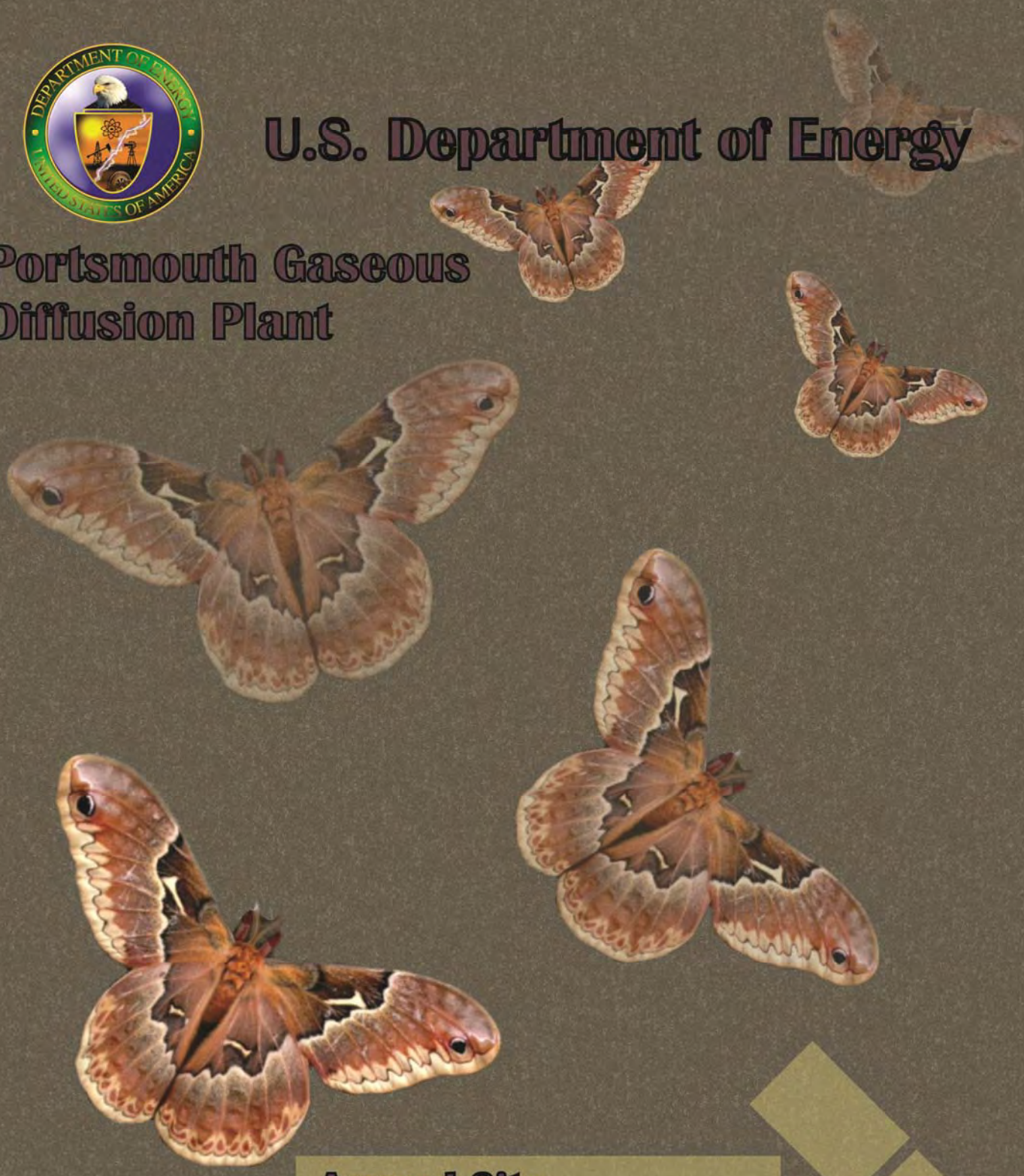
U.S. Department of Energy

Portsmouth Gaseous Diffusion Plant



Annual Site Environmental Data 2017

Tuliptree silkmoth

December 2018

U.S. Department of Energy
Portsmouth Gaseous Diffusion Plant
Annual Site Environmental Data – 2017
Piketon, Ohio

U.S. Department of Energy
DOE/PPPO/03-0863&D1

December 2018

By
Fluor-BWXT Portsmouth LLC, under Contract DE-AC30-10CC40017

FBP-ER-RCRA-WD-RPT-0289, Revision 1

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TABLES

ACRONYMS AND ABBREVIATIONS

#/100 mL	number per 100 mL
ACP	American Centrifuge Plant
BWCS	BWXT Conversion Services, LLC
°C	degrees Celsius
Ci	curie
cm	centimeter
DOE	U.S. Department of Energy
DUF_6	depleted uranium hexafluoride
FBP	Fluor-BWXT Portsmouth LLC
°F	degrees Fahrenheit
g	gram
GPD	gallons per day
in.	inch
kg	kilogram
L	liter
m	meter
m^3	cubic meter
µg	microgram
mg	milligram
MCS	Mid-America Conversion Services, LLC
MGD	million gallons per day
mrem	millirem
ND	not detected
ng	nanogram
NPDES	National Pollutant Discharge Elimination System
Ohio EPA	Ohio Environmental Protection Agency
OVEC	Ohio Valley Electric Corporation
PCB	polychlorinated biphenyl
pCi	picocurie
PK	Peter Kiewit
PORTS	Portsmouth Gaseous Diffusion Plant
SU	standard unit
TUa	acute toxicity unit
VOC	volatile organic compound

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1. INTRODUCTION

Environmental monitoring at the Department of Energy (DOE) Portsmouth Gaseous Diffusion Plant (PORTS) is conducted throughout the year. Monitoring demonstrates the site is a safe place to work, plant operations do not adversely affect neighboring communities, and activities comply with federal and state regulations.

This document is a compilation of the environmental monitoring data for calendar year 2017 and is intended as a tool for analysts in environmental monitoring, environmental restoration, and other related disciplines. The data in this document form the basis for the summary information in the *Portsmouth Gaseous Diffusion Plant Annual Site Environmental Report – 2017* (DOE 2018b).

Radiological monitoring data presented in this Data Report and discussed in the *Annual Site Environmental Report for 2017* indicate that the maximum dose a member of the public could receive from radionuclides released by PORTS in 2017 or detected by environmental monitoring programs in 2017 is 0.90 millirem (mrem). This dose is significantly less than the 100 mrem limit set in DOE Order 458.1, *Radiation Protection of the Public and the Environment.*

Other non-radiological chemicals such as polychlorinated biphenyls (PCBs), metals, and volatile organic compounds (VOCs) are also monitored. Discharges of metals and other chemicals to surface water are controlled by National Pollutant Discharge Elimination System (NPDES) permits. Emissions of non-radiological air pollutants are controlled by air emission permits issued by Ohio Environmental Protection Agency (Ohio EPA). The *Portsmouth Gaseous Diffusion Plant Annual Site Environmental Report – 2017* (DOE 2018b) provides more information about non-radiological chemicals released from PORTS or detected by PORTS monitoring programs during 2017.

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2. ENVIRONMENTAL MONITORING

This section provides environmental monitoring data collected in 2017 by DOE contractors Fluor-BWXT Portsmouth LLC (FBP), Mid-America Conversion Services, LLC (MCS), and BWXT Conversion Services, LLC (BWCS). MCS assumed operation of the depleted uranium hexafluoride conversion facility at PORTS from BWCS on February 1, 2017. Data collected by Centrus for NPDES outfalls associated with the American Centrifuge Plant (ACP) are also reported in this section.

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Table 2.1. Radionuclide concentrations in FBP and Centrus NPDES outfall water samples – 2017

NPDES outfall[a]	Parameter[b]	Number of samples[c]	Minimum[d]	Maximum[d]	Average[e]
		FBP Outfalls			
001	Americium-241	4(4)	< 0.00493	< 0.0462	
	Neptunium-237	4(4)	0	< 0.0188	
	Plutonium-238	4(4)	0	< 0.013	
	Plutonium-239/240	4(4)	< 0.0222	< 0.0391	
	Technetium-99	12(4)	< 0.0884	89.2	
	Uranium	12(0)	0.359	3.3	1.03
	Uranium-233/234	12(0)	0.697	6.55	1.88
	Uranium-235/236	12(8)	< 0.0233	0.332	
	Uranium-238	12(0)	0.115	1.06	0.330
002	Americium-241	4(4)	< 0.00534	< 0.037	
	Neptunium-237	4(4)	0	< 0.00486	
	Plutonium-238	4(4)	0	< 0.0292	
	Plutonium-239/240	4(4)	0	< 0.0268	
	Technetium-99	12(11)	0	3.77	
	Uranium	12(0)	0.312	1.05	0.72
	Uranium-233/234	12(0)	0.489	1.15	0.70
	Uranium-235/236	12(12)	< 0.0181	< 0.0764	
	Uranium-238	12(0)	0.101	0.346	0.234
003	Americium-241	4(4)	< 0.00974	< 0.0255	
	Neptunium-237	4(4)	0	< 0.00938	
	Plutonium-238	4(4)	0	< 0.0142	
	Plutonium-239/240	4(4)	0	< 0.0332	
	Technetium-99	12(2)	< 4.53	55.7	
	Uranium	12(0)	0.367	2.61	1.70
	Uranium-233/234	12(0)	0.195	2.14	1.42
	Uranium-235/236	12(7)	< 0.027	0.14	
	Uranium-238	12(0)	0.119	0.856	0.559
004	Americium-241	4(4)	< 0.0103	< 0.0529	
	Neptunium-237	4(4)	0	< 0.0114	
	Plutonium-238	4(4)	0	< 0.0103	
	Plutonium-239/240	4(4)	< 0.00535	< 0.0258	
	Technetium-99	12(12)	0	< 4.5	
	Uranium	12(12)	< 0.0308	< 0.196	
	Uranium-233/234	12(11)	< 0.0307	0.103	
	Uranium-235/236	12(12)	0	< 0.0257	
	Uranium-238	12(12)	< 0.0103	< 0.0659	

Table 2.1. Radionuclide concentrations in FBP and Centrus NPDES outfall water samples – 2017 (continued)

NPDES outfall[a]	Parameter[b]	Number of samples[c]	Minimum[d]	Maximum[d]	Average[e]
		FBP Outfalls			
005	Americium-241	1(1)	< 0.0296		
	Neptunium-237	1(1)	0		
	Plutonium-238	1(1)	0		
	Plutonium-239/240	1(1)	< 0.00519		
	Technetium-99	4(4)	0	< 1.06	
	Uranium	4(3)	< 0.14	0.251	
	Uranium-233/234	4(2)	< 0.059	0.0906	
	Uranium-235/236	4(4)	< 0.00559	< 0.0291	
	Uranium-238	4(4)	< 0.0453	< 0.0797	
009	Americium-241	4(4)	0	< 0.0793	
	Neptunium-237	4(4)	0	< 0.00937	
	Plutonium-238	4(4)	0	< 0.00636	
	Plutonium-239/240	4(4)	< 0.0112	< 0.0509	
	Technetium-99	12(11)	0	3.98	
	Uranium	12(0)	1.91	6.49	4.07
	Uranium-233/234	12(0)	0.776	2.89	1.62
	Uranium-235/236	12(8)	< 0.0281	0.151	
	Uranium-238	12(0)	0.638	2.16	1.36
010	Americium-241	6(6)	< 0.0209	< 0.041	
	Neptunium-237	6(6)	0	< 0.03118	
	Plutonium-238	6(6)	0	< 0.09153	
	Plutonium-239/240	6(6)	0	< 0.04727	
	Technetium-99	14(11)	0	12.3	
	Uranium	14(0)	1.251	2.66	1.71
	Uranium-233/234	14(0)	0.522	1.49	0.851
	Uranium-235/236	14(14)	< 0.0165	< 0.0952	
	Uranium-238	14(0)	0.4157	0.885	0.568
011	Americium-241	4(4)	< 0.0119	< 0.0307	
	Neptunium-237	4(4)	0	0	
	Plutonium-238	4(4)	0	< 0.0203	
	Plutonium-239/240	4(4)	< 0.00678	< 0.033	
	Technetium-99	12(12)	0	< 4.94	
	Uranium	12(0)	0.697	2.52	1.49
	Uranium-233/234	12(0)	0.325	1.19	0.672
	Uranium-235/236	12(11)	< 0.00711	0.0906	
	Uranium-238	12(0)	0.231	0.836	0.495
015	Americium-241	4(4)	< 0.0251	< 0.0478	
	Neptunium-237	4(4)	0	< 0.0238	
	Plutonium-238	4(4)	0	< 0.0137	
	Plutonium-239/240	4(4)	< 0.00497	< 0.0274	
	Technetium-99	12(11)	0	< 5.62	
	Uranium	12(0)	0.588	1.85	1.03
	Uranium-233/234	12(0)	0.442	1.83	0.951
	Uranium-235/236	12(10)	< 0.0177	0.093	
	Uranium-238	12(0)	0.195	0.607	0.340

Table 2.1. Radionuclide concentrations in FBP and Centrus NPDES outfall water samples – 2017 (continued)

NPDES outfall[a]	Parameter[b]	Number of samples[c]	Minimum[d]	Maximum[d]	Average[e]
		FBP Outfalls			
608	Americium-241	4(4)	< 0.00495	< 0.0344	
	Neptunium-237	4(4)	0	< 0.0102	
	Plutonium-238	4(4)	0	< 0.0108	
	Plutonium-239/240	4(4)	< 0.0107	< 0.051	
	Technetium-99	12(1)	< 4.82	174	77.4
	Uranium	12(0)	0.349	1.17	0.732
	Uranium-233/234	12(0)	0.148	0.667	0.327
	Uranium-235/236	12(12)	< 0.0115	< 0.0569	
	Uranium-238	12(0)	0.111	0.393	0.242
610	Americium-241	3(3)	0	< 0.0372	
	Neptunium-237	3(3)	0	0	
	Plutonium-238	3(3)	0	< 0.0162	
	Plutonium-239/240	3(3)	< 0.0122	< 0.022	
	Technetium-99	4(1)	< 5.02	38.4	
	Uranium	4(0)	0.816	7.42	3.91
	Uranium-233/234	4(0)	0.786	9.66	4.99
	Uranium-235/236	4(1)	< 0.0786	0.496	
	Uranium-238	4(0)	0.262	2.41	1.27
611	Americium-241	4(4)	< 0.0196	< 0.0407	
	Neptunium-237	4(4)	< 0.0134	< 0.0449	
	Plutonium-238	4(4)	0	< 0.0211	
	Plutonium-239/240	4(4)	0	< 0.0527	
	Technetium-99	12(0)	5.31	640	241
	Uranium	12(0)	4.03	18.9	5.87
	Uranium-233/234	12(0)	3.36	20.8	5.77
	Uranium-235/236	12(0)	0.146	1.37	0.331
	Uranium-238	12(0)	1.32	6.15	1.92
		Centrus Outfalls			
012	Americium-241	4(4)	< 0.031	< 0.039	
	Neptunium-237	4(4)	< 0.052	< 0.084	
	Plutonium-238	4(4)	< 0.038	< 0.07	
	Plutonium-239/240	4(4)	< 0.024	< 0.07	
	Technetium-99	52(52)	< 5.88	< 8.52	
	Uranium	52(0)	0.31	1.80	1.01
013	Americium-241	4(4)	< 0.034	< 0.042	
	Neptunium-237	4(4)	< 0.031	< 0.109	
	Plutonium-238	4(4)	< 0.038	< 0.055	
	Plutonium-239/240	4(3)	< 0.029	< 0.061	
	Technetium-99	52(52)	< 6.68	< 8.64	
	Uranium	52(0)	0.23	2.2	0.92

[a]FBP internal NPDES Outfalls 608, 610, and 611 discharge to NPDES Outfall 003 (X-6619 Sewage Treatment Plant).
[b]Uranium is reported in µg/L; all other radionuclides are reported in pCi/L.
[c]Number in parentheses is the number of samples that were below the detection limit.
[d]Minimum or maximum values reported as "0" may actually be negative results. Because of the statistical nature of radiation detection, results for samples that have no radioactivity are often negative values because background radioactivity is subtracted out. These negative value results are reported as "0" in the table for simplicity.
[e]Averages were not calculated for outfalls that had greater than 15% of the results below the detection limit. For outfalls with less than 15% of the results below the detection limit, any result below the detection limit was assigned a value at the detection limit to calculate the average for the parameter.

Table 2.2. FBP NPDES permit summary – 2017

Effluent characteristics		Monitoring requirements		Discharge limitations	
Parameter	Units	Measurement frequency	Sampling type	Concentration/Loading[a]	
				Monthly	Daily
FBP Outfall 001 (X-230J7 East Holding Pond)					
Cadmium, total recoverable	µg/L	1/quarter	24-hr composite		
Chlorine, total residual	mg/L	1/week	Grab		
Copper, total recoverable	µg/L	1/quarter	24-hr composite		
Dissolved solids	mg/L	1/week	24-hr composite		
Flow rate	MGD	Daily	24-hr total		
Fluoride, total	mg/L	1/quarter	24-hr composite		
Mercury, total (low level)	ng/L	1/month	Grab	12	
Oil & grease	mg/L	1/week	Grab	10	15
pH	SU	1/week	Grab		6.5–9.0
Precipitation, total	in.	Daily	24-hr total		
Silver, total recoverable	µg/L	1/month	24-hr composite		
Total suspended solids[b]	mg/L	1/week	24-hr composite	20	45
Zinc, total recoverable	µg/L	1/quarter	24-hr composite		
FBP Outfall 002 (X-230K South Holding Pond)					
Cadmium, total recoverable	µg/L	1/quarter	24-hr composite		
Flow rate	MGD	Daily	24-hr total		
Fluoride, total	mg/L	1/quarter	24-hr composite		
Mercury, total (low level)	ng/L	1/quarter	Grab		
pH	SU	1/week	Grab		6.5–9.0
Nitrogen, ammonia (NH_3)	mg/L	1/month	24-hr composite		
Oil & grease	mg/L	1/week	Grab		10
Selenium, total recoverable	µg/L	1/month	24-hr composite		
Silver, total recoverable	µg/L	1/quarter	24-hr composite		
Thallium, total recoverable	µg/L	1/quarter	24-hr composite		
Total suspended solids[b]	mg/L	1/week	24-hr composite	20	45
FBP Outfall 003 (X-6619 Sewage Treatment Plant)					
Acute toxicity, *Ceriodaphnia dubia*	TUa	1/quarter	24-hr composite		
Acute toxicity, *Pimephales promelas*	TUa	1/quarter	24-hr composite		
Carbonaceous biochemical oxygen demand, 5-day	mg/L	1/week	24-hr composite	10 (15.1)	15 (22.7)
Chlorine, total residual[c]	mg/L	Daily	Grab		0.038
Copper, total recoverable	µg/L	1/quarter	24-hr composite		
E. coli[c]	#/100 mL	1/week	Grab	126	284
Flow rate	MGD	Daily	24-hr total		
Mercury, total	ng/L	1/month	Grab	66 (0.000099)	1700 (0.0025)

Table 2.2. FBP NPDES permit summary – 2017 (continued)

Effluent characteristics		Monitoring requirements		Discharge limitations	
Parameter	Units	Measurement frequency	Sampling type	Concentration/Loading[a]	
				Monthly	Daily
FBP Outfall 003 (X-6619 Sewage Treatment Plant)					
Nitrogen, ammonia (NH_3)	mg/L	1/2 weeks	24-hr composite		
Nitrite plus nitrate	mg/L	1/quarter	24-hr composite		
Oil & grease	mg/L	1/quarter	Grab		
pH	SU	3/week	Grab		6.5–9.0
Silver, total recoverable	µg/L	1/quarter	24-hr composite		
Thallium, total recoverable	µg/L	1/quarter	24-hr composite		
Total suspended solids	mg/L	1/week	24-hr composite	12 (18.2)	18 (27.3)
Zinc, total recoverable	µg/L	1/quarter	24-hr composite		
FBP Outfall 004 (Cooling Tower Blowdown)					
Acute toxicity, *Ceriodaphnia dubia*	TUa	1/quarter	24-hr composite		
Acute toxicity, *Pimephales promelas*	TUa	1/quarter	24-hr composite		
Chlorine, total residual	mg/L	1/week	Grab		0.038
Copper, total recoverable	µg/L	1/month	24-hr composite		66 (0.160)
Dissolved solids	mg/L	1/month	24-hr composite	3500 (8480)	4000 (9690)
Flow rate	MGD	Daily	24-hr total		
Mercury, total	ng/L	1/quarter	Grab		
Oil & grease	mg/L	1/month	Grab	15	20
pH	SU	1/month	Grab		6.5–9.0
Total suspended solids	mg/L	1/month	24-hr composite	18 (43)	27 (65)
Zinc, total recoverable	µg/L	1/quarter	24-hr composite		
FBP Outfall 005 (X-611B Lime Sludge Lagoons)					
Flow rate	MGD	3/week	24-hr total (estimate)		
Lead, total recoverable	µg/L	1/month	Grab		
Mercury, total	ng/L	1/month	Grab		
pH	SU	1/week	Grab		6.5–10.0
Selenium, total recoverable	µg/L	1/month	Grab		5
Total suspended solids[b]	mg/L	1/week	Grab	10	15
FBP Outfall 009 (X-230L North Holding Pond)					
Bis(2-ethylhexyl)phthalate	µg/L	1/month	Composite	8.4	1105
Copper, total recoverable	µg/L	1/month	Grab		
Flow rate	MGD	Daily	24-hr total		
Fluoride, total	mg/L	1/quarter	Grab		
Mercury, total	ng/L	1/quarter	Grab		
Oil & grease	mg/L	1/month	Grab	10	15
pH	SU	1/week	Grab		6.5–9.0

Table 2.2. FBP NPDES permit summary – 2017 (continued)

Effluent characteristics		Monitoring requirements		Discharge limitations	
Parameter	Units	Measurement frequency	Sampling type	Concentration/Loading[a]	
				Monthly	Daily
FBP Outfall 009 (X-230L North Holding Pond)					
Silver, total recoverable	µg/L	1/month	Grab	1.3	2.7
Total suspended solids[b]	mg/L	1/week	Grab	30	45
Zinc, total recoverable	µg/L	1/quarter	Grab		
FBP Outfall 010 (X-230J5 Northwest Holding Pond)					
Flow rate	MGD	Daily	24-hr total		
Lead, total recoverable	µg/L	1/month	24-hr composite		
Mercury, total	ng/L	1/quarter	Composite		
Oil & grease	mg/L	1/month	Grab	10	15
pH	SU	1/2 weeks	Grab		6.5–9.0
Precipitation, total	in.	Daily	24-hr total		
Selenium, total recoverable	µg/L	1/month	24-hr composite		5.6
Total suspended solids[b]	mg/L	1/2 weeks	24-hr composite	30	45
Zinc, total recoverable	µg/L	1/month	24-hr composite		
FBP Outfall 011 (X-230J6 Northeast Holding Pond)					
Cadmium, total recoverable	µg/L	1/quarter	Grab		
Chlorine, total residual	mg/L	1/2 weeks	Grab		0.038
Copper, total recoverable	µg/L	1/month	Grab		
Flow rate	MGD	Daily	24-hr total		
Fluoride, total	mg/L	1/quarter	Grab		
Oil & grease	mg/L	1/2 weeks	Grab	10	15
pH	SU	1/2 weeks	Grab		6.5–9.0
Precipitation, total	in.	Daily	24-hr total		
Selenium, total recoverable	µg/L	1/month	Grab		
Thallium, total recoverable	µg/L	1/quarter	Grab		
Total suspended solids[b]	mg/L	1/2 weeks	Grab	30	45
Zinc, total recoverable	µg/L	1/month	Grab		
FBP Outfall 015 (X-624 Groundwater Treatment Facility)					
Arsenic, total recoverable	µg/L	1/quarter	Grab		
Barium, total recoverable	µg/L	1/quarter	Grab		
Flow rate	MGD	Daily	24-hr total		
PCBs	µg/L	1/quarter	Grab		*d*
pH	SU	1/2 weeks	Grab		6.5–9.0
Silver, total recoverable	µg/L	1/month	Grab	1.3	6.8
Trichloroethene	µg/L	1/2 weeks	Grab	10	10

Table 2.2. FBP NPDES permit summary – 2017 (continued)

Effluent characteristics		Monitoring requirements		Discharge limitations	
Parameter	Units	Measurement frequency	Sampling type	Concentration/Loading[a]	
				Monthly	Daily
FBP Outfall 602 (X-621 Coal Pile Runoff Treatment Facility)					
Flow rate	MGD	Daily	24-hr total (estimate)		
Iron, total[b]	µg/L	1/2 weeks	Grab	3500	7000
Manganese, total[b]	µg/L	1/2 weeks	Grab	2000	4000
pH	SU	1/2 weeks	Grab		6.0–10.0
Precipitation, total	in.	Daily	24-hr total		
Total suspended solids[b]	mg/L	1/2 weeks	Grab	35	50
FBP Outfall 604 (X-700 Biodenitrification Facility)					
Copper, total	µg/L	1/month	24-hr composite		
Iron, total	µg/L	1/month	24-hr composite		
Flow rate	MGD	Daily	24-hr total		
Nickel, total	µg/L	1/month	24-hr composite		
Nitrogen, nitrate	mg/L	1/month	24-hr composite		
pH	SU	1/month	Grab		6.5–9.0
Zinc, total	µg/L	1/month	24-hr composite		
FBP Outfall 605 (X-705 Microfiltration Treatment System)					
Chromium, hexavalent	µg/L	1/month	Grab		
Chromium, total	µg/L	1/month	24-hr composite		
Copper, total	µg/L	1/month	24-hr composite		
Flow rate	MGD	Daily	24-hr total		
Nickel, total	µg/L	1/month	24-hr composite		
Nitrogen, ammonia (NH_3)	mg/L	1/month	24-hr composite		
Nitrogen, nitrate	mg/L	1/month	24-hr composite		
Nitrogen, nitrite	mg/L	1/month	24-hr composite		
Nitrogen, Kjeldahl	mg/L	1/month	24-hr composite		
Oil & grease	mg/L	1/month	Grab		
pH	SU	1/month	Grab		6.5–10.0
Sulfate (SO_4)	mg/L	1/month	24-hr composite		
Total suspended solids	mg/L	1/month	24-hr composite	20	30
Trichloroethene	µg/L	1/month	Grab		
Zinc, total	µg/L	1/month	24-hr composite		
FBP Outfall 608 (X-622 Groundwater Treatment Facility)					
Flow rate	MGD	Daily	24-hr total		
pH	SU	1/2 weeks	Grab		
trans-1,2-dichloroethene	µg/L	1/2 weeks	Grab	25	66
Trichloroethene	µg/L	1/2 weeks	Grab	10	10

Table 2.2. FBP NPDES permit summary – 2017 (continued)

Effluent characteristics		Monitoring requirements		Discharge limitations	
Parameter	Units	Measurement frequency	Sampling type	Concentration/Loading[a]	
				Monthly	Daily
FBP Outfall 610 (X-623 Groundwater Treatment Facility)					
Flow rate	MGD	Daily	24-hr total		
pH	SU	1/2 weeks	Grab		
trans-1,2-dichloroethene	µg/L	1/2 weeks	Grab	25	66
Trichloroethene	µg/L	1/2 weeks	Grab	10	10
FBP Outfall 611 (X-627 Groundwater Treatment Facility)					
Flow rate	MGD	Daily	24-hr total		
pH	SU	1/2 weeks	Grab		
Trichloroethene	µg/L	1/2 weeks	Grab	10	10
FBP Monitoring Station 801 (Upstream Monitoring)					
48-hr acute toxicity, *Ceriodaphnia dubia*	% affected	1/quarter	Grab		
96-hr acute toxicity, *Pimephales promelas*	% affected	1/quarter	Grab		
FBP Monitoring Station 902 (Downstream Far Field Monitoring)					
Water temperature	°C	2/week	24-hr maximum	27.8[c]	29.4[c]
FBP Monitoring Station 903 (Downstream Far Field Monitoring)					
Water temperature	°C	2/week	24-hr maximum	27.8[c]	29.4[c]

[a]If provided in the permit, the loading limit, in kg/day or kg/month, is provided in parentheses.
[b]Limitations do not apply if flow increases as a result of a precipitation or snow melt event and conditions specified in the permit are met.
[c]Summer only (May through October).
[d]No detectable PCBs.

