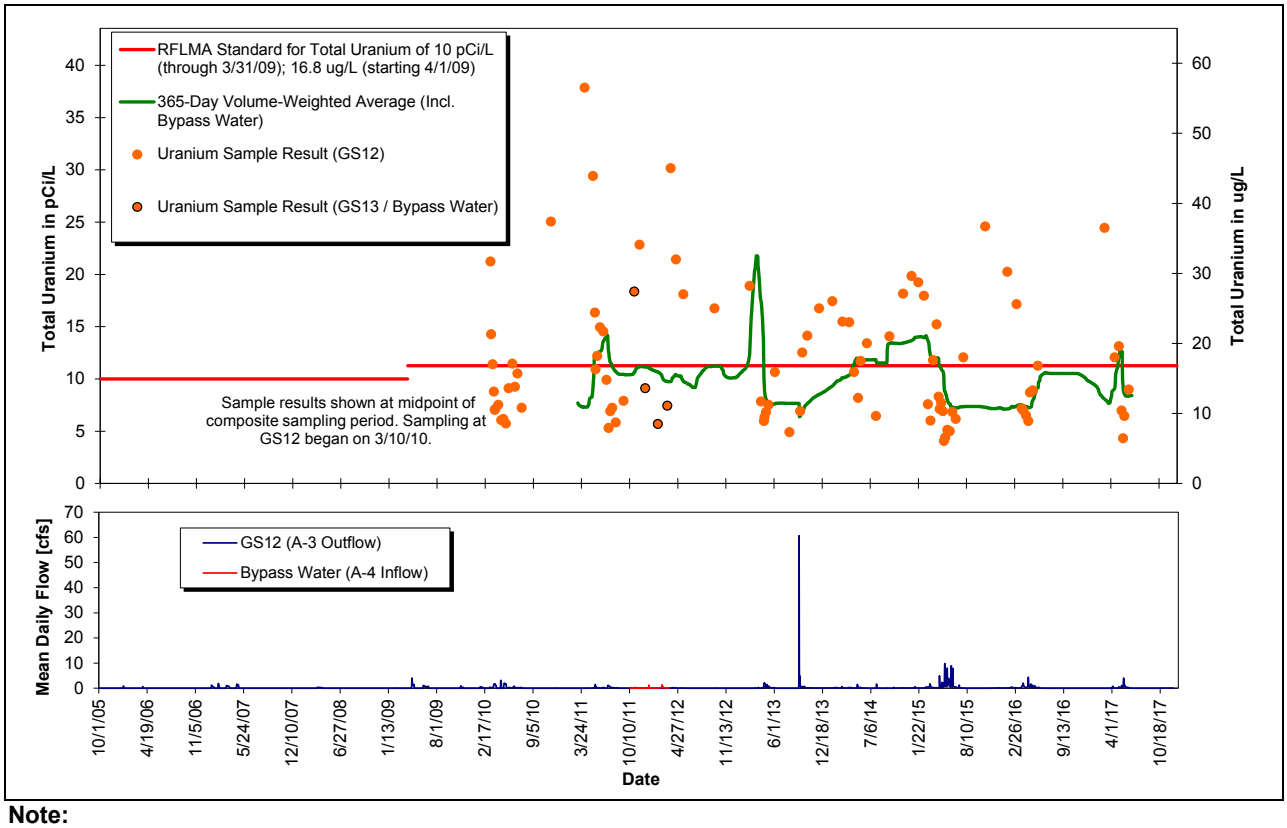


Figure 41. Composite Sample Uranium Results and Rolling 365-Day Averages at GS13: Postclosure



Note:
Analytical results for the composite sample started on June 28, 2017, are pending.

Figure 42. Composite Sample Uranium Results and Rolling 365-Day Averages at GS12 (A-4 Inflow): CY 2017



Note:
Analytical results for the composite sample started on June 28, 2017, are pending.

Figure 43. Composite Sample Uranium Results and Rolling 365-Day Averages at GS12 (A-4 Inflow): Postclosure

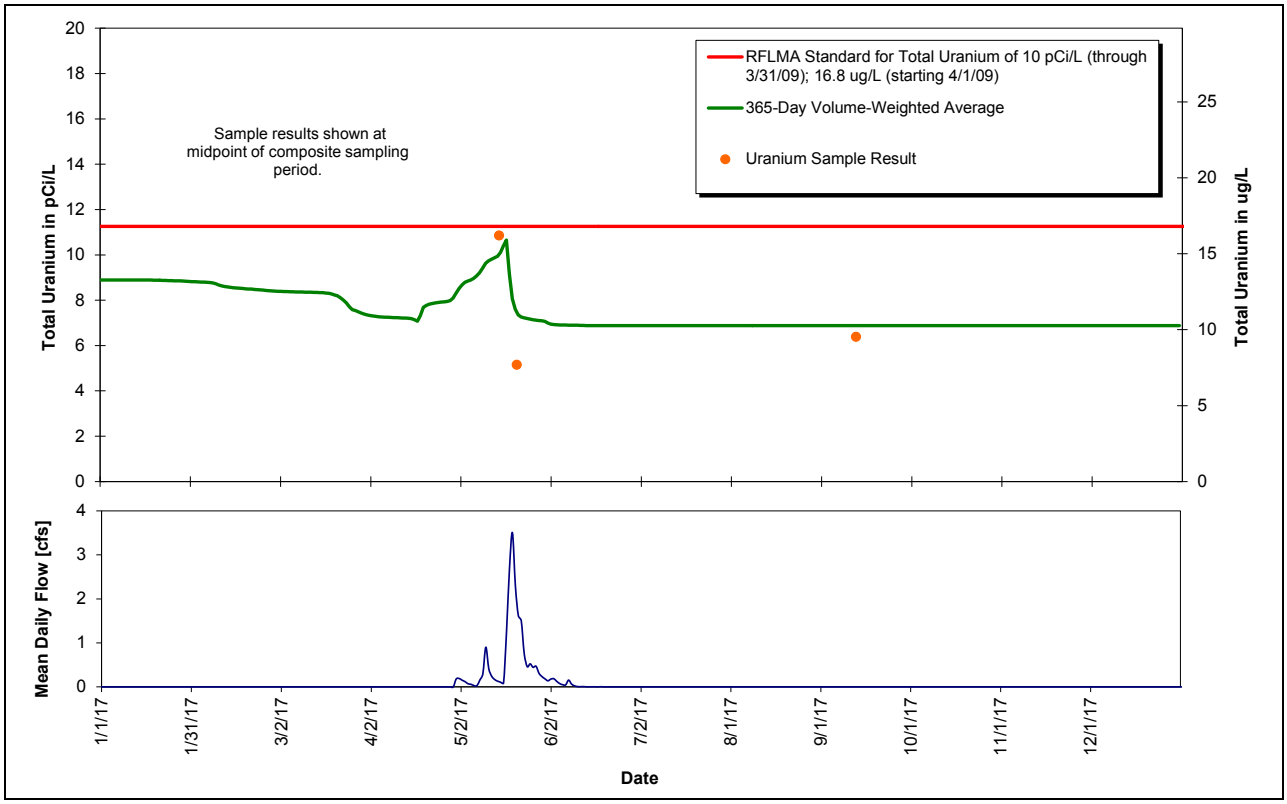


Figure 44. Composite Sample Uranium Results and Rolling 365-Day Averages at GS11: CY 2017

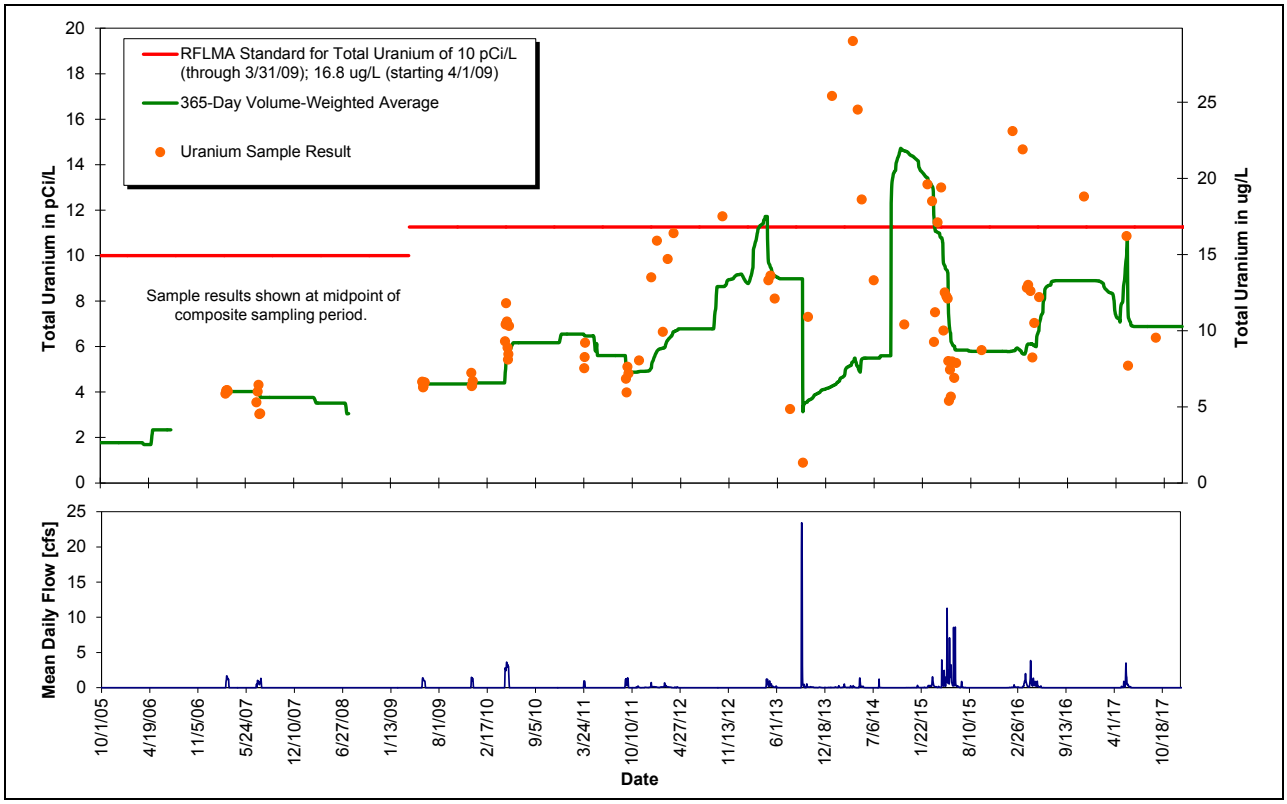


Figure 45. Composite Sample Uranium Results and Rolling 365-Day Averages at GS11: Postclosure

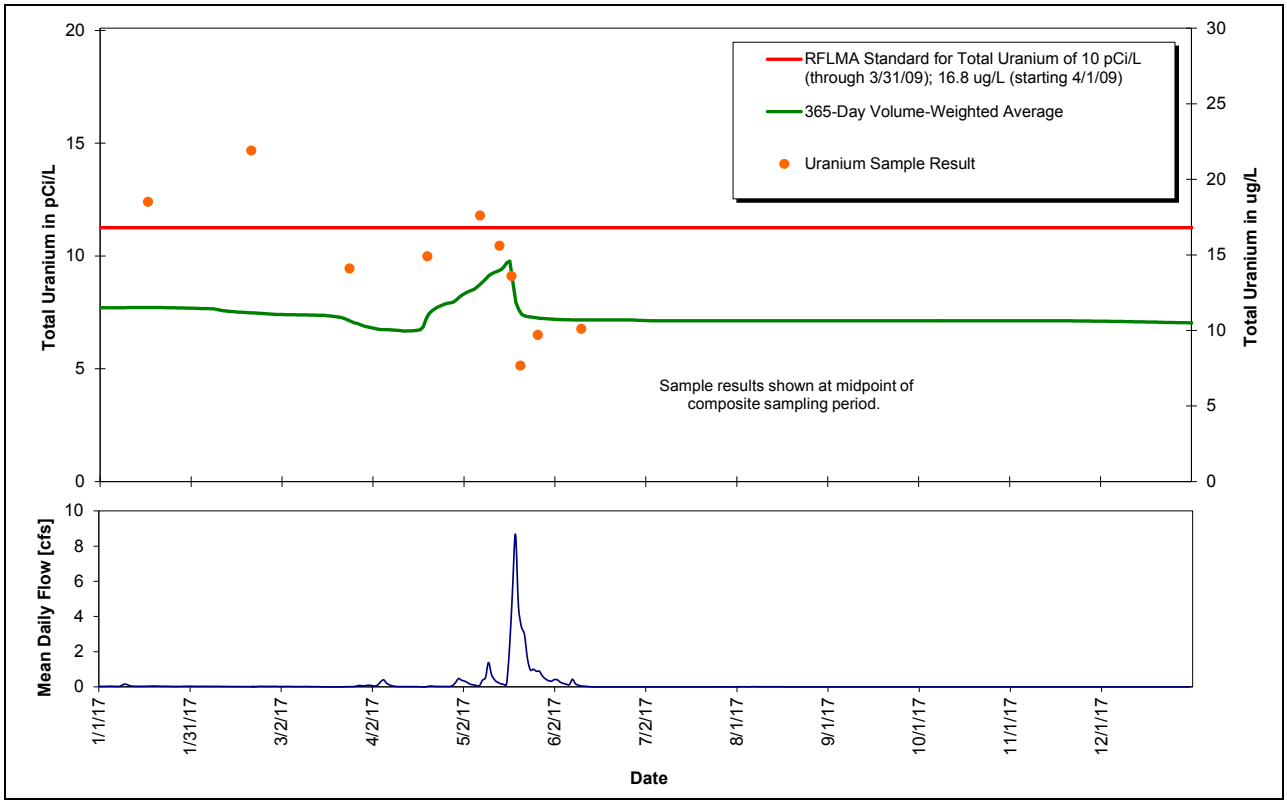


Figure 46. Composite Sample Uranium Results and Rolling 365-Day Averages at WALPOC: CY 2017

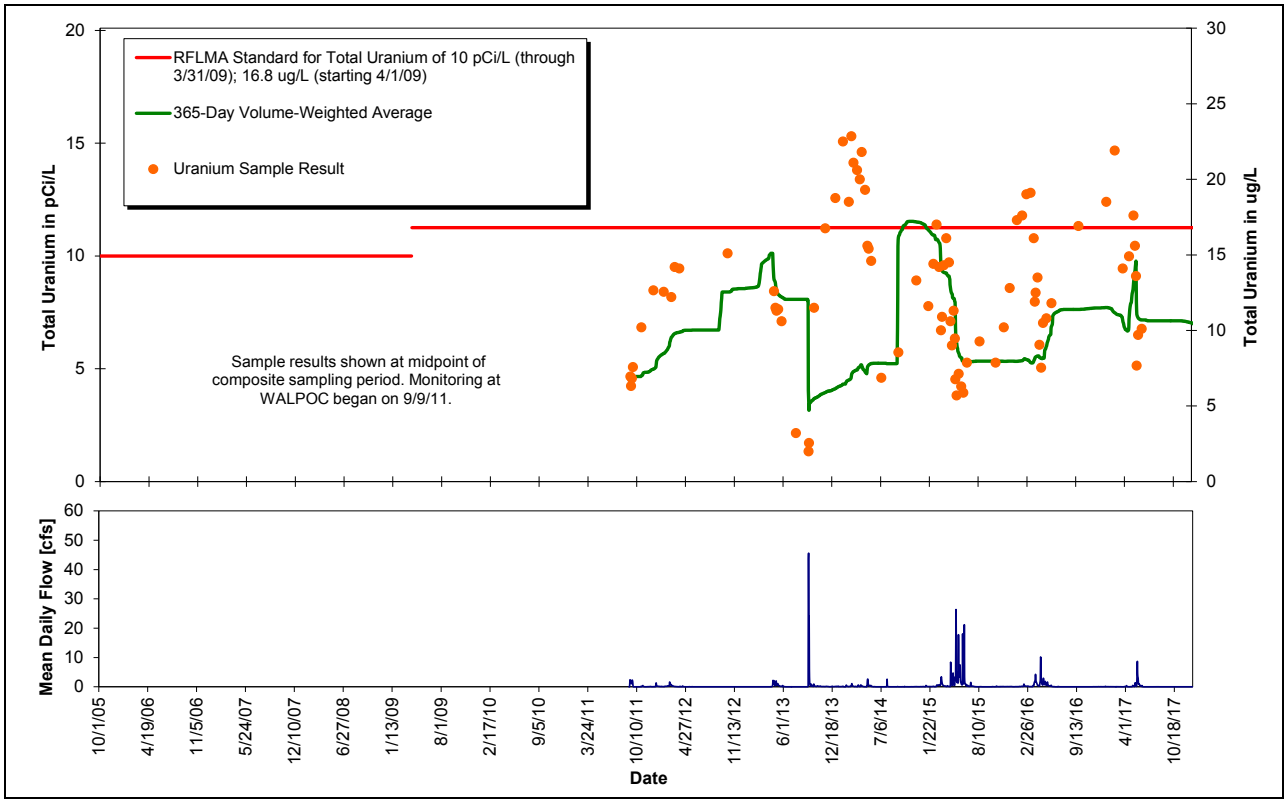
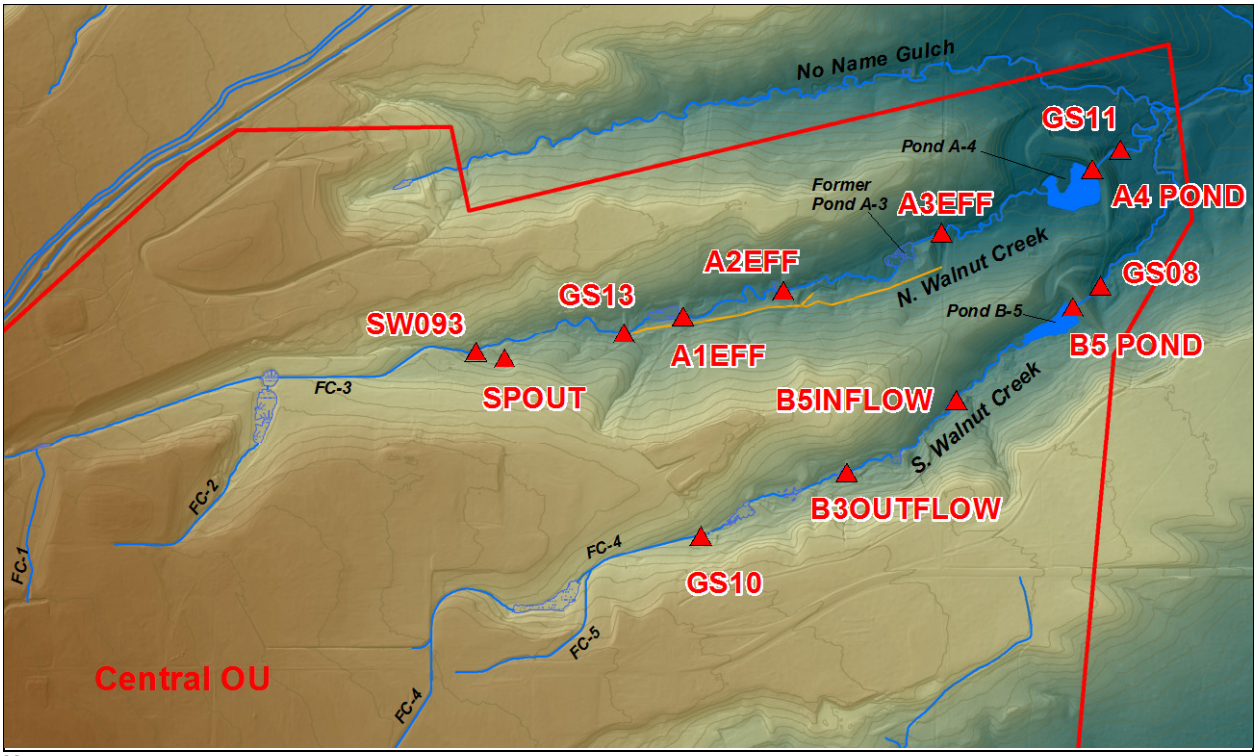


Figure 47. Composite Sample Uranium Results and Rolling 365-Day Averages at WALPOC: Postclosure

3.6 Grab Sampling for Uranium in North and South Walnut Creeks

This monitoring objective is primarily intended to evaluate the transport of uranium in North and South Walnut Creeks by assessing correlations, patterns, variability, and loading. This objective is also intended to help define the relative impacts of the Solar Ponds Plume Treatment System (SPPTS) contributions on surface water in North Walnut Creek. Samples are currently collected biweekly as grabs. Figure 48 presents the uranium grab sampling locations in North and South Walnut Creeks. Sampling for this monitoring objective at most locations began on January 27, 2010.



Notes:
The orange line shows the location of the A-Series Bypass Pipeline.
A3EFF is colocated with GS12 (A3EFF is the grab sampling location, while GS12 is the automated composite sampling location).

Figure 48. Uranium Grab Sampling Locations in North and South Walnut Creeks

Starting on October 13, 2011, water in North Walnut Creek was diverted around Pond A-3 and former Ponds A-1 and A-2 to support the Dam A-3 breach construction. This diverted water was routed through the A-Series Bypass Pipeline from GS13 to just below Pond A-3 (near A3EFF) until March 21, 2012. During this period, it is assumed that the quality and quantity of water when the water entered the pipeline were the same as when it exited the pipeline.[8] Therefore, data collected at both GS13 and A3EFF during this period have been combined to effectively summarize water quality *entering* Pond A-4, and not water quality *exiting* Pond A-3.

Table 8 shows summary statistics for the uranium grab sampling in North and South Walnut Creeks. The grab sample results show even more variability than the flow-paced composite results, as expected. Grab samples are generally collected during fair weather, baseflow periods when uranium is more likely to be present at higher concentrations. Continuous flow-paced composite sample results are a better representation of actual longer term uranium concentrations; by design, automated composite sampling collects samples during all flow conditions, including intense, high-volume runoff periods when uranium concentrations are generally lower.

[8] This assumption has been confirmed by grab samples taken at GS13 and A4INFLOW; A4INFLOW is located just upstream of Pond A-4.

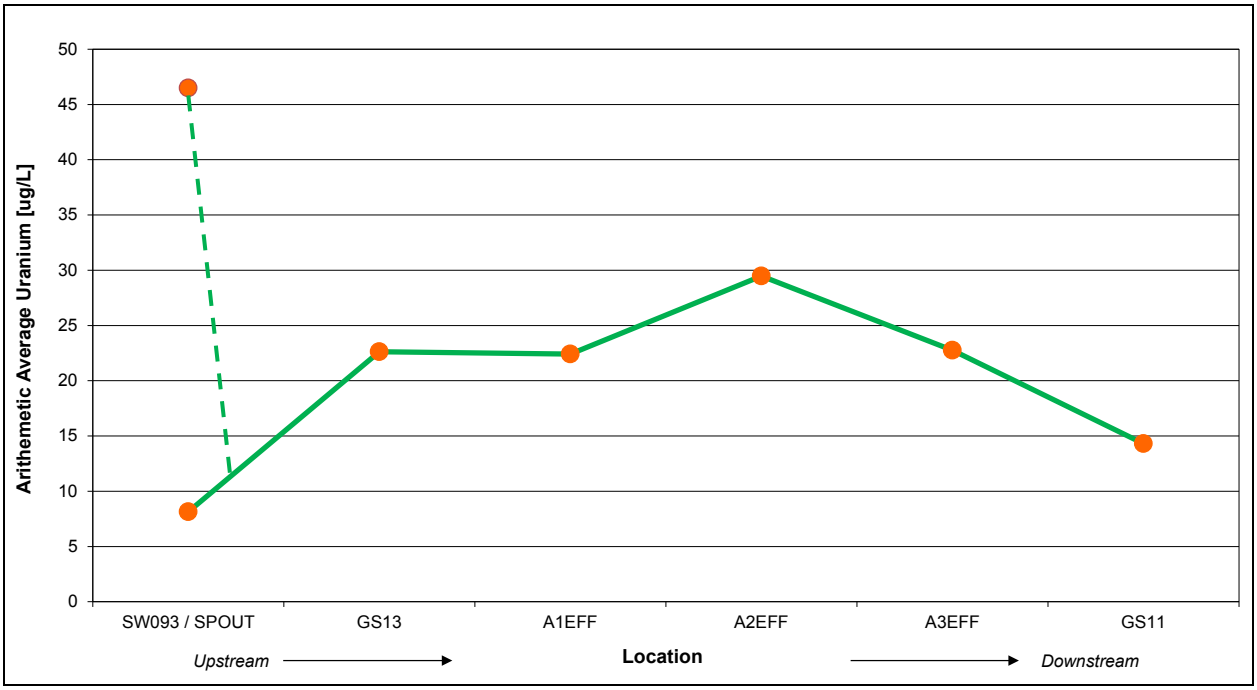
Table 8. Summary Statistics for Uranium Grab Sampling in North and South Walnut Creeks for the Period Starting January 27, 2010

North Walnut Creek		Uranium (ug/L)			
	Location Code	Average	Sample Count	85th Percentile	50th Percentile
Upstream	SW093	8.15	197	12.0	7.70
⬇	SPOUT*	46.5	200	63.0	47.0
⬇	GS13	22.6	168	38.9	19.0
⬇	A1EFF	22.4	129	35.0	17.0
⬇	A2EFF	29.5	123	48.1	25.0
⬇	A3EFF (A-4 inflow)	22.7	115	34.9	22.0
⬇	A4 POND	11.3	148	17.0	9.80
Downstream	GS11	14.3	23	20.1	13.0

South Walnut Creek		Uranium (ug/L)			
	Location Code	Average	Sample Count	85th Percentile	50th Percentile
Upstream	GS10	14.6	204	20.7	14.5
⬇	B3OUTFLOW	15.8	154	23.0	16.0
⬇	B5INFLOW	13.2	152	18.0	13.0
⬇	B5 POND	8.46	147	12.1	7.30
Downstream	GS08	8.99	49	12.0	8.50

Notes:
* SPPTS effluent (SPOUT) is not located in North Walnut Creek but flows into a below-ground discharge gallery south of North Walnut Creek between monitoring locations SW093 and GS13.
Sample counts vary because some locations are periodically dry.
Summary includes all data available as of January 23, 2018; some recent data are not validated (i.e., are preliminary and subject to revision).
Uranium grab sampling data at GS11 and GS08 start on April 30, 2015. AMP uranium grab sampling at Pond A-4 and Pond B-5 was discontinued on October 31, 2015.

Grab samples do, however, give a good portrayal of spatial water quality variation (i.e., upstream to downstream). Figure 49 and Figure 50 show the spatial variation of average uranium concentrations in North and South Walnut Creeks. Both plots show noticeable variation. As mentioned earlier, an extensive geochemistry study has been completed that examines the transport mechanisms associated with uranium and nitrate at the Site and the effects of the September 2013 flood. The report is available at: https://www.lm.doe.gov/Rocky_Flats/RFS_Evaluation_of_Water_Quality_Variability_April_2015.pdf.



Note:
SPPTS effluent (SPOUT) is not located in North Walnut Creek but flows into a below-ground discharge gallery south of North Walnut Creek between monitoring locations SW093 and GS13.

Figure 49. Arithmetic Average Uranium Concentration at North Walnut Creek Grab Locations

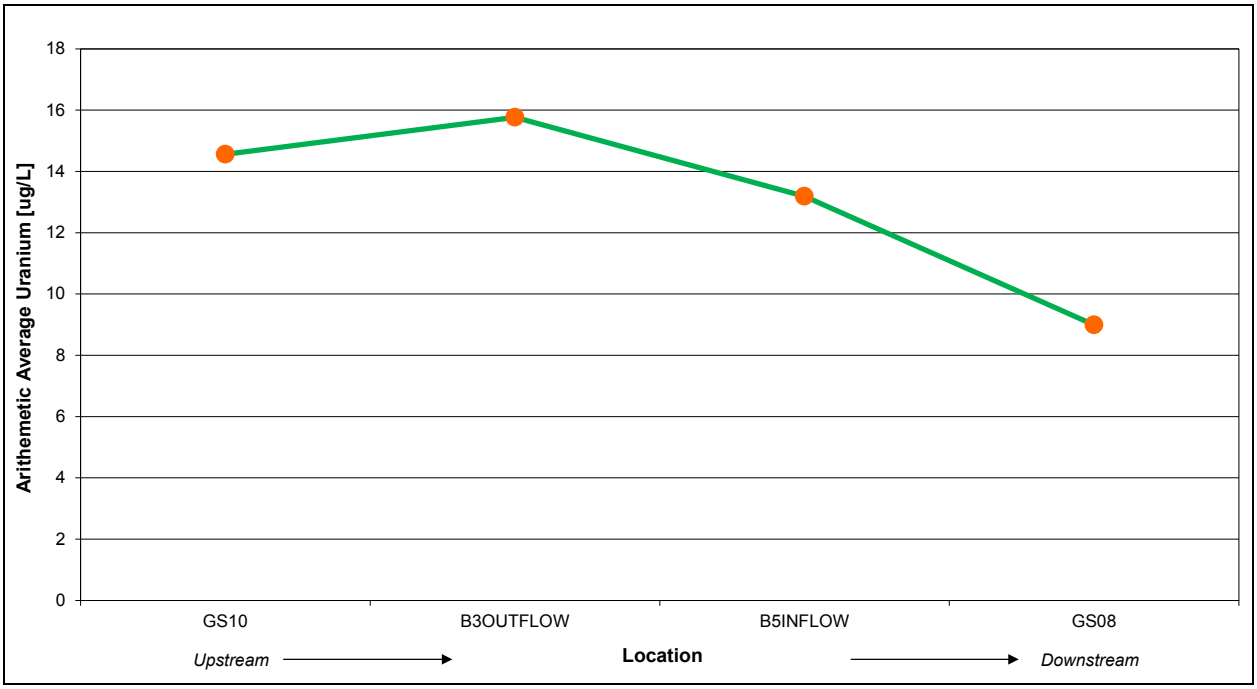
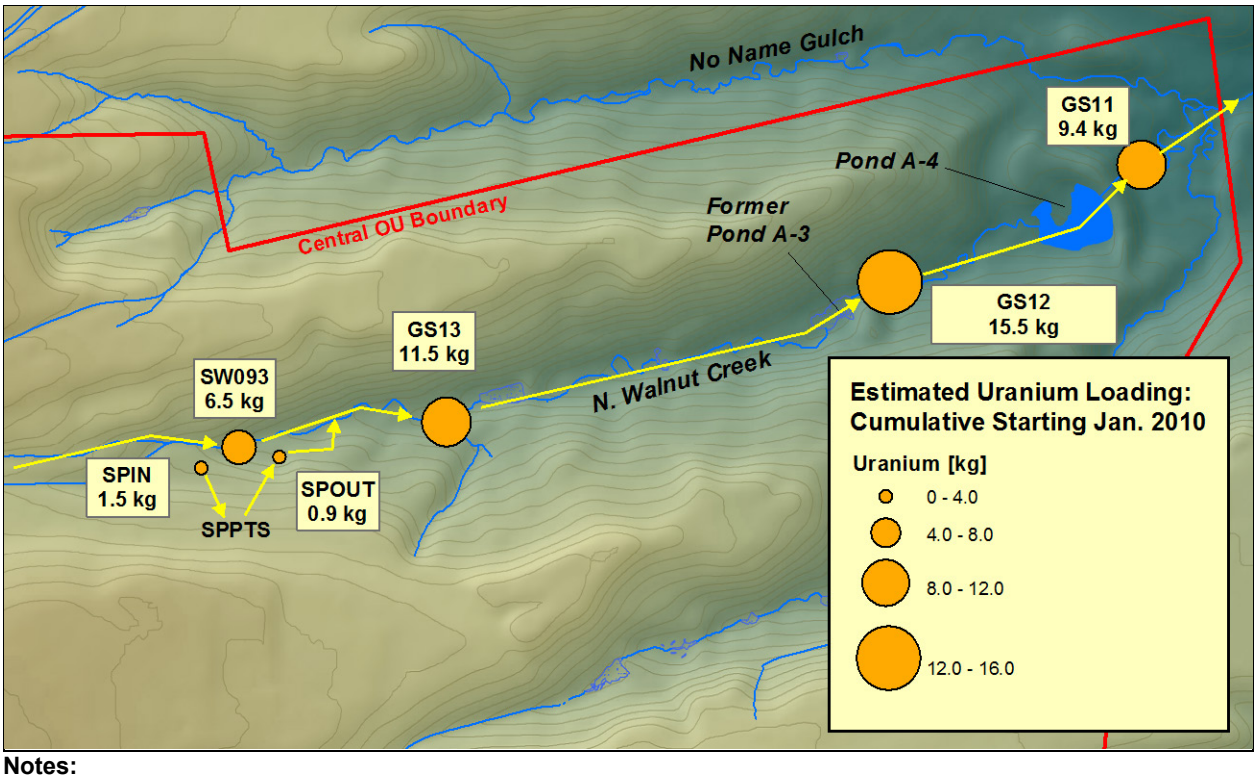


Figure 50. Arithmetic Average Uranium Concentration at South Walnut Creek Grab Locations

The map in Figure 51 shows the estimated total uranium loads in North Walnut Creek since January 2010 (using all available sample results as of January 23, 2018).[9] While the SPPTS has removed approximately 40% of the uranium load in the water it collects, the loads at both the SPPTS influent sampling location (SPIN) and the SPPTS effluent sampling location (SPOUT) are small compared to the loads in North Walnut Creek. Even though the SPPTS concentrations are higher than the creek concentrations, the much larger creek flow volumes yield significantly larger loads. In fact, the load at SPOUT is estimated to be only 5–10% of the load at GS13.



Notes:
Uranium loads at SW093, GS13, GS12, and GS11 are calculated using results from flow-paced composites (see Section 3.5). Uranium loads at SPIN and SPOUT are calculated using results from grab sampling related to this AMP objective and other treatment system optimization efforts.
Arrows indicate general flow routing.

Abbreviation:
kg = kilograms

Figure 51. Map Showing Estimated Uranium Loads in North Walnut Creek Since January 2010

3.7 Grab Sampling for Nitrate + Nitrite as Nitrogen in Walnut Creek

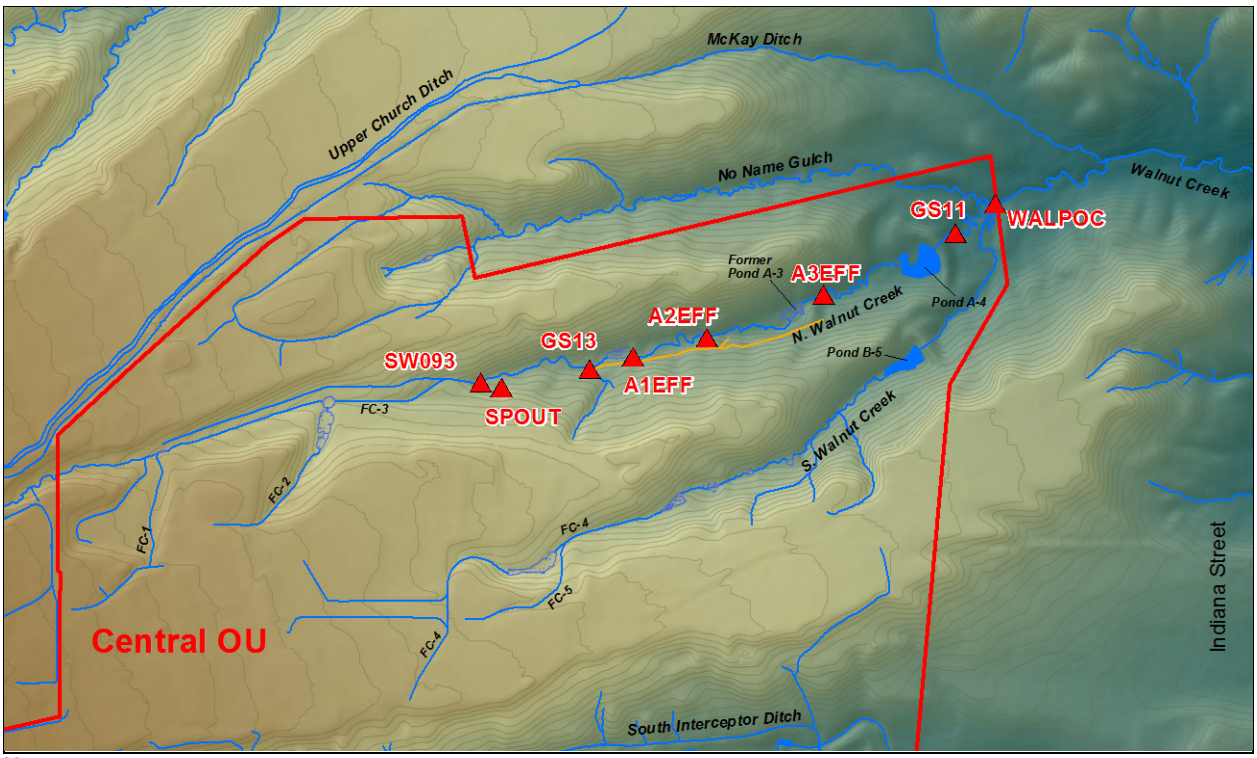
This monitoring objective is primarily intended to evaluate the transport of nitrate in North Walnut Creek and Walnut Creek by assessing correlations, patterns, variability, and loading. This objective is also intended to help define the relative impacts of the SPPTS contributions on surface water in North Walnut Creek. Samples are currently collected biweekly as grabs

[9] Loads are only calculated for locations with flow volume measurement.

(Figure 52). Sampling for this monitoring objective at most locations began on January 27, 2010. WALPOC started operation on September 9, 2011.

This evaluation is performed for three different time periods in recognition of the WALPOC operational start date of September 9, 2011, and the implementation of successful nitrate treatment at the SPPTS in late October 2016. They are:

- January 27, 2010, to November 1, 2016
- September 9, 2011, to November 1, 2016
- November 1, 2016, to the present



Notes:
The orange line shows the location of the A-Series Bypass Pipeline.
A3EFF is colocated with GS12 (A3EFF is the grab sampling location, while GS12 is the automated composite sampling location).