Table 2.3. MCS NPDES permit summary – 2017

Effluent characteristics		Monitoring requirements		Discharge limitations	
Parameter	Units	Measurement frequency	Sampling type	Concentration	
				Monthly	Daily
MCS Outfall 001[a]					
Biochemical oxygen demand, 5-day	mg/L	1/week	24-hr composite		
Chlorine, total residual	mg/L	Daily	Grab		0.05
Dissolved solids, sum of	mg/L	1/week	24-hr composite		1500
Flow rate	GPD	Daily	24-hr total		
Nitrogen, ammonia	mg/L	1/week	24-hr composite		
Oil and grease, total	mg/L	1/month	Grab		
pH	SU	Daily	Grab		6.5–9.0
Phosphorus, total	mg/L	1/week	24-hr composite		
Total suspended solids[b]	mg/L	1/week	24-hr composite	30	45
Water temperature	°F	Daily	Maximum	*c*	*c*
MCS Outfall 602					
Flow rate	GPD	Daily	24-hr total		
pH	SU	Daily	Grab		

[a]These monitoring requirements and limits apply only when process water is being discharged through the outfall.
[b]Limitations do not apply if flow increases as a result of a precipitation or snow melt event and conditions specified in the permit are met.
[c]Maximum daily and monthly average limits vary according to month.

Table 2.4. FBP NPDES discharge and compliance rates – 2017

Parameter	NPDES compliance rate (%)[a]	Number of measurements[b]	Concentration (and loading if applicable) Minimum	Maximum	Average[c]	Units
Outfall 001 (X-230J7 East Holding Pond)						
Cadmium, total recoverable	-	4(2)	< 0.04	0.058		µg/L
Chlorine, total residual	-	48(16)	< 0.02	0.07		mg/L
Copper, total recoverable		4(0)	1.3	2.7	2.2	µg/L
Dissolved solids	-	48(0)	130	330	192	mg/L
Flow rate	-	365	0.148	2.463	0.604	MGD
Fluoride, total	-	4(2)	< 0.06	0.12		mg/L
Mercury, total (low level)	-	14(0)	2.49	25.8	11.9	ng/L
monthly average[d]	67	12	2.49	23.8	10.9	ng/L
Oil & grease	100	48(42)	< 1.6	9.1		mg/L
monthly average[d]	100	12	0	2.3		mg/L
pH	100	53	6.98	8.60	7.99	SU
Precipitation, total	-	365	0	2.52	0.12	in.
Silver, total recoverable	-	12(8)	< 0.02	0.036		µg/L
Total suspended solids	100	48(5)	< 1.1	26	3.2	mg/L
monthly average[d]	100	12	1.2	8.8	3.2	mg/L
Zinc, total recoverable	-	4(0)	8.6	43	29	µg/L
Outfall 002 (X-230K South Holding Pond)						
Cadmium, total recoverable	-	4(3)	< 0.04	0.0575		µg/L
Flow rate	-	365	0.017	2.083	0.528	MGD
Fluoride, total	-	4(0)	0.072	0.13	0.093	mg/L
Mercury, total (low level)	-	4(0)	1.345	6.145	3.065	ng/L
Nitrogen, ammonia (NH_3)		12(3)	< 0.022	0.22		mg/L
Oil & grease	100	48(43)	< 1.65	2.0		mg/L
pH	98	48	5.10	8.80	8.03	SU
Selenium, total recoverable		12(12)	< 1	< 1		µg/L
Silver, total recoverable	-	4(2)	< 0.02	0.011		µg/L
Thallium, total recoverable	-	4(4)	< 0.066	< 0.066		µg/L
Total suspended solids	100	48(2)	< 1.1	20	6.6	mg/L
monthly average[d]	100	12	2.5	12	6.6	mg/L
Outfall 003 (X-6619 Sewage Treatment Plant)						
Acute toxicity, *Ceriodaphnia dubia*	-	4(4)	< 1	< 1		TUa
Acute toxicity, *Pimephales promelas*	-	4(4)	< 1	< 1		TUa
Carbonaceous biochemical oxygen demand, 5-day	100	48(29)	< 5.0	14.65		mg/L
monthly average[d]	100	12	0	10		mg/L
Carbonaceous biochemical oxygen demand, 5-day (loading)	98	48	0	24		kg/day
monthly average[d]	100	12	0	11		kg/day
Chlorine, total residual[b]	100	31(6)	< 0.02	0.03		mg/L
Copper, total recoverable	-	5(0)	1.4	23	6.1	µg/L
E. coli[b]	96	25(5)	< 1	1010		#/100 mL
Flow rate	-	365	0.179	0.627	0.319	MGD

Table 2.4. FBP NPDES discharge and compliance rates – 2017 (continued)

Parameter	NPDES compliance rate (%)[a]	Number of measurements[b]	Concentration (and loading if applicable) Minimum	Maximum	Average[c]	Units
Outfall 003 (X-6619 Sewage Treatment Plant)						
Mercury, total (low level)	-	14(0)	2.24	18.4	8.57	ng/L
monthly average[d]	-	12	2.24	14.2	8.29	ng/L
Mercury, total (low level) (loading)	-	14	0.00000253	0.0000210	0.00000951	kg/day
monthly average[d]	-	12	0.00000253	0.0000187	0.0000101	kg/day
Nitrite plus nitrate (NH_3)	-	5(0)	6.7	9.4	8.4	mg/L
Nitrogen, ammonia	-	24(12)	< 0.022	5.1		mg/L
Oil & grease	-	5(5)	< 1.8	< 1.9		mg/L
pH	100	213	6.95	8.79	7.73	SU
Silver, total recoverable	-	5(3)	< 0.02	0.21		µg/L
Thallium, total recoverable		5(5)	< 0.066	< 0.066		µg/L
Total suspended solids	100	48(1)	0.8	16	4.1	mg/L
monthly average[d]	100	12	1.3	11	4.1	mg/L
Total suspended solids (loading)	100	48	0	17	5.0	kg/day
monthly average[d]	100	12	1.5	12	4.9	kg/day
Zinc, total recoverable	-	5(0)	23	160	23	µg/L
Outfall 004 (Cooling Tower Blowdown)						
Acute toxicity, *Ceriodaphnia dubia*		4(4)	< 1	< 1		TUa
Acute toxicity, *Pimephales promelas*		4(4)	< 1	< 1		TUa
Chlorine, total residual	100	62(41)	< 0.02	0.03		mg/L
Copper, total recoverable	77	13(0)	26	140	55	µg/L
Copper, total recoverable (loading)	100	13(0)	0.0025	0.020	0.0074	kg/day
Dissolved solids	100	12(0)	440	860	620	mg/L
monthly average[d]	100	12	440	860	620	mg/L
Dissolved solids (loading)	100	12	23	111	73	kg/day
monthly average[d]	100	12	53	115	81	kg/day
Flow rate	-	271	0.005	0.125	0.035	MGD
Mercury, total (low level)	-	4(0)	1.34	2.92	2.31	ng/L
Oil & grease	100	12(12)	< 1.6	< 2		mg/L
monthly average[d]	100	12	0	0		mg/L
pH	92	13	6.25	8.20	7.05	SU
Total suspended solids	100	13(0)	1.6	20	6.7	mg/L
monthly average[d]	100	12	1.6	15	6.0	mg/L
Total suspended solids (loading)	100	12	0.07	3.0	0.92	kg/day
monthly average[d]	100	12	0.21	2.3	0.81	kg/day
Zinc, total recoverable	-	4(0)	43	81	54	µg/L
Outfall 005 (X-611B Lime Sludge Lagoons)						
Flow rate	-	22	0.003	7.069	0.831	MGD
Lead, total recoverable		4(0)	0.28	1	0.54	µg/L
Mercury, total (low level)		4(0)	1.76	5.42	3.04	ng/L
pH	100	7	8.41	9.41	9.09	SU
Selenium, total recoverable		4(4)	< 1	< 1		µg/L
Total suspended solids	100	5(0)	5.2	10	7.0	mg/L
monthly average[d]	100	4	6.0	10	7.2	mg/L

Table 2.4. FBP NPDES discharge and compliance rates – 2017 (continued)

Parameter	NPDES compliance rate (%)[a]	Number of measurements[b]	Concentration (and loading if applicable) Minimum	Maximum	Average[c]	Units
Outfall 009 (X-230L North Holding Pond)						
Bis(2-ethylhexyl)phthalate	100	12(12)	< 0.57	< 0.65		µg/L
monthly average[d]	100	12	0	0		µg/L
Copper, total recoverable		12(0)	0.50	3.8	2.0	µg/L
Flow rate	-	365	0.044	2.093	0.569	MGD
Fluoride, total	-	4(0)	0.06	0.15	0.10	mg/L
Mercury, total		4(0)	1.92	2.58	2.27	ng/L
Oil & grease	100	12(11)	< 1.6	2.0		mg/L
monthly average[d]	100	12	0	2.0		mg/L
pH	100	48	7.43	8.67	8.10	SU
Silver, total recoverable	100	12(10)	< 0.02	0.026		µg/L
monthly average[d]	100	12	0	0.026		µg/L
Total suspended solids	100	42(4)	< 1.1	43	8.3	mg/L
monthly average[d]	100	12	1.8	19	8.4	mg/L
Zinc, total recoverable	-	4(0)	5.2	37	22	µg/L
Outfall 010 (X-230J5 Northwest Holding Pond)						
Flow rate	-	365	0.004	1.818	0.457	MGD
Lead, total recoverable		12(1)	< 0.1	2.3	0.76	µg/L
Mercury, total	-	4(0)	1.53	3.53	2.45	ng/L
Oil & grease	100	13(13)	< 1.6	< 1.9		mg/L
monthly average[d]	100	12	0	0		mg/L
pH	100	162	7.20	8.64	7.95	SU
Precipitation, total	-	365	0	2.52	0.12	in.
Selenium, total recoverable	100	12(12)	< 1	< 1		µg/L
Total suspended solids	100	24(2)	< 1.1	25	6.6	mg/L
monthly average[d]	100	12	0	13	6.3	mg/L
Zinc, total recoverable	-	12(0)	5.2	43	21	µg/L
Outfall 011 (X-230J6 Northeast Holding Pond)						
Cadmium, total recoverable	-	4(2)	< 0.04	0.10		µg/L
Chlorine, total residual	-	24(11)	< 0.02	0.03		mg/L
Copper, total recoverable	-	12(0)	0.61	3.5	1.89	µg/L
Flow rate	-	365	0.002	0.335	0.031	MGD
Fluoride, total	-	4(0)	0.07	1.6	0.12	mg/L
Oil & grease	100	24(22)	< 1.6	3.0		mg/L
monthly average[d]	100	12	0	1.5		mg/L
pH	100	27	7.40	8.92	8.07	SU
Precipitation, total	-	365	0	2.52	0.12	in.
Selenium, total recoverable		12(12)	< 1.0	< 1.0		µg/L
Thallium, total recoverable		4(1)	< 0.066	0.092		µg/L
Total suspended solids	100	24(2)	< 1.1	12	3.8	mg/L
monthly average[d]	100	12	0.55	7.8	3.8	mg/L
Zinc, total recoverable	-	12(0)	5.8	74	41	µg/L

Table 2.4. FBP NPDES discharge and compliance rates – 2017 (continued)

Parameter	NPDES compliance rate (%)[a]	Number of measurements[b]	Concentration (and loading if applicable) Minimum	Maximum	Average[c]	Units
Outfall 015 (X-624 Groundwater Treatment Facility)						
Arsenic, total recoverable	-	4(3)	< 0.5	0.625		µg/L
Barium, total recoverable	-	4(0)	25	32	30	µg/L
Flow rate	-	363	0.001	0.0308	0.010	MGD
PCBs	100	4(4)	< 0.098	< 0.11		µg/L
pH	100	24	7.35	8.07	7.81	SU
Silver, total recoverable	-	12(9)	< 0.02	0.061		µg/L
Trichloroethene	100	24(5)	< 0.16	2.9		µg/L
monthly average[d]	100	12	0.078	2.3		µg/L
Outfall 602 (X-621 Coal Pile Runoff Treatment Facility)						
Flow rate	-	21	0.036	0.210	0.112	MGD
Iron, total	100	10(0)	87	270	148	µg/L
monthly average[d]	100	8	87	270	148	µg/L
Manganese, total	100	10(0)	66.5	230	115	µg/L
monthly average[d]	100	8	66.5	230	120	µg/L
pH	100	10	7.53	9.68	8.56	SU
Precipitation, total	-	242	0	2.53	0.15	in.
Total suspended solids	100	10(0)	5.6	16	9.0	mg/L
monthly average[d]	100	8	6	13	8.7	mg/L
Outfall 604 (X-700 Biodenitrification Facility)						
Copper, total	-	4(0)	0.80	1.5	1.2	µg/L
Flow rate	-	33	0.0024	0.01059	0.0098	MGD
Iron, total	-	4(0)	150	220	193	µg/L
Nickel, total	-	4(0)	0.73	0.90	0.84	µg/L
Nitrogen, nitrate	-	4(0)	3.95	50.6	28	mg/L
pH	100	4	7.62	8.70	8.15	SU
Zinc, total	-	4(0)	4.2	11	7.4	µg/L
Outfall 605 (X-705 Microfiltration Treatment System)[e]						
Outfall 608 (X-622 Groundwater Treatment Facility)						
Flow rate	-	365	0.0004	0.0923	0.056	MGD
pH	-	24	7.00	8.29	7.97	SU
Trichloroethene	100	24(18)	< 0.16	1.7		µg/L
1,2-*trans*-dichloroethene	100	24(24)	< 0.15	< 0.15		µg/L
monthly average[d]	100	12	0	0		µg/L
Outfall 610 (X-623 Groundwater Treatment Facility)						
Flow rate	-	4	0.001	0.0066	0.0029	MGD
pH	-	4	7.71	8.20	7.91	SU
Trichloroethene	100	4(4)	< 0.16	< 0.16		µg/L
monthly average[d]	100	4	0	0		µg/L
1,2-*trans*-dichloroethene	100	4(4)	< 0.15	< 0.15		µg/L
monthly average[d]	100	4	0	0		µg/L

Table 2.4. FBP NPDES discharge and compliance rates – 2017 (continued)

Parameter	NPDES compliance rate (%)[a]	Number of measurements[b]	Concentration (and loading if applicable) Minimum	Maximum	Average[c]	Units
Outfall 611 (X-627 Groundwater Treatment Facility)						
Flow rate	-	365	0.007	0.0568	0.032	MGD
pH	-	24	7.13	8.50	8.05	SU
Trichloroethene	100	24(2)	< 0.16	1.9	0.83	µg/L
monthly average[d]	100	12	0.31	1.5	0.83	µg/L
Monitoring Station 801 (upstream monitoring)						
48-hr acute toxicity, *Ceriodaphnia dubia*	-	6(5)	0	5		% affected
96-hr acute toxicity, *Pimephales promelas*	-	7(4)	0	10		% affected
Monitoring Station 902 (downstream far field monitoring)						
Water temperature	100	97	1.49	28.70	17.50	°C
monthly average	100	12	5.52	26.74	17.45	°C
Monitoring Station 903 (downstream far field monitoring)						
Water temperature	100	97	1.95	27.54	17.02	°C
monthly average	100	12	5.98	25.99	16.98	°C

[a]Compliance rates are provided only for those parameters with a limit specified in the NPDES permit (many parameters require monitoring only). At all outfalls except Outfalls 003, 004, and 605, permit limitations do not apply to total suspended solids (and iron and manganese at Outfall 605) if flow increases as a result of precipitation or snow melt and conditions set in the permit are met.
[b]Number in parentheses is the number of samples that were below the detection limit.
[c]Averages were not calculated for outfalls that had greater than 15% of the results below the detection limit. For outfalls with less than 15% of the results below the detection limit, any result below the detection limit was assumed to be zero for calculating the average for the parameter.
[d]To compute the monthly average, parameters that were undetected were assumed to be zero. Exceedances due to flow increases from precipitation or snow melt (see footnote a) were not included in the monthly average calculation.
[e]The X-705 Microfiltration Treatment System (Outfall 605) did not operate in 2017.

Table 2.5. MCS NPDES discharge and compliance rates – 2017

Parameter	NPDES compliance rate (%)	Number of measurements	Result			Units
			Minimum	Maximum	Average	
		Outfall 001[a]				
		Outfall 602				
Flow rate	100	365	289	15,591	8279	GPD
pH	100	256	5.89	8.79	6.93	SU

[a]This outfall was not used for process water discharges in 2017; therefore, monitoring was not required.

Table 2.6. Centrus NPDES discharge monitoring results – 2017

Parameter	Number of samples[a]	Concentration			Unit
		Minimum	Maximum	Average[b]	
Outfall 012 (X-230M Southwest Holding Pond)					
Cadmium	12(0)	0.061	0.48	0.24	µg/L
Chlorine	26(0)	0	0.08	0.03	mg/L
Copper	12(0)	0.40	2.4	1.3	µg/L
Flow rate	365	0.0032	1.489	0.216	MGD
Iron	12(0)	280	1200	609	µg/L
Oil and grease	24(23)	< 1.6	2.3		mg/L
PCBs, total	1(1)	< 0.1			µg/L
pH	24	7.52	8.69	8.19	SU
Selenium	12(12)	< 1	< 1		µg/L
Silver	12(9)	< 0.02	0.025		µg/L
Suspended solids	24(0)	1.6	13	5.8	mg/L
Thallium	12(11)	< 0.066	0.094		µg/L
Trichloroethene	12(12)	< 0.16	< 0.16		µg/L
Outfall 013 (X-230N West Holding Pond)					
Antimony	12(0)	0.32	0.86	0.49	µg/L
Arsenic	12(0)	0.51	0.97	0.77	µg/L
Chlorine	24(0)	0	0.05	0.03	mg/L
Copper	12(0)	0.83	2.4	1.6	µg/L
Flow rate	365	0.0127	1.790	0.166	MGD
Oil and grease	24(21)	< 1.7	8.7		mg/L
PCBs, total	1(1)	< 0.098			µg/L
pH	24	7.74	8.68	8.24	SU
Suspended solids	24(0)	1.2	23	4.4	mg/L
Thallium	12(9)	< 0.066	0.12		µg/L
Zinc	12(0)	3.4	59	20	µg/L
Outfall 613 (X-6002 Particulate Separator)					
Chlorine	16(0)	0	2.4	0.20	mg/L
Flow rate	273	0	0.022	0.0002	MGD
Suspended solids	16(4)	0.03	5.6		mg/L

[a]Number in parentheses is the number of samples that were below the detection limit.
[b]Averages were not calculated for outfalls that had greater than 15% of the results below the detection limit. For outfalls with less than 15% of the results below the detection limit, any result below the detection limit was assigned a value at the detection limit for calculating an average for the parameter.

Table 2.7. Radionuclides in surface water runoff samples from FBP and MCS cylinder storage yards – 2017

Sample location	Parameter	Unit	Number of samples[a]	Minimum[b]	Maximum	Average[c]
			FBP cylinder storage yards			
X745-B1	Alpha activity	pCi/L	10(5)	< 0.278	303	
	Beta activity	pCi/L	10(3)	< 1.84	232	
	Uranium	µg/L	10(1)	0.157	21.1	3.21
X745-B2	Alpha activity	pCi/L	10(2)	< 4.12	70.2	
	Beta activity	pCi/L	10(4)	< 1.72	72.5	
	Uranium	µg/L	10(0)	1.57	44.5	14.4
X745-B3	Alpha activity	pCi/L	10(3)	< 1.18	66.4	
	Beta activity	pCi/L	10(2)	< 3.19	105	
	Uranium	µg/L	10(1)	< 0.067	5.15	1.39
X745-D1	Alpha activity	pCi/L	10(5)	< 0.0514	12.1	
	Beta activity	pCi/L	10(1)	< 3.75	17.2	9.86
	Uranium	µg/L	10(0)	0.166	7.84	3.17
X745-F1	Alpha activity	pCi/L	11(7)	0	81.7	
	Beta activity	pCi/L	11(4)	< 0.63	74.9	
	Uranium	µg/L	11(0)	0.187	5.62	1.53
X745-F2	Alpha activity	pCi/L	11(7)	< 0.362	19.2	
	Beta activity	pCi/L	11(2)	3.92	23.1	
	Uranium	µg/L	11(0)	0.93	7.45	2.92
X745-F3	Alpha activity	pCi/L	11(8)	< 1.3	10.1	
	Beta activity	pCi/L	11(7)	< 0.754	11.8	
	Uranium	µg/L	11(0)	1.29	3.19	2.10
			MCS cylinder storage yards			
X745-C1	Alpha activity	pCi/L	12(0)	0.939	3.76	2.24
	Beta activity	pCi/L	12(0)	0.953	7.28	3.42
	Uranium	µg/L	12(0)	0.81	3.4	2.1
X745-C2	Alpha activity	pCi/L	13(0)	1.20	6.44	3.35
	Beta activity	pCi/L	13(0)	1.07	10.5	3.88
	Uranium	µg/L	13(0)	1.4	12	5.1
X745-C3	Alpha activity	pCi/L	12(0)	0.414	2.53	1.50
	Beta activity	pCi/L	12(0)	0.532	3.40	2.03
	Uranium	µg/L	12(1)	0	3.4	1.6
X745-C4	Alpha activity	pCi/L	12(1)	0	5.58	2.35
	Beta activity	pCi/L	12(0)	1.49	5.68	3.34
	Uranium	µg/L	12(0)	1.2	13	4.3
X745-E1	Alpha activity	pCi/L	12(1)	0	2.44	1.20
	Beta activity	pCi/L	12(0)	3.86	8.98	5.63
	Uranium	µg/L	12(1)	0	1.9	0.93

Table 2.7. Radionuclides in surface water runoff samples from FBP and MCS cylinder storage yards – 2017 (continued)

Sample location	Parameter	Unit	Number of samples[a]	Minimum[b]	Maximum	Average[c]
MCS cylinder storage yards (continued)						
X745-G1A	Alpha activity	pCi/L	12(0)	0.714	4.37	2.52
	Beta activity	pCi/L	12(0)	1.21	8.48	4.30
	Uranium	µg/L	12(0)	1.6	4.1	2.7
X745-G2	Alpha activity	pCi/L	12(0)	1.25	7.10	2.41
	Beta activity	pCi/L	12(0)	1.63	5.90	3.40
	Uranium	µg/L	12(0)	1.1	3.8	2.3

[a]Number in parentheses is the number of samples that were below the detection limit.
[b]Minimum values reported as "0" may actually be negative results. Because of the statistical nature of radiation detection, results for samples that have no radioactivity are often negative values because background radioactivity is subtracted out. These negative value results are reported as "0" in the table for simplicity.
[c]Averages were not calculated for locations that had greater than 15% of the results below the detection limit. For locations with less than 15% of the results below the detection limit, any result below the detection limit was assigned a value at the detection limit to calculate the average for the parameter.

Table 2.8. Drainage basin monitoring of surface water and sediment for MCS cylinder storage yards – 2017

Location	Parameter[a]	First quarter[b]			Second quarter[b]		
		SW-F	SW-UF	Sed	SW-F	SW-UF	Sed
UDS X01	Total PCB	0.21U	0.20U	11U	0.21U	0.21U	10U
RM-8	Total PCB	0.21U	0.21U	210	0.21U	0.22U	91
UDS X02	Total PCB	0.21U	0.21U	230	0.21U	0.21U	68
RM-10	Total PCB	0.21U	0.21U	17J	0.21U	0.21U	24J

Location	Parameter[a]	Third quarter[b]			Fourth quarter[b]		
		SW-F	SW-UF	Sed	SW-F	SW-UF	Sed
UDS X01	Total PCB	0.35U	0.34U	41J	0.33U	0.33U	27J
RM-8	Total PCB	0.35U	0.36U	25J	0.33U	0.34U	13U
UDS X02	Total PCB	0.35U	0.34U	12U	0.33U	0.33U	67
RM-10	Total PCB	0.39U	0.33U	13U	0.33U	0.34U	12U

[a]Results for surface water (SW) are reported in µg/L; results for sediment (Sed) are reported in µg/kg.
[b]Abbreviations and data qualifiers are as follows: SW-F – filtered surface water; SW-UF – unfiltered surface water; Sed – sediment; J – the reported value is an estimated concentration greater than the method detection limit but less than the reporting limit; U – undetected.

Table 2.9. Ambient air monitoring program summary for radionuclides and fluoride – 2017

Sampling Location	Parameter[a]	No. of measurements[b]	Minimum[c, d]	Maximum[c, d]	Average[c, e]
		On-site air samplers			
A8	Americium-241	4(4)	2.1E-06	4.0E-06	
	Fluoride	20(20)	8.8E-03	2.0E-02	
	Neptunium-237	4(4)	0	2.5E-06	
	Plutonium-238	4(4)	0	1.4E-06	
	Plutonium-239/240	4(4)	0	2.2E-06	
	Technetium-99	12(4)	1.6E-05	3.9E-03	
	Uranium	12(12)	4.0E-05	9.7E-05	
	Uranium-233/234	12(11)	1.7E-05	4.5E-05	
	Uranium-235/236	12(12)	0	5.4E-06	
	Uranium-238	12(12)	1.3E-05	3.2E-05	
A10	Americium-241	4(4)	1.8E-06	5.1E-06	
	Fluoride	39(37)	7.7E-03	2.3E-02	
	Neptunium-237	4(4)	0	3.1E-06	
	Plutonium-238	4(4)	0	3.3E-06	
	Plutonium-239/240	4(4)	0	3.2E-06	
	Technetium-99	12(2)	1.2E-04	2.5E-03	
	Uranium	12(12)	4.2E-05	1.4E-04	
	Uranium-233/234	12(10)	2.1E-05	4.9E-05	
	Uranium-235/236	12(12)	4.8E-07	6.2E-06	
	Uranium-238	12(12)	1.4E-05	4.6E-05	
A29	Americium-241	4(4)	1.3E-06	6.7E-06	
	Fluoride	49(49)	8.1E-03	2.3E-02	
	Neptunium-237	4(4)	0	1.3E-06	
	Plutonium-238	4(4)	0	2.0E-06	
	Plutonium-239/240	4(4)	6.8E-07	4.7E-06	
	Technetium-99	12(6)	0	2.1E-03	
	Uranium	12(12)	2.7E-05	1.1E-04	
	Uranium-233/234	12(12)	1.4E-05	5.1E-05	
	Uranium-235/236	12(12)	5.3E-07	3.5E-06	
	Uranium-238	12(12)	8.8E-06	3.7E-05	
A36	Americium-241	4(4)	7.1E-07	5.1E-06	
	Fluoride	35(33)	9.5E-03	2.6E-02	
	Neptunium-237	4(4)	1.2E-06	2.5E-06	
	Plutonium-238	4(4)	0	5.0E-06	
	Plutonium-239/240	4(4)	0	3.6E-06	
	Technetium-99	12(3)	3.4E-05	7.7E-03	
	Uranium	12(9)	3.5E-05	5.0E-04	
	Uranium-233/234	12(8)	2.5E-05	2.5E-04	
	Uranium-235/236	12(12)	5.2E-07	8.6E-06	
	Uranium-238	12(9)	1.1E-05	1.7E-04	
A40A	Fluoride	45(42)	7.6E-03	2.1E-02	

Table 2.9. Ambient air monitoring program summary for radionuclides and fluoride – 2017 (continued)

Sampling Location	Parameter[a]	No. of measurements[b]	Minimum[c, d]	Maximum[c, d]	Average[c, e]
		On-site air samplers			
T7	Americium-241	4(4)	1.4E-06	3.9E-06	
	Neptunium-237	4(4)	0	1.4E-06	
	Plutonium-238	4(4)	0	2.0E-06	
	Plutonium-239/240	4(4)	6.8E-07	4.1E-06	
	Technetium-99	12(4)	6.0E-05	1.7E-03	
	Uranium	12(12)	3.1E-05	1.1E-04	
	Uranium-233/234	12(11)	1.7E-05	5.5E-05	
	Uranium-235/236	12(12)	0	5.0E-06	
	Uranium-238	12(12)	1.1E-05	3.8E-05	
		Off-site air samplers			
A3	Americium-241	4(4)	2.0E-06	6.0E-06	
	Fluoride	36(30)	7.1E-03	2.8E-02	
	Neptunium-237	4(4)	0	1.3E-06	
	Plutonium-238	4(4)	0	0	
	Plutonium-239/240	4(4)	6.7E-07	4.8E-06	
	Technetium-99	11(4)	6.6E-06	5.7E-03	
	Uranium	11(11)	5.1E-05	1.0E-04	
	Uranium-233/234	11(10)	1.8E-05	4.9E-05	
	Uranium-235/236	11(11)	1.6E-06	3.8E-06	
	Uranium-238	11(11)	1.7E-05	3.4E-05	
A6	Americium-241	4(4)	2.0E-06	4.8E-06	
	Fluoride	38(34)	5.7E-03	2.6E-02	
	Neptunium-237	4(4)	0	1.2E-06	
	Plutonium-238	4(4)	0	1.4E-06	
	Plutonium-239/240	4(4)	1.3E-06	3.4E-06	
	Technetium-99	12(8)	0	3.6E-03	
	Uranium	12(12)	4.9E-05	1.3E-04	
	Uranium-233/234	12(11)	1.6E-05	4.4E-05	
	Uranium-235/236	12(12)	9.6E-07	5.1E-06	
	Uranium-238	12(12)	1.6E-05	4.5E-05	
A9	Americium-241	4(4)	7.0E-07	3.1E-06	
	Fluoride	51(50)	8.6E-03	2.4E-02	
	Neptunium-237	4(4)	0	6.6E-07	
	Plutonium-238	4(4)	0	3.0E-06	
	Plutonium-239/240	4(4)	7.5E-07	4.4E-06	
	Technetium-99	12(7)	0	3.4E-03	
	Uranium	12(11)	4.4E-05	1.3E-04	
	Uranium-233/234	12(11)	1.9E-05	5.0E-05	
	Uranium-235/236	12(12)	1.0E-06	4.5E-06	
	Uranium-238	12(11)	1.4E-05	4.4E-05	

Table 2.9. Ambient air monitoring program summary for radionuclides and fluoride – 2017 (continued)

Sampling Location	Parameter[a]	No. of measurements[b]	Minimum[c, d]	Maximum[c, d]	Average[c, e]
A12	Americium-241	4(4)	1.9E-06	3.0E-06	
	Fluoride	39(18)	8.0E-03	4.2E-02	
	Neptunium-237	4(4)	0	0	
	Plutonium-238	4(4)	0	7.6E-07	
	Plutonium-239/240	4(4)	2.0E-06	3.9E-06	
	Technetium-99	12(4)	2.2E-05	2.1E-03	
	Uranium	12(12)	4.3E-05	1.2E-04	
	Uranium-233/234	12(11)	1.4E-05	6.6E-05	
	Uranium-235/236	12(12)	7.4E-07	5.0E-06	
	Uranium-238	12(12)	1.4E-05	3.8E-05	
A15	Americium-241	4(4)	1.3E-06	4.3E-06	
	Fluoride	10(10)	5.9E-03	8.8E-03	
	Neptunium-237	4(4)	0	6.6E-07	
	Plutonium-238	4(4)	7.1E-07	2.2E-06	
	Plutonium-239/240	4(4)	1.4E-06	2.8E-06	
	Technetium-99	12(5)	0	3.3E-03	
	Uranium	12(12)	2.6E-05	1.0E-04	
	Uranium-233/234	12(12)	1.0E-05	3.9E-05	
	Uranium-235/236	12(12)	0	3.9E-06	
	Uranium-238	12(12)	8.3E-06	3.3E-05	
A23	Americium-241	4(4)	2.0E-06	5.8E-06	
	Fluoride	37(29)	7.3E-03	2.0E-02	
	Neptunium-237	4(4)	6.0E-07	2.1E-06	
	Plutonium-238	4(4)	0	3.0E-06	
	Plutonium-239/240	4(4)	6.6E-07	5.1E-06	
	Technetium-99	12(4)	5.0E-05	3.0E-03	
	Uranium	12(11)	4.0E-05	1.4E-04	
	Uranium-233/234	12(10)	1.9E-05	6.3E-05	
	Uranium-235/236	12(12)	4.8E-07	3.9E-06	
	Uranium-238	12(11)	1.3E-05	4.7E-05	
A24	Americium-241	4(4)	1.9E-06	4.9E-06	
	Fluoride	44(42)	8.8E-03	2.3E-02	
	Neptunium-237	4(4)	0	2.5E-06	
	Plutonium-238	4(4)	0	2.2E-06	
	Plutonium-239/240	4(4)	1.5E-06	3.3E-06	
	Technetium-99	12(3)	0	2.5E-03	
	Uranium	12(11)	3.8E-05	1.3E-04	
	Uranium-233/234	12(9)	1.9E-05	6.4E-05	
	Uranium-235/236	12(12)	4.9E-07	4.7E-06	
	Uranium-238	12(11)	1.2E-05	4.3E-05	

Table 2.9. Ambient air monitoring program summary for radionuclides and fluoride – 2017 (continued)

Sampling Location	Parameter[a]	No. of measurements[b]	Minimum[c, d]	Maximum[c, d]	Average[c, e]
A28	Americium-241	4(4)	1.9E-06	8.8E-06	
	Fluoride	51(47)	7.3E-03	3.4E-02	
	Neptunium-237	4(3)	0	2.1E-05	
	Plutonium-238	4(4)	0	2.5E-06	
	Plutonium-239/240	4(4)	1.9E-06	3.7E-06	
	Technetium-99	12(9)	0	1.9E-03	
	Uranium	12(12)	4.1E-05	1.1E-04	
	Uranium-233/234	12(12)	1.3E-05	3.3E-05	
	Uranium-235/236	12(12)	5.1E-07	3.2E-06	
	Uranium-238	12(12)	1.4E-05	3.5E-05	
A37 (background)	Americium-241	4(4)	1.9E-06	7.9E-06	
	Fluoride	42(38)	9.0E-03	2.3E-02	
	Neptunium-237	4(4)	0	2.0E-06	
	Plutonium-238	4(4)	6.4E-07	1.3E-06	
	Plutonium-239/240	4(4)	0	3.8E-06	
	Technetium-99	12(9)	7.4E-06	3.1E-03	
	Uranium	12(12)	4.2E-05	1.1E-04	
	Uranium-233/234	12(12)	1.2E-05	3.1E-05	
	Uranium-235/236	12(12)	4.9E-07	3.5E-06	
	Uranium-238	12(12)	1.4E-05	3.7E-05	
A41A	Americium-241	4(4)	1.2E-06	5.0E-06	
	Fluoride	51(36)	7.1E-03	4.3E-02	
	Neptunium-237	4(3)	0	1.5E-04	
	Plutonium-238	4(4)	0	2.9E-06	
	Plutonium-239/240	4(4)	1.3E-06	5.0E-06	
	Technetium-99	12(7)	6.9E-06	3.6E-03	
	Uranium	12(11)	4.6E-05	1.2E-04	
	Uranium-233/234	12(11)	1.9E-05	5.2E-05	
	Uranium-235/236	12(12)	5.1E-07	4.6E-06	
	Uranium-238	12(11)	1.5E-05	3.9E-05	

[a]All parameters are measured in pCi/m^3 with the exception of uranium and fluoride which are measured in $\mu g/m^3$.
[b]Radiological samples for technetium-99, uranium, and uranium isotopes are analyzed monthly, samples for americium-241, neptunium-237, plutonium-238, and plutonium-239/240 are analyzed one month per quarter, and samples for fluoride are analyzed weekly. Number in parentheses is the number of samples that were below the detection limit. If the analytical result for a sample was below the detection limit, the ambient air concentration was calculated based on the detection limit for the sample.
[c]Results are provided in scientific notation. The number and sign (+ or -) to the right of the "E" indicate the number of places to the right or left of the decimal point. For example, 3.4E-04 is 0.00034 (the decimal point moves four places to the left); 2.1E+02 is 210 (the decimal point moves two places to the right).
Ambient concentrations of uranium and uranium isotopes reported in 2017 may be slightly elevated and should be considered estimated. Uranium and uranium isotopes were detected in quality control samples associated with the ambient air samples and subsequently in unused filters obtained from the manufacturer that are placed at the ambient air stations to collect samples. The presence of uranium and uranium isotopes in the unused filters may have caused slightly elevated analytical results for uranium and uranium isotopes. Levels of these constituents in ambient air are calculated based on the analytical results and therefore may be slightly elevated as well. Reported minimum and maximum values include these estimated results.
Ambient concentrations of radionuclides should be considered estimated due to a slightly higher than acceptable deviation (up to -1.55% with an acceptable limit of ±1%) in flow meter calibration for 2017.
[d]Values reported as "0" may actually be negative results. Because of the statistical nature of radiation detection, results for samples that have no radioactivity are often negative values because background radioactivity is subtracted out. These negative value results are reported as "0" in the table for simplicity.
[e]Averages are not calculated for locations that had greater than 15% of the results below the detection limit. For locations with less than 15% of the results below the detection limit, any result below the detection limit was assigned a value at the detection limit to calculate the average for the parameter.

Table 2.10. External radiation monitoring program (mrem) – 2017

Location	First quarter	Second quarter	Third quarter	Fourth quarter	Cumulative annual whole body dose[a]
A12	20	21	24	20	85
A15	20	24	25	20	89
A23	20	20	25	20	85
A24	21	24	25	22	92
A28	20	21	22	19	82
A29	20	23	25	20	88
A3	19	23	24	19	85
A36	19	21	23	19	82
A40A	19	20	23	21	83
A6	20	20	24	19	83
A8	23	24	25	24	96
A9	20	23	25	20	88
UPOLE-1404A	19	21	23	18	81
UPOLE-518	18	21	23	19	81
UPOLE-862	28	33	36	27	124
UPOLE-874	144	165	166	151	626
UPOLE-906	17	20	21	17	75
UPOLE-933	18	19	23	17	77
X230-J2	21	22	25	20	88

[a]The annual occupational whole body dose limit set by Title 10 of the *Code of Federal Regulations* Part 20 is 5000 mrem.

Table 2.11. External radiation monitoring (mrem) at locations near cylinder storage yards – 2017

Location	First quarter	Second quarter	Third quarter	Fourth quarter	Cumulative annual whole body dose[a]
UPOLE-41	151	125	134	116	526
UPOLE-868	286	314	370	299	1269
UPOLE-874	149	166	170	145	630
UPOLE-882	235	252	285	244	1016
UPOLE-890	72	59	69	53	253

[a]The annual occupational whole body dose limit set by Title 10 of the *Code of Federal Regulations* Part 20 is 5000 mrem.

Table 2.12. Settleable solids monitoring results – 2017

Sampling location	Parameter[a]	Unit	Results[b] June	Results[b] October
Little Beaver Creek				
EDD-SW01 (FBP Outfalls 001& 015)	Settleable solids	mg/L	4U 10[c]	23.6
	Suspended solids	mg/L	4*U 17*[c]	28.4
FBP Outfall 005	Settleable solids	mg/L	4U[d]	ns
	Suspended solids	mg/L	4U[d]	ns
FBP Outfall 009	Settleable solids	mg/L	4U	4U
	Suspended solids	mg/L	4*U	4UJ
FBP Outfall 011	Settleable solids	mg/L	4U	4U 4U[c]
	Suspended solids	mg/L	4*U	4UJ 4UJ[c]
Big Run Creek				
FBP Outfall 002	Settleable solids	mg/L	4U	4U
	Suspended solids	mg/L	4*U	4UJ
Scioto River				
ACP NPDES Outfall 012	Settleable solids	mg/L	5	4U
	Suspended solids	mg/L	5*	4U
WDD-SW03 (FBP Outfall 010 & ACP Outfall 013)	Settleable solids	mg/L	4U	4U 4U[c]
	Suspended solids	mg/L	4*U	4UJ 4UJ[c]
FBP Outfall 003	Settleable solids	mg/L	4U 4U[c]	17.2
	Suspended solids	mg/L	4*U 4*U[c]	23.6
FBP Outfall 004	Settleable solids	mg/L	4U	4U
	Suspended solids	mg/L	7*	4UJ
Background locations				
RW-6 (Scioto River)	Settleable solids	mg/L	16	21.2
	Suspended solids	mg/L	36*	21.2
RW-5 (Big Beaver Creek)	Settleable solids	mg/L	7	4U
	Suspended solids	mg/L	12*	4UJ
LBC-SW12 (Little Beaver Creek)	Settleable solids	mg/L	4U	4U
	Suspended solids	mg/L	4*U	4UJ

[a]Suspended solids are the solids in a water sample (such as silt or clay particles) that can be trapped by a filter. Settleable solids are a component of suspended solids defined as the particles that settle out of suspension in water within a defined time period.
[b]Abbreviations and data qualifiers are as follows: * – duplicate analysis is not within control limits. J – estimated. U – undetected. ns – not sampled.
[c]This result is for the duplicate sample collected from this location. A duplicate sample is a sample collected from the same location at the same time and using the same sampling device (if possible) as the regular sample.
[d]Sample collected in January 2017.

Table 2.13. Local surface water monitoring program results – 2017

Location	Parameter[a]	Second quarter[b,c]	Fourth quarter[b,c]	
Scioto River	Americium-241	-0.00617U	0.0453U	
RW-1A	Neptunium-237	0.00562U	-0.00492U	
(downstream)	Plutonium-238	0.00611U	0.00509U	
	Plutonium-239/240	0U	0.0204U	
	Technetium-99	-1.9U	3.19U	
	Uranium	1.67	2.18	
	Uranium-233/234	0.667	0.639	
	Uranium-235/236	0.0345U	0.0292U	
	Uranium-238	0.556	0.729	
Scioto River	Americium-241	0.0369U	0U	
RW-6	Neptunium-237	0.0067U	0.0095U	
(upstream)	Plutonium-238	0U	0U	
	Plutonium-239/240	0U	0.0216U	
	Technetium-99	-3.05U	-0.0221U	
	Uranium	2.46	2.03	
	Uranium-233/234	0.694	0.662	
	Uranium-235/236	0.0359U	0.0248U	
	Uranium-238	0.821	0.677	
Little Beaver	Americium-241	0.00576U	0.00523U	
Creek	Neptunium-237	0.017U	0U	
RW-7	Plutonium-238	-0.00551U	0.00515U	
(downstream)	Plutonium-239/240	0.0165U	0U	
	Technetium-99	5.84U	5.85UJ	
	Uranium	1.18	3.13	
	Uranium-233/234	1.5	4.72	
	Uranium-235/236	0.111U	0.214	
	Uranium-238	0.379	1.02	
RW-8	Americium-241	0.0253U	0.0146U	
(downstream)	Neptunium-237	0.006U	0.00488U	
	Plutonium-238	-0.0202U	0.00574U	
	Plutonium-239/240	0.0135U	0.0115U	
	Technetium-99	3.21U	4.5UJ	
	Uranium	0.812	2.64	
	Uranium-233/234	1.06	3.29	
	Uranium-235/236	0.0536U	0.137	
	Uranium-238	0.265	0.865	
RW-12	Americium-241	0.0372U	0.0259U	0.0409U[d]
(upstream)	Neptunium-237	-0.0165U	0U	0U[d]
	Plutonium-238	0.00609U	0U	0.00558U[d]
	Plutonium-239/240	0.00609U	0.0232U	0.00559U[d]
	Technetium-99	0.565U	3.94U	1.74U[d]
	Uranium	0.107U	0.0735U	0.0668U[d]
	Uranium-233/234	0.075U	0.0504UJ	0.0404UJ[d]
	Uranium-235/236	0.00622U	0.0114U	0U[d]
	Uranium-238	0.035U	0.0229U	0.0224U[d]

Table 2.13. Local surface water monitoring program results – 2017 (continued)

Location	Parameter[a]	Second quarter[b,c]		Fourth quarter[b,c]	
Big Beaver Creek RW-13 (downstream)	Americium-241	0.0242U	0.0113U[d]	0.0234U	
	Neptunium-237	0U	0U[d]	-0.00535U	
	Plutonium-238	-0.00634U	0.0223U[d]	0U	
	Plutonium-239/240	0.00634U	0.0223U[d]	0.0111U	
	Technetium-99	0.832U	-0.0999U[d]	9.12	
	Uranium	0.297	0.228U[d]	1.26J	
	Uranium-233/234	0.291	0.328[d]	1.46	
	Uranium-235/236	0.00682U	0.0376U[d]	0.0878UJ	
	Uranium-238	0.0987	0.0706U[d]	0.41	
RW-5 (upstream)	Americium-241	0.0274U		0.0101U	
	Neptunium-237	0.00487U		0.0104U	
	Plutonium-238	-0.00675U		-0.00546U	
	Plutonium-239/240	0.0337U		0.0164U	
	Technetium-99	0.72U		1.41U	
	Uranium	0.33		0.273J	
	Uranium-233/234	0.0844U		0.109	
	Uranium-235/236	0.015U		0.00564U	
	Uranium-238	0.109		0.0908J	
Big Run Creek RW-2 (downstream)	Americium-241	0.0105U		0.0344U	
	Neptunium-237	-0.0153U		0.00504U	
	Plutonium-238	0.0118U		0.0105U	
	Plutonium-239/240	0.0178U		0.0105U	
	Technetium-99	0.653U		1.19U	
	Uranium	0.179U		0.417J	
	Uranium-233/234	0.128		0.252	
	Uranium-235/236	0.00613U		0.0336U	
	Uranium-238	0.0592U		0.135	
RW-3 (downstream)	Americium-241	0.0165U	0.0232U[d]	0.0152U	0.0101U[d]
	Neptunium-237	0U	0.0054U[d]	0.0106U	0U[d]
	Plutonium-238	0.017U	-0.00591U[d]	0.00582	0.0156U[d]
	Plutonium-239/240	0.0227U	0.00591U[d]	0.0233U	0.0104U[d]
	Technetium-99	0.899U	0.277U[d]	2.16U	2.22U[d]
	Uranium	1.05	0.752[d]	0.482J	0.684J[d]
	Uranium-233/234	0.82	0.739[d]	0.489	0.403[d]
	Uranium-235/236	0.0581U	0.019U[d]	0.0239U	0.0173U[d]
	Uranium-238	0.342	0.25[d]	0.158	0.227[d]

Table 2.13. Local surface water monitoring program results – 2017 (continued)

Location	Parameter[a]	Second quarter[b,c]	Fourth quarter[b,c]
Big Run Creek (continued)	Americium-241	0.0113U	0.0203U
	Neptunium-237	0U	0.00472U
RW-33 (upstream)	Plutonium-238	-0.0178U	0.00551U
	Plutonium-239/240	0.0178U	0.011U
	Technetium-99	-1.67U	1.86U
	Uranium	0.0956U	0.0684U
	Uranium-233/234	0.0252U	0.0512UJ
	Uranium-235/236	0.0125U	0.0106U
	Uranium-238	0.0302U	0.0213U
Background creeks	Americium-241	0.0132U	0.0191U
RW-10N	Neptunium-237	0.00588U	0.0134U
	Plutonium-238	-0.00668U	0U
	Plutonium-239/240	0.0468U	0.0166U
	Technetium-99	-1.01U	2.96U
	Uranium	0.302U	0.471J
	Uranium-233/234	0.189	0.125
	Uranium-235/236	0.00733U	0.00576U
	Uranium-238	0.1	0.157
RW-10S	Americium-241	0.0333U	0.0354U
	Neptunium-237	-0.00493U	0U
	Plutonium-238	0.00612U	0.0167U
	Plutonium-239/240	0.0184U	0.0223U
	Technetium-99	-1.16U	3.85U
	Uranium	0.131U	0.17UJ
	Uranium-233/234	0.0906	0.0592UJ
	Uranium-235/236	0.025U	0.017U
	Uranium-238	0.0403U	0.0546UJ
RW-10E	Americium-241	0.0349U	0.0106U
	Neptunium-237	-0.00517U	-0.0152U
	Plutonium-238	-0.00592U	0.00544U
	Plutonium-239/240	0.00592U	0U
	Technetium-99	-2.54U	2.21U
	Uranium	0.0726U	0.0566U
	Uranium-233/234	0.0195U	0.0363UJ
	Uranium-235/236	0U	0.00564U
	Uranium-238	0.0244U	0.0182U

Table 2.13. Local surface water monitoring program results – 2017 (continued)

Location	Parameter[a]	Second quarter[b,c]	Fourth quarter[b,c]
Background creeks	Americium-241	-0.00619U	0.0242U
RW-10W	Neptunium-237	0.00611U	-0.00957U
	Plutonium-238	0U	0U
	Plutonium-239/240	-0.0062U	0.0217U
	Technetium-99	-0.655U	2.91U
	Uranium	0.0161U	0.0685U
	Uranium-233/234	0.0217U	0.0443UJ
	Uranium-235/236	0U	0.00551U
	Uranium-238	0.00541U	0.0221U

[a]Results are reported in µg/L (uranium) and pCi/L (all other parameters).
[b]Abbreviations and data qualifiers are as follows: U – undetected. J – the reported result is estimated.
[c]Because of the statistical nature of radiation detection, results for samples that have no radioactivity are often negative values because background radioactivity is subtracted out.
[d]This result is for the duplicate sample collected from this location. A duplicate sample is a sample collected from the same location at the same time and using the same sampling device (if possible) as the regular sample.