Figure 52. Nitrate + Nitrite as Nitrogen Grab Sampling Locations in North Walnut and Walnut Creeks

Starting on October 13, 2011, water in North Walnut Creek was diverted around Pond A-3 and former Ponds A-1 and A-2 to drain Pond A-3 in preparation for the Dam A-3 breach. This diverted water was routed through the A-Series Bypass Pipeline from GS13 to just below Pond A-3 (near A3EFF) until March 21, 2012. During this period, it is assumed that the quality and quantity of water when the water entered the pipeline were the same as when it exited the pipeline.[10] Therefore, data collected at both GS13 and A3EFF during this period have been

[10] This assumption has been confirmed by grab samples taken at GS13 and A4INFLOW; A4INFLOW is located just upstream of Pond A-4.

combined to effectively summarize water quality *entering* Pond A-4, and not water quality *exiting* Pond A-3.

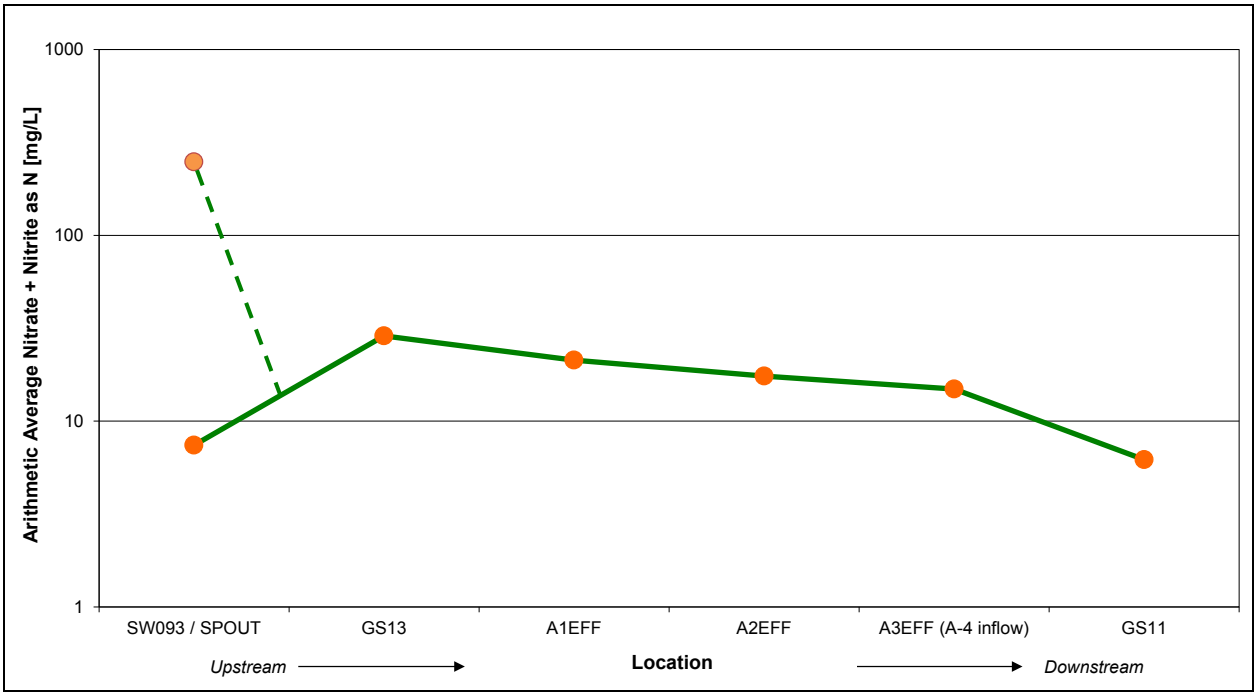
Table 9 shows summary statistics for the nitrate + nitrite as nitrogen grab sampling in North Walnut Creek and Walnut Creeks for the period January 27, 2010, to November 1, 2016. These grab samples are collected during fair weather, baseflow periods when nitrate is more likely to be present at higher concentrations (because the source is groundwater). These grab samples also give a good portrayal of spatial nitrate variation (i.e., upstream to downstream). Figure 53 shows the spatial variation of average nitrate concentrations in North Walnut Creek. The plot shows a measurable increase between SW093 (upstream of Solar Ponds influence) and GS13 (downstream of Solar Ponds influence). However, farther downstream, the reduction of nitrate through natural processes is apparent.

Table 9. Summary Statistics for Nitrate + Nitrite as Nitrogen Grab Sampling in North Walnut Creek and Walnut Creek for January 27, 2010, to November 1, 2016

North Walnut Creek		**Nitrate+Nitrite as N (mg/L)**			
	Location Code	**Average**	**Sample Count**	**85th Percentile**	**50th Percentile**
Upstream	SW093	7.42	163	13.4	3.40
⬇	SPOUT*	248	164	420	260
⬇	GS13	28.8	149	50.0	26.0
⬇	A1EFF	21.3	106	40.0	19.0
⬇	A2EFF	17.5	102	36.0	15.0
⬇	A3EFF (A-4 inflow)	14.9	102	30.7	12.0
Downstream	GS11	6.20	72	10.12	6.70

Notes:
* SPOUT is not located in North Walnut Creek but flows into a below-ground discharge gallery south of North Walnut Creek between monitoring locations SW093 and GS13.
Sample counts vary because some locations are periodically dry.
Data for the period May 1, 2010, to March 28, 2011, at GS11 include results from short-duration composite samples collected during batch-discharge operations.

Abbreviation:
mg/L = milligrams per liter



Notes:
Concentrations are shown on a logarithmic scale.
SPOUT is not located in North Walnut Creek but flows into a below-ground discharge gallery south of North Walnut Creek between monitoring locations SW093 and GS13.
Data for May 1, 2010, to March 28, 2011, at GS11, include results from short-duration composite samples collected during batch-discharge pond operations.

Abbreviation:
mg/L = milligrams per liter

Figure 53. Arithmetic Average Nitrate + Nitrite as Nitrogen Concentration at North Walnut Creek and Walnut Creek Grab Locations for January 27, 2010, to November 1, 2016

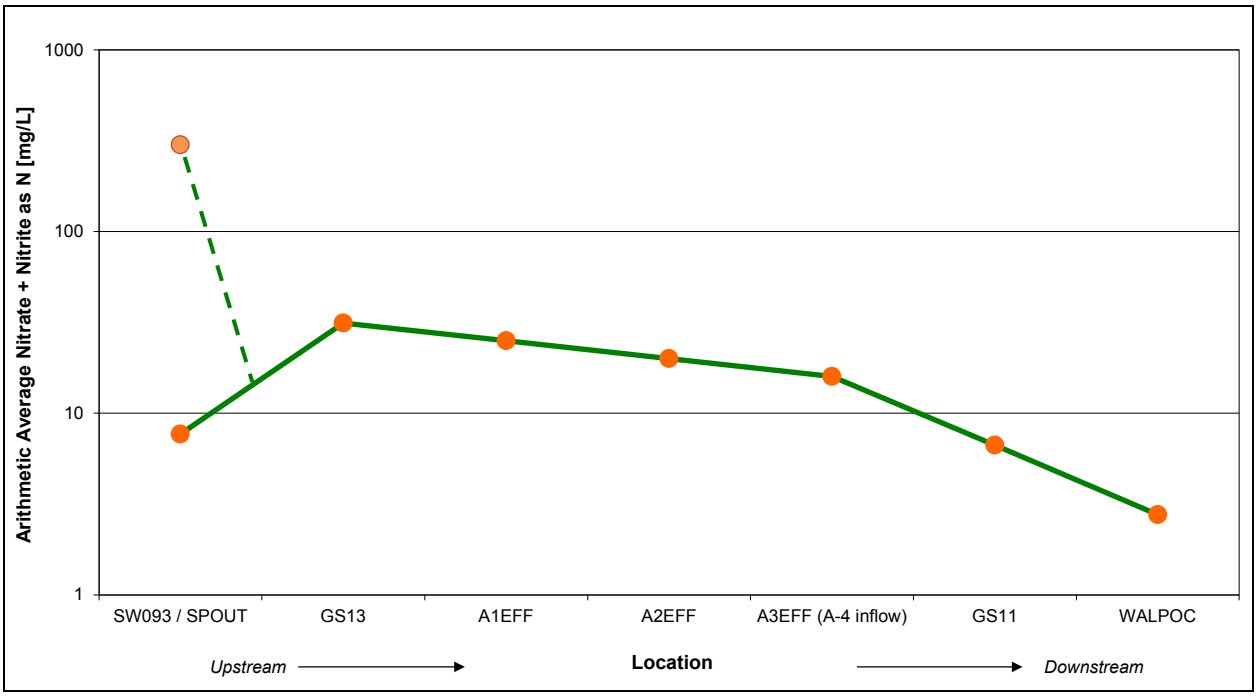
Table 10 shows summary statistics for the nitrate + nitrite as nitrogen grab sampling in North Walnut Creek and Walnut Creek for September 1, 2011, to November 1, 2016 (using all available sample results as of January 26, 2017). Figure 54 shows the spatial variation (upstream to downstream) of average nitrate concentrations in North Walnut Creek for this period. As for January 27, 2010, to November 1, 2016, the plot shows a measurable increase between SW093 (upstream of Solar Ponds influence) and GS13 (downstream of Solar Ponds influence). However, farther downstream, the reduction of nitrate through natural processes is apparent.

Table 10. Summary Statistics for Nitrate + Nitrite as Nitrogen Grab Sampling in North Walnut Creek and Walnut Creek for September 1, 2011, to November 1, 2016

North Walnut Creek		Nitrate+Nitrite as N (mg/L)			
	Location Code	Average	Sample Count	85th Percentile	50th Percentile
Upstream	SW093	7.67	122	14.8	3.10
⬇	SPOUT*	300	114	440	310
⬇	GS13	31.3	113	52.0	26.0
⬇	A1EFF	25.1	71	42.3	21.0
⬇	A2EFF	20.0	75	39.0	17.5
⬇	A3EFF (A-4 inflow)	16.0	56	30.4	16.0
⬇	GS11	6.68	59	10.8	7.15
Downstream	WALPOC	2.77	83	5.73	2.50

Notes:
* SPOUT is not located in North Walnut Creek but flows into a below-ground discharge gallery south of North Walnut Creek between monitoring locations SW093 and GS13.
Sample counts vary because some locations are periodically dry.

Abbreviation:
mg/L = milligrams per liter



Notes:
Concentrations are shown on a logarithmic scale.
SPOUT is not located in North Walnut Creek but flows into a below-ground discharge gallery south of North Walnut Creek between monitoring locations SW093 and GS13.

Abbreviation:
mg/L = milligrams per liter

Figure 54. Arithmetic Average Nitrate + Nitrite as N Concentration at North Walnut Creek and Walnut Creek Grab Locations for September 1, 2011, to November 1, 2016

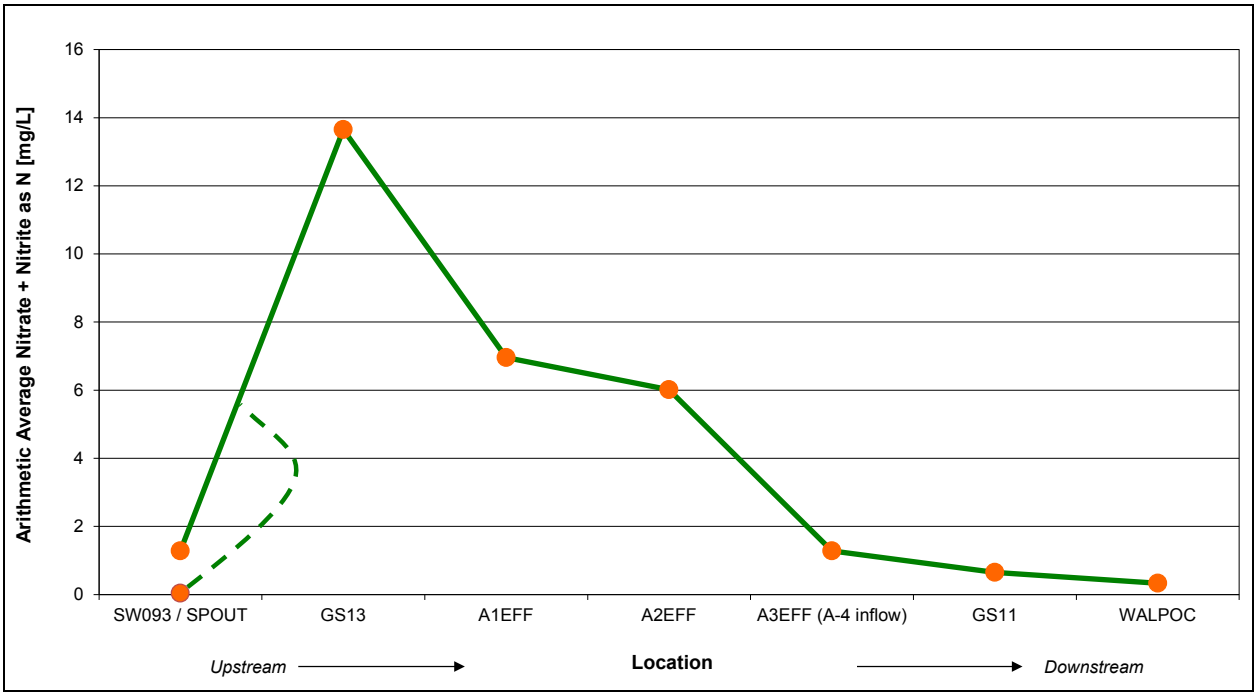
Table 11 shows summary statistics for the nitrate + nitrite as nitrogen grab sampling in North Walnut Creek and Walnut Creek since November 1, 2016 (using all sample results available by January 26, 2017). Figure 55 shows the spatial variation (upstream to downstream) of average nitrate concentrations in North Walnut Creek for this time period.

The positive effects of the successful optimization of nitrate treatment at the SPPTS can clearly be seen in the data. Average concentrations at every location except GS13 are below 10 milligrams per liter (mg/L) nitrate+nitrite as nitrogen. As for the previously discussed time periods, the plot shows a measurable increase between SW093 (upstream of Solar Ponds influence) and GS13 (downstream of Solar Ponds influence). However, farther downstream, the reduction of nitrate through natural processes is generally apparent.

Table 11. Summary Statistics for Nitrate + Nitrite as Nitrogen Grab Sampling in North Walnut Creek and Walnut Creek for November 1, 2016, to Present

North Walnut Creek		Nitrate+Nitrite as N (mg/L)			
	Location Code	Average	Sample Count	85th Percentile	50th Percentile
Upstream	SW093	1.29	30	1.97	0.87
⬇	SPOUT*	0.05	32	0.14	0.01
⬇	GS13	13.7	25	19.0	8.80
⬇	A1EFF	6.96	19	13.9	5.20
⬇	A2EFF	6.02	18	13.2	3.05
⬇	A3EFF (A-4 inflow)	1.29	12	3.72	0.02
⬇	GS11	0.66	4	1.43	0.01
Downstream	WALPOC	0.34	7	0.37	0.11

Notes:
* SPOUT is not located in North Walnut Creek but flows into a below-ground discharge gallery south of North Walnut Creek between monitoring locations SW093 and GS13.
Sample counts vary because some locations are periodically dry.
Summary includes all data available as of January 24, 2018; some recent data are not validated (i.e., are preliminary and subject to revision).



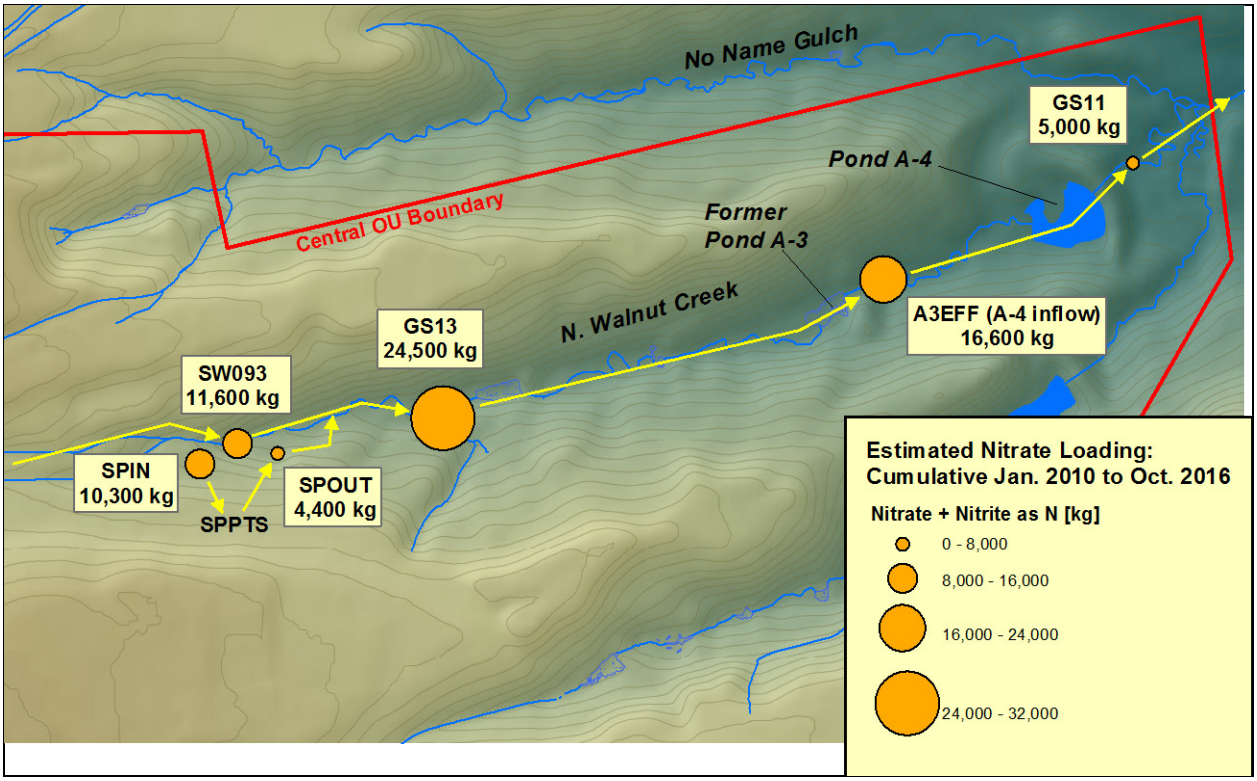
Notes:
SPOUT is not located in North Walnut Creek but flows into a below-ground discharge gallery south of North Walnut Creek between monitoring locations SW093 and GS13.
Summary includes all data available as of January 24, 2018; some recent data are not validated (i.e., are preliminary and subject to revision).

Figure 55. Arithmetic Average Nitrate + Nitrite as Nitrogen Concentration at North Walnut Creek and Walnut Creek Grab Locations for November 1, 2016, to Present

The map in Figure 56 shows the estimated total nitrate + nitrite as nitrogen loads in North Walnut Creek for the period January 2010 to October 2016.[11] While the SPPTS removed approximately 55% of the nitrate load in the water it collected during this time frame, the loads at both the system influent (SPIN) and effluent (SPOUT) are only a portion of the loads in North Walnut Creek. As with uranium, the SPPTS nitrate concentrations are higher than the creek concentrations, but the much larger creek flow volumes yield significantly larger loads. In fact, the nitrate load at SPOUT is estimated to be only about 18% of the load in North Walnut Creek at GS13.

It should be noted, however, that the grab samples collected in the creek are likely biased toward higher concentrations since they are generally collected during baseflow periods. In other words, high-volume runoff events with relatively lower concentrations are underrepresented in the average creek concentrations calculated from grab sample results. Therefore, the amount of nitrate + nitrite as nitrogen at creek locations could be overestimated. Assuming this is the case, the relative contribution from the SPPTS to North Walnut Creek would be larger than estimated.

[11] Loads are calculated only for locations with flow volume measurement.



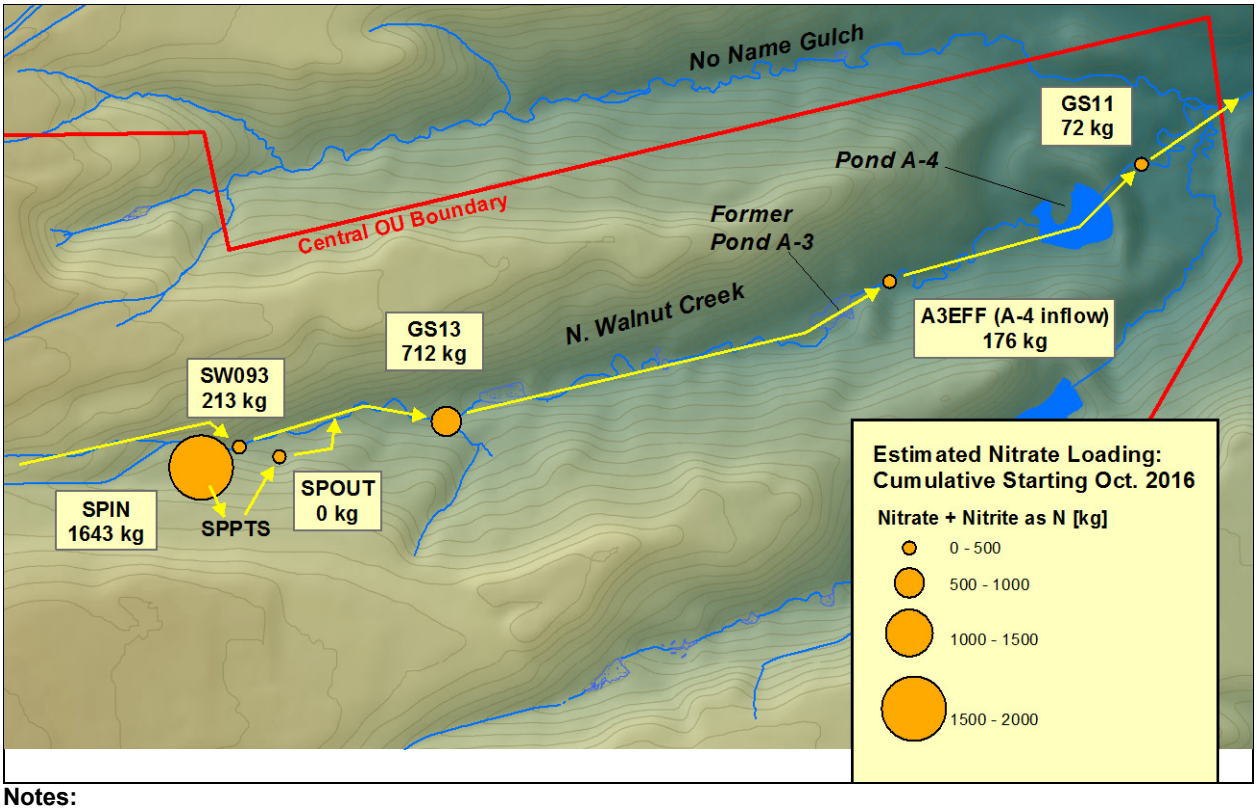
Notes:
Loads at SW093, GS13, and GS11 are calculated using results from flow-paced composites (Section 3.5). Loads at A3EFF are calculated using grab sample results and flow measurement from GS12 (colocated with A3EFF). Loads at SPIN and SPOUT are calculated using results from grab sampling related to this AMP objective and other treatment system optimization efforts.
Arrows indicate general flow routing.

Abbreviation:
kg = kilograms

Figure 56. Map Showing Estimated Nitrate + Nitrite as Nitrogen Loads in North Walnut Creek: January 2010 to October 2016

The map in Figure 57 shows the estimated total nitrate + nitrite as nitrogen loads in North Walnut Creek for the period starting with October 2016 (using all available sample results as of January 26, 2018).[12] During this period, the SPPTS removed essentially 100% of the nitrate load in the water it collected.

[12] Loads are calculated only for locations with flow volume measurement.



Notes:
Loads at SW093, GS13, and GS11 are calculated using results from flow-paced composites (Section 3.5). Loads at A3EFF are calculated using grab sample results and flow measurement from GS12 (colocated with A3EFF). Loads at SPIN and SPOUT are calculated using results from grab sampling related to this AMP objective and other treatment system optimization efforts.
Arrows indicate general flow routing.

Abbreviation:
kg = kilograms

Figure 57. Map Showing Estimated Nitrate + Nitrite as Nitrogen Loads in North Walnut Creek Since October 2016

4.0 Analytical Data: Fourth Quarter CY 2014

Table 12, "Analytical Results for Water Samples," is available at the end of this report.

Table 13, "Water Sampling Events: Fourth Quarter CY 2014," is available at the end of this report.

5.0 References

DOE (U.S. Department of Energy), 2007. *Rocky Flats Legacy Management Agreement*, Rocky Flats Environmental Technology Site, Golden, Colorado, March 14 (Attachment 2, "Legacy Management Requirements," was revised in 2012).

DOE (U.S. Department of Energy), 2011. *Rocky Flats Site, Colorado, Surface Water Configuration Environmental Assessment*, DOE/EA-1747, LMS/RFS/S06335, Office of Legacy Management, May.

DOE (U.S. Department of Energy), 2013. *Rocky Flats Site, Colorado, Site Operations Guide*, Revision 6.0, LMS/RFS/S03037, Office of Legacy Management, Westminster, Colorado, July.

DOE (U.S. Department of Energy), 2017. *Surface Water Configuration Adaptive Management Plan for the Rocky Flats Site, Colorado,* Revision 3.0, LMS/RFS/S07698, Office of Legacy Management, August.

DOE (U.S. Department of Energy), forthcoming. *Annual Report of Site Surveillance and Maintenance Activities at the Rocky Flats Site, Colorado, Calendar Year 2017,* LMS/RFS/S18141, Office of Legacy Management, to be published.

Table 12. Analytical Results for Water Samples

LOCATION CODE	LOCATION TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS	COLLECTION METHOD	LAB CODE
00193	WL	10/10/2017	17108725	000630-20-6	1,1,1,2-Tetrachloroethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
00193	WL	10/10/2017	17108725	000071-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
00193	WL	10/10/2017	17108725	000079-34-5	1,1,2,2-Tetrachloroethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
00193	WL	10/10/2017	17108725	000079-00-5	1,1,2-Trichloroethane	N001	0.27	ug/L	U	F	0.27		FQ	G	STD
00193	WL	10/10/2017	17108725	000075-34-3	1,1-Dichloroethane	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
00193	WL	10/10/2017	17108725	000075-35-4	1,1-Dichloroethene	N001	0.23	ug/L	U	F	0.23		FQ	G	STD
00193	WL	10/10/2017	17108725	000563-58-6	1,1-Dichloropropene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
00193	WL	10/10/2017	17108725	000087-61-6	1,2,3-Trichlorobenzene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
00193	WL	10/10/2017	17108725	000096-18-4	1,2,3-Trichloropropane	N001	0.33	ug/L	U	F	0.33		FQ	G	STD
00193	WL	10/10/2017	17108725	000120-82-1	1,2,4-Trichlorobenzene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
00193	WL	10/10/2017	17108725	000095-63-6	1,2,4-Trimethylbenzene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
00193	WL	10/10/2017	17108725	000096-12-8	1,2-Dibromo-3-chloropropane	N001	0.47	ug/L	U	F	0.47		FQ	G	STD
00193	WL	10/10/2017	17108725	000106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
00193	WL	10/10/2017	17108725	000095-50-1	1,2-Dichlorobenzene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
00193	WL	10/10/2017	17108725	000107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		FQ	G	STD
00193	WL	10/10/2017	17108725	000078-87-5	1,2-Dichloropropane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
00193	WL	10/10/2017	17108725	000108-67-8	1,3,5-Trimethylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
00193	WL	10/10/2017	17108725	000541-73-1	1,3-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		FQ	G	STD
00193	WL	10/10/2017	17108725	000142-28-9	1,3-Dichloropropane	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
00193	WL	10/10/2017	17108725	000106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
00193	WL	10/10/2017	17108725	000594-20-7	2,2-Dichloropropane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
00193	WL	10/10/2017	17108725	000078-93-3	2-Butanone	N001	2	ug/L	U	F	2		FQ	G	STD
00193	WL	10/10/2017	17108725	000095-49-8	2-Chlorotoluene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
00193	WL	10/10/2017	17108725	000591-78-6	2-Hexanone	N001	1.7	ug/L	U	F	1.7		FQ	G	STD
00193	WL	10/10/2017	17108725	000106-43-4	4-Chlorotoluene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
00193	WL	10/10/2017	17108725	000108-10-1	4-Methyl-2-Pentanone	N001	0.98	ug/L	U	F	0.98		FQ	G	STD
00193	WL	10/10/2017	17108725	000067-64-1	Acetone	N001	32	ug/L		F	1.9		UFQ	G	STD
00193	WL	10/10/2017	17108725	000071-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
00193	WL	10/10/2017	17108725	000108-86-1	Bromobenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
00193	WL	10/10/2017	17108725	000074-97-5	Bromochloromethane	N001	0.1	ug/L	U	F	0.1		FQ	G	STD
00193	WL	10/10/2017	17108725	000075-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
00193	WL	10/10/2017	17108725	000075-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
00193	WL	10/10/2017	17108725	000074-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
00193	WL	10/10/2017	17108725	000075-15-0	Carbon Disulfide	N001	0.45	ug/L	U	F	0.45		FQ	G	STD
00193	WL	10/10/2017	17108725	000056-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
00193	WL	10/10/2017	17108725	000108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
00193	WL	10/10/2017	17108725	000124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
00193	WL	10/10/2017	17108725	000075-00-3	Chloroethane	N001	0.41	ug/L	U	F	0.41		FQ	G	STD
00193	WL	10/10/2017	17108725	000067-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
00193	WL	10/10/2017	17108725	000074-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		FQ	G	STD
00193	WL	10/10/2017	17108725	000156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
00193	WL	10/10/2017	17108725	010061-01-5	cis-1,3-Dichloropropene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
00193	WL	10/10/2017	17108725	000074-95-3	Dibromomethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
00193	WL	10/10/2017	17108725	000075-71-8	Dichlorodifluoromethane	N001	0.31	ug/L	U	F	0.31		FQ	G	STD
00193	WL	10/10/2017	17108725	000100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
00193	WL	10/10/2017	17108725	000087-68-3	Hexachlorobutadiene	N001	0.36	ug/L	U	F	0.36		FQ	G	STD
00193	WL	10/10/2017	17108725	000098-82-8	Isopropylbenzene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
00193	WL	10/10/2017	17108725	000075-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		FQ	G	STD
00193	WL	10/10/2017	17108725	000091-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
00193	WL	10/10/2017	17108725	000104-51-8	n-Butylbenzene	N001	0.32	ug/L	U	F	0.32		FQ	G	STD
00193	WL	10/10/2017	17108725	000103-65-1	n-Propylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
00193	WL	10/10/2017	17108725	000099-87-6	p-Isopropyltoluene	N001	0.2	ug/L	U	F	0.2		FQ	G	STD
00193	WL	10/10/2017	17108725	000135-98-8	sec-Butylbenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
00193	WL	10/10/2017	17108725	000100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
00193	WL	10/10/2017	17108725	000098-06-6	tert-Butylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD

Table 12. Analytical Results for Water Samples

LOCATION CODE	LOCATION TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS	COLLECTION METHOD	LAB CODE
00193	WL	10/10/2017	17108725	000127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		FQ	G	STD
00193	WL	10/10/2017	17108725	000108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
00193	WL	10/10/2017	17108725	001330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
00193	WL	10/10/2017	17108725	000156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
00193	WL	10/10/2017	17108725	010061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
00193	WL	10/10/2017	17108725	000079-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
00193	WL	10/10/2017	17108725	000075-69-4	Trichlorofluoromethane	N001	0.29	ug/L	U	F	0.29		FQ	G	STD
00193	WL	10/10/2017	17108725	07440-61-1	Uranium	0001	74	ug/L		F	0.05		FQ	G	STD
00193	WL	10/10/2017	17108725	000075-01-4	Vinyl chloride	N001	0.1	ug/L	U	F	0.1		FQ	G	STD
00997	WL	10/11/2017	17108725	000630-20-6	1,1,1,2-Tetrachloroethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
00997	WL	10/11/2017	17108725	000071-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
00997	WL	10/11/2017	17108725	000079-34-5	1,1,2,2-Tetrachloroethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
00997	WL	10/11/2017	17108725	000079-00-5	1,1,2-Trichloroethane	N001	0.27	ug/L	U	F	0.27		FQ	G	STD
00997	WL	10/11/2017	17108725	000075-34-3	1,1-Dichloroethane	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
00997	WL	10/11/2017	17108725	000075-35-4	1,1-Dichloroethene	N001	0.23	ug/L	U	F	0.23		FQ	G	STD
00997	WL	10/11/2017	17108725	000563-58-6	1,1-Dichloropropene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
00997	WL	10/11/2017	17108725	000087-61-6	1,2,3-Trichlorobenzene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
00997	WL	10/11/2017	17108725	000096-18-4	1,2,3-Trichloropropane	N001	0.33	ug/L	U	F	0.33		FQ	G	STD
00997	WL	10/11/2017	17108725	000120-82-1	1,2,4-Trichlorobenzene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
00997	WL	10/11/2017	17108725	000095-63-6	1,2,4-Trimethylbenzene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
00997	WL	10/11/2017	17108725	000096-12-8	1,2-Dibromo-3-chloropropane	N001	0.47	ug/L	U	F	0.47		FQ	G	STD
00997	WL	10/11/2017	17108725	000106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
00997	WL	10/11/2017	17108725	000095-50-1	1,2-Dichlorobenzene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
00997	WL	10/11/2017	17108725	000107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		FQ	G	STD
00997	WL	10/11/2017	17108725	000078-87-5	1,2-Dichloropropane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
00997	WL	10/11/2017	17108725	000108-67-8	1,3,5-Trimethylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
00997	WL	10/11/2017	17108725	000541-73-1	1,3-Dichlorobenzene	N001	0.43	ug/L	J	F	0.13		FQ	G	STD
00997	WL	10/11/2017	17108725	000142-28-9	1,3-Dichloropropane	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
00997	WL	10/11/2017	17108725	000106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
00997	WL	10/11/2017	17108725	000594-20-7	2,2-Dichloropropane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
00997	WL	10/11/2017	17108725	000078-93-3	2-Butanone	N001	2	ug/L	U	F	2		FQ	G	STD
00997	WL	10/11/2017	17108725	000095-49-8	2-Chlorotoluene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
00997	WL	10/11/2017	17108725	000591-78-6	2-Hexanone	N001	1.7	ug/L	U	F	1.7		FQ	G	STD
00997	WL	10/11/2017	17108725	000106-43-4	4-Chlorotoluene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
00997	WL	10/11/2017	17108725	000108-10-1	4-Methyl-2-Pentanone	N001	0.98	ug/L	U	F	0.98		FQ	G	STD
00997	WL	10/11/2017	17108725	000067-64-1	Acetone	N001	4.4	ug/L	J	F	1.9		UFQ	G	STD
00997	WL	10/11/2017	17108725	000071-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
00997	WL	10/11/2017	17108725	000108-86-1	Bromobenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
00997	WL	10/11/2017	17108725	000074-97-5	Bromochloromethane	N001	0.1	ug/L	U	F	0.1		FQ	G	STD
00997	WL	10/11/2017	17108725	000075-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
00997	WL	10/11/2017	17108725	000075-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
00997	WL	10/11/2017	17108725	000074-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
00997	WL	10/11/2017	17108725	000075-15-0	Carbon Disulfide	N001	0.45	ug/L	U	F	0.45		FQ	G	STD
00997	WL	10/11/2017	17108725	000056-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
00997	WL	10/11/2017	17108725	000108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
00997	WL	10/11/2017	17108725	000124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
00997	WL	10/11/2017	17108725	000075-00-3	Chloroethane	N001	0.41	ug/L	U	F	0.41		FQ	G	STD
00997	WL	10/11/2017	17108725	000067-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
00997	WL	10/11/2017	17108725	000074-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		FQ	G	STD
00997	WL	10/11/2017	17108725	000156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
00997	WL	10/11/2017	17108725	010061-01-5	cis-1,3-Dichloropropene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
00997	WL	10/11/2017	17108725	000074-95-3	Dibromomethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
00997	WL	10/11/2017	17108725	000075-71-8	Dichlorodifluoromethane	N001	0.31	ug/L	U	F	0.31		FQ	G	STD
00997	WL	10/11/2017	17108725	000100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
00997	WL	10/11/2017	17108725	000087-68-3	Hexachlorobutadiene	N001	0.36	ug/L	U	F	0.36		FQ	G	STD
00997	WL	10/11/2017	17108725	000098-82-8	Isopropylbenzene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
00997	WL	10/11/2017	17108725	000075-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		FQ	G	STD