Table 2.14. Sediment monitoring program results – 2017

Parameter	Unit	Location/results[a,b]			
		Scioto River and outfalls that discharge to the Scioto River			
		RM-6 Upstream @ Piketon	*RM-1A Downstream @ Lucasville*	*RM-9 Outfall 012*	*RM-10 Outfall 010/Outfall 013*
Aluminum	mg/kg	7710D	4010D	4770D	6040D
Americium-241	pCi/g	0.00301U	0.000458U	0.00125U	0U
Antimony	mg/kg	0.0735DJ	0.0723DJ	0.125DJ	0.0455DU
Arsenic	mg/kg	11.9	8.35	16.3	12
Barium	mg/kg	96.1D	48.3D	65.3D	83.9D
Beryllium	mg/kg	0.38D	0.272D	0.459D	0.619D
Cadmium	mg/kg	0.543D	0.33D	0.948D	0.0725D
Calcium	mg/kg	39000D	41800D	2090D	876D
Chromium	mg/kg	11.5	7.35	14.8D	10.1
Copper	mg/kg	21.7D	11.1	17.6D	6.56
Iron	mg/kg	21000D	14200D	42400D	21700D
Lead	mg/kg	15.6	9.39	12.1	12.5
Magnesium	mg/kg	17500D	17900D	1840D	864D
Manganese	mg/kg	573D	383D	1110D	618D
Mercury	mg/kg	0.0426J	0.0249J	0.0161J	0.0171J
Neptunium-237	pCi/g	0.00045U	0U	0U	0.0103U
Nickel	mg/kg	23.5D	15.6D	39.7D	7.2
Plutonium-238	pCi/g	0U	0.000592U	-0.00163U	-0.00117U
Plutonium-239/240	pCi/g	0.00178U	0.00414U	0.00272U	0.00293U
PCB, total	µg/kg	47.6	68.2	17.7U	19.9U
Selenium	mg/kg	0.812D	0.565D	0.413D	0.922D
Silicon	mg/kg	654D	538D	450D	515D
Silver	mg/kg	0.471U	0.485U	0.448U	0.488U
Technetium-99	pCi/g	-0.0265U	-0.0106U	-0.0401U	-0.00569U
Thallium	mg/kg	0.274D	0.173D	0.176D	0.118D
Uranium	µg/g	1.51	0.982	1.47	1.06
Uranium-233/234	pCi/g	0.442	0.296	0.517	0.355
Uranium-235/236	pCi/g	0.0237	0.0169	0.0257	0.0203
Uranium-238	pCi/g	0.504	0.328	0.491	0.352
Zinc	mg/kg	92.9D	60.7D	146D	25.8D

Table 2.14. Sediment monitoring program results – 2017 (continued)

Parameter	Unit	Location/results[a,b]			
		Little Beaver Creek			
		RM-12 Upstream	*RM-11 X-230J7 Discharge*	*RM-8 Downstream @ Outfall 009 Discharge*	*RM-7 Downstream @ Confluence*
Aluminum	mg/kg	8860D	3750D	7290D	5010D
Americium-241	pCi/g	0.000504U	0.00212U	0.00355U	0.00225U
Antimony	mg/kg	0.0474DU	0.405D	0.1DJ	0.107DJ
Arsenic	mg/kg	10.5	16.5	28.2	14.6
Barium	mg/kg	71.1D	30.1D	126D	67.7D
Beryllium	mg/kg	0.62D	0.314D	0.904D	0.456D
Cadmium	mg/kg	0.0474DU	0.533D	0.926D	0.534D
Calcium	mg/kg	570D	51400D	5550D	27900D
Chromium	mg/kg	14.6D	11.1	28.3D	13.4D
Copper	mg/kg	8.64	26.9D	18.8D	14.6D
Iron	mg/kg	23500D	19400D	40100D	22800D
Lead	mg/kg	15.7	15.1	29.3D	27.3D
Magnesium	mg/kg	1110D	23500D	2600D	14300D
Manganese	mg/kg	110D	423D	1870D	744D
Mercury	mg/kg	0.0234J	0.528	0.0731J	0.0572J
Neptunium-237	pCi/g	-0.00115U	0.00403U	0.0103U	0.00876U
Nickel	mg/kg	12.8D	23.6D	46.9D	24.1D
Plutonium-238	pCi/g	0.0013U	0.00173U	0.00263U	0.00161U
Plutonium-239/240	pCi/g	0.0013U	0.00604U	0.0046U	0.00588U
PCB, total	µg/kg	19.2U	208	175	57.1
Selenium	mg/kg	0.57D	1.57D	1.02D	0.647D
Silicon	mg/kg	544D	467D	500D	486D
Silver	mg/kg	0.476U	0.494U	0.474U	0.485U
Technetium-99	pCi/g	-0.127U	3.62	2.49	3.42
Thallium	mg/kg	0.126D	0.24D	0.26D	0.184D
Uranium	µg/g	0.81	3.43	3.39	2.36
Uranium-233/234	pCi/g	0.34	6.88	3.14	2.55
Uranium-235/236	pCi/g	0.0128U	0.291	0.16	0.128
Uranium-238	pCi/g	0.27	1.11	1.11	0.774
Zinc	mg/kg	39.2D	329D	149D	92.1D

Table 2.14. Sediment monitoring program results – 2017 (continued)

Parameter	Unit	Location/results[a,b]		
			Big Beaver Creek	
		RM-15 Upstream	*RM-15 Upstream (duplicate sample)*	*RM-5 Confluence with Little Beaver Creek*
Aluminum	mg/kg	3270D	3170D	5260D
Americium-241	pCi/g	0.00199U	0.00132U	0.00134U
Antimony	mg/kg	0.0533*DNJ	0.0619*DNJ	0.0468DU
Arsenic	mg/kg	7.4	7.73	8.16
Barium	mg/kg	37D	39.5D	65.9D
Beryllium	mg/kg	0.264D	0.255D	0.378D
Cadmium	mg/kg	0.255D	0.254D	0.302D
Calcium	mg/kg	8920D	8450D	10400D
Chromium	mg/kg	6.85	7.95	9.83
Copper	mg/kg	8.65	8.37	10.9
Iron	mg/kg	13400D	13500D	17000D
Lead	mg/kg	7.63	7.23	11.7
Magnesium	mg/kg	4060D	4100D	5520D
Manganese	mg/kg	460D	463D	749D
Mercury	mg/kg	0.0116	0.0125	0.0201J
Neptunium-237	pCi/g	0.001U	0.000591U	0.000522U
Nickel	mg/kg	16.6D	16.6D	17.3D
Plutonium-238	pCi/g	0.00112U	0U	0.00337U
Plutonium-239/240	pCi/g	0U	0.00263U	0U
PCB, total	µg/kg	19.8U	19.4U	18.9U
Selenium	mg/kg	0.412D	0.417D	0.469D
Silicon	mg/kg	543D	588D	480D
Silver	mg/kg	0.47U	0.485U	0.49U
Technetium-99	pCi/g	-0.0688U	-0.0037U	-0.00502U
Thallium	mg/kg	0.108D	0.105D	0.123D
Uranium	µg/g	0.967	0.811	0.912
Uranium-233/234	pCi/g	0.286J	0.228J	0.337
Uranium-235/236	pCi/g	0.0137	0.0152	0.0169
Uranium-238	pCi/g	0.323	0.27	0.304
Zinc	mg/kg	47.4D	45.6D	52.2D

Table 2.14. Sediment monitoring program results – 2017 (continued)

Parameter	Unit	Location/results[a,b]	
		Big Beaver Creek	
		RM-13 Downtream	*RM-13 Downtream (duplicate sample)*
Aluminum	mg/kg	4960D	4210D
Americium-241	pCi/g	0U	0.0012U
Antimony	mg/kg	0.222DJ	0.173DJ
Arsenic	mg/kg	25.2	19.1
Barium	mg/kg	61.7D	45.9D
Beryllium	mg/kg	0.513D	0.436D
Cadmium	mg/kg	0.794D	0.53D
Calcium	mg/kg	16600D	25000D
Chromium	mg/kg	22.5D	15.3D
Copper	mg/kg	24D	17.8D
Iron	mg/kg	33400D	27400D
Lead	mg/kg	16.8	12.1
Magnesium	mg/kg	5950D	8160D
Manganese	mg/kg	570D	504D
Mercury	mg/kg	0.0308J	0.0249J
Neptunium-237	pCi/g	0.00503U	0.00975
Nickel	mg/kg	31D	25.8D
Plutonium-238	pCi/g	-0.000582U	-0.000575U
Plutonium-239/240	pCi/g	0.00349U	0.00288U
PCB, total	µg/kg	24.3	22.4
Selenium	mg/kg	0.528D	0.479D
Silicon	mg/kg	406D	411D
Silver	mg/kg	0.473U	0.469U
Technetium-99	pCi/g	2.8	2.1
Thallium	mg/kg	0.157D	0.137D
Uranium	µg/g	2.38	2.04
Uranium-233/234	pCi/g	1.95	1.51
Uranium-235/236	pCi/g	0.0859	0.0872
Uranium-238	pCi/g	0.786	0.672
Zinc	mg/kg	105D	86.3D

Table 2.14. Sediment monitoring program results – 2017 (continued)

Parameter	Unit	Location/results[a,b]			
		Big Run Creek			
		RM-33 Upstream	*RM-3 Downstream*	*RM-3 Downstream (duplicate sample)*	*RM-2 Downstream @ Wakefield*
Aluminum	mg/kg	6690D	7740D	8730D	7330D
Americium-241	pCi/g	0.00249U	0.000703U	0.0029U	0.00238U
Antimony	mg/kg	0.302D	0.158DJ	0.17DJ	0.054DJ
Arsenic	mg/kg	37.6	39.8	49.9	20.4
Barium	mg/kg	51.7D	98.9D	145D	70.5D
Beryllium	mg/kg	1.22D	1.06D	1.42D	0.548D
Cadmium	mg/kg	0.475D	0.41D	0.45D	0.418D
Calcium	mg/kg	2740D	1910D	1880D	1150D
Chromium	mg/kg	46.6D	24.9D	32D	19D
Copper	mg/kg	19.1D	16.4D	20.4D	14.3D
Iron	mg/kg	86600D	49200D	67300D	28300D
Lead	mg/kg	37.5D	33.9D	49.9D	20.4
Magnesium	mg/kg	1750D	1070D	1030D	1420D
Manganese	mg/kg	759D	1780D	2980D	933D
Mercury	mg/kg	0.0318J	0.0381J	0.0379J	0.0363J
Neptunium-237	pCi/g	0.00128U	0.000789U	0.00341U	0.000893U
Nickel	mg/kg	38D	28.2D	36.5D	23D
Plutonium-238	pCi/g	0U	0.00123U	0.000552U	0.00139U
Plutonium-239/240	pCi/g	0.000665U	0.00432U	0.0011U	0.00697U
PCB, total	µg/kg	19.3U	32.1	34.8	40.9
Selenium	mg/kg	0.512D	0.893D	0.855D	0.586D
Silicon	mg/kg	291D	535D	540D	531D
Silver	mg/kg	0.454U	0.482U	0.481U	0.474U
Technetium-99	pCi/g	-0.0479U	0.356	0.393	0.067U
Thallium	mg/kg	0.15D	0.275D	0.34D	0.163D
Uranium	µg/g	2.78	3.84	4.57	1.46
Uranium-233/234	pCi/g	0.987	2.05	2.37	0.856
Uranium-235/236	pCi/g	0.0489	0.104	0.125	0.0449
Uranium-238	pCi/g	0.928	1.27	1.52	0.485
Zinc	mg/kg	154D	107D	120D	76.3D

Table 2.14. Sediment monitoring program results – 2017 (continued)

Parameter	Unit	Location/results[a,b]			
		Background creeks			
		RM-10N North background	*RM-10S South background*	*RM-10E East background*	*RM-10W West background*
Aluminum	mg/kg	4450D	5820D	951D	5890D
Americium-241	pCi/g	0.00131U	0.00354U	0.00142U	0.00329U
Antimony	mg/kg	0.0614DJ	0.0643DJ	0.0488DU	0.455D
Arsenic	mg/kg	6.84	23	5.22	41
Barium	mg/kg	51D	71D	12.4D	58.2D
Beryllium	mg/kg	0.362D	0.613D	0.143D	0.906D
Cadmium	mg/kg	0.686D	0.0882D	0.0488DU	2.09D
Calcium	mg/kg	7210D	2770D	157D	3200D
Chromium	mg/kg	7.8	29.4DJ	6.67	21.9D
Copper	mg/kg	11.3	9.7	1.43J	24.6D
Iron	mg/kg	13700D	41800D	8830D	50400D
Lead	mg/kg	13.1	20.5	2.87	21.6
Magnesium	mg/kg	4100D	1290D	83.5D	2130D
Manganese	mg/kg	445D	1110D	109D	888D
Mercury	mg/kg	0.026J	0.0187J	0.0111U	0.0188J
Neptunium-237	pCi/g	0.00148U	0.000642U	0U	0.000739U
Nickel	mg/kg	23.9D	13.6D	2.37	53.5D
Plutonium-238	pCi/g	0.00295U	0.000566U	-0.00134U	0.00108U
Plutonium-239/240	pCi/g	0.00236U	0.00961	0U	0.00163U
PCB, total	µg/kg	19.8UJ	19.8UJ	18.8U	17.9U
Selenium	mg/kg	0.493D	0.327DJ	0.0976DU	0.726D
Silicon	mg/kg	501D	533D	188D	463D
Silver	mg/kg	0.486U	0.466U	0.463U	0.498U
Technetium-99	pCi/g	-0.083U	-0.0682U	-0.0592U	-0.041U
Thallium	mg/kg	0.135D	0.0632DJ	0.0488DU	0.357D
Uranium	µg/g	1.02	1.09	0.186	3.31
Uranium-233/234	pCi/g	0.368	0.437	0.0602	1.16
Uranium-235/236	pCi/g	0.021	0.0192	0.00205U	0.0584
Uranium-238	pCi/g	0.338	0.363	0.0622	1.1
Zinc	mg/kg	68.2D	53.7D	9	189D

[a]Abbreviations and data qualifiers are as follows: * – duplicate analysis is not within control limits. D – the result is reported from a dilution. J – the reported result is estimated. N – sample spike recovery is not within control limits. U – undetected.
[b]Because of the statistical nature of radiation detection, results for samples that have no radioactivity are often negative values because background radioactivity is subtracted out.

Table 2.15. Soil and biota (vegetation) monitoring at ambient air monitoring stations – 2017

Parameter[a]	Location/results[b,c]			
	A8 – On site at northwest boundary		*T7 – On site near X-230L North Holding Pond*	
	Vegetation	Soil	Vegetation	Soil
Americium-241	0.00129U	0.00277U	0U	0.00449UJ
Neptunium-237	-0.000324U	-0.00154U	0.000336U	0.000795U
Plutonium-238	0.000414U	-0.000348U	0.00126U	0.000361U
Plutonium-239/240	0.00166U	-0.000348U	-0.00126U	0.00578UJ
Technetium-99	0.0481U	0.0402U	0.0216U	0.0484U
Uranium	0.00927U	2.86	0.00211U	1.05
Uranium-233/234	0.00648	1.12	0.000647U	0.369
Uranium-235/236	0.0011U	0.0494	0.000402U	0.0159
Uranium-238	0.00295U	0.953	0.000647U	0.35
	A10 – On site on northwest segment of Perimeter Road		*A29 – On site at OVEC*	
	Vegetation	Soil	Vegetation	Soil
Americium-241	0.00148U	0.00192U	-0.000634U	0.0021U
Neptunium-237	0U	0U	-0.000666U	0.00125U
Plutonium-238	0U	-0.000671U	-0.000775U	0.000343U
Plutonium-239/240	0.00325U	0.00201U	0.000388U	0.00618U
Technetium-99	0.0586U	0.0321U	0.0467U	0.0432U
Uranium	0.0311	0.839	0.0119U	0.944
Uranium-233/234	0.0135	0.352	0.00493U	0.272
Uranium-235/236	0.000714U	0.0172	0U	0.0172
Uranium-238	0.0103	0.279	0.00401U	0.315
	A36 – On site at X-611 Water Treatment Plant		*A6 – North of PORTS in Piketon*	
	Vegetation	Soil	Vegetation	Soil
Americium-241	0.00135U	0.00863J	0.000604U	0.00303U
Neptunium-237	0.000332U	-0.000595U	0.000667U	-0.000953U
Plutonium-238	0.000786U	0.000349U	0.000356U	0.000394U
Plutonium-239/240	0.000393U	0.0154	0.000356U	0.00472UJ
Technetium-99	0.0494U	0.0191U	0.04U	0.0244U
Uranium	0.016U	0.742	0.00631U	1.01
Uranium-233/234	0.00656	0.353	0.00308U	0.298
Uranium-235/236	0U	0.0182	0.00104U	0.0204
Uranium-238	0.00537U	0.247	0.00196U	0.338

Table 2.15. Soil and biota (vegetation) monitoring at ambient air monitoring stations – 2017 (continued)

Parameter[a]	Location/results[b,c]			
	A24 – North of PORTS at Schuster Road		*A41A - North of PORTS at Zahns Corner*	
	Vegetation	Soil	Vegetation	Soil
Americium-241	0.000631U	0.00365U	0.000638U	0.00045U
Neptunium-237	-0.000346U	0U	0U	0U
Plutonium-238	0.000345U	-0.000376U	0.000711U	0.000336U
Plutonium-239/240	0.00172U	0.00865	0.00249U	0.00235U
Technetium-99	-0.0165U	0.00363U	0.0327U	0.0458U
Uranium	0.00171U	0.777	0.00393U	0.818
Uranium-233/234	0.00143U	0.283	0.000865U	0.291
Uranium-235/236	0U	0.0188	0.00108U	0.0124
Uranium-238	0.000574U	0.258	0.00115U	0.273
	A23 – Northeastern PORTS boundary		*A12 – Eastern PORTS boundary*	
	Vegetation	Soil	Vegetation	Soil
Americium-241	0.00283U	0.00179U	0.00273U	0.000614U
Neptunium-237	0U	-0.000527U	-0.000688U	0.000373U
Plutonium-238	-0.000711U	-0.000811U	0.000348U	0U
Plutonium-239/240	0.000711U	0.00122U	0.00174U	0.00624UJ
Technetium-99	0.0779U	0.0306U	0.0605U	0.0688U
Uranium	0.0121U	0.72	0.08	1.31
Uranium-233/234	0.00169U	0.254	0.0363	0.513
Uranium-235/236	0.000702U	0.015	0.00243U	0.0285
Uranium-238	0.00395U	0.24	0.0265	0.435
	A15 – Southeast of PORTS on Loop Road		*A3 – Southern PORTS boundary*	
	Vegetation	Soil	Vegetation	Soil
Americium-241	0.00228U	0.00333UJ	0.000305U	0.00405UJ
Neptunium-237	0.000645U	0.000347U	0U	0U
Plutonium-238	0.000488U	-0.000342U	0.000369U	0.000954U
Plutonium-239/240	0.00244U	0.0144	0.00185U	0.00604J
Technetium-99	0.0523U	0.0855UJ	-0.00913U	0.0782U
Uranium	0.00694U	0.889	0.00162U	0.858
Uranium-233/234	0.000947U	0.321	0.0012U	0.307
Uranium-235/236	0.000785U	0.0169	-0.000374U	0.0172
Uranium-238	0.00221U	0.296	0.000601U	0.286

Table 2.15. Soil and biota (vegetation) monitoring at ambient air monitoring stations – 2017 (continued)

Parameter[a]	Location/results[b,c]			
	A9 – South of PORTS		*A28 – Southwest of PORTS on Camp Creek Road*	
	Vegetation	Soil	Vegetation	Soil
Americium-241	0.000914U	0.00667UJ	0.00127U	0.00425U
Neptunium-237	-0.000339U	0.000332U	0.000906U	0.00073U
Plutonium-238	0.000351U	0.00292U	0.00117U	-0.00035U
Plutonium-239/240	0.000703U	0.0152	0.00117U	0.00491UJ
Technetium-99	0.0378U	0.0605U	0.0443U	0.0498U
Uranium	0.0141U	0.843	0.00626U	0.808
Uranium-233/234	0.00519	0.271	0.00234U	0.276
Uranium-235/236	0.000679U	0.0119	0.000364U	0.0143
Uranium-238	0.00464U	0.282	0.00205U	0.269
	A37 – Background station near Otway			
	Vegetation	Soil		
Americium-241	0.00187U	0.0073UJ		
Neptunium-237	0U	0U		
Plutonium-238	0.00106U	0U		
Plutonium-239/240	0.000354U	0.0145		
Technetium-99	0.0243U	0.0554U		
Uranium	0.00543U	0.927		
Uranium-233/234	0.00343U	0.325		
Uranium-235/236	0.000711U	0.0128		
Uranium-238	0.00172U	0.31		
	Duplicate vegetation samples		*Duplicate soil samples*	
	A28	A37	A10	A41A
Americium-241	0.00183U	0.000939U	0.00187U	0.000389U
Neptunium-237	-0.00062U	0.00102U	0.000315U	-0.000426U
Plutonium-238	-0.000377U	0U	-0.000355U	0.000374U
Plutonium-239/240	0.00113U	0.00109U	0.00213U	0.0015U
Technetium-99	0.0491U	-0.0352U	0.0158U	0.087U
Uranium	0.00899U	0.00263U	0.84	0.839
Uranium-233/234	0.00229U	0.00221U	0.378	0.297
Uranium-235/236	0.00107U	0.000344U	0.0127	0.0148
Uranium-238	0.00286U	0.000829U	0.28	0.28

[a]All parameters are measured in pCi/g with the exception of uranium which is measured in µg/g.
[b]Abbreviations and data qualifiers are as follows: U – undetected. J – the reported result is estimated.
[c]Because of the statistical nature of radiation detection, results for samples that have no radioactivity are often negative values because background radioactivity is subtracted out.

Table 2.16. Biota (fish) monitoring program results – 2017

Parameter	Unit	Location/fish/results[a,b]		
		Scioto River (RW-1A) drum	*Scioto River (RW-6) catfish*	*Big Beaver Creek (RW-15) bass*
Americium-241	pCi/g	0.0028U	0.00212U	0.00132U
Neptunium-237	pCi/g	0.0019U	-0.000322U	0.000291U
Plutonium-238	pCi/g	0.000315U	0.000703U	-0.000317U
Plutonium-239/240	pCi/g	0.00157U	0.00106U	0.00126U
PCB, total	µg/kg	20.2	18.5Q	22
Technetium-99	pCi/g	-0.0805U	-0.1U	-0.0324U
Uranium	µg/g	0.00114UJ	-0.000228UJ	0.000718UJ
Uranium-233/234	pCi/g	0.000322U	0.00159U	0.000312U
Uranium-235/236	pCi/g	0.000401UJ	-0.000494UJ	0.00155UJ
Uranium-238	pCi/g	0.000322U	0U	0U
		Big Beaver Creek (RW-13) bass	*Little Beaver Creek (RW-8) bass*	*Little Beaver Creek (RW-8) bass (duplicate sample)*
Americium-241	pCi/g	0.00131U	0U	0.00229U
Neptunium-237	pCi/g	-0.000323U	0.000662U	0.000592U
Plutonium-238	pCi/g	0.000674U	0.000351U	0.000891U
Plutonium-239/240	pCi/g	0.00101U	0.0021U	0.00089U
PCB, total	µg/kg	30.6	241D	290D
Technetium-99	pCi/g	-0.064U	-0.119U	-0.0945U
Uranium	µg/g	0.000358UJ	0.00228UJ	0.00106UJ
Uranium-233/234	pCi/g	0.00186U	0.000642U	0.00119U
Uranium-235/236	pCi/g	0.000773UJ	0.000798UJ	0.00037UJ
Uranium-238	pCi/g	0U	0.000642U	0.000298U

[a]Abbreviations and data qualifiers are as follows: U – undetected. D – the result is reported from a dilution. Q – one or more quality control criteria failed. J – estimated.
[b]Because of the statistical nature of radiation detection, results for samples that have no radioactivity are often negative values because background radioactivity is subtracted out.

Table 2.17. Biota (crops) monitoring program results – 2017

Parameter	Unit	Location/crop/results[a,b]		
		Off-site #2 corn	*Off-site #2 cucumbers*	*Off-site #2 tomatoes*
Americium-241	pCi/g	0.000929U	0.000335U	0.000346U
Neptunium-237	pCi/g	-0.000303U	-0.000657U	0.000351U
Plutonium-238	pCi/g	-0.000295U	0.000347U	0.000359U
Plutonium-239/240	pCi/g	0.000885U	0.000694U	-0.000359U
Technetium-99	pCi/g	-0.068U	-0.0259U	-0.0422U
Uranium	µg/g	0.000159U	0.0024U	0.00292U
Uranium-233/234	pCi/g	-0.000276U	0.00135U	0.000615U
Uranium-235/236	pCi/g	0.000344U	0.000842U	0.000382U
Uranium-238	pCi/g	0U	0.000677U	0.000922U
		Off-site #3 cucumbers	*Off-site #3 cucumbers (duplicate sample)*	*Off-site #3 gourds*
Americium-241	pCi/g	0.00163U	0.00209U	0.00222U
Neptunium-237	pCi/g	0U	-0.000319U	0.000295U
Plutonium-238	pCi/g	-0.000316U	0.000357U	-0.000343U
Plutonium-239/240	pCi/g	0U	0.00107U	0.000685U
Technetium-99	pCi/g	-0.0149U	-0.0144U	-0.0224U
Uranium	µg/g	0.000000153U	0.00107U	0.000882U
Uranium-233/234	pCi/g	0.000952U	0.000302U	0.00178U
Uranium-235/236	pCi/g	0U	0.000375U	0U
Uranium-238	pCi/g	0U	0.000302U	0.000296U
		Off-site #3 tomatoes	*Off-site #4 corn*	*Off-site #4 green beans*
Americium-241	pCi/g	0.00067U	0.00142U	0.00195U
Neptunium-237	pCi/g	-0.000937U	-0.000317U	-0.000309U
Plutonium-238	pCi/g	-0.00141U	0.000395U	-0.000644U
Plutonium-239/240	pCi/g	0.000703U	0.00079U	0.00129U
Technetium-99	pCi/g	-0.0113U	-0.0691U	-0.0472U
Uranium	µg/g	0.000166U	-0.000000108U	0.00378U
Uranium-233/234	pCi/g	0U	-0.000669U	0.00029U
Uranium-235/236	pCi/g	0.000359U	0U	0.00072U
Uranium-238	pCi/g	0U	0U	0.00116U

Table 2.17. Biota (crops) monitoring program results – 2017 (continued)

Parameter	Unit	Location/crop/results[a,b]		
		Off-site #4 tomatoes	*Off-site #5 blackberries*	
Americium-241	pCi/g	0.000327U	0.00206U	
Neptunium-237	pCi/g	0.00104U	0U	
Plutonium-238	pCi/g	0U	0U	
Plutonium-239/240	pCi/g	0U	0.0012U	
Technetium-99	pCi/g	0.00552U	-0.0311U	
Uranium	µg/g	-0.00214U	0.000331U	
Uranium-233/234	pCi/g	0.000657U	0U	
Uranium-235/236	pCi/g	-0.000409U	0.000715U	
Uranium-238	pCi/g	-0.000657U	0U	
		Off-site #5 corn	*Off-site #5 corn (duplicate sample)*	*Off-site #5 hops*
Americium-241	pCi/g	0.000315U	0.00212U	0.00179U
Neptunium-237	pCi/g	-0.000579U	0U	0U
Plutonium-238	pCi/g	0.00058U	-0.000708U	0U
Plutonium-239/240	pCi/g	0.00029U	0.00283U	0.0012U
Technetium-99	pCi/g	-0.0329U	-0.0837U	0.0145U
Uranium	µg/g	0.00205U	0.00207U	0.00376U
Uranium-233/234	pCi/g	0.000289U	0.000582U	0.000822U
Uranium-235/236	pCi/g	0.000719U	0.000724U	-0.000682U
Uranium-238	pCi/g	0.000578U	0.000582U	0.00137U
		Off-site #6 corn	*Off-site #6 tomatoes*	*Off-site #6 zucchini*
Americium-241	pCi/g	0.00261U	0.00128U	0.00156U
Neptunium-237	pCi/g	0.000289U	0U	0.000979U
Plutonium-238	pCi/g	0.000343U	0.000637U	0.0007U
Plutonium-239/240	pCi/g	0.00137U	0.00191U	0.0014U
Technetium-99	pCi/g	-0.0849U	0.00681U	0.0389U
Uranium	µg/g	-0.000755U	0.00106U	0.00422U
Uranium-233/234	pCi/g	0.000315U	0.000894U	0.000338U
Uranium-235/236	pCi/g	0.000392U	0.000371U	0.000421U
Uranium-238	pCi/g	-0.000315U	0.000298U	0.00135U

[a]Abbreviations and data qualifiers are as follows: U – undetected.
[b]Because of the statistical nature of radiation detection, results for samples that have no radioactivity are often negative values because background radioactivity is subtracted out.