Table 12. Analytical Results for Water Samples

LOCATION CODE	LOCATION TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS	COLLECTION METHOD	LAB CODE
00997	WL	10/11/2017	17108725	000091-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
00997	WL	10/11/2017	17108725	000104-51-8	n-Butylbenzene	N001	0.32	ug/L	U	F	0.32		FQ	G	STD
00997	WL	10/11/2017	17108725	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.019	mg/L	U	F	0.019		FQ	G	STD
00997	WL	10/11/2017	17108725	000103-65-1	n-Propylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
00997	WL	10/11/2017	17108725	000099-87-6	p-Isopropyltoluene	N001	0.2	ug/L	U	F	0.2		FQ	G	STD
00997	WL	10/11/2017	17108725	000135-98-8	sec-Butylbenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
00997	WL	10/11/2017	17108725	000100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
00997	WL	10/11/2017	17108725	000098-06-6	tert-Butylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
00997	WL	10/11/2017	17108725	000127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		FQ	G	STD
00997	WL	10/11/2017	17108725	000108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
00997	WL	10/11/2017	17108725	001330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
00997	WL	10/11/2017	17108725	000156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
00997	WL	10/11/2017	17108725	010061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
00997	WL	10/11/2017	17108725	000079-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
00997	WL	10/11/2017	17108725	000075-69-4	Trichlorofluoromethane	N001	0.29	ug/L	U	F	0.29		FQ	G	STD
00997	WL	10/11/2017	17108725	07440-61-1	Uranium	0001	22	ug/L		F	0.05		FQ	G	STD
00997	WL	10/11/2017	17108725	000075-01-4	Vinyl chloride	N001	0.1	ug/L	U	F	0.1		FQ	G	STD
4087	WL	10/12/2017	17108725	000630-20-6	1,1,1,2-Tetrachloroethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
4087	WL	10/12/2017	17108725	000071-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
4087	WL	10/12/2017	17108725	000079-34-5	1,1,2,2-Tetrachloroethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
4087	WL	10/12/2017	17108725	000079-00-5	1,1,2-Trichloroethane	N001	0.27	ug/L	U	F	0.27		FQ	G	STD
4087	WL	10/12/2017	17108725	000075-34-3	1,1-Dichloroethane	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
4087	WL	10/12/2017	17108725	000075-35-4	1,1-Dichloroethene	N001	0.23	ug/L	U	F	0.23		FQ	G	STD
4087	WL	10/12/2017	17108725	000563-58-6	1,1-Dichloropropene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
4087	WL	10/12/2017	17108725	000087-61-6	1,2,3-Trichlorobenzene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
4087	WL	10/12/2017	17108725	000096-18-4	1,2,3-Trichloropropane	N001	0.33	ug/L	U	F	0.33		FQ	G	STD
4087	WL	10/12/2017	17108725	000120-82-1	1,2,4-Trichlorobenzene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
4087	WL	10/12/2017	17108725	000095-63-6	1,2,4-Trimethylbenzene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
4087	WL	10/12/2017	17108725	000096-12-8	1,2-Dibromo-3-chloropropane	N001	0.47	ug/L	U	F	0.47		FQ	G	STD
4087	WL	10/12/2017	17108725	000106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
4087	WL	10/12/2017	17108725	000095-50-1	1,2-Dichlorobenzene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
4087	WL	10/12/2017	17108725	000107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		FQ	G	STD
4087	WL	10/12/2017	17108725	000078-87-5	1,2-Dichloropropane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
4087	WL	10/12/2017	17108725	000108-67-8	1,3,5-Trimethylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
4087	WL	10/12/2017	17108725	000541-73-1	1,3-Dichlorobenzene	N001	0.41	ug/L	J	F	0.13		FQ	G	STD
4087	WL	10/12/2017	17108725	000142-28-9	1,3-Dichloropropane	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
4087	WL	10/12/2017	17108725	000106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
4087	WL	10/12/2017	17108725	000594-20-7	2,2-Dichloropropane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
4087	WL	10/12/2017	17108725	000078-93-3	2-Butanone	N001	2	ug/L	U	F	2		FQ	G	STD
4087	WL	10/12/2017	17108725	000095-49-8	2-Chlorotoluene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
4087	WL	10/12/2017	17108725	000591-78-6	2-Hexanone	N001	1.7	ug/L	U	F	1.7		FQ	G	STD
4087	WL	10/12/2017	17108725	000106-43-4	4-Chlorotoluene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
4087	WL	10/12/2017	17108725	000108-10-1	4-Methyl-2-Pentanone	N001	0.98	ug/L	U	F	0.98		FQ	G	STD
4087	WL	10/12/2017	17108725	000067-64-1	Acetone	N001	1.9	ug/L	U	F	1.9		FQ	G	STD
4087	WL	10/12/2017	17108725	000071-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
4087	WL	10/12/2017	17108725	000108-86-1	Bromobenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
4087	WL	10/12/2017	17108725	000074-97-5	Bromochloromethane	N001	0.1	ug/L	U	F	0.1		FQ	G	STD
4087	WL	10/12/2017	17108725	000075-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
4087	WL	10/12/2017	17108725	000075-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
4087	WL	10/12/2017	17108725	000074-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
4087	WL	10/12/2017	17108725	000075-15-0	Carbon Disulfide	N001	0.45	ug/L	U	F	0.45		FQ	G	STD
4087	WL	10/12/2017	17108725	000056-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
4087	WL	10/12/2017	17108725	000108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
4087	WL	10/12/2017	17108725	000124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
4087	WL	10/12/2017	17108725	000075-00-3	Chloroethane	N001	0.41	ug/L	U	F	0.41		FQ	G	STD
4087	WL	10/12/2017	17108725	000067-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
4087	WL	10/12/2017	17108725	000074-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		FQ	G	STD

Table 12. Analytical Results for Water Samples

LOCATION CODE	LOCATION TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS	COLLECTION METHOD	LAB CODE
4087	WL	10/12/2017	17108725	000156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
4087	WL	10/12/2017	17108725	010061-01-5	cis-1,3-Dichloropropene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
4087	WL	10/12/2017	17108725	000074-95-3	Dibromomethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
4087	WL	10/12/2017	17108725	000075-71-8	Dichlorodifluoromethane	N001	0.31	ug/L	U	F	0.31		FQ	G	STD
4087	WL	10/12/2017	17108725	000100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
4087	WL	10/12/2017	17108725	000087-68-3	Hexachlorobutadiene	N001	0.36	ug/L	U	F	0.36		FQ	G	STD
4087	WL	10/12/2017	17108725	000098-82-8	Isopropylbenzene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
4087	WL	10/12/2017	17108725	000075-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		FQ	G	STD
4087	WL	10/12/2017	17108725	000091-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
4087	WL	10/12/2017	17108725	000104-51-8	n-Butylbenzene	N001	0.32	ug/L	U	F	0.32		FQ	G	STD
4087	WL	10/12/2017	17108725	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.094	mg/L		F	0.019		FQ	G	STD
4087	WL	10/12/2017	17108725	000103-65-1	n-Propylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
4087	WL	10/12/2017	17108725	000099-87-6	p-Isopropyltoluene	N001	0.2	ug/L	U	F	0.2		FQ	G	STD
4087	WL	10/12/2017	17108725	000135-98-8	sec-Butylbenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
4087	WL	10/12/2017	17108725	000100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
4087	WL	10/12/2017	17108725	000098-06-6	tert-Butylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
4087	WL	10/12/2017	17108725	000127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		FQ	G	STD
4087	WL	10/12/2017	17108725	000108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
4087	WL	10/12/2017	17108725	001330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
4087	WL	10/12/2017	17108725	000156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
4087	WL	10/12/2017	17108725	010061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
4087	WL	10/12/2017	17108725	000079-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
4087	WL	10/12/2017	17108725	000075-69-4	Trichlorofluoromethane	N001	0.29	ug/L	U	F	0.29		FQ	G	STD
4087	WL	10/12/2017	17108725	07440-61-1	Uranium	0001	12	ug/L		F	0.05		FQ	G	STD
4087	WL	10/12/2017	17108725	000075-01-4	Vinyl chloride	N001	0.1	ug/L	U	F	0.1		FQ	G	STD
10304	WL	10/10/2017	17108725	000630-20-6	1,1,1,2-Tetrachloroethane	N001	0.21	ug/L	U	F	0.21		F	G	STD
10304	WL	10/10/2017	17108725	000630-20-6	1,1,1,2-Tetrachloroethane	N002	0.21	ug/L	U	D	0.21		F	G	STD
10304	WL	10/10/2017	17108725	000071-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		F	G	STD
10304	WL	10/10/2017	17108725	000071-55-6	1,1,1-Trichloroethane	N002	0.16	ug/L	U	D	0.16		F	G	STD
10304	WL	10/10/2017	17108725	000079-34-5	1,1,2,2-Tetrachloroethane	N001	0.21	ug/L	U	F	0.21		F	G	STD
10304	WL	10/10/2017	17108725	000079-34-5	1,1,2,2-Tetrachloroethane	N002	0.21	ug/L	U	D	0.21		F	G	STD
10304	WL	10/10/2017	17108725	000079-00-5	1,1,2-Trichloroethane	N001	0.27	ug/L	U	F	0.27		F	G	STD
10304	WL	10/10/2017	17108725	000079-00-5	1,1,2-Trichloroethane	N002	0.27	ug/L	U	D	0.27		F	G	STD
10304	WL	10/10/2017	17108725	000075-34-3	1,1-Dichloroethane	N001	0.22	ug/L	U	F	0.22		F	G	STD
10304	WL	10/10/2017	17108725	000075-34-3	1,1-Dichloroethane	N002	0.22	ug/L	U	D	0.22		F	G	STD
10304	WL	10/10/2017	17108725	000075-35-4	1,1-Dichloroethene	N001	0.23	ug/L	U	F	0.23		F	G	STD
10304	WL	10/10/2017	17108725	000075-35-4	1,1-Dichloroethene	N002	0.23	ug/L	U	D	0.23		F	G	STD
10304	WL	10/10/2017	17108725	000563-58-6	1,1-Dichloropropene	N001	0.19	ug/L	U	F	0.19		F	G	STD
10304	WL	10/10/2017	17108725	000563-58-6	1,1-Dichloropropene	N002	0.19	ug/L	U	D	0.19		F	G	STD
10304	WL	10/10/2017	17108725	000087-61-6	1,2,3-Trichlorobenzene	N001	0.21	ug/L	U	F	0.21		F	G	STD
10304	WL	10/10/2017	17108725	000087-61-6	1,2,3-Trichlorobenzene	N002	0.21	ug/L	U	D	0.21		F	G	STD
10304	WL	10/10/2017	17108725	000096-18-4	1,2,3-Trichloropropane	N001	0.33	ug/L	U	F	0.33		F	G	STD
10304	WL	10/10/2017	17108725	000096-18-4	1,2,3-Trichloropropane	N002	0.33	ug/L	U	D	0.33		F	G	STD
10304	WL	10/10/2017	17108725	000120-82-1	1,2,4-Trichlorobenzene	N001	0.21	ug/L	U	F	0.21		F	G	STD
10304	WL	10/10/2017	17108725	000120-82-1	1,2,4-Trichlorobenzene	N002	0.21	ug/L	U	D	0.21		F	G	STD
10304	WL	10/10/2017	17108725	000095-63-6	1,2,4-Trimethylbenzene	N001	0.15	ug/L	U	F	0.15		F	G	STD
10304	WL	10/10/2017	17108725	000095-63-6	1,2,4-Trimethylbenzene	N002	0.15	ug/L	U	D	0.15		F	G	STD
10304	WL	10/10/2017	17108725	000096-12-8	1,2-Dibromo-3-chloropropane	N001	0.47	ug/L	U	F	0.47		F	G	STD
10304	WL	10/10/2017	17108725	000096-12-8	1,2-Dibromo-3-chloropropane	N002	0.47	ug/L	U	D	0.47		F	G	STD
10304	WL	10/10/2017	17108725	000106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		F	G	STD
10304	WL	10/10/2017	17108725	000106-93-4	1,2-Dibromoethane	N002	0.18	ug/L	U	D	0.18		F	G	STD
10304	WL	10/10/2017	17108725	000095-50-1	1,2-Dichlorobenzene	N001	0.15	ug/L	U	F	0.15		F	G	STD
10304	WL	10/10/2017	17108725	000095-50-1	1,2-Dichlorobenzene	N002	0.15	ug/L	U	D	0.15		F	G	STD
10304	WL	10/10/2017	17108725	000107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		F	G	STD
10304	WL	10/10/2017	17108725	000107-06-2	1,2-Dichloroethane	N002	0.13	ug/L	U	D	0.13		F	G	STD
10304	WL	10/10/2017	17108725	000078-87-5	1,2-Dichloropropane	N001	0.18	ug/L	U	F	0.18		F	G	STD
10304	WL	10/10/2017	17108725	000078-87-5	1,2-Dichloropropane	N002	0.18	ug/L	U	D	0.18		F	G	STD

Table 12. Analytical Results for Water Samples

LOCATION CODE	LOCATION TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS	COLLECTION METHOD	LAB CODE
10304	WL	10/10/2017	17108725	000108-67-8	1,3,5-Trimethylbenzene	N001	0.16	ug/L	U	F	0.16		F	G	STD
10304	WL	10/10/2017	17108725	000108-67-8	1,3,5-Trimethylbenzene	N002	0.16	ug/L	U	D	0.16		F	G	STD
10304	WL	10/10/2017	17108725	000541-73-1	1,3-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		F	G	STD
10304	WL	10/10/2017	17108725	000541-73-1	1,3-Dichlorobenzene	N002	0.13	ug/L	U	D	0.13		F	G	STD
10304	WL	10/10/2017	17108725	000142-28-9	1,3-Dichloropropane	N001	0.22	ug/L	U	F	0.22		F	G	STD
10304	WL	10/10/2017	17108725	000142-28-9	1,3-Dichloropropane	N002	0.22	ug/L	U	D	0.22		F	G	STD
10304	WL	10/10/2017	17108725	000106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		F	G	STD
10304	WL	10/10/2017	17108725	000106-46-7	1,4-Dichlorobenzene	N002	0.16	ug/L	U	D	0.16		F	G	STD
10304	WL	10/10/2017	17108725	000594-20-7	2,2-Dichloropropane	N001	0.18	ug/L	U	F	0.18		F	G	STD
10304	WL	10/10/2017	17108725	000594-20-7	2,2-Dichloropropane	N002	0.18	ug/L	U	D	0.18		F	G	STD
10304	WL	10/10/2017	17108725	000078-93-3	2-Butanone	N001	2	ug/L	U	F	2		F	G	STD
10304	WL	10/10/2017	17108725	000078-93-3	2-Butanone	N002	2	ug/L	U	D	2		F	G	STD
10304	WL	10/10/2017	17108725	000095-49-8	2-Chlorotoluene	N001	0.17	ug/L	U	F	0.17		F	G	STD
10304	WL	10/10/2017	17108725	000095-49-8	2-Chlorotoluene	N002	0.17	ug/L	U	D	0.17		F	G	STD
10304	WL	10/10/2017	17108725	000591-78-6	2-Hexanone	N001	1.7	ug/L	U	F	1.7		F	G	STD
10304	WL	10/10/2017	17108725	000591-78-6	2-Hexanone	N002	1.7	ug/L	U	D	1.7		F	G	STD
10304	WL	10/10/2017	17108725	000106-43-4	4-Chlorotoluene	N001	0.21	ug/L	U	F	0.21		F	G	STD
10304	WL	10/10/2017	17108725	000106-43-4	4-Chlorotoluene	N002	0.21	ug/L	U	D	0.21		F	G	STD
10304	WL	10/10/2017	17108725	000108-10-1	4-Methyl-2-Pentanone	N001	0.98	ug/L	U	F	0.98		F	G	STD
10304	WL	10/10/2017	17108725	000108-10-1	4-Methyl-2-Pentanone	N002	0.98	ug/L	U	D	0.98		F	G	STD
10304	WL	10/10/2017	17108725	000067-64-1	Acetone	N001	1.9	ug/L	U	F	1.9		F	G	STD
10304	WL	10/10/2017	17108725	000067-64-1	Acetone	N002	16	ug/L		D	1.9		UF	G	STD
10304	WL	10/10/2017	17108725	000071-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		F	G	STD
10304	WL	10/10/2017	17108725	000071-43-2	Benzene	N002	0.16	ug/L	U	D	0.16		F	G	STD
10304	WL	10/10/2017	17108725	000108-86-1	Bromobenzene	N001	0.17	ug/L	U	F	0.17		F	G	STD
10304	WL	10/10/2017	17108725	000108-86-1	Bromobenzene	N002	0.17	ug/L	U	D	0.17		F	G	STD
10304	WL	10/10/2017	17108725	000074-97-5	Bromochloromethane	N001	0.1	ug/L	U	F	0.1		F	G	STD
10304	WL	10/10/2017	17108725	000074-97-5	Bromochloromethane	N002	0.1	ug/L	U	D	0.1		F	G	STD
10304	WL	10/10/2017	17108725	000075-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		F	G	STD
10304	WL	10/10/2017	17108725	000075-27-4	Bromodichloromethane	N002	0.17	ug/L	U	D	0.17		F	G	STD
10304	WL	10/10/2017	17108725	000075-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		F	G	STD
10304	WL	10/10/2017	17108725	000075-25-2	Bromoform	N002	0.19	ug/L	U	D	0.19		F	G	STD
10304	WL	10/10/2017	17108725	000074-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		F	G	STD
10304	WL	10/10/2017	17108725	000074-83-9	Bromomethane	N002	0.21	ug/L	U	D	0.21		F	G	STD
10304	WL	10/10/2017	17108725	000075-15-0	Carbon Disulfide	N001	0.45	ug/L	U	F	0.45		F	G	STD
10304	WL	10/10/2017	17108725	000075-15-0	Carbon Disulfide	N002	0.45	ug/L	U	D	0.45		F	G	STD
10304	WL	10/10/2017	17108725	000056-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		F	G	STD
10304	WL	10/10/2017	17108725	000056-23-5	Carbon tetrachloride	N002	0.19	ug/L	U	D	0.19		F	G	STD
10304	WL	10/10/2017	17108725	000108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		F	G	STD
10304	WL	10/10/2017	17108725	000108-90-7	Chlorobenzene	N002	0.17	ug/L	U	D	0.17		F	G	STD
10304	WL	10/10/2017	17108725	000124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		F	G	STD
10304	WL	10/10/2017	17108725	000124-48-1	Chlorodibromomethane	N002	0.17	ug/L	U	D	0.17		F	G	STD
10304	WL	10/10/2017	17108725	000075-00-3	Chloroethane	N001	0.41	ug/L	U	F	0.41		F	G	STD
10304	WL	10/10/2017	17108725	000075-00-3	Chloroethane	N002	0.41	ug/L	U	D	0.41		F	G	STD
10304	WL	10/10/2017	17108725	000067-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		F	G	STD
10304	WL	10/10/2017	17108725	000067-66-3	Chloroform	N002	0.16	ug/L	U	D	0.16		F	G	STD
10304	WL	10/10/2017	17108725	000074-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		F	G	STD
10304	WL	10/10/2017	17108725	000074-87-3	Chloromethane	N002	0.3	ug/L	U	D	0.3		F	G	STD
10304	WL	10/10/2017	17108725	000156-59-2	cis-1,2-Dichloroethene	N001	2.5	ug/L		F	0.15		FJ	G	STD
10304	WL	10/10/2017	17108725	000156-59-2	cis-1,2-Dichloroethene	N002	1.6	ug/L		D	0.15		FJ	G	STD
10304	WL	10/10/2017	17108725	010061-01-5	cis-1,3-Dichloropropene	N001	0.16	ug/L	U	F	0.16		F	G	STD
10304	WL	10/10/2017	17108725	010061-01-5	cis-1,3-Dichloropropene	N002	0.16	ug/L	U	D	0.16		F	G	STD
10304	WL	10/10/2017	17108725	000074-95-3	Dibromomethane	N001	0.17	ug/L	U	F	0.17		F	G	STD
10304	WL	10/10/2017	17108725	000074-95-3	Dibromomethane	N002	0.17	ug/L	U	D	0.17		F	G	STD
10304	WL	10/10/2017	17108725	000075-71-8	Dichlorodifluoromethane	N001	0.31	ug/L	U	F	0.31		F	G	STD
10304	WL	10/10/2017	17108725	000075-71-8	Dichlorodifluoromethane	N002	0.31	ug/L	U	D	0.31		F	G	STD
10304	WL	10/10/2017	17108725	000100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		F	G	STD