Table 2.18. Biota (deer) monitoring program results – 2017

Parameter	Unit	August 2017[a,b]	October 2017[a,b]	October 2017[a,b]
		liver		
Americium-241	pCi/g	0.00152U	0.000301U	0.00275UJ
Neptunium-237	pCi/g	-0.00042U	0.0003U	0U
Plutonium-238	pCi/g	0.00133U	-0.00073U	0U
Plutonium-239/240	pCi/g	0U	0.000367U	0.000727U
Technetium-99	pCi/g	-0.0118U	0.0758U	0.0332U
Uranium	µg/g	0.00136UJ	0.000964U	0.000586U
Uranium-233/234	pCi/g	0.00137U	0.00163U	-0.00051U
Uranium-235/236	pCi/g	0UJ	0.000338U	0.00127U
Uranium-238	pCi/g	0.000458U	0.000271U	0U
		muscle		
Americium-241	pCi/g	0.000845U	0.00091U	0.000857U
Neptunium-237	pCi/g	-0.00078U	-0.00033U	-0.00029U
Plutonium-238	pCi/g	0.000453U	-0.00031U	-0.00031U
Plutonium-239/240	pCi/g	0.000454U	0.00094U	0.000314U
Technetium-99	pCi/g	-0.0213U	0.0826U	0.0485U
Uranium	µg/g	0.0054UJ	0.00275U	0.00203U
Uranium-233/234	pCi/g	0.000433U	0.000545U	0U
Uranium-235/236	pCi/g	0.000538UJ	0.000678U	-0.00047U
Uranium-238	pCi/g	0.00173U	0.000818U	0.000757U
		kidney		
Americium-241	pCi/g	0.0015U	0.000779U	0.000293U
Neptunium-237	pCi/g	0.000385U	0.000548U	-0.00026U
Plutonium-238	pCi/g	0U	-0.00028U	0U
Plutonium-239/240	pCi/g	0.00211U	0.00111U	0.000377U
Technetium-99	pCi/g	-0.00558U	0.045U	0.0891UJ
Uranium	µg/g	0.00207UJ	0.00398U	0.000827U
Uranium-233/234	pCi/g	0.000861U	0.000772U	0.000556U
Uranium-235/236	pCi/g	-0.00107UJ	0.00032U	0U
Uranium-238	pCi/g	0.000861U	0.00129U	0.000278U

[a]Abbreviations and data qualifiers are as follows: U – undetected. J – the reported result is estimated.
[b]Because of the statistical nature of radiation detection, results for samples that have no radioactivity are often negative values because background radioactivity is subtracted out.

Table 2.19. Biota (off-site dairy) monitoring program results– 2017

Parameter	Unit	Milk[a,b]	Eggs[a,b]
Americium-241	pCi/g	0U	0.000319U
Neptunium-237	pCi/g	-0.00031U	0U
Plutonium-238	pCi/g	0U	0U
Plutonium-239/240	pCi/g	0.0012U	-0.00034U
Technetium-99	pCi/g	-0.114U	-0.0782U
Uranium	µg/g	0.00175U	0.00176U
Uranium-233/234	pCi/g	-0.0008U	0U
Uranium-235/236	pCi/g	0.000333U	0U
Uranium-238	pCi/g	0.000536U	0.000591U

[a]Abbreviations and data qualifiers are as follows: U – undetected.
[b]Because of the statistical nature of radiation detection, results for samples that have no radioactivity are often negative values because background radioactivity is subtracted out.

3. DOSE

This section provides summary tables of air emissions and dose assessments completed by DOE for compliance with the National Emission Standards for Hazardous Air Pollutants for airborne radionuclide emissions. The following tables are provided in this section:

- Table 3.1. Emissions (Ci/year) from DOE air emission sources – 2017
- Table 3.2. Predicted radiation doses from airborne releases at PORTS – 2017
- Table 3.3. Dose calculations for ambient air monitoring stations – 2017.

Table 3.1. Emissions (Ci/year) from DOE air emission sources – 2017

Radionuclide	Group 1[a]	Group 2[b]	Group 3[c]	DUF_6 facility[d]
Americium-241	2.95E-07	-	5.43E-06	-
Neptunium-237	4.19E-08	-	1.16E-05	-
Plutonium-238	6.04E-08	-	5.56E-07	-
Plutonium-239/240	2.45E-07	-	3.92E-05	-
Technetium-99	5.25E-04	2.34E-03	6.10E-02	-
Uranium-233/234	5.64E-05	2.46E-05	1.10E-03	1.70E-06
Uranium-235	4.12E-06	3.01E-06	6.16E-05	7.90E-08
Uranium-238	4.357E-04	2.41E-05	3.11E-04	4.20E-06
Thorium-228	3.74E-08	1.39E-07	1.39E-07	-
Thorium-230	3.75E-05	4.27E-06	3.28E-06	-
Thorium-231	3.61E-06	2.46E-05	3.54E-05	2.1E-07
Thorium-232	2.29E-09	1.49E-07	1.13E-07	-
Thorium-234	4.18E-04	3.01E-06	4.30E-05	1.9E-05
Protactinium-234m	4.18E-04	3.01E-06	4.30E-05	1.9E-05
Total	1.90E-03	2.43E-03	6.27E-02	4.42E-05

[a]Group 1 consists of the X-710 Vents and X-622 Groundwater Treatment Facility.
[b]Group 2 consists of the X-344A Gulper Vent and X-344A Cold Trap Vent.
[c]Group 3 consists of the X-330 Vents, X-333 Vents, X-705 Vents, X-623 Groundwater Treatment Facility, X-624 Groundwater Treatment Facility, and X-627 Groundwater Treatment Facility.
[d]DUF_6 – depleted uranium hexafluoride.

Note: Measurements are provided in scientific notation. The number and sign (+ or -) to the right of the "E" indicate the number of places to the right or left of the decimal point. For example, 3.4E-04 is 0.00034 (the decimal point moves four places to the left); 2.1E+02 is 210 (the decimal point moves two places to the right).

Table 3.2. Predicted radiation doses from airborne releases at PORTS – 2017

Effective dose to:	
Maximally exposed individual (mrem/year)	0.12
Population[a] (person-rem/year)	0.47

[a]Population within 50 miles (80 kilometers) of plant site.

Table 3.3. Dose calculations for ambient air monitoring stations – 2017

Station	Parameter[a]	Dose[b] (mrem/year)	Total dose for station[c]	Net dose for station[d]
A3	Americium-241	3.6E-09		
	Neptunium-237	1.4E-09		
	Plutonium-238	0		
	Plutonium-239/240	2.4E-09		
	Technetium-99	5.8E-04		
	Uranium-233/234	9.4E-07		
	Uranium-235/236	2.5E-08	(0.00058)	(0.00026)
	Uranium-238	3.5E-07	5.8E-04	2.6E-04
A6	Americium-241	2.9E-09		
	Neptunium-237	1.3E-09		
	Plutonium-238	7.8E-10		
	Plutonium-239/240	1.7E-09		
	Technetium-99	3.6E-04		
	Uranium-233/234	7.5E-07		
	Uranium-235/236	3.3E-08	(0.00037)	(0.000050)
	Uranium-238	4.6E-07	3.7E-04	5.0E-05
A8	Americium-241	2.4E-09		
	Neptunium-237	2.8E-09		
	Plutonium-238	1.1E-09		
	Plutonium-239/240	1.1E-09		
	Technetium-99	3.9E-04		
	Uranium-233/234	7.6E-07		
	Uranium-235/236	3.5E-08	(0.00039)	(0.000070)
	Uranium-238	3.0E-07	3.9E-04	7.0E-05
A9	Americium-241	1.9E-09		
	Neptunium-237	7.4E-10		
	Plutonium-238	7.0E-10		
	Plutonium-239/240	2.2E-09		
	Technetium-99	3.4E-04		
	Uranium-233/234	8.5E-07		
	Uranium-235/236	2.9E-08	(0.00034)	(0.000020)
	Uranium-238	8.9E-07	3.4E-04	2.0E-05

Table 3.3. Dose calculations for ambient air monitoring stations – 2017 (continued)

Station	Parameter[a]	Dose[b] (mrem/year)	Total dose for station[c]	Net dose for station[d]
A10	Americium-241	6.8E-07		
	Neptunium-237	5.0E-08		
	Plutonium-238	2.0E-09		
	Plutonium-239/240	1.5E-08		
	Technetium-99	2.5E-04		
	Uranium-233/234	1.1E-06		
	Uranium-235/236	4.1E-08	(0.00025)	
	Uranium-238	4.7E-07	2.5E-04	0
A12	Americium-241	1.9E-06		
	Neptunium-237	3.6E-08		
	Plutonium-238	1.7E-09		
	Plutonium-239/240	1.5E-08		
	Technetium-99	1.7E-04		
	Uranium-233/234	1.1E-06		
	Uranium-235/236	3.3E-08	(0.00017)	
	Uranium-238	3.9E-07	1.7E-04	0
A15	Americium-241	8.8E-07		
	Neptunium-237	7.2E-08		
	Plutonium-238	2.6E-09		
	Plutonium-239/240	1.9E-08		
	Technetium-99	3.3E-04		
	Uranium-233/234	3.3E-07		
	Uranium-235/236	2.5E-08	(0.00033)	(0.000010)
	Uranium-238	3.4E-07	3.3E-04	1.0E-05
A23	Americium-241	5.9E-07		
	Neptunium-237	3.8E-08		
	Plutonium-238	1.7E-09		
	Plutonium-239/240	1.6E-08		
	Technetium-99	3.0E-04		
	Uranium-233/234	7.7E-07		
	Uranium-235/236	2.6E-08	(0.00030)	
	Uranium-238	9.7E-07	3.0E-04	0
A24	Americium-241	1.7E-06		
	Neptunium-237	2.8E-07		
	Plutonium-238	4.7E-09		
	Plutonium-239/240	2.5E-08		
	Technetium-99	2.5E-04		
	Uranium-233/234	9.4E-07		
	Uranium-235/236	2.6E-08	(0.00026)	
	Uranium-238	8.7E-07	2.6E-04	0

Table 3.3. Dose calculations for ambient air monitoring stations – 2017 (continued)

Station	Parameter[a]	Dose[b] (mrem/year)	Total dose for station[c]	Net dose for station[d]
A28	Americium-241	3.2E-07		
	Neptunium-237	1.1E-07		
	Plutonium-238	1.4E-09		
	Plutonium-239/240	1.3E-08		
	Technetium-99	1.9E-04		
	Uranium-233/234	3.7E-07		
	Uranium-235/236	2.1E-08	(0.00019)	
	Uranium-238	3.6E-07	1.9E-04	0
A29	Americium-241	7.9E-07		
	Neptunium-237	4.8E-08		
	Plutonium-238	1.1E-09		
	Plutonium-239/240	1.6E-08		
	Technetium-99	2.1E-04		
	Uranium-233/234	4.3E-07		
	Uranium-235/236	2.3E-08	(0.00022)	
	Uranium-238	3.8E-07	2.2E-04	0
A36	Americium-241	3.1E-09		
	Neptunium-237	2.8E-09		
	Plutonium-238	2.8E-09		
	Plutonium-239/240	1.8E-09		
	Technetium-99	7.8E-04		
	Uranium-233/234	2.5E-06		
	Uranium-235/236	3.5E-08	(0.00078)	(0.00046)
	Uranium-238	3.4E-06	7.8E-04	4.6E-04
A37	Americium-241	4.8E-09		
	Neptunium-237	2.3E-09		
	Plutonium-238	7.0E-10		
	Plutonium-239/240	1.9E-09		
	Technetium-99	3.2E-04		
	Uranium-233/234	2.7E-07		
	Uranium-235/236	2.3E-08	(0.00032)	
	Uranium-238	3.8E-07	3.2E-04	-
A41A	Americium-241	3.0E-09		
	Neptunium-237	3.3E-07		
	Plutonium-238	1.6E-09		
	Plutonium-239/240	2.5E-09		
	Technetium-99	3.6E-04		
	Uranium-233/234	7.5E-07		
	Uranium-235/236	3.0E-08	(0.00037)	(0.000050)
	Uranium-238	7.9E-07	3.7E-04	5.0E-05

Table 3.3. Dose calculations for ambient air monitoring stations – 2017 (continued)

Station	Parameter[a]	Dose[b] (mrem/year)	Total dose for station[c]	Net dose for station[d]
T7	Americium-241	2.4E-09		
	Neptunium-237	1.5E-09		
	Plutonium-238	3.7E-10		
	Plutonium-239/240	2.1E-09		
	Technetium-99	1.7E-04		
	Uranium-233/234	7.2E-07		
	Uranium-235/236	3.3E-08	(0.00017)	
	Uranium-238	3.9E-07	1.7E-04	0

[a]Parameters listed in **bold** type were detected at least once in the samples collected in 2017 (see Table 2.9).
[b]The dose calculation is based on the maximum detection of each parameter at each station. For parameters that were not detected, half of the highest undetected result for the parameter was used to calculate the activity of each parameter in ambient air that is the basis for the dose. Measurements are provided in scientific notation. The number and sign (+ or -) to the right of the "E" indicate the number of places to the right or left of the decimal point. For example, 3.4E-04 is 0.00034 (the decimal point moves four places to the left); 2.1E+02 is 210 (the decimal point moves two places to the right).
[c]The total dose is provided in scientific notation and standard numeric format (in parentheses).
[d]The net dose is calculated by subtracting the total dose at Station A37 (background) from the total dose calculated for each station (the net dose is recorded as zero for stations with a gross dose less than the background station). The net dose is provided in scientific notation and standard numeric format (in parentheses).

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4. GROUNDWATER

This section summarizes analytical results for routine groundwater monitoring at PORTS in 2017 at the following locations:

- X-749 Contaminated Materials Disposal Facility/X-120 Former Training Facility
- Peter Kiewit (PK) Landfill
- Quadrant I Groundwater Investigative (5-Unit) Area
- X-749A Classified Materials Disposal Facility
- Quadrant II Groundwater Investigative (7-Unit) Area
- X-701B Former Holding Pond
- X-633 Former Recirculating Cooling Water Complex
- X-616 Former Chromium Sludge Surface Impoundments
- X-740 Former Waste Oil Handling Facility
- X-611A Former Lime Sludge Lagoons
- X-735 Landfills
- X-734 Landfills
- X-533 Former Switchyard Complex
- X-344C Former Hydrogen Fluoride Storage Building
- Surface water monitoring locations
- Exit pathway monitoring locations.

Results for radiological parameters and VOCs are reported in this section. Only those VOCs that were detected in at least one sampling event are listed in this section.

All results are included for radiological parameters, even if a specific constituent was not detected at a specific well or location during any sampling event in 2017. Sampling for radionuclides is not part of the monitoring programs for PK Landfill, X-633 Former Recirculating Cooling Water Complex, X-616 Former Chromium Sludge Surface Impoundments, X-740 Former Waste Oil Handling Facility, X-611A Former Lime Sludge Lagoons, X-533 Former Switchyard Complex, and X-344C Former Hydrogen Fluoride Storage Building.

Results for chromium at the X-616 Former Chromium Sludge Surface Impoundments are included in this section because chromium is a primary contaminant in this area. Results are provided for metals at the X-633 Former Recirculating Cooling Water Complex, X-611A Former Lime Sludge Lagoons, and X-533 Former Switchyard Complex because metals are the only analytical parameters for these areas.

Two VOCs, acetone and methylene chloride, were frequently detected in both environmental and blank samples (field and trip blanks) collected in 2017. Acetone and methylene chloride are common laboratory contaminants that are not typically detected in the PORTS groundwater plumes. Detections of acetone and methylene chloride are often qualified by the laboratory with a “B”, which indicates that the analyte was also detected in the laboratory blank associated with the environmental sample and may be present due to laboratory contamination.

Other VOCs, including 2-butanone, tetrachloroethene, TCE, and 1,2-dichlorobenzene were detected in trip and/or field blanks during 2017. These detections indicate that samples (both environmental samples and blank samples) may become contaminated with low concentrations of VOCs during other portions of the sampling process, although contamination can still occur in the laboratory. Other sources of contamination may include storage areas for sampling equipment (such as bottles and blank water), areas

in which samples are collected or prepared, sample containers, and storage areas after samples are collected (such as refrigerators or sample shipping containers).

The primary purpose of the groundwater data is to determine the nature and extent of contamination in groundwater and associated surface water at PORTS. Data collected in 2017 meet this purpose.

Complete groundwater monitoring results for sampling completed as required by the *Integrated Groundwater Monitoring Plan* (DOE 2015, DOE 2017) are provided in the *2017 Groundwater Monitoring Report for the Portsmouth Gaseous Diffusion Plant* (DOE 2018a). The *2017 Groundwater Monitoring Report for the Portsmouth Gaseous Diffusion Plant* also provides the following information not included in this Data Report:

- Results for special studies conducted during 2017 at the X-633 Former Recirculating Cooling Water Complex and X-630 Former Recirculating Cooling Water Complex.

- Results for duplicate samples (samples collected from the same location, at the same time, and from the same sampling device as the regular sample), which are collected at a frequency of one per ten sampling locations per groundwater monitoring area. Duplicate samples are analyzed for the same parameters as the regular sample associated with the sampling location.

The following tables are included in this section:

- Table 4.1. VOCs detected at the X-749 Contaminated Materials Disposal Facility/X-120 Former Training Facility – 2017

- Table 4.2. Results for radionuclides at the X-749 Contaminated Materials Disposal Facility/X-120 Former Training Facility – 2017

- Table 4.3. VOCs detected at the PK Landfill – 2017

- Table 4.4. VOCs detected at the Quadrant I Groundwater Investigative (5-Unit) Area – 2017

- Table 4.5. Results for radionuclides at the Quadrant I Groundwater Investigative (5-Unit) Area – 2017

- Table 4.6. VOCs detected at the X-749A Classified Materials Disposal Facility – 2017

- Table 4.7. Results for radionuclides at the X-749A Classified Materials Disposal Facility – 2017

- Table 4.8. VOCs detected at the Quadrant II Groundwater Investigative (7-Unit) Area – 2017

- Table 4.9. Results for radionuclides at the Quadrant II Groundwater Investigative (7-Unit) Area – 2017

- Table 4.10. VOCs detected at the X-701B Former Holding Pond – 2017

- Table 4.11. Results for radionuclides at the X-701B Former Holding Pond – 2017

- Table 4.12. Results for chromium at the X-633 Former Recirculating Cooling Water Complex – 2017

- Table 4.13. VOCs detected at the X-616 Former Chromium Sludge Surface Impoundments – 2017
- Table 4.14. Results for chromium at the X-616 Former Chromium Sludge Surface Impoundments – 2017
- Table 4.15. VOCs detected at the X-740 Former Waste Oil Handling Facility – 2017
- Table 4.16. Results for beryllium and chromium at the X-611A Former Lime Sludge Lagoons – 2017
- Table 4.17. VOCs detected at the X-735 Landfills – 2017
- Table 4.18. Results for radionuclides at the X-735 Landfills – 2017
- Table 4.19. VOCs detected at the X-734 Landfills – 2017
- Table 4.20. Results for radionuclides at the X-734 Landfills – 2017
- Table 4.21. Results for cadmium and nickel at the X-533 Former Switchyard Complex – 2017
- Table 4.22. VOCs detected at the X-344C Former Hydrogen Fluoride Storage Building – 2017
- Table 4.23. VOCs detected at surface water monitoring locations – 2017
- Table 4.24. Results for radionuclides at surface water monitoring locations – 2017.

Tables for VOCs and radionuclides detected at exit pathway monitoring location F-29B are not provided because none were detected. Results for exit pathway monitoring locations sampled during 2017 (that are part of the monitoring programs for other areas) are provided in the tables for their respective monitoring areas as follows:

- Tables 4.1 and 4.2: VOCs and/or radionuclides detected at the X-749 Contaminated Materials Disposal Facility/X-120 Former Training Facility (wells X749-14B, X749-44G, X749-45G, X749-64B, X749-68G, X749-96G, X749-97G, and X749-98G).
- Table 4.11: Results for radionuclides at X-701B Former Holding Pond area well X701-48G (VOCs were not detected in well X701-48G in 2017).
- Tables 4.23 and 4.24: VOCs and/or radionuclides detected at surface water monitoring locations BRC-SW02, LBC-SW04, UND-SW02, and WDD-SW03.

The following laboratory data qualifiers are used in the tables in this section:

Data qualifier	Meaning
B	The analyte was detected in the laboratory blank sample.
D	The reported result is from a dilution.
J	The reported value is estimated.
Q	One or more quality control criteria failed.
U	Undetected

Table 4.1. VOCs detected at the X-749 Contaminated Materials Disposal Facility/X-120 Former Training Facility – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
F-27G	1,1-Dichloroethane	µg/L			0.71 J	
	cis-1,2-Dichloroethene	µg/L			0.73 J	
	Trichloroethene	µg/L			1.8 Q	
PK-07G	Trichloroethene	µg/L			0.38 J	
PK-08G	cis-1,2-Dichloroethene	µg/L			0.34 J	
	Trichloroethene	µg/L			15	
PK-09G	cis-1,2-Dichloroethene	µg/L			8.6 D	
	Trichloroethene	µg/L			480 D	
STSW-101G	1,1,1-Trichloroethane	µg/L		4.6		3.9
	1,1,2-Trichloroethane	µg/L		0.46 J		0.32 U
	1,1-Dichloroethane	µg/L		15 J		14
	1,1-Dichloroethene	µg/L		35 J		31
	1,2-Dichloroethane	µg/L		2.8		1.9
	Chloroform	µg/L		1.2		0.96 J
	cis-1,2-Dichloroethene	µg/L		10		9.3
	Tetrachloroethene	µg/L		0.71 J		0.7 J
	Trichloroethene	µg/L		37 J		36
STSW-102G	1,1,1-Trichloroethane	µg/L		5.1		5
	1,1-Dichloroethane	µg/L		55		75 D
	1,1-Dichloroethene	µg/L		28		34 J
	1,2-Dichloroethane	µg/L		19		21
	Acetone	µg/L		1.9 U		7.4 JQ
	Benzene	µg/L		0.17 J		0.16 U
	Chloroform	µg/L		2.9		3
	cis-1,2-Dichloroethene	µg/L		18		19
	trans-1,2-Dichloroethene	µg/L		0.15 U		0.21 J
	Trichloroethene	µg/L		160 DJ		170 D
	Vinyl chloride	µg/L		0.22 J		0.22 J
WP-01G	Acetone	µg/L		1.9 U		5 J
WP-06G	Acetone	µg/L		1.9 U		8.8 J
X120-03G	Chloroform	µg/L			0.25 J	
X120-05G	Trichloroethene	µg/L			2	
X120-06B	Trichloroethene	µg/L			0.76 J	
X120-08G	1,1,1-Trichloroethane	µg/L			3.2	
	1,1,2-Trichloroethane	µg/L			0.61 J	
	1,1-Dichloroethane	µg/L			7.4	
	1,1-Dichloroethene	µg/L			24 J	
	1,2-Dichloroethane	µg/L			0.77 J	
	Chloroform	µg/L			0.83 J	
	cis-1,2-Dichloroethene	µg/L			0.68 J	
	Tetrachloroethene	µg/L			0.22 J	
	Trichloroethene	µg/L			15 J	
X120-09G	1,1,1-Trichloroethane	µg/L			3.7	
	1,1,2-Trichloroethane	µg/L			0.5 J	
	1,1-Dichloroethane	µg/L			7.1	
	1,1-Dichloroethene	µg/L			21	
	1,2-Dichloroethane	µg/L			0.77 J	
	Chloroform	µg/L			0.76 J	
	cis-1,2-Dichloroethene	µg/L			0.79 J	
	Tetrachloroethene	µg/L			0.26 J	

Table 4.1. VOCs detected at the X-749 Contaminated Materials Disposal Facility/X-120 Former Training Facility – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X120-09G	Trichloroethene	µg/L			16	
X120-10G	1,1,1-Trichloroethane	µg/L			4.4	
	1,1,2-Trichloroethane	µg/L			1.2	
	1,1-Dichloroethane	µg/L			15	
	1,1-Dichloroethene	µg/L			50 J	
	1,2-Dichloroethane	µg/L			1.2	
	Chloroform	µg/L			1.4	
	cis-1,2-Dichloroethene	µg/L			0.72 J	
	Methylene chloride	µg/L			0.77 J	
	Trichloroethene	µg/L			12 J	
X120-11G	1,1-Dichloroethene	µg/L		0.59 J		0.76 J
	Acetone	µg/L		1.9 QU		13
	cis-1,2-Dichloroethene	µg/L		8.7		11
	trans-1,2-Dichloroethene	µg/L		0.21 J		0.29 J
	Trichloroethene	µg/L		220 D		210 D
	Vinyl chloride	µg/L		0.1 JQU		0.19 J
X749-04G	Chloroform	µg/L			0.24 J	
	cis-1,2-Dichloroethene	µg/L			0.48 J	
	Tetrachloroethene	µg/L			0.56 J	
	Trichloroethene	µg/L			260 D	
X749-05G	1,1-Dichloroethane	µg/L			0.61 J	
	1,1-Dichloroethene	µg/L			0.35 J	
	Carbon tetrachloride	µg/L			0.29 J	
	Chloroform	µg/L			0.86 J	
	cis-1,2-Dichloroethene	µg/L			0.88 J	
	Tetrachloroethene	µg/L			1.7	
	Trichloroethene	µg/L			100 D	
X749-06G	1,1,1-Trichloroethane	µg/L		28 D		22 D
	1,1,2-Trichloroethane	µg/L		1.3 QU		3.7 D
	1,1-Dichloroethane	µg/L		160 D		200 D
	1,1-Dichloroethene	µg/L		110 D		120 D
	1,2-Dichloroethane	µg/L		4.1 D		3.5 D
	Benzene	µg/L		0.64 U		0.33 DJ
	Chloroform	µg/L		16 D		16 D
	cis-1,2-Dichloroethene	µg/L		39 D		50 D
	Tetrachloroethene	µg/L		12 D		14 D
	Trichloroethene	µg/L		610 D		640 D
	Vinyl chloride	µg/L		0.4 U		1.2 DJ
X749-07G	1,1,1,2-Tetrachloroethane	µg/L		0.17 J		
	1,1,1-Trichloroethane	µg/L		8.3		7.5
	1,1-Dichloroethane	µg/L		35 J		30
	1,1-Dichloroethene	µg/L		21 J		18
	1,2-Dichloroethane	µg/L		19 J		14
	Chloroform	µg/L		1.4		1.2
	cis-1,2-Dichloroethene	µg/L				6
	Tetrachloroethene	µg/L		0.35 J		0.38 J
	Trichloroethene	µg/L		70 DQJ		64 D
	Vinyl chloride	µg/L		0.1 U		0.28 J
X749-08G	1,1,1-Trichloroethane	µg/L		7.5		4.2
	1,1-Dichloroethane	µg/L		1.9		1.1

Table 4.1. VOCs detected at the X-749 Contaminated Materials Disposal Facility/X-120 Former Training Facility – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-08G	1,1-Dichloroethene	µg/L		7.6		4.5
	Chloroform	µg/L		0.21 J		0.16 U
	cis-1,2-Dichloroethene	µg/L				1.1
	Trichloroethene	µg/L		14		8
X749-09GA	1,1,1-Trichloroethane	µg/L		14		6.8
	1,1-Dichloroethane	µg/L		4.3		2.1
	1,1-Dichloroethene	µg/L		9.8		4.9
	1,2-Dichloroethane	µg/L		0.69 J		0.13 U
	Chloroform	µg/L		0.36 J		0.16 U
	cis-1,2-Dichloroethene	µg/L		3.1		1.3
	trans-1,2-Dichloroethene	µg/L		0.23 J		0.15 U
	Trichloroethene	µg/L		13		4.7
X749-10GA	1,1-Dichloroethane	µg/L		2.8		1.5
	1,1-Dichloroethene	µg/L		4.9		2.8
	cis-1,2-Dichloroethene	µg/L				1.3
	Trichloroethene	µg/L		0.27 J		0.28 J
	Vinyl chloride	µg/L		0.97 J		0.54 J
X749-13G	1,1,1-Trichloroethane	µg/L		2.3		2.8
	1,1-Dichloroethane	µg/L		0.84 J		0.86 J
	1,1-Dichloroethene	µg/L		3.2		4.4
	Acetone	µg/L		2.3 J		1.9 U
	Chloroform	µg/L		0.16 U		0.2 J
	cis-1,2-Dichloroethene	µg/L		0.75 J		0.79 J
	Trichloroethene	µg/L		7.2 J		7.8
X749-14B	Acetone	µg/L		2.4 J		1.9 U
X749-20G	1,1,1-Trichloroethane	µg/L			0.51 J	
	1,1-Dichloroethane	µg/L			1.3	
	1,1-Dichloroethene	µg/L			1	
	cis-1,2-Dichloroethene	µg/L			1	
	Methylene chloride	µg/L			1.2 J	
	Trichloroethene	µg/L			12	
X749-21G	1,1,1-Trichloroethane	µg/L		1.5		4
	1,1-Dichloroethane	µg/L		0.48 J		1.3
	1,1-Dichloroethene	µg/L		0.93 J		2.6
	cis-1,2-Dichloroethene	µg/L		0.22 J		0.6 J
	Trichloroethene	µg/L		2.2		4.9
X749-22G	1,1,1-Trichloroethane	µg/L		0.18 J		0.16 U
	1,1-Dichloroethane	µg/L		2.9		3.2
	1,1-Dichloroethene	µg/L		3.6		4.2
	cis-1,2-Dichloroethene	µg/L		1.1		1.2
	Vinyl chloride	µg/L		0.63 J		0.64 J
X749-26G	1,1,1-Trichloroethane	µg/L		3.7		0.9 J
	1,1-Dichloroethane	µg/L		11		2.5
	1,1-Dichloroethene	µg/L		15 J		2.5
	1,2-Dichloroethane	µg/L		5.1		1.1
	Chloroform	µg/L		1.2		0.21 J
	cis-1,2-Dichloroethene	µg/L		2.9		0.47 J
	Tetrachloroethene	µg/L		0.28 J		0.2 U
	Trichloroethene	µg/L		25 J		4.8 J
X749-27G	1,1,1-Trichloroethane	µg/L		30		16

Table 4.1. VOCs detected at the X-749 Contaminated Materials Disposal Facility/X-120 Former Training Facility – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-27G	1,1,2-Trichloroethane	µg/L		1.1 Q		1
	1,1-Dichloroethane	µg/L		130 DQ		41
	1,1-Dichloroethene	µg/L		180 DQ		83 D
	1,2-Dichloroethane	µg/L		75 DQ		14
	Acetone	µg/L		1.9 U		6.2 J
	Benzene	µg/L		0.16 J		0.16 U
	Chloroethane	µg/L		1.5 J		0.48 J
	Chloroform	µg/L		14 Q		5.7
	cis-1,2-Dichloroethene	µg/L		32		13
	Tetrachloroethene	µg/L		1.6		1.5
	trans-1,2-Dichloroethene	µg/L		0.33 JQ		0.15 J
	Trichloroethene	µg/L		230 D		130 D
	Vinyl chloride	µg/L		0.1 U		0.19 J
X749-28G	1,1,1-Trichloroethane	µg/L			4.3	
	1,1-Dichloroethane	µg/L			3.2	
	1,1-Dichloroethene	µg/L			9.4	
	1,2-Dichloroethane	µg/L			0.35 J	
	Chloroform	µg/L			0.67 J	
	cis-1,2-Dichloroethene	µg/L			0.64 J	
	Methylene chloride	µg/L			1.3 BJ	
	Trichloroethene	µg/L			29 J	
X749-29G	1,1-Dichloroethene	µg/L			0.32 J	
	Chloroform	µg/L			0.3 J	
	cis-1,2-Dichloroethene	µg/L			0.61 J	
	Trichloroethene	µg/L			34	
X749-30G	1,1-Dichloroethene	µg/L			1.7	
	Chloroform	µg/L			0.59 J	
	cis-1,2-Dichloroethene	µg/L			1.2	
	Trichloroethene	µg/L			57	
X749-33G	1,1,1-Trichloroethane	µg/L		11		14
	1,1,2-Trichloroethane	µg/L		0.32 QU		1.3
	1,1-Dichloroethane	µg/L		37 Q		41
	1,1-Dichloroethene	µg/L		55 Q		76 D
	1,2-Dichloroethane	µg/L		15 Q		15
	Acetone	µg/L		1.9 U		8.1 J
	Chloroethane	µg/L		0.51 J		0.43 J
	Chloroform	µg/L		4.2 Q		4.9
	cis-1,2-Dichloroethene	µg/L		5.9		9.3
	Tetrachloroethene	µg/L		1.2		1.4
	Trichloroethene	µg/L		100 D		120 D
X749-35G	1,1,1-Trichloroethane	µg/L			36	
	1,1-Dichloroethane	µg/L			5.7	
	1,1-Dichloroethene	µg/L			19	
	cis-1,2-Dichloroethene	µg/L			3.5	
	Tetrachloroethene	µg/L			0.24 J	
	Trichloroethene	µg/L			57	
	Vinyl chloride	µg/L			0.34 J	
X749-36G	1,1,1-Trichloroethane	µg/L			0.74 J	
	1,1-Dichloroethane	µg/L			1.5	
	1,1-Dichloroethene	µg/L			5.2	

Table 4.1. VOCs detected at the X-749 Contaminated Materials Disposal Facility/X-120 Former Training Facility – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-36G	Chloroform	µg/L			0.22 J	
	cis-1,2-Dichloroethene	µg/L			0.31 J	
	Trichloroethene	µg/L			5.1	
X749-37G	1,1,1-Trichloroethane	µg/L		1.9		2.1
	1,1-Dichloroethane	µg/L		7.6 Q		8.9
	1,1-Dichloroethene	µg/L		15 Q		21 J
	1,2-Dichloroethane	µg/L		0.13 JQU		0.74 J
	Chloroform	µg/L		0.36 JQ		0.37 J
	cis-1,2-Dichloroethene	µg/L		3.3		3.9
	Tetrachloroethene	µg/L		0.34 J		0.4 J
	Trichloroethene	µg/L		17		19 J
X749-38G	1,1,1-Trichloroethane	µg/L		5.6		8.9
	1,1,2-Trichloroethane	µg/L		0.61 J		0.32 U
	1,1-Dichloroethane	µg/L		14		23
	1,1-Dichloroethene	µg/L		39		58
	1,2-Dichloroethane	µg/L		1.5		2.4
	Acetone	µg/L		1.9 U		2.6 J
	Chloroform	µg/L		1.3		1.8
	cis-1,2-Dichloroethene	µg/L		10		14
	Tetrachloroethene	µg/L		0.88 J		1.2
	Trichloroethene	µg/L		41		57 D
X749-40G	Chloroform	µg/L			0.43 J	
	Trichloroethene	µg/L			0.23 J	
X749-41G	Acetone	µg/L		7.6 U		22 D
	Chloroform	µg/L		0.64 U		0.36 DJ
	cis-1,2-Dichloroethene	µg/L		2.4 DJ		2.7 D
	trans-1,2-Dichloroethene	µg/L		1.1 DJ		0.85 DJ
	Trichloroethene	µg/L		370 D		590 D
X749-42G	1,1,1-Trichloroethane	µg/L		0.54 J		0.52 J
	1,1-Dichloroethane	µg/L		0.83 J		1.1
	1,1-Dichloroethene	µg/L		3.3		3.8
	Acetone	µg/L		1.9 U		5.9 J
	Chloroform	µg/L		0.16 U		0.18 J
	Trichloroethene	µg/L		3.1		4.2
X749-43G	1,1,1-Trichloroethane	µg/L			0.24 J	
	1,1-Dichloroethane	µg/L			0.47 J	
	1,1-Dichloroethene	µg/L			1.2 J	
	Trichloroethene	µg/L			0.84 J	
X749-44G	1,1-Dichloroethane	µg/L	0.22 U	0.18 J	0.3 J	0.16 J
	1,1-Dichloroethene	µg/L	0.23 U	0.14 U	0.23 J	0.14 U
	Trichloroethene	µg/L	0.36 J	0.25 J	0.6 J	0.27 J
X749-45G	1,1,1-Trichloroethane	µg/L	0.24 J	0.16 U	0.16 U	0.16 U
	1,1-Dichloroethane	µg/L	4.1	1.5	0.25 J	0.23 J
	1,1-Dichloroethene	µg/L	2.8	0.93 J	0.17 J	0.14 U
	1,2-Dichloroethane	µg/L	1.2	0.13 U	0.13 U	0.13 U
	Acetone	µg/L	1.9 U	1.9 U	1.9 U	20
	cis-1,2-Dichloroethene	µg/L	4.9	1.2	0.21 J	0.2 J
	Trichloroethene	µg/L	8.4	3.6	0.73 J	0.58 J
X749-50B	1,1-Dichloroethane	µg/L			0.88 J	
	Methylene chloride	µg/L			0.87 J	

Table 4.1. VOCs detected at the X-749 Contaminated Materials Disposal Facility/X-120 Former Training Facility – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-51B	Methylene chloride	µg/L			0.85 J	
X749-54B	1,1-Dichloroethane	µg/L		2.6 Q		2.8
	Acetone	µg/L		1.9 U		6.6 J
	Trichloroethene	µg/L		0.72 J		5.1
	Vinyl chloride	µg/L		0.1 U		0.45 J
X749-60B	Trichloroethene	µg/L			1.8	
X749-64B	Methylene chloride	µg/L			0.83 J	
X749-67G	1,1,1-Trichloroethane	µg/L	6	7.8	7.6	6
	1,1,2-Trichloroethane	µg/L	0.46 J	0.32 JQU	0.47 J	0.38 J
	1,1-Dichloroethane	µg/L	73 D	66 D	85 D	74 D
	1,1-Dichloroethene	µg/L	54	53 J	58	50
	1,2-Dichloroethane	µg/L	24	30 JQ	24	22
	Chloroethane	µg/L	0.91 J	1 J	0.81 J	0.69 J
	Chloroform	µg/L	3.5	4	3.4	3.2
	cis-1,2-Dichloroethene	µg/L	42	45 J	37	36
	Tetrachloroethene	µg/L	0.31 J	0.23 J	0.24 J	0.2 U
	trans-1,2-Dichloroethene	µg/L	0.42 J	0.44 J	0.39 J	0.31 J
	Trichloroethene	µg/L	220 D	170 D	240 D	200 D
	Vinyl chloride	µg/L	0.27 J	0.4 J	0.33 J	0.24 J
X749-96G	Trichloroethene	µg/L		0.16 U		1.7
X749-97G	1,1-Dichloroethane	µg/L	0.76 J	0.16 U	0.16 U	0.2 J
	1,1-Dichloroethene	µg/L	0.25 J	0.14 U	0.14 U	0.14 U
	1,2-Dichloroethane	µg/L	0.2 J	0.13 U	0.13 U	0.13 U
	cis-1,2-Dichloroethene	µg/L	0.39 J	0.15 U	0.15 U	0.15 U
	Toluene	µg/L	0.17 U	0.21 J	0.5 J	0.17 QU
	Trichloroethene	µg/L	1.4	0.28 J	0.16 U	0.16 U
X749-98G	Acetone	µg/L		3.5 J		1.9 U
	Trichloroethene	µg/L		0.16 U		0.2 J
X749-102G	1,1,1-Trichloroethane	µg/L	0.17 J	0.19 J	0.16 U	0.16 U
	1,1-Dichloroethane	µg/L	0.76 J	0.72 J	0.19 J	0.33 J
	1,1-Dichloroethene	µg/L	1	0.92 J	0.21 J	0.47 J
	1,2-Dichloroethane	µg/L	0.14 J	0.13 U	0.13 U	0.13 U
	cis-1,2-Dichloroethene	µg/L	0.16 J	0.15 U	0.15 U	0.15 U
	Trichloroethene	µg/L	1.2	1.1	0.28 J	0.48 J
X749-103G	1,1,1-Trichloroethane	µg/L	0.18 J	0.16 U	0.16 U	0.16 U
	1,1-Dichloroethane	µg/L	0.24 J	0.22 U	0.56 J	0.75 J
	1,1-Dichloroethene	µg/L	0.33 J	0.24 J	0.9 J	1.1
	Acetone	µg/L	1.9 U	1.9 U	1.9 U	16
	cis-1,2-Dichloroethene	µg/L	0.15 U	0.15 U	0.15 U	0.19 J
	Trichloroethene	µg/L	0.44 J	0.34 J	0.87 J	1.1
X749-106G	1,1,1-Trichloroethane	µg/L		12		31
	1,1,2-Trichloroethane	µg/L		1.2		2
	1,1-Dichloroethane	µg/L		22		36
	1,1-Dichloroethene	µg/L		69 D		97 D
	1,2-Dichloroethane	µg/L		2.1		3.2
	Acetone	µg/L		1.9 U		5.4 J
	Chloroform	µg/L		2.2		3.6
	cis-1,2-Dichloroethene	µg/L		3.4		5
	Tetrachloroethene	µg/L		0.88 J		1.5
	Trichloroethene	µg/L		50		87 D

Table 4.1. VOCs detected at the X-749 Contaminated Materials Disposal Facility/X-120 Former Training Facility – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-106G	Vinyl chloride	µg/L		0.1 U		0.22 J
X749-107G	1,1,1-Trichloroethane	µg/L		14		12
	1,1,2-Trichloroethane	µg/L		1.6		1.6
	1,1-Dichloroethane	µg/L		27		26
	1,1-Dichloroethene	µg/L		83 D		70 DJ
	1,2-Dichloroethane	µg/L		2.6		2.6
	Chloroform	µg/L		2.9		2.4
	cis-1,2-Dichloroethene	µg/L		4.4		4.1
	Tetrachloroethene	µg/L		0.96 J		0.85 J
	Trichloroethene	µg/L		57 D		58
X749-108G	1,1,1-Trichloroethane	µg/L		28		11
	1,1,2-Trichloroethane	µg/L		1.8		1.2
	1,1-Dichloroethane	µg/L		31		23
	1,1-Dichloroethene	µg/L		86 D		63 D
	1,2-Dichloroethane	µg/L		2.9		2.2
	Chloroform	µg/L		3.5		2
	cis-1,2-Dichloroethene	µg/L		4.8		3.7
	Tetrachloroethene	µg/L		1.4		0.92 J
	trans-1,2-Dichloroethene	µg/L		0.15 J		0.15 U
	Trichloroethene	µg/L		83 D		49
X749-109G	1,1,1-Trichloroethane	µg/L		1.9		1.3
	1,1-Dichloroethane	µg/L		7.3		5.7
	1,1-Dichloroethene	µg/L		12		8.8
	1,2-Dichloroethane	µg/L		1.6		1
	Acetone	µg/L		1.9 U		8.8 J
	Chloroform	µg/L		0.47 J		0.34 J
	cis-1,2-Dichloroethene	µg/L		4.7		3.2
	Tetrachloroethene	µg/L		0.28 J		0.2 U
	Trichloroethene	µg/L		15		11
X749-110G	1,1,1-Trichloroethane	µg/L		0.64 J		1
	1,1-Dichloroethane	µg/L		3.9		4.8
	1,1-Dichloroethene	µg/L		4.1		7
	1,2-Dichloroethane	µg/L		1.5		1.5
	Acetone	µg/L		2.9 J		1.9 U
	Chloroform	µg/L		0.53 J		0.43 J
	cis-1,2-Dichloroethene	µg/L		4.6		5.9
	trans-1,2-Dichloroethene	µg/L		0.15 U		0.26 J
	Trichloroethene	µg/L		19		25
X749-112G	Acetone	µg/L		3.2 J		1.9 U
X749-113G	1,1,1-Trichloroethane	µg/L		10		13
	1,1-Dichloroethane	µg/L		16		20
	1,1-Dichloroethene	µg/L		21		32
	1,2-Dichloroethane	µg/L		9.7		10
	Acetone	µg/L		2.9 J		1.9 QU
	Chloroform	µg/L		1.9		2.1
	cis-1,2-Dichloroethene	µg/L		2.2		3.1
	Tetrachloroethene	µg/L		0.29 J		0.37 JQ
	Trichloroethene	µg/L		38		47
	Vinyl chloride	µg/L		0.1 U		0.13 J
X749-114G	Benzene	µg/L			0.26 J	

Table 4.1. VOCs detected at the X-749 Contaminated Materials Disposal Facility/X-120 Former Training Facility – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-114G	cis-1,2-Dichloroethene	µg/L			1.2	
X749-115G	Acetone	µg/L			2 J	
	Chloroform	µg/L			0.16 J	
	cis-1,2-Dichloroethene	µg/L			6.9	
	Trichloroethene	µg/L			260 D	
X749-117G	Chloroform	µg/L			1.9	
	cis-1,2-Dichloroethene	µg/L			0.25 J	
	Trichloroethene	µg/L			21	
X749-118G	1,1-Dichloroethane	µg/L			1.7	
	1,1-Dichloroethene	µg/L			0.3 J	
	Carbon tetrachloride	µg/L			0.21 J	
	Chloroform	µg/L			0.4 J	
	cis-1,2-Dichloroethene	µg/L			1.8	
	Tetrachloroethene	µg/L			2	
	Trichloroethene	µg/L			99 D	
X749-119G	Acetone	µg/L			2.1 J	
	Chloroform	µg/L			1.2	
	cis-1,2-Dichloroethene	µg/L			0.48 J	
	Trichloroethene	µg/L			14	
X749-120G	1,1,1-Trichloroethane	µg/L			600 D	
	1,1,2-Trichloroethane	µg/L			81 D	
	1,1-Dichloroethane	µg/L			5300 D	
	1,1-Dichloroethene	µg/L			2400 D	
	1,2-Dichloroethane	µg/L			86 D	
	Acetone	µg/L			460 D	
	Benzene	µg/L			7 DJ	
	Chloroform	µg/L			290 D	
	cis-1,2-Dichloroethene	µg/L			1600 D	
	Methylene chloride	µg/L			72 DJ	
	Tetrachloroethene	µg/L			330 D	
	Trichloroethene	µg/L			9800 D	
X749-121G	1,1,1-Trichloroethane	µg/L			45	
	1,1,2-Trichloroethane	µg/L			0.8 JQ	
	1,1-Dichloroethane	µg/L			15	
	1,1-Dichloroethene	µg/L			380 D	
	1,2-Dichloroethane	µg/L			1.7	
	Acetone	µg/L			11 Q	
	Chloroethane	µg/L			4.9	
	Chloroform	µg/L			1.2	
	cis-1,2-Dichloroethene	µg/L			10	
	Tetrachloroethene	µg/L			0.33 J	
	trans-1,2-Dichloroethene	µg/L			0.46 J	
	Trichloroethene	µg/L			82 D	
	Vinyl chloride	µg/L			1.3	
X749-122G	1,1,1-Trichloroethane	µg/L			230 D	
	1,1,2-Trichloroethane	µg/L			1.7 DJQ	
	1,1-Dichloroethane	µg/L			64 D	
	1,1-Dichloroethene	µg/L			220 D	
	1,2-Dichloroethane	µg/L			3.4 D	
	Acetone	µg/L			8.5 DJQ	

Table 4.1. VOCs detected at the X-749 Contaminated Materials Disposal Facility/X-120 Former Training Facility – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-122G	Benzene	µg/L			2.5 D	
	Chloroform	µg/L			2.5 D	
	cis-1,2-Dichloroethene	µg/L			40 D	
	trans-1,2-Dichloroethene	µg/L			0.86 DJ	
	Trichloroethene	µg/L			670 D	
	Vinyl chloride	µg/L			1.6 DJ	
X749-BG9G	Trichloroethene	µg/L		0.27 J		0.29 J
X749-PZ02G	1,1-Dichloroethene	µg/L		0.14 QU		0.27 J
	Trichloroethene	µg/L		0.38 J		0.59 J
X749-PZ04G	1,1,1-Trichloroethane	µg/L	0.21 J	0.16 U	0.16 U	0.16 U
	1,1-Dichloroethane	µg/L	0.74 J	0.74 J	0.56 J	0.48 J
	1,1-Dichloroethene	µg/L	0.28 J	0.32 J	0.21 J	0.16 J
	1,2-Dichloroethane	µg/L	0.23 J	0.13 U	0.13 U	0.16 J
	cis-1,2-Dichloroethene	µg/L	0.24 J	0.15 U	0.16 J	0.15 U
	Trichloroethene	µg/L	1.9	1.8	1.2	1.5
X749-PZ05G	cis-1,2-Dichloroethene	µg/L	0.15 U	0.15 U	0.15 U	0.17 J
	Trichloroethene	µg/L	0.16 U	0.16 U	0.47 J	30
X749-PZ06G	1,1,1-Trichloroethane	µg/L		9.5		9.5
	1,1,2-Trichloroethane	µg/L		1.1		1.1
	1,1-Dichloroethane	µg/L		23		25 J
	1,1-Dichloroethene	µg/L		71 D		68 D
	1,2-Dichloroethane	µg/L		2		2.2
	Chloroform	µg/L		2.1		2.1
	cis-1,2-Dichloroethene	µg/L		3.8		3.9
	Tetrachloroethene	µg/L		0.56 J		0.53 J
	Trichloroethene	µg/L		49		51 J
X749-PZ07G	1,1,1-Trichloroethane	µg/L			0.16 J	
	1,1-Dichloroethane	µg/L			0.2 J	
	1,1-Dichloroethene	µg/L			0.61 J	
	Trichloroethene	µg/L			1.3	
X749-PZ08G	1,1-Dichloroethane	µg/L		0.32 J		
	Chloroform	µg/L		0.17 J		
	cis-1,2-Dichloroethene	µg/L		0.73 J		
	Trichloroethene	µg/L		1.3		
X749-PZ09G	1,1,1-Trichloroethane	µg/L		1.4		
	1,1-Dichloroethane	µg/L		3		
	1,1-Dichloroethene	µg/L		5.7		
	cis-1,2-Dichloroethene	µg/L		15		
	Trichloroethene	µg/L		27		
	Vinyl chloride	µg/L		0.55 J		
X749-PZ10G	1,1,1-Trichloroethane	µg/L		7.6 D		6.7 D
	1,1-Dichloroethane	µg/L		0.78 DJ		0.63 DJ
	1,1-Dichloroethene	µg/L		82 D		90 D
	1,2-Dichloroethane	µg/L		0.6 DJ		0.56 DJ
	Acetone	µg/L		3.8 U		70 DQ
	Chloroform	µg/L		23 D		25 D
	cis-1,2-Dichloroethene	µg/L		0.48 DJ		0.62 DJ
	Trichloroethene	µg/L		370 D		360 D
X749-PZ11G	1,1,1-Trichloroethane	µg/L		7.3		
	1,1-Dichloroethane	µg/L		4.7		

Table 4.1. VOCs detected at the X-749 Contaminated Materials Disposal Facility/X-120 Former Training Facility – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-PZ11G	1,1-Dichloroethene	µg/L		4.4		
	Benzene	µg/L		0.18 J		
	cis-1,2-Dichloroethene	µg/L		13		
	trans-1,2-Dichloroethene	µg/L		0.3 J		
	Trichloroethene	µg/L		47 J		
	Vinyl chloride	µg/L		1.1		
X749-PZ12G	1,1,1-Trichloroethane	µg/L		3.5		
	1,1-Dichloroethane	µg/L		25		
	1,1-Dichloroethene	µg/L		23		
	1,2-Dichloroethane	µg/L		0.44 J		
	Benzene	µg/L		0.78 J		
	cis-1,2-Dichloroethene	µg/L		7.7		
	trans-1,2-Dichloroethene	µg/L		0.49 J		
	Trichloroethene	µg/L		4.2		
	Vinyl chloride	µg/L		1.5		
X749-PZ13G	1,1,1-Trichloroethane	µg/L		17		
	1,1-Dichloroethane	µg/L		36		
	1,1-Dichloroethene	µg/L		60		
	1,2-Dichloroethane	µg/L		1.8		
	Benzene	µg/L		3.2		
	Chloroethane	µg/L		0.63 J		
	Chloroform	µg/L		0.7 J		
	cis-1,2-Dichloroethene	µg/L		17		
	trans-1,2-Dichloroethene	µg/L		0.53 J		
	Trichloroethene	µg/L		44		
	Vinyl chloride	µg/L		1.5		
X749-WPW	1,1,1-Trichloroethane	µg/L		54		87 D
	1,1,2-Trichloroethane	µg/L		0.71 J		3.2 U
	1,1-Dichloroethane	µg/L		56		65 D
	1,1-Dichloroethene	µg/L		94 D		180 D
	1,2-Dichloroethane	µg/L		12		1.3 U
	Acetone	µg/L		4.3 J		19 U
	Benzene	µg/L		0.47 J		6.9 DJ
	Carbon tetrachloride	µg/L		0.24 J		1.9 U
	Chloroform	µg/L		15		1.6 U
	cis-1,2-Dichloroethene	µg/L		29		350 D
	Tetrachloroethene	µg/L		3.1		2 U
	trans-1,2-Dichloroethene	µg/L		0.22 J		1.5 U
	Trichloroethene	µg/L		300 D		1300 D
	Vinyl chloride	µg/L		6.1		1 U

Table 4.2. Results for radionuclides at the X-749 Contaminated Materials Disposal Facility/X-120 Former Training Facility – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
STSW-101G	Technetium-99	pCi/L		1.96 U		
	Uranium	µg/L		0.301 UJ		
	Uranium-233/234	pCi/L		0.053 UJ		
	Uranium-235/236	pCi/L		0 U		
	Uranium-238	pCi/L		0.101 J		
STSW-102G	Technetium-99	pCi/L		33.6		
	Uranium	µg/L		1.59		
	Uranium-233/234	pCi/L		0.754		
	Uranium-235/236	pCi/L		0.0169 U		
	Uranium-238	pCi/L		0.533		
WP-01G	Technetium-99	pCi/L		-1.75 U		
	Uranium	µg/L		0.086 U		
	Uranium-233/234	pCi/L		0.0311 U		
	Uranium-235/236	pCi/L		0.0193 U		
	Uranium-238	pCi/L		0.0259 U		
WP-02G	Technetium-99	pCi/L		-2.52 U		
	Uranium	µg/L		0.107 U		
	Uranium-233/234	pCi/L		0.0206 U		
	Uranium-235/236	pCi/L		0 U		
	Uranium-238	pCi/L		0.036 U		
WP-03G	Technetium-99	pCi/L		-2.28 U		
	Uranium	µg/L		0.173 UJ		
	Uranium-233/234	pCi/L		0.0885 UJ		
	Uranium-235/236	pCi/L		0.00648 U		
	Uranium-238	pCi/L		0.0573 UJ		
WP-04G	Technetium-99	pCi/L		-2.42 U		
	Uranium	µg/L		0.0692 U		
	Uranium-233/234	pCi/L		0.029 U		
	Uranium-235/236	pCi/L		-0.0060 U		
	Uranium-238	pCi/L		0.0242 U		
WP-05G	Technetium-99	pCi/L		-1.91 U		
	Uranium	µg/L		0.135 U		
	Uranium-233/234	pCi/L		0.0655 UJ		
	Uranium-235/236	pCi/L		0 U		
	Uranium-238	pCi/L		0.0453 UJ		
WP-06G	Technetium-99	pCi/L		-4.11 U		
	Uranium	µg/L		8.31 J		
	Uranium-233/234	pCi/L		2.68		
	Uranium-235/236	pCi/L		0.121 J		
	Uranium-238	pCi/L		2.77		
WP-07G	Technetium-99	pCi/L		-0.929 U		
	Uranium	µg/L		0.229 UJ		
	Uranium-233/234	pCi/L		0.0337 U		
	Uranium-235/236	pCi/L		0 U		
	Uranium-238	pCi/L		0.0769 UJ		
X120-08G	Technetium-99	pCi/L			3.19 U	
	Uranium	µg/L			0.546 J	
	Uranium-233/234	pCi/L			0.259	
	Uranium-235/236	pCi/L			0 U	
	Uranium-238	pCi/L			0.184 J	