Table 12. Analytical Results for Water Samples

LOCATION CODE	LOCATION TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS	COLLECTION METHOD	LAB CODE
10304	WL	10/10/2017	17108725	000100-41-4	Ethylbenzene	N002	0.16	ug/L	U	D	0.16		F	G	STD
10304	WL	10/10/2017	17108725	000087-68-3	Hexachlorobutadiene	N001	0.36	ug/L	U	F	0.36		F	G	STD
10304	WL	10/10/2017	17108725	000087-68-3	Hexachlorobutadiene	N002	0.36	ug/L	U	D	0.36		F	G	STD
10304	WL	10/10/2017	17108725	000098-82-8	Isopropylbenzene	N001	0.19	ug/L	U	F	0.19		F	G	STD
10304	WL	10/10/2017	17108725	000098-82-8	Isopropylbenzene	N002	0.19	ug/L	U	D	0.19		F	G	STD
10304	WL	10/10/2017	17108725	000075-09-2	Methylene chloride	N001	0.37	ug/L	JB	F	0.32		UF	G	STD
10304	WL	10/10/2017	17108725	000075-09-2	Methylene chloride	N002	0.46	ug/L	JB	D	0.32		UF	G	STD
10304	WL	10/10/2017	17108725	000091-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		F	G	STD
10304	WL	10/10/2017	17108725	000091-20-3	Naphthalene	N002	0.22	ug/L	U	D	0.22		F	G	STD
10304	WL	10/10/2017	17108725	000104-51-8	n-Butylbenzene	N001	0.32	ug/L	U	F	0.32		F	G	STD
10304	WL	10/10/2017	17108725	000104-51-8	n-Butylbenzene	N002	0.32	ug/L	U	D	0.32		F	G	STD
10304	WL	10/10/2017	17108725	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.019	mg/L	U	F	0.019		F	G	STD
10304	WL	10/10/2017	17108725	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N002	0.019	mg/L	U	D	0.019		F	G	STD
10304	WL	10/10/2017	17108725	000103-65-1	n-Propylbenzene	N001	0.16	ug/L	U	F	0.16		F	G	STD
10304	WL	10/10/2017	17108725	000103-65-1	n-Propylbenzene	N002	0.16	ug/L	U	D	0.16		F	G	STD
10304	WL	10/10/2017	17108725	000099-87-6	p-Isopropyltoluene	N001	0.2	ug/L	U	F	0.2		F	G	STD
10304	WL	10/10/2017	17108725	000099-87-6	p-Isopropyltoluene	N002	0.2	ug/L	U	D	0.2		F	G	STD
10304	WL	10/10/2017	17108725	000135-98-8	sec-Butylbenzene	N001	0.17	ug/L	U	F	0.17		F	G	STD
10304	WL	10/10/2017	17108725	000135-98-8	sec-Butylbenzene	N002	0.17	ug/L	U	D	0.17		F	G	STD
10304	WL	10/10/2017	17108725	000100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		F	G	STD
10304	WL	10/10/2017	17108725	000100-42-5	Styrene	N002	0.17	ug/L	U	D	0.17		F	G	STD
10304	WL	10/10/2017	17108725	000098-06-6	tert-Butylbenzene	N001	0.16	ug/L	U	F	0.16		F	G	STD
10304	WL	10/10/2017	17108725	000098-06-6	tert-Butylbenzene	N002	0.16	ug/L	U	D	0.16		F	G	STD
10304	WL	10/10/2017	17108725	000127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		F	G	STD
10304	WL	10/10/2017	17108725	000127-18-4	Tetrachloroethene	N002	0.2	ug/L	U	D	0.2		F	G	STD
10304	WL	10/10/2017	17108725	000108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		F	G	STD
10304	WL	10/10/2017	17108725	000108-88-3	Toluene	N002	0.17	ug/L	U	D	0.17		F	G	STD
10304	WL	10/10/2017	17108725	001330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		F	G	STD
10304	WL	10/10/2017	17108725	001330-20-7	Total Xylenes	N002	0.19	ug/L	U	D	0.19		F	G	STD
10304	WL	10/10/2017	17108725	000156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		F	G	STD
10304	WL	10/10/2017	17108725	000156-60-5	trans-1,2-Dichloroethene	N002	0.15	ug/L	U	D	0.15		F	G	STD
10304	WL	10/10/2017	17108725	010061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		F	G	STD
10304	WL	10/10/2017	17108725	010061-02-6	trans-1,3-dichloropropene	N002	0.19	ug/L	U	D	0.19		F	G	STD
10304	WL	10/10/2017	17108725	000079-01-6	Trichloroethene	N001	2.3	ug/L		F	0.16		FJ	G	STD
10304	WL	10/10/2017	17108725	000079-01-6	Trichloroethene	N002	1.1	ug/L		D	0.16		FJ	G	STD
10304	WL	10/10/2017	17108725	000075-69-4	Trichlorofluoromethane	N001	0.29	ug/L	U	F	0.29		F	G	STD
10304	WL	10/10/2017	17108725	000075-69-4	Trichlorofluoromethane	N002	0.29	ug/L	U	D	0.29		F	G	STD
10304	WL	10/10/2017	17108725	07440-61-1	Uranium	0001	16	ug/L		F	0.05		F	G	STD
10304	WL	10/10/2017	17108725	07440-61-1	Uranium	0002	16	ug/L		D	0.05		F	G	STD
10304	WL	10/10/2017	17108725	000075-01-4	Vinyl chloride	N001	0.1	ug/L	U	F	0.1		F	G	STD
10304	WL	10/10/2017	17108725	000075-01-4	Vinyl chloride	N002	0.1	ug/L	U	D	0.1		F	G	STD
10594	WL	10/11/2017	17108725	000630-20-6	1,1,1,2-Tetrachloroethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
10594	WL	10/11/2017	17108725	000071-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
10594	WL	10/11/2017	17108725	000079-34-5	1,1,2,2-Tetrachloroethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
10594	WL	10/11/2017	17108725	000079-00-5	1,1,2-Trichloroethane	N001	0.27	ug/L	U	F	0.27		FQ	G	STD
10594	WL	10/11/2017	17108725	000075-34-3	1,1-Dichloroethane	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
10594	WL	10/11/2017	17108725	000075-35-4	1,1-Dichloroethene	N001	0.23	ug/L	U	F	0.23		FQ	G	STD
10594	WL	10/11/2017	17108725	000563-58-6	1,1-Dichloropropene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
10594	WL	10/11/2017	17108725	000087-61-6	1,2,3-Trichlorobenzene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
10594	WL	10/11/2017	17108725	000096-18-4	1,2,3-Trichloropropane	N001	0.33	ug/L	U	F	0.33		FQ	G	STD
10594	WL	10/11/2017	17108725	000120-82-1	1,2,4-Trichlorobenzene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
10594	WL	10/11/2017	17108725	000095-63-6	1,2,4-Trimethylbenzene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
10594	WL	10/11/2017	17108725	000096-12-8	1,2-Dibromo-3-chloropropane	N001	0.47	ug/L	U	F	0.47		FQ	G	STD
10594	WL	10/11/2017	17108725	000106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
10594	WL	10/11/2017	17108725	000095-50-1	1,2-Dichlorobenzene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
10594	WL	10/11/2017	17108725	000107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		FQ	G	STD
10594	WL	10/11/2017	17108725	000078-87-5	1,2-Dichloropropane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD

Table 12. Analytical Results for Water Samples

LOCATION CODE	LOCATION TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS	COLLECTION METHOD	LAB CODE
10594	WL	10/11/2017	17108725	000108-67-8	1,3,5-Trimethylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
10594	WL	10/11/2017	17108725	000541-73-1	1,3-Dichlorobenzene	N001	0.46	ug/L	J	F	0.13		FQ	G	STD
10594	WL	10/11/2017	17108725	000142-28-9	1,3-Dichloropropane	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
10594	WL	10/11/2017	17108725	000106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
10594	WL	10/11/2017	17108725	000594-20-7	2,2-Dichloropropane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
10594	WL	10/11/2017	17108725	000078-93-3	2-Butanone	N001	2	ug/L	U	F	2		FQ	G	STD
10594	WL	10/11/2017	17108725	000095-49-8	2-Chlorotoluene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
10594	WL	10/11/2017	17108725	000591-78-6	2-Hexanone	N001	1.7	ug/L	U	F	1.7		FQ	G	STD
10594	WL	10/11/2017	17108725	000106-43-4	4-Chlorotoluene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
10594	WL	10/11/2017	17108725	000108-10-1	4-Methyl-2-Pentanone	N001	0.98	ug/L	U	F	0.98		FQ	G	STD
10594	WL	10/11/2017	17108725	000067-64-1	Acetone	N001	1.9	ug/L	U	F	1.9		FQ	G	STD
10594	WL	10/11/2017	17108725	000071-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
10594	WL	10/11/2017	17108725	000108-86-1	Bromobenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
10594	WL	10/11/2017	17108725	000074-97-5	Bromochloromethane	N001	0.1	ug/L	U	F	0.1		FQ	G	STD
10594	WL	10/11/2017	17108725	000075-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
10594	WL	10/11/2017	17108725	000075-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
10594	WL	10/11/2017	17108725	000074-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
10594	WL	10/11/2017	17108725	000075-15-0	Carbon Disulfide	N001	0.45	ug/L	U	F	0.45		FQ	G	STD
10594	WL	10/11/2017	17108725	000056-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
10594	WL	10/11/2017	17108725	000108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
10594	WL	10/11/2017	17108725	000124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
10594	WL	10/11/2017	17108725	000075-00-3	Chloroethane	N001	0.41	ug/L	U	F	0.41		FQ	G	STD
10594	WL	10/11/2017	17108725	000067-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
10594	WL	10/11/2017	17108725	000074-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		FQ	G	STD
10594	WL	10/11/2017	17108725	000156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
10594	WL	10/11/2017	17108725	010061-01-5	cis-1,3-Dichloropropene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
10594	WL	10/11/2017	17108725	000074-95-3	Dibromomethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
10594	WL	10/11/2017	17108725	000075-71-8	Dichlorodifluoromethane	N001	0.31	ug/L	U	F	0.31		FQ	G	STD
10594	WL	10/11/2017	17108725	000100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
10594	WL	10/11/2017	17108725	000087-68-3	Hexachlorobutadiene	N001	0.36	ug/L	U	F	0.36		FQ	G	STD
10594	WL	10/11/2017	17108725	000098-82-8	Isopropylbenzene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
10594	WL	10/11/2017	17108725	000075-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		FQ	G	STD
10594	WL	10/11/2017	17108725	000091-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
10594	WL	10/11/2017	17108725	000104-51-8	n-Butylbenzene	N001	0.32	ug/L	U	F	0.32		FQ	G	STD
10594	WL	10/11/2017	17108725	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.89	mg/L		F	0.019		FQ	G	STD
10594	WL	10/11/2017	17108725	000103-65-1	n-Propylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
10594	WL	10/11/2017	17108725	000099-87-6	p-Isopropyltoluene	N001	0.2	ug/L	U	F	0.2		FQ	G	STD
10594	WL	10/11/2017	17108725	000135-98-8	sec-Butylbenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
10594	WL	10/11/2017	17108725	000100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
10594	WL	10/11/2017	17108725	000098-06-6	tert-Butylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
10594	WL	10/11/2017	17108725	000127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		FQ	G	STD
10594	WL	10/11/2017	17108725	000108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
10594	WL	10/11/2017	17108725	001330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
10594	WL	10/11/2017	17108725	000156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
10594	WL	10/11/2017	17108725	010061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
10594	WL	10/11/2017	17108725	000079-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
10594	WL	10/11/2017	17108725	000075-69-4	Trichlorofluoromethane	N001	0.29	ug/L	U	F	0.29		FQ	G	STD
10594	WL	10/11/2017	17108725	07440-61-1	Uranium	0001	79	ug/L		F	0.05		FQ	G	STD
10594	WL	10/11/2017	17108725	000075-01-4	Vinyl chloride	N001	0.1	ug/L	U	F	0.1		FQ	G	STD
11104	WL	10/12/2017	17108725	000630-20-6	1,1,1,2-Tetrachloroethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
11104	WL	10/12/2017	17108725	000071-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
11104	WL	10/12/2017	17108725	000079-34-5	1,1,2,2-Tetrachloroethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
11104	WL	10/12/2017	17108725	000079-00-5	1,1,2-Trichloroethane	N001	0.27	ug/L	U	F	0.27		FQ	G	STD
11104	WL	10/12/2017	17108725	000075-34-3	1,1-Dichloroethane	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
11104	WL	10/12/2017	17108725	000075-35-4	1,1-Dichloroethene	N001	0.23	ug/L	U	F	0.23		FQ	G	STD
11104	WL	10/12/2017	17108725	000563-58-6	1,1-Dichloropropene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
11104	WL	10/12/2017	17108725	000087-61-6	1,2,3-Trichlorobenzene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD

Table 12. Analytical Results for Water Samples

LOCATION CODE	LOCATION TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS	COLLECTION METHOD	LAB CODE
11104	WL	10/12/2017	17108725	000096-18-4	1,2,3-Trichloropropane	N001	0.33	ug/L	U	F	0.33		FQ	G	STD
11104	WL	10/12/2017	17108725	000120-82-1	1,2,4-Trichlorobenzene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
11104	WL	10/12/2017	17108725	000095-63-6	1,2,4-Trimethylbenzene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
11104	WL	10/12/2017	17108725	000096-12-8	1,2-Dibromo-3-chloropropane	N001	0.47	ug/L	U	F	0.47		FQ	G	STD
11104	WL	10/12/2017	17108725	000106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
11104	WL	10/12/2017	17108725	000095-50-1	1,2-Dichlorobenzene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
11104	WL	10/12/2017	17108725	000107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		FQ	G	STD
11104	WL	10/12/2017	17108725	000078-87-5	1,2-Dichloropropane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
11104	WL	10/12/2017	17108725	000108-67-8	1,3,5-Trimethylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
11104	WL	10/12/2017	17108725	000541-73-1	1,3-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		FQ	G	STD
11104	WL	10/12/2017	17108725	000142-28-9	1,3-Dichloropropane	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
11104	WL	10/12/2017	17108725	000106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
11104	WL	10/12/2017	17108725	000594-20-7	2,2-Dichloropropane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
11104	WL	10/12/2017	17108725	000078-93-3	2-Butanone	N001	2	ug/L	U	F	2		FQ	G	STD
11104	WL	10/12/2017	17108725	000095-49-8	2-Chlorotoluene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
11104	WL	10/12/2017	17108725	000591-78-6	2-Hexanone	N001	1.7	ug/L	U	F	1.7		FQ	G	STD
11104	WL	10/12/2017	17108725	000106-43-4	4-Chlorotoluene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
11104	WL	10/12/2017	17108725	000108-10-1	4-Methyl-2-Pentanone	N001	0.98	ug/L	U	F	0.98		FQ	G	STD
11104	WL	10/12/2017	17108725	000067-64-1	Acetone	N001	1.9	ug/L	U	F	1.9		FQ	G	STD
11104	WL	10/12/2017	17108725	000071-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
11104	WL	10/12/2017	17108725	000108-86-1	Bromobenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
11104	WL	10/12/2017	17108725	000074-97-5	Bromochloromethane	N001	0.1	ug/L	U	F	0.1		FQ	G	STD
11104	WL	10/12/2017	17108725	000075-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
11104	WL	10/12/2017	17108725	000075-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
11104	WL	10/12/2017	17108725	000074-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
11104	WL	10/12/2017	17108725	000075-15-0	Carbon Disulfide	N001	0.45	ug/L	U	F	0.45		FQ	G	STD
11104	WL	10/12/2017	17108725	000056-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
11104	WL	10/12/2017	17108725	000108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
11104	WL	10/12/2017	17108725	000124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
11104	WL	10/12/2017	17108725	000075-00-3	Chloroethane	N001	0.41	ug/L	U	F	0.41		FQ	G	STD
11104	WL	10/12/2017	17108725	000067-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
11104	WL	10/12/2017	17108725	000074-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		FQ	G	STD
11104	WL	10/12/2017	17108725	000156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
11104	WL	10/12/2017	17108725	010061-01-5	cis-1,3-Dichloropropene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
11104	WL	10/12/2017	17108725	000074-95-3	Dibromomethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
11104	WL	10/12/2017	17108725	000075-71-8	Dichlorodifluoromethane	N001	0.31	ug/L	U	F	0.31		FQ	G	STD
11104	WL	10/12/2017	17108725	000100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
11104	WL	10/12/2017	17108725	000087-68-3	Hexachlorobutadiene	N001	0.36	ug/L	U	F	0.36		FQ	G	STD
11104	WL	10/12/2017	17108725	000098-82-8	Isopropylbenzene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
11104	WL	10/12/2017	17108725	000075-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		FQ	G	STD
11104	WL	10/12/2017	17108725	000091-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
11104	WL	10/12/2017	17108725	000104-51-8	n-Butylbenzene	N001	0.32	ug/L	U	F	0.32		FQ	G	STD
11104	WL	10/12/2017	17108725	000103-65-1	n-Propylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
11104	WL	10/12/2017	17108725	000099-87-6	p-Isopropyltoluene	N001	0.2	ug/L	U	F	0.2		FQ	G	STD
11104	WL	10/12/2017	17108725	000135-98-8	sec-Butylbenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
11104	WL	10/12/2017	17108725	000100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
11104	WL	10/12/2017	17108725	000098-06-6	tert-Butylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
11104	WL	10/12/2017	17108725	000127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		FQ	G	STD
11104	WL	10/12/2017	17108725	000108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
11104	WL	10/12/2017	17108725	001330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
11104	WL	10/12/2017	17108725	000156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
11104	WL	10/12/2017	17108725	010061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
11104	WL	10/12/2017	17108725	000079-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
11104	WL	10/12/2017	17108725	000075-69-4	Trichlorofluoromethane	N001	0.29	ug/L	U	F	0.29		FQ	G	STD
11104	WL	10/12/2017	17108725	07440-61-1	Uranium	0001	29	ug/L		F	0.05		FQ	G	STD
11104	WL	10/12/2017	17108725	000075-01-4	Vinyl chloride	N001	0.1	ug/L	U	F	0.1		FQ	G	STD
42505	WL	10/10/2017	17108725	000630-20-6	1,1,1,2-Tetrachloroethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD

Table 12. Analytical Results for Water Samples

LOCATION CODE	LOCATION TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS	COLLECTION METHOD	LAB CODE
42505	WL	10/10/2017	17108725	000071-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
42505	WL	10/10/2017	17108725	000079-34-5	1,1,2,2-Tetrachloroethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
42505	WL	10/10/2017	17108725	000079-00-5	1,1,2-Trichloroethane	N001	0.27	ug/L	U	F	0.27		FQ	G	STD
42505	WL	10/10/2017	17108725	000075-34-3	1,1-Dichloroethane	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
42505	WL	10/10/2017	17108725	000075-35-4	1,1-Dichloroethene	N001	0.23	ug/L	U	F	0.23		FQ	G	STD
42505	WL	10/10/2017	17108725	000563-58-6	1,1-Dichloropropene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
42505	WL	10/10/2017	17108725	000087-61-6	1,2,3-Trichlorobenzene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
42505	WL	10/10/2017	17108725	000096-18-4	1,2,3-Trichloropropane	N001	0.33	ug/L	U	F	0.33		FQ	G	STD
42505	WL	10/10/2017	17108725	000120-82-1	1,2,4-Trichlorobenzene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
42505	WL	10/10/2017	17108725	000095-63-6	1,2,4-Trimethylbenzene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
42505	WL	10/10/2017	17108725	000096-12-8	1,2-Dibromo-3-chloropropane	N001	0.47	ug/L	U	F	0.47		FQ	G	STD
42505	WL	10/10/2017	17108725	000106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
42505	WL	10/10/2017	17108725	000095-50-1	1,2-Dichlorobenzene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
42505	WL	10/10/2017	17108725	000107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		FQ	G	STD
42505	WL	10/10/2017	17108725	000078-87-5	1,2-Dichloropropane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
42505	WL	10/10/2017	17108725	000108-67-8	1,3,5-Trimethylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
42505	WL	10/10/2017	17108725	000541-73-1	1,3-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		FQ	G	STD
42505	WL	10/10/2017	17108725	000142-28-9	1,3-Dichloropropane	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
42505	WL	10/10/2017	17108725	000106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
42505	WL	10/10/2017	17108725	000594-20-7	2,2-Dichloropropane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
42505	WL	10/10/2017	17108725	000078-93-3	2-Butanone	N001	2	ug/L	U	F	2		FQ	G	STD
42505	WL	10/10/2017	17108725	000095-49-8	2-Chlorotoluene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
42505	WL	10/10/2017	17108725	000591-78-6	2-Hexanone	N001	1.7	ug/L	U	F	1.7		FQ	G	STD
42505	WL	10/10/2017	17108725	000106-43-4	4-Chlorotoluene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
42505	WL	10/10/2017	17108725	000108-10-1	4-Methyl-2-Pentanone	N001	0.98	ug/L	U	F	0.98		FQ	G	STD
42505	WL	10/10/2017	17108725	000067-64-1	Acetone	N001	1.9	ug/L	U	F	1.9		FQ	G	STD
42505	WL	10/10/2017	17108725	000071-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
42505	WL	10/10/2017	17108725	000108-86-1	Bromobenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
42505	WL	10/10/2017	17108725	000074-97-5	Bromochloromethane	N001	0.1	ug/L	U	F	0.1		FQ	G	STD
42505	WL	10/10/2017	17108725	000075-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
42505	WL	10/10/2017	17108725	000075-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
42505	WL	10/10/2017	17108725	000074-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
42505	WL	10/10/2017	17108725	000075-15-0	Carbon Disulfide	N001	0.45	ug/L	U	F	0.45		FQ	G	STD
42505	WL	10/10/2017	17108725	000056-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
42505	WL	10/10/2017	17108725	000108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
42505	WL	10/10/2017	17108725	000124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
42505	WL	10/10/2017	17108725	000075-00-3	Chloroethane	N001	0.41	ug/L	U	F	0.41		FQ	G	STD
42505	WL	10/10/2017	17108725	000067-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
42505	WL	10/10/2017	17108725	000074-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		FQ	G	STD
42505	WL	10/10/2017	17108725	000156-59-2	cis-1,2-Dichloroethene	N001	1.5	ug/L		F	0.15		FQ	G	STD
42505	WL	10/10/2017	17108725	010061-01-5	cis-1,3-Dichloropropene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
42505	WL	10/10/2017	17108725	000074-95-3	Dibromomethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
42505	WL	10/10/2017	17108725	000075-71-8	Dichlorodifluoromethane	N001	0.31	ug/L	U	F	0.31		FQ	G	STD
42505	WL	10/10/2017	17108725	000100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
42505	WL	10/10/2017	17108725	000087-68-3	Hexachlorobutadiene	N001	0.36	ug/L	U	F	0.36		FQ	G	STD
42505	WL	10/10/2017	17108725	000098-82-8	Isopropylbenzene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
42505	WL	10/10/2017	17108725	000075-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		FQ	G	STD
42505	WL	10/10/2017	17108725	000091-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
42505	WL	10/10/2017	17108725	000104-51-8	n-Butylbenzene	N001	0.32	ug/L	U	F	0.32		FQ	G	STD
42505	WL	10/10/2017	17108725	000103-65-1	n-Propylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
42505	WL	10/10/2017	17108725	000099-87-6	p-Isopropyltoluene	N001	0.2	ug/L	U	F	0.2		FQ	G	STD
42505	WL	10/10/2017	17108725	000135-98-8	sec-Butylbenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
42505	WL	10/10/2017	17108725	000100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
42505	WL	10/10/2017	17108725	000098-06-6	tert-Butylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
42505	WL	10/10/2017	17108725	000127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		FQ	G	STD
42505	WL	10/10/2017	17108725	000108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
42505	WL	10/10/2017	17108725	001330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		FQ	G	STD

Table 12. Analytical Results for Water Samples

LOCATION CODE	LOCATION TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS	COLLECTION METHOD	LAB CODE
42505	WL	10/10/2017	17108725	000156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
42505	WL	10/10/2017	17108725	010061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
42505	WL	10/10/2017	17108725	000079-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
42505	WL	10/10/2017	17108725	000075-69-4	Trichlorofluoromethane	N001	0.29	ug/L	U	F	0.29		FQ	G	STD
42505	WL	10/10/2017	17108725	000075-01-4	Vinyl chloride	N001	0.1	ug/L	U	F	0.1		FQ	G	STD
89104	WL	10/11/2017	17108725	000630-20-6	1,1,1,2-Tetrachloroethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
89104	WL	10/11/2017	17108725	000071-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
89104	WL	10/11/2017	17108725	000079-34-5	1,1,2,2-Tetrachloroethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
89104	WL	10/11/2017	17108725	000079-00-5	1,1,2-Trichloroethane	N001	0.27	ug/L	U	F	0.27		FQ	G	STD
89104	WL	10/11/2017	17108725	000075-34-3	1,1-Dichloroethane	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
89104	WL	10/11/2017	17108725	000075-35-4	1,1-Dichloroethene	N001	0.23	ug/L	U	F	0.23		FQ	G	STD
89104	WL	10/11/2017	17108725	000563-58-6	1,1-Dichloropropene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
89104	WL	10/11/2017	17108725	000087-61-6	1,2,3-Trichlorobenzene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
89104	WL	10/11/2017	17108725	000096-18-4	1,2,3-Trichloropropane	N001	0.33	ug/L	U	F	0.33		FQ	G	STD
89104	WL	10/11/2017	17108725	000120-82-1	1,2,4-Trichlorobenzene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
89104	WL	10/11/2017	17108725	000095-63-6	1,2,4-Trimethylbenzene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
89104	WL	10/11/2017	17108725	000096-12-8	1,2-Dibromo-3-chloropropane	N001	0.47	ug/L	U	F	0.47		FQ	G	STD
89104	WL	10/11/2017	17108725	000106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
89104	WL	10/11/2017	17108725	000095-50-1	1,2-Dichlorobenzene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
89104	WL	10/11/2017	17108725	000107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		FQ	G	STD
89104	WL	10/11/2017	17108725	000078-87-5	1,2-Dichloropropane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
89104	WL	10/11/2017	17108725	000108-67-8	1,3,5-Trimethylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
89104	WL	10/11/2017	17108725	000541-73-1	1,3-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		FQ	G	STD
89104	WL	10/11/2017	17108725	000142-28-9	1,3-Dichloropropane	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
89104	WL	10/11/2017	17108725	000106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
89104	WL	10/11/2017	17108725	000594-20-7	2,2-Dichloropropane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
89104	WL	10/11/2017	17108725	000078-93-3	2-Butanone	N001	2	ug/L	U	F	2		FQ	G	STD
89104	WL	10/11/2017	17108725	000095-49-8	2-Chlorotoluene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
89104	WL	10/11/2017	17108725	000591-78-6	2-Hexanone	N001	1.7	ug/L	U	F	1.7		FQ	G	STD
89104	WL	10/11/2017	17108725	000106-43-4	4-Chlorotoluene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
89104	WL	10/11/2017	17108725	000108-10-1	4-Methyl-2-Pentanone	N001	0.98	ug/L	U	F	0.98		FQ	G	STD
89104	WL	10/11/2017	17108725	000067-64-1	Acetone	N001	1.9	ug/L	U	F	1.9		FQ	G	STD
89104	WL	10/11/2017	17108725	000071-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
89104	WL	10/11/2017	17108725	000108-86-1	Bromobenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
89104	WL	10/11/2017	17108725	000074-97-5	Bromochloromethane	N001	0.1	ug/L	U	F	0.1		FQ	G	STD
89104	WL	10/11/2017	17108725	000075-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
89104	WL	10/11/2017	17108725	000075-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
89104	WL	10/11/2017	17108725	000074-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
89104	WL	10/11/2017	17108725	000075-15-0	Carbon Disulfide	N001	0.45	ug/L	U	F	0.45		FQ	G	STD
89104	WL	10/11/2017	17108725	000056-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
89104	WL	10/11/2017	17108725	000108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
89104	WL	10/11/2017	17108725	000124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
89104	WL	10/11/2017	17108725	000075-00-3	Chloroethane	N001	0.41	ug/L	U	F	0.41		FQ	G	STD
89104	WL	10/11/2017	17108725	000067-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
89104	WL	10/11/2017	17108725	000074-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		FQ	G	STD
89104	WL	10/11/2017	17108725	000156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
89104	WL	10/11/2017	17108725	010061-01-5	cis-1,3-Dichloropropene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
89104	WL	10/11/2017	17108725	000074-95-3	Dibromomethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
89104	WL	10/11/2017	17108725	000075-71-8	Dichlorodifluoromethane	N001	0.31	ug/L	U	F	0.31		FQ	G	STD
89104	WL	10/11/2017	17108725	000100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
89104	WL	10/11/2017	17108725	000087-68-3	Hexachlorobutadiene	N001	0.36	ug/L	U	F	0.36		FQ	G	STD
89104	WL	10/11/2017	17108725	000098-82-8	Isopropylbenzene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
89104	WL	10/11/2017	17108725	000075-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		FQ	G	STD
89104	WL	10/11/2017	17108725	000091-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
89104	WL	10/11/2017	17108725	000104-51-8	n-Butylbenzene	N001	0.32	ug/L	U	F	0.32		FQ	G	STD
89104	WL	10/11/2017	17108725	000103-65-1	n-Propylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
89104	WL	10/11/2017	17108725	000099-87-6	p-Isopropyltoluene	N001	0.2	ug/L	U	F	0.2		FQ	G	STD

Table 12. Analytical Results for Water Samples

LOCATION CODE	LOCATION TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS	COLLECTION METHOD	LAB CODE
89104	WL	10/11/2017	17108725	000135-98-8	sec-Butylbenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
89104	WL	10/11/2017	17108725	000100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
89104	WL	10/11/2017	17108725	000098-06-6	tert-Butylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
89104	WL	10/11/2017	17108725	000127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		FQ	G	STD
89104	WL	10/11/2017	17108725	000108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
89104	WL	10/11/2017	17108725	001330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
89104	WL	10/11/2017	17108725	000156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
89104	WL	10/11/2017	17108725	010061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
89104	WL	10/11/2017	17108725	000079-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
89104	WL	10/11/2017	17108725	000075-69-4	Trichlorofluoromethane	N001	0.29	ug/L	U	F	0.29		FQ	G	STD
89104	WL	10/11/2017	17108725	000075-01-4	Vinyl chloride	N001	0.1	ug/L	U	F	0.1		FQ	G	STD
A1EFF	SL	10/4/2017	17108728	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	4.1	mg/L		F	0.019		valid	G	STD
A1EFF	SL	10/4/2017	17108728	07440-61-1	Uranium	N001	9.1	ug/L		F	0.05		valid	G	STD
A1EFF	SL	10/16/2017	17108737	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	4.1	mg/L		F	0.019		valid	G	STD
A1EFF	SL	10/16/2017	17108737	07440-61-1	Uranium	N001	17	ug/L		F	0.05		valid	G	STD
A1EFF	SL	11/2/2017	17118754	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	2.9	mg/L		F	0.019		valid	G	STD
A1EFF	SL	11/2/2017	17118754	07440-61-1	Uranium	N001	29	ug/L		F	0.05		valid	G	STD
A1EFF	SL	11/16/2017	17118778	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	4.6	mg/L		F	0.019		valid	G	STD
A1EFF	SL	11/16/2017	17118778	07440-61-1	Uranium	N001	26	ug/L		F	0.05		valid	G	STD
A1EFF	SL	11/29/2017	17118796	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	3.8	mg/L		F	0.019		valid	G	STD
A1EFF	SL	11/29/2017	17118796	07440-61-1	Uranium	N001	28	ug/L		F	0.05		valid	G	STD
A1EFF	SL	12/13/2017	17128815	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N002	5.2	mg/L		F	0.019		valid	G	STD
A1EFF	SL	12/13/2017	17128815	07440-61-1	Uranium	N002	29	ug/L		F	0.05		valid	G	STD
A2EFF	SL	10/16/2017	17108737	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	3.2	mg/L		F	0.019		valid	G	STD
A2EFF	SL	10/16/2017	17108737	07440-61-1	Uranium	N001	24	ug/L		F	0.05		valid	G	STD
A2EFF	SL	11/2/2017	17118754	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.46	mg/L		F	0.019		valid	G	STD
A2EFF	SL	11/2/2017	17118754	07440-61-1	Uranium	N001	34	ug/L		F	0.05		valid	G	STD
A2EFF	SL	11/16/2017	17118778	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.92	mg/L		F	0.019		valid	G	STD
A2EFF	SL	11/16/2017	17118778	07440-61-1	Uranium	N001	39	ug/L		F	0.05		valid	G	STD
A2EFF	SL	11/29/2017	17118796	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.19	mg/L		F	0.019		valid	G	STD
A2EFF	SL	11/29/2017	17118796	07440-61-1	Uranium	N001	39	ug/L		F	0.05		valid	G	STD
A2EFF	SL	12/13/2017	17128815	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N002	0.82	mg/L		F	0.019		valid	G	STD
A2EFF	SL	12/13/2017	17128815	07440-61-1	Uranium	N002	38	ug/L		F	0.05		valid	G	STD
A3EFF	SL	10/16/2017	17108737	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	3.4	mg/L		F	0.019		valid	G	STD
A3EFF	SL	10/16/2017	17108737	07440-61-1	Uranium	N001	25	ug/L		F	0.05		valid	G	STD
A3EFF	SL	11/2/2017	17118754	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.019	mg/L	U	F	0.019		valid	G	STD
A3EFF	SL	11/2/2017	17118754	07440-61-1	Uranium	N001	29	ug/L		F	0.05		valid	G	STD
A3EFF	SL	11/16/2017	17118778	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.019	mg/L	U	F	0.019		valid	G	STD
A3EFF	SL	11/16/2017	17118778	07440-61-1	Uranium	N001	37	ug/L		F	0.05		valid	G	STD
A3EFF	SL	11/29/2017	17118796	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.019	mg/L	U	F	0.019		valid	G	STD
A3EFF	SL	11/29/2017	17118796	07440-61-1	Uranium	N001	38	ug/L		F	0.05		valid	G	STD
A3EFF	SL	12/13/2017	17128815	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N002	0.019	mg/L	U	F	0.019		valid	G	STD
A3EFF	SL	12/13/2017	17128815	07440-61-1	Uranium	N002	34	ug/L		F	0.05		valid	G	STD
B206989	WL	10/12/2017	17108725	000630-20-6	1,1,1,2-Tetrachloroethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
B206989	WL	10/12/2017	17108725	000071-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
B206989	WL	10/12/2017	17108725	000079-34-5	1,1,2,2-Tetrachloroethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
B206989	WL	10/12/2017	17108725	000079-00-5	1,1,2-Trichloroethane	N001	0.27	ug/L	U	F	0.27		FQ	G	STD
B206989	WL	10/12/2017	17108725	000075-34-3	1,1-Dichloroethane	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
B206989	WL	10/12/2017	17108725	000075-35-4	1,1-Dichloroethene	N001	0.23	ug/L	U	F	0.23		FQ	G	STD
B206989	WL	10/12/2017	17108725	000563-58-6	1,1-Dichloropropene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
B206989	WL	10/12/2017	17108725	000087-61-6	1,2,3-Trichlorobenzene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
B206989	WL	10/12/2017	17108725	000096-18-4	1,2,3-Trichloropropane	N001	0.33	ug/L	U	F	0.33		FQ	G	STD
B206989	WL	10/12/2017	17108725	000120-82-1	1,2,4-Trichlorobenzene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
B206989	WL	10/12/2017	17108725	000095-63-6	1,2,4-Trimethylbenzene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
B206989	WL	10/12/2017	17108725	000096-12-8	1,2-Dibromo-3-chloropropane	N001	0.47	ug/L	U	F	0.47		FQ	G	STD
B206989	WL	10/12/2017	17108725	000106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
B206989	WL	10/12/2017	17108725	000095-50-1	1,2-Dichlorobenzene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD

Table 12. Analytical Results for Water Samples

LOCATION CODE	LOCATION TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS	COLLECTION METHOD	LAB CODE
B206989	WL	10/12/2017	17108725	000107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		FQ	G	STD
B206989	WL	10/12/2017	17108725	000078-87-5	1,2-Dichloropropane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
B206989	WL	10/12/2017	17108725	000108-67-8	1,3,5-Trimethylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
B206989	WL	10/12/2017	17108725	000541-73-1	1,3-Dichlorobenzene	N001	0.44	ug/L	J	F	0.13		FQ	G	STD
B206989	WL	10/12/2017	17108725	000142-28-9	1,3-Dichloropropane	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
B206989	WL	10/12/2017	17108725	000106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
B206989	WL	10/12/2017	17108725	000594-20-7	2,2-Dichloropropane	N001	0.18	ug/L	U	F	0.18		FQ	G	STD
B206989	WL	10/12/2017	17108725	000078-93-3	2-Butanone	N001	2	ug/L	U	F	2		FQ	G	STD
B206989	WL	10/12/2017	17108725	000095-49-8	2-Chlorotoluene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
B206989	WL	10/12/2017	17108725	000591-78-6	2-Hexanone	N001	1.7	ug/L	U	F	1.7		FQ	G	STD
B206989	WL	10/12/2017	17108725	000106-43-4	4-Chlorotoluene	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
B206989	WL	10/12/2017	17108725	000108-10-1	4-Methyl-2-Pentanone	N001	0.98	ug/L	U	F	0.98		FQ	G	STD
B206989	WL	10/12/2017	17108725	000067-64-1	Acetone	N001	1.9	ug/L	U	F	1.9		FQ	G	STD
B206989	WL	10/12/2017	17108725	000071-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
B206989	WL	10/12/2017	17108725	000108-86-1	Bromobenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
B206989	WL	10/12/2017	17108725	000074-97-5	Bromochloromethane	N001	0.1	ug/L	U	F	0.1		FQ	G	STD
B206989	WL	10/12/2017	17108725	000075-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
B206989	WL	10/12/2017	17108725	000075-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
B206989	WL	10/12/2017	17108725	000074-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		FQ	G	STD
B206989	WL	10/12/2017	17108725	000075-15-0	Carbon Disulfide	N001	0.45	ug/L	U	F	0.45		FQ	G	STD
B206989	WL	10/12/2017	17108725	000056-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
B206989	WL	10/12/2017	17108725	000108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
B206989	WL	10/12/2017	17108725	000124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
B206989	WL	10/12/2017	17108725	000075-00-3	Chloroethane	N001	0.41	ug/L	U	F	0.41		FQ	G	STD
B206989	WL	10/12/2017	17108725	000067-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
B206989	WL	10/12/2017	17108725	000074-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		FQ	G	STD
B206989	WL	10/12/2017	17108725	000156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
B206989	WL	10/12/2017	17108725	010061-01-5	cis-1,3-Dichloropropene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
B206989	WL	10/12/2017	17108725	000074-95-3	Dibromomethane	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
B206989	WL	10/12/2017	17108725	000075-71-8	Dichlorodifluoromethane	N001	0.31	ug/L	U	F	0.31		FQ	G	STD
B206989	WL	10/12/2017	17108725	000100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
B206989	WL	10/12/2017	17108725	000087-68-3	Hexachlorobutadiene	N001	0.36	ug/L	U	F	0.36		FQ	G	STD
B206989	WL	10/12/2017	17108725	000098-82-8	Isopropylbenzene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
B206989	WL	10/12/2017	17108725	000075-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		FQ	G	STD
B206989	WL	10/12/2017	17108725	000091-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		FQ	G	STD
B206989	WL	10/12/2017	17108725	000104-51-8	n-Butylbenzene	N001	0.32	ug/L	U	F	0.32		FQ	G	STD
B206989	WL	10/12/2017	17108725	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	6.2	mg/L		F	0.019		FQ	G	STD
B206989	WL	10/12/2017	17108725	000103-65-1	n-Propylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
B206989	WL	10/12/2017	17108725	000099-87-6	p-Isopropyltoluene	N001	0.2	ug/L	U	F	0.2		FQ	G	STD
B206989	WL	10/12/2017	17108725	000135-98-8	sec-Butylbenzene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
B206989	WL	10/12/2017	17108725	000100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
B206989	WL	10/12/2017	17108725	000098-06-6	tert-Butylbenzene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
B206989	WL	10/12/2017	17108725	000127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		FQ	G	STD
B206989	WL	10/12/2017	17108725	000108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		FQ	G	STD
B206989	WL	10/12/2017	17108725	001330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
B206989	WL	10/12/2017	17108725	000156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		FQ	G	STD
B206989	WL	10/12/2017	17108725	010061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		FQ	G	STD
B206989	WL	10/12/2017	17108725	000079-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		FQ	G	STD
B206989	WL	10/12/2017	17108725	000075-69-4	Trichlorofluoromethane	N001	0.29	ug/L	U	F	0.29		FQ	G	STD
B206989	WL	10/12/2017	17108725	07440-61-1	Uranium	0001	89	ug/L		F	0.05		FQ	G	STD
B206989	WL	10/12/2017	17108725	000075-01-4	Vinyl chloride	N001	0.1	ug/L	U	F	0.1		FQ	G	STD
B3OUTFLOW	SL	10/4/2017	17108728	07440-61-1	Uranium	N001	23	ug/L		F	0.05		valid	G	STD
B3OUTFLOW	SL	10/16/2017	17108737	07440-61-1	Uranium	N001	19	ug/L		F	0.05		valid	G	STD
B3OUTFLOW	SL	11/2/2017	17118754	07440-61-1	Uranium	N001	25	ug/L		F	0.05		valid	G	STD
B3OUTFLOW	SL	11/16/2017	17118778	07440-61-1	Uranium	N001	23	ug/L		F	0.05		valid	G	STD
B3OUTFLOW	SL	11/29/2017	17118796	07440-61-1	Uranium	N001	21	ug/L		F	0.05		valid	G	STD
B3OUTFLOW	SL	12/13/2017	17128815	07440-61-1	Uranium	N002	21	ug/L		F	0.05		valid	G	STD

Table 12. Analytical Results for Water Samples

LOCATION CODE	LOCATION TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS	COLLECTION METHOD	LAB CODE
B5INFLOW	SL	6/28/2017	17118787	07440-61-1	Uranium	N001	25.2	ug/L		F	0.067		valid	C	GEN
B5INFLOW	SL	10/4/2017	17108728	07440-61-1	Uranium	N001	21	ug/L		F	0.05		valid	G	STD
B5INFLOW	SL	10/16/2017	17108737	07440-61-1	Uranium	N001	25	ug/L		F	0.05		valid	G	STD
B5INFLOW	SL	11/2/2017	17118754	07440-61-1	Uranium	N001	25	ug/L		F	0.05		valid	G	STD
B5INFLOW	SL	11/16/2017	17118778	07440-61-1	Uranium	N001	26	ug/L		F	0.05		valid	G	STD
B5INFLOW	SL	11/29/2017	17118796	07440-61-1	Uranium	N001	25	ug/L		F	0.05		valid	G	STD
B5INFLOW	SL	12/13/2017	17128815	07440-61-1	Uranium	N002	29	ug/L		F	0.05		valid	G	STD
GS08	SL	11/29/2017	17118796	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.15	mg/L		F	0.019		valid	G	STD
GS08	SL	11/29/2017	17118796	07440-61-1	Uranium	N001	16	ug/L		F	0.05		valid	G	STD
GS08	SL	12/13/2017	17128815	07440-61-1	Uranium	N002	16	ug/L		F	0.05		valid	G	STD
GS10	SL	6/29/2017	17068616	07440-61-1	Uranium	N001	8.5	ug/L		F	0.05		valid	G	STD
GS10	SL	7/10/2017	17078631	07440-61-1	Uranium	N001	8.1	ug/L		F	0.05		valid	G	STD
GS10	SL	7/24/2017	17078651	07440-61-1	Uranium	N001	5.4	ug/L		F	0.05		valid	G	STD
GS10	SL	8/9/2017	17088662	07440-61-1	Uranium	N001	6.7	ug/L		F	0.05		valid	G	STD
GS10	SL	8/21/2017	17088676	07440-61-1	Uranium	N001	4.2	ug/L		F	0.05		valid	G	STD
GS10	SL	8/21/2017	17088676	07440-61-1	Uranium	N002	4.5	ug/L		D	0.05		valid	G	STD
GS10	SL	10/4/2017	17108728	07440-61-1	Uranium	N001	14	ug/L		F	0.05		valid	G	STD
GS10	SL	10/16/2017	17108737	07440-61-1	Uranium	N001	16	ug/L		F	0.05		valid	G	STD
GS10	SL	10/16/2017	17108737	07440-61-1	Uranium	N002	17	ug/L		D	0.05		valid	G	STD
GS10	SL	11/2/2017	17118754	07440-61-1	Uranium	N001	16	ug/L		F	0.05		valid	G	STD
GS10	SL	11/16/2017	17118778	07440-61-1	Uranium	N001	17	ug/L		F	0.05		valid	G	STD
GS10	SL	11/29/2017	17118796	07440-61-1	Uranium	N001	17	ug/L		F	0.05		valid	G	STD
GS10	SL	12/13/2017	17128815	07440-61-1	Uranium	N002	19	ug/L		F	0.05		valid	G	STD
GS13	SL	6/29/2017	17068616	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.019	mg/L	U	F	0.019		valid	G	STD
GS13	SL	6/29/2017	17068616	07440-61-1	Uranium	N001	22	ug/L		F	0.05		valid	G	STD
GS13	SL	7/10/2017	17078631	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.019	mg/L	U	F	0.019		valid	G	STD
GS13	SL	7/10/2017	17078631	07440-61-1	Uranium	N001	22	ug/L		F	0.05		valid	G	STD
GS13	SL	10/4/2017	17108728	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	12	mg/L		F	0.038		valid	G	STD
GS13	SL	10/4/2017	17108728	07440-61-1	Uranium	N001	18	ug/L		F	0.05		valid	G	STD
GS13	SL	10/11/2017	17108725	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	5.7	mg/L		F	0.019		valid	G	STD
GS13	SL	10/16/2017	17108737	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	8	mg/L		F	0.019		valid	G	STD
GS13	SL	10/16/2017	17108737	07440-61-1	Uranium	N001	19	ug/L		F	0.05		valid	G	STD
GS13	SL	11/2/2017	17118754	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	6.3	mg/L		F	0.019		valid	G	STD
GS13	SL	11/2/2017	17118754	07440-61-1	Uranium	N001	22	ug/L		F	0.05		valid	G	STD
GS13	SL	11/16/2017	17118778	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	8.3	mg/L		F	0.038		valid	G	STD
GS13	SL	11/16/2017	17118778	07440-61-1	Uranium	N001	23	ug/L		F	0.05		valid	G	STD
GS13	SL	11/29/2017	17118796	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	8.5	mg/L		F	0.038		valid	G	STD
GS13	SL	11/29/2017	17118796	07440-61-1	Uranium	N001	25	ug/L		F	0.05		valid	G	STD
GS13	SL	12/13/2017	17128815	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N002	8.8	mg/L		F	0.019		valid	G	STD
GS13	SL	12/13/2017	17128815	07440-61-1	Uranium	N002	26	ug/L		F	0.05		valid	G	STD
SPOUT	TS	6/29/2017	17068616	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.019	mg/L	U	F	0.019		valid	G	STD
SPOUT	TS	6/29/2017	17068616	07440-61-1	Uranium	N001	59	ug/L		F	0.05		valid	G	STD
SPOUT	TS	7/10/2017	17078631	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.15	mg/L		F	0.019		valid	G	STD
SPOUT	TS	7/10/2017	17078631	07440-61-1	Uranium	N001	52	ug/L		F	0.05		valid	G	STD
SPOUT	TS	7/24/2017	17078651	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.019	mg/L	U	F	0.019		valid	G	STD
SPOUT	TS	7/24/2017	17078651	07440-61-1	Uranium	N001	52	ug/L		F	0.05		valid	G	STD
SPOUT	TS	8/9/2017	17088662	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.086	mg/L		F	0.019		valid	G	STD
SPOUT	TS	8/9/2017	17088662	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N002	0.087	mg/L		D	0.019		valid	G	STD
SPOUT	TS	8/9/2017	17088662	07440-61-1	Uranium	N001	65	ug/L		F	0.05		valid	G	STD
SPOUT	TS	8/9/2017	17088662	07440-61-1	Uranium	N002	65	ug/L		D	0.05		valid	G	STD
SPOUT	TS	8/21/2017	17088676	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.019	mg/L	U	F	0.019		valid	G	STD
SPOUT	TS	8/21/2017	17088676	07440-61-1	Uranium	N001	62	ug/L		F	0.05		valid	G	STD
SPOUT	TS	9/7/2017	17098699	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.025	mg/L	J	F	0.019		valid	G	STD
SPOUT	TS	9/7/2017	17098699	07440-61-1	Uranium	N001	71	ug/L		F	0.05		valid	G	STD
SPOUT	TS	9/20/2017	17098712	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.019	mg/L	U	F	0.019		valid	G	STD
SPOUT	TS	9/20/2017	17098712	07440-61-1	Uranium	N001	58	ug/L		F	0.05		valid	G	STD
SPOUT	TS	10/4/2017	17108728	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.019	mg/L	U	F	0.019		valid	G	STD

Table 12. Analytical Results for Water Samples

LOCATION CODE	LOCATION TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS	COLLECTION METHOD	LAB CODE
SPOUT	TS	10/4/2017	17108728	07440-61-1	Uranium	N001	53	ug/L		F	0.05		valid	G	STD
SPOUT	TS	10/11/2017	17108725	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.16	mg/L		F	0.019		valid	G	STD
SPOUT	TS	10/11/2017	17108725	07440-61-1	Uranium	N001	55	ug/L		F	0.05		valid	G	STD
SPOUT	TS	10/16/2017	17108737	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.13	mg/L		F	0.019		valid	G	STD
SPOUT	TS	10/16/2017	17108737	07440-61-1	Uranium	N001	50	ug/L		F	0.05		valid	G	STD
SPOUT	TS	11/2/2017	17118754	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.019	mg/L	U	F	0.019		valid	G	STD
SPOUT	TS	11/2/2017	17118754	07440-61-1	Uranium	N001	63	ug/L		F	0.05		valid	G	STD
SPOUT	TS	11/16/2017	17118778	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.019	mg/L	U	F	0.019		valid	G	STD
SPOUT	TS	11/16/2017	17118778	07440-61-1	Uranium	N001	67	ug/L		F	0.05		valid	G	STD
SPOUT	TS	11/29/2017	17118796	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.019	mg/L	U	F	0.019		valid	G	STD
SPOUT	TS	11/29/2017	17118796	07440-61-1	Uranium	N001	70	ug/L		F	0.05		valid	G	STD
SPOUT	TS	12/13/2017	17128815	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N002	0.019	mg/L	U	F	0.019		valid	G	STD
SPOUT	TS	12/13/2017	17128815	07440-61-1	Uranium	N002	59	ug/L		F	0.05		valid	G	STD
SW093	SL	6/29/2017	17068616	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.85	mg/L		F	0.019		valid	G	STD
SW093	SL	6/29/2017	17068616	07440-61-1	Uranium	N001	4.8	ug/L		F	0.05		valid	G	STD
SW093	SL	7/10/2017	17078631	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.43	mg/L		F	0.019		valid	G	STD
SW093	SL	7/10/2017	17078631	07440-61-1	Uranium	N001	6	ug/L		F	0.05		valid	G	STD
SW093	SL	7/24/2017	17078651	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.044	mg/L	J	F	0.019		J	G	STD
SW093	SL	7/24/2017	17078651	07440-61-1	Uranium	N001	5.7	ug/L		F	0.05		valid	G	STD
SW093	SL	8/9/2017	17088662	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	1.6	mg/L		F	0.019		valid	G	STD
SW093	SL	8/9/2017	17088662	07440-61-1	Uranium	N001	5.4	ug/L		F	0.05		valid	G	STD
SW093	SL	8/21/2017	17088676	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.29	mg/L		F	0.019		valid	G	STD
SW093	SL	8/21/2017	17088676	07440-61-1	Uranium	N001	5.5	ug/L		F	0.05		valid	G	STD
SW093	SL	9/7/2017	17098699	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.039	mg/L	J	F	0.019		valid	G	STD
SW093	SL	9/7/2017	17098699	07440-61-1	Uranium	N001	6.6	ug/L		F	0.05		valid	G	STD
SW093	SL	9/20/2017	17098712	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.025	mg/L	J	F	0.019		valid	G	STD
SW093	SL	9/20/2017	17098712	07440-61-1	Uranium	N001	6.5	ug/L		F	0.05		valid	G	STD
SW093	SL	10/4/2017	17108728	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.6	mg/L		F	0.019		valid	G	STD
SW093	SL	10/4/2017	17108728	07440-61-1	Uranium	N001	1.8	ug/L		F	0.05		valid	G	STD
SW093	SL	10/16/2017	17108737	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.2	mg/L		F	0.019		valid	G	STD
SW093	SL	10/16/2017	17108737	07440-61-1	Uranium	N001	2.4	ug/L		F	0.05		valid	G	STD
SW093	SL	11/2/2017	17118754	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.64	mg/L		F	0.019		valid	G	STD
SW093	SL	11/2/2017	17118754	07440-61-1	Uranium	N001	4.6	ug/L		F	0.05		valid	G	STD
SW093	SL	11/16/2017	17118778	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.88	mg/L		F	0.019		valid	G	STD
SW093	SL	11/16/2017	17118778	07440-61-1	Uranium	N001	4.5	ug/L		F	0.05		valid	G	STD
SW093	SL	11/29/2017	17118796	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.041	mg/L	J	F	0.019		valid	G	STD
SW093	SL	11/29/2017	17118796	07440-61-1	Uranium	N001	5.2	ug/L		F	0.05		valid	G	STD
SW093	SL	12/13/2017	17128815	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N002	0.67	mg/L		F	0.019		valid	G	STD
SW093	SL	12/13/2017	17128815	07440-61-1	Uranium	N002	5.5	ug/L		F	0.05		valid	G	STD
WOMPOC	SL	6/21/2017	17108729	AM-241	Americium-241	N001	0.00323	pCi/L	U	F	0.0218	0.00776	valid	C	GEN
WOMPOC	SL	6/21/2017	17108729	PU-239,240	Plutonium-239, 240	N001	0.00552	pCi/L	U	F	0.0234	0.00857	valid	C	GEN
WOMPOC	SL	6/21/2017	17108729	07440-61-1	Uranium	N001	3.02	ug/L		F	0.067		valid	C	GEN

Table 12. Analytical Results for Water Samples

LOCATION CODE	LOCATION TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS	COLLECTION METHOD	LAB CODE
WOMPOC	SL	10/6/2017	17118759	AM-241	Americium-241	N001	0.00526	pCi/L	U	F	0.0144	0.00685	valid	C	GEN
WOMPOC	SL	10/6/2017	17118759	PU-239,240	Plutonium-239, 240	N001	0.0045	pCi/L	U	F	0.024	0.00976	valid	C	GEN
WOMPOC	SL	10/6/2017	17118759	07440-61-1	Uranium	N001	2.82	ug/L		F	0.067		valid	C	GEN

EXPLANATION

SAMPLE_ID

N00x = Sample was not filtered.
000x = 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

valid	Result is valid.
F	Low flow sampling method used.
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

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

SL	SURFACE LOCATION
TS	TREATMENT SYSTEM
WL	WELL

COLLECTION_METHOD

G	Grab
C	Composite

LAB_CODE

GEN	Gel Laboratories
STD	Test America

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Table 13. Water Sampling Events: Fourth Quarter CY 2017

	Sampling Dates		Sample Info			Analytes					Sample Tracking Info	
Location Code	**Start**	**End**	**Collection Method**	**Type**	**Filtered**	**VOC**	**U**	**Nitrate**	**Pu/Am**	**TSS**	**Ticket**	**RIN #**
B5INFLOW	10/4/2017 11:49	10/4/2017 11:49	grab	F	No		X				PLX 828	17108728
SW093	10/4/2017 12:17	10/4/2017 12:17	grab	F	No		X	X			PLX 825	17108728
SPOUT	10/4/2017 12:28	10/4/2017 12:28	grab	F	No		X	X			PLX 824	17108728
GS13	10/4/2017 12:38	10/4/2017 12:38	grab	F	No		X	X			PLX 829	17108728
A1EFF	10/4/2017 12:55	10/4/2017 12:55	grab	F	No		X	X			PLX 830	17108728
GS10	10/4/2017 13:18	10/4/2017 13:18	grab	F	No		X				PLX 826	17108728
B3OUTFLOW	10/4/2017 13:51	10/4/2017 13:51	grab	F	No		X				PLX 831	17108728
WOMPOC	6/21/2017 12:26	10/6/2017 15:03	composite	F	No		X		X		PLX 849	17108729
00193	10/10/2017 13:00	10/10/2017 13:00	grab	F	No	X					PLX 763	17108725
00193	10/10/2017 13:00	10/10/2017 13:00	grab	F	Yes		X				PLX 763	17108725
10304	10/10/2017 14:30	10/10/2017 14:30	grab	F	No	X		X			PLX 758	17108725
10304	10/10/2017 14:30	10/10/2017 14:30	grab	F	Yes		X				PLX 758	17108725
10304	10/10/2017 14:30	10/10/2017 14:30	grab	D	No	X		X			PLX 759	17108725
10304	10/10/2017 14:30	10/10/2017 14:30	grab	D	Yes		X				PLX 759	17108725
42505	10/10/2017 16:00	10/10/2017 16:00	grab	F	No	X					PLX 789	17108725
89104	10/11/2017 10:00	10/11/2017 10:00	grab	F	No	X					PLX 739	17108725
SPOUT	10/11/2017 12:05	10/11/2017 12:05	grab	F	No		X	X			PLX 794	17108725
GS13	10/11/2017 13:50	10/11/2017 13:50	grab	F	No			X			PLX 796	17108725
10594	10/11/2017 14:35	10/11/2017 14:35	grab	F	No	X		X			PLX 797	17108725

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