Table 4.2. Results for radionuclides at the X-749 Contaminated Materials Disposal Facility/X-120 Former Training Facility – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-06G	Technetium-99	pCi/L		14.4		
	Uranium	µg/L		0.274		
	Uranium-233/234	pCi/L		0.0476 U		
	Uranium-235/236	pCi/L		0.0118 U		
	Uranium-238	pCi/L		0.0904		
X749-07G	Americium-241	pCi/L		0.0159 U		
	Neptunium-237	pCi/L		0.0202 U		
	Plutonium-238	pCi/L		0 U		
	Plutonium-239/240	pCi/L		0.0278 U		
	Technetium-99	pCi/L		12.6		
	Uranium	µg/L		0.192 UJ		
	Uranium-233/234	pCi/L		0.101 J		
	Uranium-235/236	pCi/L		0.012 U		
	Uranium-238	pCi/L		0.0626 UJ		
X749-08G	Americium-241	pCi/L		0.0321 U		
	Neptunium-237	pCi/L		0.00945 U		
	Plutonium-238	pCi/L		-0.0055 U		
	Plutonium-239/240	pCi/L		0.011 U		
	Technetium-99	pCi/L		8.36		
	Uranium	µg/L		0.184 UJ		
	Uranium-233/234	pCi/L		0.122 J		
	Uranium-235/236	pCi/L		0.00583 U		
	Uranium-238	pCi/L		0.0609 UJ		
X749-10GA	Americium-241	pCi/L		0.00517 U		
	Neptunium-237	pCi/L		0.00963 U		
	Plutonium-238	pCi/L		-0.0052 U		
	Plutonium-239/240	pCi/L		0.0104 U		
	Technetium-99	pCi/L		0.166 U		
	Uranium	µg/L		0.112 U		
	Uranium-233/234	pCi/L		0.0425 UJ		
	Uranium-235/236	pCi/L		0 U		
	Uranium-238	pCi/L		0.0378 UJ		
X749-13G	Technetium-99	pCi/L		1.5 U		
	Uranium	µg/L		0.655 J		
	Uranium-233/234	pCi/L		0.267		
	Uranium-235/236	pCi/L		0.0292 U		
	Uranium-238	pCi/L		0.216 J		
X749-14B	Americium-241	pCi/L		0.0325 U		
	Neptunium-237	pCi/L		0 U		
	Plutonium-238	pCi/L		0.0119 U		
	Plutonium-239/240	pCi/L		0.00593 U		
	Technetium-99	pCi/L		-1.21 U		
	Uranium	µg/L		0.2 UJ		
	Uranium-233/234	pCi/L		0.024 U		
	Uranium-235/236	pCi/L		0 U		
	Uranium-238	pCi/L		0.0672 UJ		
X749-20G	Technetium-99	pCi/L			34.9	
	Uranium	µg/L			1.47	
	Uranium-233/234	pCi/L			0.476	
	Uranium-235/236	pCi/L			0.023 U	

Table 4.2. Results for radionuclides at the X-749 Contaminated Materials Disposal Facility/X-120 Former Training Facility – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-20G	Uranium-238	pCi/L			0.489	
X749-26G	Technetium-99	pCi/L		6.17 UJ		
	Uranium	µg/L		0.0456 U		
	Uranium-233/234	pCi/L		0.0181 U		
	Uranium-235/236	pCi/L		0.0113 U		
	Uranium-238	pCi/L		0.0136 U		
X749-27G	Technetium-99	pCi/L		83		
	Uranium	µg/L		0.169 UJ		
	Uranium-233/234	pCi/L		0.0559 UJ		
	Uranium-235/236	pCi/L		0.0058 U		
	Uranium-238	pCi/L		0.0559 UJ		
X749-28G	Technetium-99	pCi/L			3.88 U	
	Uranium	µg/L			0.086 U	
	Uranium-233/234	pCi/L			0.0382 U	
	Uranium-235/236	pCi/L			-0.00528 U	
	Uranium-238	pCi/L			0.0297 U	
X749-33G	Technetium-99	pCi/L		14		
	Uranium	µg/L		0.0412 U		
	Uranium-233/234	pCi/L		0.0369 UJ		
	Uranium-235/236	pCi/L		0 U		
	Uranium-238	pCi/L		0.0138 U		
X749-37G	Technetium-99	pCi/L		-4E-15 U		
	Uranium	µg/L		0.672 J		
	Uranium-233/234	pCi/L		0.272		
	Uranium-235/236	pCi/L		0.0226 U		
	Uranium-238	pCi/L		0.222 J		
X749-44G	Americium-241	pCi/L		0.0359 U		
	Neptunium-237	pCi/L		-0.0096 U		
	Plutonium-238	pCi/L		0.0204 U		
	Plutonium-239/240	pCi/L		0.0305 U		
	Technetium-99	pCi/L		-1.73 U		
	Uranium	µg/L		0.402 J		
	Uranium-233/234	pCi/L		0.163 J		
	Uranium-235/236	pCi/L		0.019 U		
	Uranium-238	pCi/L		0.132 J		
X749-45G	Americium-241	pCi/L		0.0125 U		
	Neptunium-237	pCi/L		-0.0145 U		
	Plutonium-238	pCi/L		-0.0166 U		
	Plutonium-239/240	pCi/L		0.0111 U		
	Technetium-99	pCi/L		-1.79 U		
	Uranium	µg/L		0.0308 U		
	Uranium-233/234	pCi/L		0.0158 U		
	Uranium-235/236	pCi/L		0.0327 U		
	Uranium-238	pCi/L		0.00525 U		
X749-54B	Technetium-99	pCi/L		-2.58 U		
	Uranium	µg/L		0.0542 U		
	Uranium-233/234	pCi/L		0 U		
	Uranium-235/236	pCi/L		0 U		
	Uranium-238	pCi/L		0.0182 U		
X749-64B	Americium-241	pCi/L			0.0499 U	

Table 4.2. Results for radionuclides at the X-749 Contaminated Materials Disposal Facility/X-120 Former Training Facility – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-64B	Neptunium-237	pCi/L			0.00478 U	
	Plutonium-238	pCi/L			0.0103 U	
	Plutonium-239/240	pCi/L			-0.00515 U	
	Technetium-99	pCi/L			3.06 U	
	Uranium	µg/L			0.986 J	
	Uranium-233/234	pCi/L			1.4	
	Uranium-235/236	pCi/L			0.0112 U	
	Uranium-238	pCi/L			0.33	
X749-67G	Technetium-99	pCi/L		26.3		
	Uranium	µg/L		0.361		
	Uranium-233/234	pCi/L		0.0801 U		
	Uranium-235/236	pCi/L		0.0235 U		
	Uranium-238	pCi/L		0.118		
X749-68G	Americium-241	pCi/L			0.0292 U	
	Neptunium-237	pCi/L			0 U	
	Plutonium-238	pCi/L			0.00715 U	
	Plutonium-239/240	pCi/L			0.0286 U	
	Technetium-99	pCi/L			2.97 U	
	Uranium	µg/L			0.621 J	
	Uranium-233/234	pCi/L			0.228	
	Uranium-235/236	pCi/L			0 U	
	Uranium-238	pCi/L			0.209 J	
X749-96G	Americium-241	pCi/L		0.0348 U		
	Neptunium-237	pCi/L		0.00904 U		
	Plutonium-238	pCi/L		0.0163 U		
	Plutonium-239/240	pCi/L		0.0217 U		
	Technetium-99	pCi/L		-1.39 U		
	Uranium	µg/L		0.127 U		
	Uranium-233/234	pCi/L		0.0664 UJ		
	Uranium-235/236	pCi/L		0 U		
	Uranium-238	pCi/L		0.0427 UJ		
X749-97G	Americium-241	pCi/L		0.0198 U		
	Neptunium-237	pCi/L		0 U		
	Plutonium-238	pCi/L		0.00544 U		
	Plutonium-239/240	pCi/L		0.0272 U		
	Technetium-99	pCi/L		-1.31 U		
	Uranium	µg/L		0.198 UJ		
	Uranium-233/234	pCi/L		0.0744 UJ		
	Uranium-235/236	pCi/L		0.0123 U		
	Uranium-238	pCi/L		0.0645 UJ		
X749-98G	Americium-241	pCi/L		0.0228 U		
	Neptunium-237	pCi/L		0.00443 U		
	Plutonium-238	pCi/L		0.0118 U		
	Plutonium-239/240	pCi/L		0.0355 U		
	Technetium-99	pCi/L		-1.68 U		
	Uranium	µg/L		0.118 U		
	Uranium-233/234	pCi/L		0.0593 UJ		
	Uranium-235/236	pCi/L		0 U		
	Uranium-238	pCi/L		0.0395 UJ		
X749-106G	Technetium-99	pCi/L		1.15 U		

Table 4.2. Results for radionuclides at the X-749 Contaminated Materials Disposal Facility/X-120 Former Training Facility – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-106G	Uranium	µg/L		0.0607 U		
	Uranium-233/234	pCi/L		0.00465 U		
	Uranium-235/236	pCi/L		0.0116 U		
	Uranium-238	pCi/L		0.0186 U		
X749-108G	Technetium-99	pCi/L		3.25 U		
	Uranium	µg/L		0.0952 U		
	Uranium-233/234	pCi/L		0.00914 U		
	Uranium-235/236	pCi/L		0 U		
	Uranium-238	pCi/L		0.032 U		
X749-109G	Technetium-99	pCi/L		-1.06 U		
	Uranium	µg/L		0.459 J		
	Uranium-233/234	pCi/L		0.155 J		
	Uranium-235/236	pCi/L		0.0227 U		
	Uranium-238	pCi/L		0.151 J		
X749-110G	Technetium-99	pCi/L		1.35 U		
	Uranium	µg/L		11.1 J		
	Uranium-233/234	pCi/L		3.43		
	Uranium-235/236	pCi/L		0.195 J		
	Uranium-238	pCi/L		3.69		
X749-113G	Technetium-99	pCi/L		7.73		
	Uranium	µg/L		0.168 UJ		
	Uranium-233/234	pCi/L		0.0517 UJ		
	Uranium-235/236	pCi/L		0 U		
	Uranium-238	pCi/L		0.0564 UJ		
X749-120G	Technetium-99	pCi/L			73.2	
	Uranium	µg/L			0.399 J	
	Uranium-233/234	pCi/L			0.0751 JU	
	Uranium-235/236	pCi/L			0.011 U	
	Uranium-238	pCi/L			0.133 J	
X749-121G	Technetium-99	pCi/L			703	
	Uranium	µg/L			0.732 J	
	Uranium-233/234	pCi/L			0.281	
	Uranium-235/236	pCi/L			0.0113 U	
	Uranium-238	pCi/L			0.244	
X749-PZ02G	Technetium-99	pCi/L		-0.396 U		
	Uranium	µg/L		0.0461 U		
	Uranium-233/234	pCi/L		0.00914 U		
	Uranium-235/236	pCi/L		0.0114 U		
	Uranium-238	pCi/L		0.0137 U		
X749-PZ04G	Technetium-99	pCi/L		1.76 U		
	Uranium	µg/L		0.148 U		
	Uranium-233/234	pCi/L		0.0488 U		
	Uranium-235/236	pCi/L		0.00607 U		
	Uranium-238	pCi/L		0.0488 U		
X749-PZ09G	Technetium-99	pCi/L		220		
	Uranium	µg/L		6		
	Uranium-233/234	pCi/L		2.17		
	Uranium-235/236	pCi/L		0.135		
	Uranium-238	pCi/L		2		
X749-PZ10G	Technetium-99	pCi/L		21.3		

Table 4.2. Results for radionuclides at the X-749 Contaminated Materials Disposal Facility/X-120 Former Training Facility – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-PZ10G	Uranium	µg/L		0.103 U		
	Uranium-233/234	pCi/L		0.108		
	Uranium-235/236	pCi/L		0.0117 U		
	Uranium-238	pCi/L		0.0328 U		
X749-PZ11G	Technetium-99	pCi/L		0.43 U		
	Uranium	µg/L		1.67		
	Uranium-233/234	pCi/L		0.759		
	Uranium-235/236	pCi/L		0.0423 U		
	Uranium-238	pCi/L		0.554		
X749-PZ12G	Technetium-99	pCi/L		1.72 U		
	Uranium	µg/L		0.315		
	Uranium-233/234	pCi/L		0.118		
	Uranium-235/236	pCi/L		0.019 U		
	Uranium-238	pCi/L		0.103		
X749-PZ13G	Technetium-99	pCi/L		1.01 U		
	Uranium	µg/L		0.807		
	Uranium-233/234	pCi/L		0.44		
	Uranium-235/236	pCi/L		0.0291 U		
	Uranium-238	pCi/L		0.267		
X749-WPW	Americium-241	pCi/L		0.0409 UJ		
	Neptunium-237	pCi/L		0 U		
	Plutonium-238	pCi/L		0.00503 U		
	Plutonium-239/240	pCi/L		0.0151 U		
	Technetium-99	pCi/L		1720		
	Uranium	µg/L		0.579 J		
	Uranium-233/234	pCi/L		0.27		
	Uranium-235/236	pCi/L		0.012 U		
	Uranium-238	pCi/L		0.193 J		

Table 4.3 VOCs detected at PK Landfill – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
MH GW-4	Acetone	µg/L			9.5 J	
	cis-1,2-Dichloroethene	µg/L			0.42 J	
MH GW-5	1,1-Dichloroethane	µg/L			0.37 J	
	Acetone	µg/L			7.6 J	
	cis-1,2-Dichloroethene	µg/L			1.7	
PK-10G	Trichloroethene	µg/L		0.18 J		0.16 U
PK-15B	Acetone	µg/L		4.9 J		1.9 QU
	Vinyl chloride	µg/L		0.38 J		0.1 U
PK-16G	Acetone	µg/L		4.3 J		1.9 JU
	cis-1,2-Dichloroethene	µg/L		0.22 J		0.15 U
PK-17B	1,1-Dichloroethane	µg/L		3		3.6
	1,1-Dichloroethene	µg/L		0.45 J		0.67 J
	Acetone	µg/L		2 J		1.9 U
	Benzene	µg/L		0.37 J		0.34 J
	Chlorobenzene	µg/L		1.3		1.7
	cis-1,2-Dichloroethene	µg/L		38 J		58
	trans-1,2-Dichloroethene	µg/L		1.4		1.8
	Trichloroethene	µg/L		0.77 J		1.6
	Vinyl chloride	µg/L		14 J		14
PK-19B	1,1-Dichloroethane	µg/L		0.31 J		0.16 U
	Chloroethane	µg/L		2.2		2
	Tetrachloroethene	µg/L		0.22 J		0.2 U
PK-21B	1,1-Dichloroethane	µg/L		110 D		120 D
	1,1-Dichloroethene	µg/L		1		0.61 J
	1,2-Dichloroethane	µg/L		0.13 U		0.27 J
	Benzene	µg/L		0.7 J		0.34 J
	cis-1,2-Dichloroethene	µg/L		9.5		9.8
	Trichloroethene	µg/L		0.32 J		0.16 U
	Vinyl chloride	µg/L		13		11
PK-PL6	1,1,1-Trichloroethane	µg/L	0.2 J	1.3	1.1	1.5
	1,1-Dichloroethane	µg/L	0.94 J	4.1	3.3	7.1
	1,1-Dichloroethene	µg/L	0.23 U	0.75 J	0.57 J	1.2
	cis-1,2-Dichloroethene	µg/L	0.74 J	1.1	1.3	1.6
	Trichloroethene	µg/L	0.17 J	1.1	0.99 J	1.4
	Vinyl chloride	µg/L	0.1 U	0.17 J	0.1 U	0.1 U
PK-PL6A	1,1,1-Trichloroethane	µg/L	2.5	3.9	1.8	2.4
	1,1-Dichloroethane	µg/L	11	10	3.4	9.7
	1,1-Dichloroethene	µg/L	1.8	2.7	0.59 J	2.2
	Acetone	µg/L	1.9 U	1.9 U	2.6 J	1.9 U
	cis-1,2-Dichloroethene	µg/L	2	2.1	0.51 J	2.1
	Trichloroethene	µg/L	1.9	2.9	1.5	2
	Vinyl chloride	µg/L	0.24 J	0.7 J	0.12 J	0.32 J

Table 4.4. VOCs detected at the Quadrant I Groundwater Investigative (5-Unit) Area – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X230K-14G	cis-1,2-Dichloroethene	µg/L			0.3 J	
	Trichloroethene	µg/L			4.1	
X230K-15G	cis-1,2-Dichloroethene	µg/L			0.15 J	
	Trichloroethene	µg/L			1	
X231A-01G	1,1-Dichloroethane	µg/L			1.5	
	Benzene	µg/L			0.21 JQ	
	cis-1,2-Dichloroethene	µg/L			0.46 J	
	Trichloroethene	µg/L			2.3 Q	
X231A-02G	1,1,1-Trichloroethane	µg/L			3.6	
	1,1,2-Trichloroethane	µg/L			0.6 J	
	1,1-Dichloroethane	µg/L			6	
	1,1-Dichloroethene	µg/L			73 D	
	Benzene	µg/L			0.19 J	
	Chloroform	µg/L			1.4	
	cis-1,2-Dichloroethene	µg/L			11	
	Tetrachloroethene	µg/L			0.43 J	
	trans-1,2-Dichloroethene	µg/L			0.25 J	
	Trichloroethene	µg/L			230 DJ	
	Trichlorofluoromethane	µg/L			0.34 J	
X231A-04G	1,1,1-Trichloroethane	µg/L			0.16 J	
	1,1-Dichloroethene	µg/L			0.6 J	
	Chloroform	µg/L			0.25 J	
	cis-1,2-Dichloroethene	µg/L			6.4	
	Trichloroethene	µg/L			47	
	Trichlorofluoromethane	µg/L			1.3 J	
X231B-02G	1,1-Dichloroethene	µg/L	1.2 J		2.6 D	
	Chloroform	µg/L	1 J		0.73 DJ	
	cis-1,2-Dichloroethene	µg/L	35		20 D	
	Methylene chloride	µg/L	1.8 BJ		0.64 U	
	trans-1,2-Dichloroethene	µg/L	0.92 J		0.89 DJ	
	Trichloroethene	µg/L	630		270 D	
X231B-03G	1,1,1-Trichloroethane	µg/L	1.4		1.3	
	1,1,2-Trichloroethane	µg/L	0.71 J		0.57 J	
	1,1-Dichloroethane	µg/L	1.9		1.6	
	1,1-Dichloroethene	µg/L	95 D		74 D	
	1,2-Dichloroethane	µg/L	0.4 J		0.13 U	
	Benzene	µg/L	0.18 J		0.16 J	
	Chloroform	µg/L	0.35 J		0.23 J	
	cis-1,2-Dichloroethene	µg/L			4.5 J	
	Tetrachloroethene	µg/L	0.25 J		0.22 JQ	
	trans-1,2-Dichloroethene	µg/L	0.35 J		0.15 U	
	Trichloroethene	µg/L	110 D		100 D	
X231B-06G	1,1,1-Trichloroethane	µg/L	25		14	
	1,1,2-Trichloroethane	µg/L	0.37 J		0.48 J	
	1,1-Dichloroethane	µg/L	28		23	
	1,1-Dichloroethene	µg/L	66 DJ		52	
	1,2-Dichloroethane	µg/L	0.59 J		0.13 U	
	Chloroform	µg/L	0.45 J		0.66 J	
	cis-1,2-Dichloroethene	µg/L			2.6	
	Tetrachloroethene	µg/L	0.4 J		0.36 J	

Table 4.4. VOCs detected at the Quadrant I Groundwater Investigative (5-Unit) Area – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X231B-06G	Trichloroethene	µg/L	64 D		52	
	Trichlorofluoromethane	µg/L	0.29 U		0.7 J	
X231B-07G	Chloroform	µg/L	1.7			
	cis-1,2-Dichloroethene	µg/L	7.2			
	Trichloroethene	µg/L	57			
X231B-11G	1,1,1-Trichloroethane	µg/L	0.97 J			
	1,1-Dichloroethene	µg/L	3.3			
	Trichloroethene	µg/L	0.71 J			
X231B-12G	1,1,1-Trichloroethane	µg/L			1.1	
	1,1-Dichloroethane	µg/L			0.18 J	
	1,1-Dichloroethene	µg/L			5.3	
	Trichloroethene	µg/L			2.5	
X231B-14G	1,1,1-Trichloroethane	µg/L			0.68 J	
	1,1-Dichloroethane	µg/L			0.82 J	
	1,1-Dichloroethene	µg/L			14 J	
	Chloroform	µg/L			0.55 J	
	cis-1,2-Dichloroethene	µg/L			3.9	
	Trichloroethene	µg/L			69 D	
X231B-15G	1,1-Dichloroethene	µg/L			0.24 J	
	Chloroform	µg/L			0.61 J	
	cis-1,2-Dichloroethene	µg/L			0.17 J	
	Trichloroethene	µg/L			0.67 J	
X231B-16G	1,1,1-Trichloroethane	µg/L			0.38 J	
	1,1-Dichloroethene	µg/L			2	
	Chloroform	µg/L			4.3	
	Trichloroethene	µg/L			0.26 J	
X231B-20G	1,1,1-Trichloroethane	µg/L			0.21 J	
	1,1-Dichloroethene	µg/L			8.8	
	Chloroform	µg/L			0.93 J	
	cis-1,2-Dichloroethene	µg/L			0.28 J	
	Trichloroethene	µg/L			34	
	Trichlorofluoromethane	µg/L			0.53 J	
X231B-23G	1,1,1-Trichloroethane	µg/L			0.18 J	
	1,1-Dichloroethene	µg/L			1.1	
	Trichloroethene	µg/L			1.3	
X231B-24B	Methylene chloride	µg/L	0.32 BJ			
X231B-29G	cis-1,2-Dichloroethene	µg/L	0.26 J			
	Trichloroethene	µg/L	4.5			
X231B-32B	1,2-Dimethylbenzene	µg/L			0.2 J	
	m,p-Xylenes	µg/L			0.44 J	
	Toluene	µg/L			0.37 J	
	Trichloroethene	µg/L			0.53 J	
X231B-36G	Chloroform	µg/L			0.95 DJ	
	cis-1,2-Dichloroethene	µg/L			0.84 DJ	
	Trichloroethene	µg/L			540 D	
X231B-37G	1,1-Dichloroethane	µg/L			1.4	
	1,1-Dichloroethene	µg/L			1.5	
	Benzene	µg/L			0.17 J	
	cis-1,2-Dichloroethene	µg/L			7.3	
	trans-1,2-Dichloroethene	µg/L			0.92 J	

Table 4.4. VOCs detected at the Quadrant I Groundwater Investigative (5-Unit) Area – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X231B-37G	Trichloroethene	µg/L			12	
	Vinyl chloride	µg/L			0.49 J	
X231B-38G	1,1,1-Trichloroethane	µg/L	0.39 J			
	1,1-Dichloroethane	µg/L	0.25 J			
	1,1-Dichloroethene	µg/L	0.62 J			
	1,2-Dichlorobenzene	µg/L	0.26 J			
	Trichloroethene	µg/L	0.17 J			
X326-09G	1,1-Dichloroethene	µg/L	280 D		180 D	
	Bromodichloromethane	µg/L	34 U		32 DJ	
	Chloroform	µg/L	290 D		670 D	
	cis-1,2-Dichloroethene	µg/L	180 DJ		560 D	
	Methylene chloride	µg/L	88 DJ		13 U	
	Trichloroethene	µg/L	27000 D		71000 DJ	
	Vinyl chloride	µg/L	20 U		27 DJ	
X326-10G	1,1-Dichloroethene	µg/L			8.6	
	cis-1,2-Dichloroethene	µg/L			0.81 J	
	Trichloroethene	µg/L			9.3	
X622-PZ01G	1,1-Dichloroethene	µg/L			0.24 J	
	Benzene	µg/L			0.17 J	
	cis-1,2-Dichloroethene	µg/L			11	
	trans-1,2-Dichloroethene	µg/L			0.72 J	
	Trichloroethene	µg/L			2.8	
	Vinyl chloride	µg/L			0.23 J	
X622-PZ02G	1,1,1-Trichloroethane	µg/L			1.1	
	1,1-Dichloroethane	µg/L			1.2	
	1,1-Dichloroethene	µg/L			15	
	Chloroform	µg/L			0.75 J	
	cis-1,2-Dichloroethene	µg/L			8	
	Trichloroethene	µg/L			140 D	
	Trichlorofluoromethane	µg/L			1.5 J	
X622-PZ03G	1,1,1-Trichloroethane	µg/L			0.71 DJ	
	1,1-Dichloroethane	µg/L			0.97 DJ	
	1,1-Dichloroethene	µg/L			2.8 D	
	cis-1,2-Dichloroethene	µg/L			6.1 D	
	Trichloroethene	µg/L			270 D	
	Trichlorofluoromethane	µg/L			6.7 D	
X626-07G	1,1,1-Trichloroethane	µg/L	5.7 D		5.4 D	
	1,1,2-Trichloroethane	µg/L	3.5 DJ		4.5 D	
	1,1-Dichloroethane	µg/L	3.1 DJ		3.4 D	
	1,1-Dichloroethene	µg/L	410 D		430 D	
	Benzene	µg/L	1.1 DJ		1.3 DJ	
	Chloroform	µg/L	0.96 DJ		0.85 DJ	
	cis-1,2-Dichloroethene	µg/L	1.5 DJ		1.7 DJ	
	Methylene chloride	µg/L	1.5 DJ		0.64 U	
	Trichloroethene	µg/L	680 D		620 D	
X710-01G	cis-1,2-Dichloroethene	µg/L	0.45 J			
	Trichloroethene	µg/L	22			
X760-02G	Trichloroethene	µg/L	0.39 J			
X760-03G	Chloroform	µg/L			0.24 J	
	cis-1,2-Dichloroethene	µg/L			1.1	

Table 4.4. VOCs detected at the Quadrant I Groundwater Investigative (5-Unit) Area – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X760-03G	Trichloroethene	µg/L			150 D	
X760-07G	1,1-Dichloroethene	µg/L			0.42 J	
	Chloroform	µg/L			0.29 J	
	cis-1,2-Dichloroethene	µg/L			12	
	Trichloroethene	µg/L			400 D	
	Vinyl chloride	µg/L			0.35 J	
X770-17GA	cis-1,2-Dichloroethene	µg/L	1 DJ		1.2	
	Methylene chloride	µg/L	0.65 DJ		0.32 U	
	Trichloroethene	µg/L	370 D		400 D	

Table 4.5. Results for radionuclides at the Quadrant I Groundwater Investigative (5-Unit) Area – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X231A-01G	Technetium-99	pCi/L			21.4	
	Uranium	µg/L			20.8	
	Uranium-233/234	pCi/L			23.3	
	Uranium-235/236	pCi/L			1.21	
	Uranium-238	pCi/L			6.79	
X231A-02G	Technetium-99	pCi/L			9.52	
	Uranium	µg/L			0.0836 U	
	Uranium-233/234	pCi/L			0.0774 JU	
	Uranium-235/236	pCi/L			-0.00602 U	
	Uranium-238	pCi/L			0.029 U	
X231A-04G	Technetium-99	pCi/L			3.28 U	
	Uranium	µg/L			0.343 J	
	Uranium-233/234	pCi/L			0.126 J	
	Uranium-235/236	pCi/L			0.0241 U	
	Uranium-238	pCi/L			0.112 J	
X231B-02G	Technetium-99	pCi/L			52.6	
	Uranium	µg/L			0.234 JU	
	Uranium-233/234	pCi/L			0.0617 JU	
	Uranium-235/236	pCi/L			0.0177 U	
	Uranium-238	pCi/L			0.076 JU	
X231B-03G	Americium-241	pCi/L			0.0387 UJ	
	Neptunium-237	pCi/L			0 U	
	Plutonium-238	pCi/L			-0.00537 U	
	Plutonium-239/240	pCi/L			0.0107 U	
	Technetium-99	pCi/L			11	
	Uranium	µg/L			0.364 J	
	Uranium-233/234	pCi/L			0.112 J	
	Uranium-235/236	pCi/L			0.0058 U	
	Uranium-238	pCi/L			0.121 J	
X231B-06G	Americium-241	pCi/L			0.0153 U	
	Neptunium-237	pCi/L			0.0099 U	
	Plutonium-238	pCi/L			-0.00525 U	
	Plutonium-239/240	pCi/L			0.0105 U	
	Technetium-99	pCi/L			28.5	
	Uranium	µg/L			2.4	
	Uranium-233/234	pCi/L			3.44	
	Uranium-235/236	pCi/L			0.226	
	Uranium-238	pCi/L			0.773	
X326-09G	Technetium-99	pCi/L			1.95 U	
	Uranium	µg/L			0.214 UJ	
	Uranium-233/234	pCi/L			0.0791 UJ	
	Uranium-235/236	pCi/L			0.0109 U	
	Uranium-238	pCi/L			0.0703 UJ	
X626-07G	Technetium-99	pCi/L			3.29 U	
	Uranium	µg/L			0.282 J	
	Uranium-233/234	pCi/L			0.0759 U	
	Uranium-235/236	pCi/L			0 U	
	Uranium-238	pCi/L			0.0949 J	

Table 4.6 VOCs detected at the X-749A Classified Materials Disposal Facility – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749A-12G	1,1-Dichloroethane	µg/L		0.22 J		
	cis-1,2-Dichloroethene	µg/L		5.1		
	Trichloroethene	µg/L		4		
X749A-16G	Acetone	µg/L		2.7 J		
X749A-18G	cis-1,2-Dichloroethene	µg/L		0.21 J		
	Trichloroethene	µg/L		4.2		
X749A-19G	cis-1,2-Dichloroethene	µg/L		3.2		
	Trichloroethene	µg/L		14		

Table 4.7 Results for radionuclides at the X-749A Classified Materials Disposal Facility – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749A-02G	Technetium-99	pCi/L		-0.566 U		
	Uranium	µg/L		0.131 U		
	Uranium-233/234	pCi/L		0.132 J		
	Uranium-235/236	pCi/L		0 U		
	Uranium-238	pCi/L		0.044 UJ		
X749A-03G	Technetium-99	pCi/L		0.411 U		
	Uranium	µg/L		0.306 J		
	Uranium-233/234	pCi/L		0.13 J		
	Uranium-235/236	pCi/L		0.00577 U		
	Uranium-238	pCi/L		0.102 J		
X749A-04G	Technetium-99	pCi/L		-2.83 U		
	Uranium	µg/L		0.0546 U		
	Uranium-233/234	pCi/L		0.0642 UJ		
	Uranium-235/236	pCi/L		0 U		
	Uranium-238	pCi/L		0.0183 U		
X749A-07G	Technetium-99	pCi/L		-2.65 U		
	Uranium	µg/L		6.93		
	Uranium-233/234	pCi/L		2.7		
	Uranium-235/236	pCi/L		0.151 J		
	Uranium-238	pCi/L		2.3		
X749A-12G	Technetium-99	pCi/L		-1.76 U		
	Uranium	µg/L		0.234 UJ		
	Uranium-233/234	pCi/L		0.0961 J		
	Uranium-235/236	pCi/L		0.012 U		
	Uranium-238	pCi/L		0.0769 UJ		
X749A-14G	Technetium-99	pCi/L		-1.43 U		
	Uranium	µg/L		0.194 UJ		
	Uranium-233/234	pCi/L		0.045 UJ		
	Uranium-235/236	pCi/L		0 U		
	Uranium-238	pCi/L		0.065 UJ		
X749A-16G	Technetium-99	pCi/L		2.67 U		
	Uranium	µg/L		0.151 UJ		
	Uranium-233/234	pCi/L		0.0329 U		
	Uranium-235/236	pCi/L		-0.0058 U		
	Uranium-238	pCi/L		0.0516 UJ		
X749A-17G	Technetium-99	pCi/L		-3.19 U		
	Uranium	µg/L		0.218 UJ		
	Uranium-233/234	pCi/L		0.0498 UJ		
	Uranium-235/236	pCi/L		0.00563 U		
	Uranium-238	pCi/L		0.0724 UJ		
X749A-18G	Technetium-99	pCi/L		-0.872 U		
	Uranium	µg/L		0.105 U		
	Uranium-233/234	pCi/L		0.0271 U		
	Uranium-235/236	pCi/L		0.0225 U		
	Uranium-238	pCi/L		0.0316 U		
X749A-19G	Technetium-99	pCi/L		-0.387 U		
	Uranium	µg/L		0.134 UJ		
	Uranium-233/234	pCi/L		0.0846 UJ		
	Uranium-235/236	pCi/L		0.0175 U		
	Uranium-238	pCi/L		0.0423 UJ		

Table 4.8. VOCs detected at the Quadrant II Groundwater Investigative (7-Unit) Area – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X700-02G	1,1,1-Trichloroethane	µg/L	5.2 J			
	1,1-Dichloroethane	µg/L	14			
	1,1-Dichloroethene	µg/L	130			
	Chloroethane	µg/L	4.7 J			
	Chloroform	µg/L	1.6 J			
	cis-1,2-Dichloroethene	µg/L	1800			
	trans-1,2-Dichloroethene	µg/L	4.6 J			
	Trichloroethene	µg/L	4400			
	Vinyl chloride	µg/L	160			
X700-04G	1,1-Dichloroethane	µg/L	4.7 J			
	1,1-Dichloroethene	µg/L	21			
	Chloroethane	µg/L	41			
	cis-1,2-Dichloroethene	µg/L	2800			
	trans-1,2-Dichloroethene	µg/L	21			
	Trichloroethene	µg/L	950			
	Vinyl chloride	µg/L	5200			
X700-05G	1,1,2-Trichloroethane	µg/L	67 J			
	1,1-Dichloroethene	µg/L	100 J			
	Chloroform	µg/L	32 J			
	cis-1,2-Dichloroethene	µg/L	44000			
	Trichloroethene	µg/L	89000			
	Vinyl chloride	µg/L	1200			
X700-06G	1,1,2-Trichloroethane	µg/L	950 J			
	Chloroform	µg/L	530 J			
	cis-1,2-Dichloroethene	µg/L	2100			
	Trichloroethene	µg/L	1100000			
X701-26G	1,1-Dichloroethene	µg/L	0.23 U		0.93 J	
	Chloroform	µg/L	0.31 J		0.32 J	
	Methylene chloride	µg/L	0.32 BJ		0.32 U	
	Tetrachloroethene	µg/L	1.4		1.6	
	Trichloroethene	µg/L	0.58 J		0.4 J	
X701-27G	1,1,1-Trichloroethane	µg/L	0.68 J		0.79 J	
	1,1-Dichloroethane	µg/L	0.51 J		0.51 J	
	1,1-Dichloroethene	µg/L	1		1.4	
	cis-1,2-Dichloroethene	µg/L	3.8		6.2	
	trans-1,2-Dichloroethene	µg/L	0.15 U		0.2 J	
	Trichloroethene	µg/L	9.7		19	
X701-45G	cis-1,2-Dichloroethene	µg/L	0.7 J			
	Trichloroethene	µg/L	11			
X701-68G	1,1,1-Trichloroethane	µg/L	0.35 J			
	1,1-Dichloroethane	µg/L	0.28 J			
	1,1-Dichloroethene	µg/L	1.5			
	Chloroform	µg/L	0.19 J			
	cis-1,2-Dichloroethene	µg/L	15			
	trans-1,2-Dichloroethene	µg/L	0.23 J			
	Trichloroethene	µg/L	56			
	Trichlorofluoromethane	µg/L	0.82 J			
X701-69G	cis-1,2-Dichloroethene	µg/L	210			
	Methylene chloride	µg/L	2.4 BJ			
	trans-1,2-Dichloroethene	µg/L	4.8			

Table 4.8. VOCs detected at the Quadrant II Groundwater Investigative (7-Unit) Area – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X701-69G	Trichloroethene	µg/L	750			
	Vinyl chloride	µg/L	0.52 J			
X701-70G	cis-1,2-Dichloroethene	µg/L	250			
	Methylene chloride	µg/L	8.3 BJ			
	Trichloroethene	µg/L	1400			
	Vinyl chloride	µg/L	1.1 J			
X701-117GA	1,1-Dichloroethene	µg/L	1.5 J			
	cis-1,2-Dichloroethene	µg/L	190			
	Methylene chloride	µg/L	2.7 BJ			
	trans-1,2-Dichloroethene	µg/L	0.65 J			
	Trichloroethene	µg/L	920			
X705-01GA	Carbon tetrachloride	µg/L	0.25 J			
	Chloroform	µg/L	13			
	Methylene chloride	µg/L	0.35 BJ			
	Tetrachloroethene	µg/L	0.37 J			
	Trichloroethene	µg/L	40			
X705-02G	1,1-Dichloroethene	µg/L	0.3 J			
	cis-1,2-Dichloroethene	µg/L	0.51 J			
	Trichloroethene	µg/L	33			
X705-03G	1,1-Dichloroethane	µg/L	1.3			
	1,1-Dichloroethene	µg/L	9.8			
	cis-1,2-Dichloroethene	µg/L	8			
	Tetrachloroethene	µg/L	0.62 J			
	trans-1,2-Dichloroethene	µg/L	0.29 J			
	Trichloroethene	µg/L	90			
X705-04G	1,1-Dichloroethene	µg/L	0.34 J			
	Carbon tetrachloride	µg/L	8.7			
	Chloroform	µg/L	190			
	Tetrachloroethene	µg/L	1.4			
	Trichloroethene	µg/L	18			
X705-06G	Chloroform	µg/L	1.2			
	cis-1,2-Dichloroethene	µg/L	0.6 J			
	Tetrachloroethene	µg/L	3.7			
	Trichloroethene	µg/L	10			
X705-07G	Bromodichloromethane	µg/L	0.17 J			
	Chloroform	µg/L	1.3			
	Chloromethane	µg/L	0.42 J			
	cis-1,2-Dichloroethene	µg/L	0.19 J			
	Trichloroethene	µg/L	7.1			
X705-08G	1,1-Dichloroethene	µg/L	27			
	Trichlorofluoromethane	µg/L	14			
X720-01G	1,1,1-Trichloroethane	µg/L	8.1 DJ			
	1,1-Dichloroethene	µg/L	57 D			
	Trichloroethene	µg/L	6500 D			
	Vinyl chloride	µg/L	85 D			
X720-08G	1,1-Dichloroethene	µg/L	93			
	cis-1,2-Dichloroethene	µg/L	27 J			
	Methylene chloride	µg/L	14 J			
	Tetrachloroethene	µg/L	24 J			
	Trichloroethene	µg/L	10000			

Table 4.8. VOCs detected at the Quadrant II Groundwater Investigative (7-Unit) Area – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X720-09G	1,1,1-Trichloroethane	µg/L	2800			
	1,1,2-Trichloroethane	µg/L	72 J			
	1,1-Dichloroethane	µg/L	170			
	1,1-Dichloroethene	µg/L	7500 J			
	1,2-Dichloroethane	µg/L	88 J			
	1,2-Dimethylbenzene	µg/L	220			
	Acetone	µg/L	1300			
	Chloroform	µg/L	65 J			
	cis-1,2-Dichloroethene	µg/L	2400			
	Ethylbenzene	µg/L	150			
	m,p-Xylenes	µg/L	400			
	Methylene chloride	µg/L	52 J			
	Tetrachloroethene	µg/L	620			
	Toluene	µg/L	770			
	Trichloroethene	µg/L	330000			
	Vinyl chloride	µg/L	100			

Table 4.9. Results for radionuclides at the Quadrant II Groundwater Investigative (7-Unit) Area – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X700-02G	Technetium-99	pCi/L	21.8			
	Uranium	µg/L	2.44 J			
	Uranium-233/234	pCi/L	0.668			
	Uranium-235/236	pCi/L	0.0364 UJ			
	Uranium-238	pCi/L	0.815			
X700-04G	Technetium-99	pCi/L	29.6			
	Uranium	µg/L	9.86 J			
	Uranium-233/234	pCi/L	4.39			
	Uranium-235/236	pCi/L	0.202 J			
	Uranium-238	pCi/L	3.28			
X700-05G	Technetium-99	pCi/L	2.12 U			
	Uranium	µg/L	1.87 J			
	Uranium-233/234	pCi/L	0.983			
	Uranium-235/236	pCi/L	0.031 UJ			
	Uranium-238	pCi/L	0.624			
X700-06G	Technetium-99	pCi/L	21.9			
	Uranium	µg/L	12.2 J			
	Uranium-233/234	pCi/L	5.89			
	Uranium-235/236	pCi/L	0.193 J			
	Uranium-238	pCi/L	4.05			
X701-26G	Technetium-99	pCi/L	27			
	Uranium	µg/L	4.4 J			
	Uranium-233/234	pCi/L	2.41			
	Uranium-235/236	pCi/L	0.0777 UJ			
	Uranium-238	pCi/L	1.47			
X701-68G	Technetium-99	pCi/L	21.1			
	Uranium	µg/L	4.06 J			
	Uranium-233/234	pCi/L	1.6			
	Uranium-235/236	pCi/L	0.0534 UJ			
	Uranium-238	pCi/L	1.35			
X701-69G	Technetium-99	pCi/L	0 U			
	Uranium	µg/L	5.74 J			
	Uranium-233/234	pCi/L	2.77			
	Uranium-235/236	pCi/L	0.0793 UJ			
	Uranium-238	pCi/L	1.92			
X701-70G	Technetium-99	pCi/L	13.7			
	Uranium	µg/L	2.04 J			
	Uranium-233/234	pCi/L	1			
	Uranium-235/236	pCi/L	0.056 UJ			
	Uranium-238	pCi/L	0.676			
X705-01GA	Americium-241	pCi/L	0.0315 U			
	Neptunium-237	pCi/L	0.00476 U			
	Plutonium-238	pCi/L	0.017 U			
	Plutonium-239/240	pCi/L	0.0284 U			
	Technetium-99	pCi/L	154			
	Uranium	µg/L	0.826 J			
	Uranium-233/234	pCi/L	0.461			
	Uranium-235/236	pCi/L	0.0174 U			
	Uranium-238	pCi/L	0.275			
X705-02G	Technetium-99	pCi/L	1.8 U			

Table 4.9. Results for radionuclides at the Quadrant II Groundwater Investigative (7-Unit) Area – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X705-02G	Uranium	µg/L	4.53 J			
	Uranium-233/234	pCi/L	1.38			
	Uranium-235/236	pCi/L	0.0834 UJ			
	Uranium-238	pCi/L	1.51			
X705-07G	Technetium-99	pCi/L	74.7			
	Uranium	µg/L	1.19 J			
	Uranium-233/234	pCi/L	0.424 J			
	Uranium-235/236	pCi/L	0.0543 UJ			
	Uranium-238	pCi/L	0.393 J			
X720-01G	Technetium-99	pCi/L	1.99 U			
	Uranium	µg/L	26			
	Uranium-233/234	pCi/L	8.3			
	Uranium-235/236	pCi/L	0.476			
	Uranium-238	pCi/L	8.65			
X720-08G	Technetium-99	pCi/L	191			
	Uranium	µg/L	3.58 J			
	Uranium-233/234	pCi/L	2.62			
	Uranium-235/236	pCi/L	0.114 J			
	Uranium-238	pCi/L	1.19			
X720-09G	Technetium-99	pCi/L	1.22 U			
	Uranium	µg/L	9.02			
	Uranium-233/234	pCi/L	7.63			
	Uranium-235/236	pCi/L	0.429			
	Uranium-238	pCi/L	2.96			

Table 4.10. VOCs detected at the X-701B Former Holding Pond – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
LBC-PZ03G	1,1-Dichloroethene	µg/L	0.23 U		0.2 J	
	cis-1,2-Dichloroethene	µg/L	110		110 D	
	trans-1,2-Dichloroethene	µg/L	0.85 J		1.4	
	Trichloroethene	µg/L	26 J		52	
	Vinyl chloride	µg/L	0.1 U		0.53 J	
LBC-PZ07G	Acetone	µg/L			1.9 JQ	
X230J7-01GA	1,1-Dichloroethene	µg/L	0.46 U		0.21 J	
	Chloroform	µg/L	0.32 U		0.18 J	
	cis-1,2-Dichloroethene	µg/L	0.86 J		0.94 J	
	Trichloroethene	µg/L	360		340 D	
X230J7-02GA	Chloroform	µg/L	0.32 U		0.2 J	
	cis-1,2-Dichloroethene	µg/L	8.7		10	
	Tetrachloroethene	µg/L	0.4 U		0.31 J	
	Trichloroethene	µg/L	370		340 DQ	
	Vinyl chloride	µg/L	0.2 U		0.52 J	
X230J7-03GA	1,1,2-Trichloroethane	µg/L	1.1 DJ		1.6 U	
	cis-1,2-Dichloroethene	µg/L	130 D		200 D	
	Tetrachloroethene	µg/L	1.3 DJ		1.1 DJ	
	trans-1,2-Dichloroethene	µg/L	2.5 DJ		4.9 DJ	
	Trichloroethene	µg/L	1200 D		1300 D	
	Vinyl chloride	µg/L	1.8 DJ		8 D	
X237-EPW	cis-1,2-Dichloroethene	µg/L			1900 DJ	
	Tetrachloroethene	µg/L			8 DJ	
	trans-1,2-Dichloroethene	µg/L			11 DJ	
	Trichloroethene	µg/L			5800 D	
X237-WPW	1,1,1-Trichloroethane	µg/L			8.7 DJ	
	1,1,2,2-Tetrachloroethane	µg/L			75 D	
	1,1,2-Trichloroethane	µg/L			46 D	
	1,1-Dichloroethene	µg/L			16 DJ	
	Chloroform	µg/L			4.8 DJ	
	cis-1,2-Dichloroethene	µg/L			3500 D	
	Tetrachloroethene	µg/L			67 D	
	trans-1,2-Dichloroethene	µg/L			48 D	
	Trichloroethene	µg/L			38000 D	
	Vinyl chloride	µg/L			240 D	
X701-01G	1,1-Dichloroethene	µg/L	0.62 J		1.8	
	cis-1,2-Dichloroethene	µg/L	15		40 J	
	trans-1,2-Dichloroethene	µg/L	0.5 J		1.6	
	Trichloroethene	µg/L	83 D		190 D	
	Vinyl chloride	µg/L	0.19 J		0.75 J	
X701-02G	1,1-Dichloroethene	µg/L	0.23 U		0.21 J	
	cis-1,2-Dichloroethene	µg/L	2.8		2.7	
	Trichloroethene	µg/L	9.1		9.5	
X701-06G	1,1-Dichloroethane	µg/L	0.23 J		0.8 J	
	1,1-Dichloroethene	µg/L	2.2		5.9	
	Chloroform	µg/L	0.16 U		0.33 J	
	cis-1,2-Dichloroethene	µg/L	16		22	
	trans-1,2-Dichloroethene	µg/L	0.26 J		0.6 J	
	Trichloroethene	µg/L	97 D		180 D	
	Vinyl chloride	µg/L	0.34 J		0.74 J	

Table 4.10. VOCs detected at the X-701B Former Holding Pond – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X701-15G	1,1-Dichloroethene	µg/L	0.23 U		0.85 DJ	
	cis-1,2-Dichloroethene	µg/L	190		780 D	
	trans-1,2-Dichloroethene	µg/L	3.6		8.4 D	
	Trichloroethene	µg/L	3		8.4 D	
	Vinyl chloride	µg/L	0.1 U		2.2 DJ	
X701-16G	Trichloroethene	µg/L	0.16 U		0.17 J	
X701-20G	1,1,2,2-Tetrachloroethane	µg/L	150 DJ		160 D	
	1,1,2-Trichloroethane	µg/L	140 U		65 DJ	
	cis-1,2-Dichloroethene	µg/L	1200 D		1000 D	
	Methylene chloride	µg/L	180 DJ		32 U	
	Tetrachloroethene	µg/L	120 DJ		130 D	
	trans-1,2-Dichloroethene	µg/L	75 U		67 DJ	
	Trichloroethene	µg/L	60000 D		51000 D	
X701-21G	1,1,2,2-Tetrachloroethane	µg/L	0.21 U		0.52 J	
	1,1-Dichloroethane	µg/L	0.22 U		0.23 J	
	1,1-Dichloroethene	µg/L	0.23 U		0.35 J	
	1,2-Dichlorobenzene	µg/L	0.29 J		0.31 J	
	Chloroform	µg/L	0.16 U		0.18 J	
	cis-1,2-Dichloroethene	µg/L	38		54	
	Tetrachloroethene	µg/L	0.2 U		0.34 J	
	trans-1,2-Dichloroethene	µg/L	0.3 J		1.2	
	Trichloroethene	µg/L	30		120 D	
	Vinyl chloride	µg/L	2		3.7	
X701-23G	cis-1,2-Dichloroethene	µg/L			0.41 J	
	Trichloroethene	µg/L			5.6	
X701-24G	1,1,2-Trichloroethane	µg/L	4.1 DJ		16 U	
	1,1-Dichloroethene	µg/L	2.3 U		9.8 DJ	
	cis-1,2-Dichloroethene	µg/L	340 D		1400 D	
	Methylene chloride	µg/L	3.4 DJ		16 U	
	trans-1,2-Dichloroethene	µg/L	4 DJ		32 DJ	
	Trichloroethene	µg/L	3600 D		15000 D	
	Vinyl chloride	µg/L	6.2 DJ		61 D	
X701-30G	cis-1,2-Dichloroethene	µg/L	0.18 J		0.16 J	
	Trichloroethene	µg/L	4.4		4.5	
	Trichlorofluoromethane	µg/L	0.67 J		0.9 J	
X701-31G	Trichloroethene	µg/L			0.18 J	
X701-38G	Acetone	µg/L			2.2 J	
X701-42G	1,2-Dichlorobenzene	µg/L			0.3 J	
	cis-1,2-Dichloroethene	µg/L			31	
	Trichloroethene	µg/L			7.2	
	Vinyl chloride	µg/L			1.9	
X701-61B	1,2-Dimethylbenzene	µg/L			0.21 J	
	Acetone	µg/L			200 J	
	m,p-Xylenes	µg/L			2.7	
X701-66G	1,1-Dichloroethene	µg/L	2.4 DJ		3 DJ	
	Chloroform	µg/L	4 DJ		4.1 DJ	
	cis-1,2-Dichloroethene	µg/L	180 D			
	Tetrachloroethene	µg/L	4.9 DJ		6.2 DJ	
	trans-1,2-Dichloroethene	µg/L	1.6 DJ		2.7 DJ	
	Trichloroethene	µg/L	3300 D		4700 D	

Table 4.10. VOCs detected at the X-701B Former Holding Pond – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X701-66G	Vinyl chloride	µg/L	5.5 DJ		11 UJ	
X701-77G	1,1,1-Trichloroethane	µg/L			1.6 DJ	
	1,1-Dichloroethene	µg/L			2.6 DJ	
	Chloroform	µg/L			1.7 DJ	
	cis-1,2-Dichloroethene	µg/L			46 D	
	Methylene chloride	µg/L			4 DJ	
	Tetrachloroethene	µg/L			9 DJ	
	trans-1,2-Dichloroethene	µg/L			2 DJ	
	Trichloroethene	µg/L			2400 D	
X701-79G	1,1-Dichloroethene	µg/L			0.19 J	
	cis-1,2-Dichloroethene	µg/L			4.7	
	Trichloroethene	µg/L			230 D	
X701-127G	1,1,2,2-Tetrachloroethane	µg/L	42 DJ		80 DJ	
	1,1,2-Trichloroethane	µg/L	58 DJ		67 DJ	
	cis-1,2-Dichloroethene	µg/L	850 D		1000 D	
	Methylene chloride	µg/L	79 DJ		64 U	
	Tetrachloroethene	µg/L	40 U		51 DJ	
	trans-1,2-Dichloroethene	µg/L	30 U		39 DJ	
	Trichloroethene	µg/L	36000 D		52000 D	
X701-128G	1,1,2-Trichloroethane	µg/L	29 DJ		32 U	
	cis-1,2-Dichloroethene	µg/L	440 D		340 D	
	Methylene chloride	µg/L	34 DJ		32 U	
	Tetrachloroethene	µg/L	40 DJ		41 DJ	
	Trichloroethene	µg/L	32000 D		26000 D	
X701-130G	Chloroform	µg/L			170 DJ	
	cis-1,2-Dichloroethene	µg/L			690 DJ	
	Tetrachloroethene	µg/L			220 DJ	
	Trichloroethene	µg/L			150000 D	
X701-141G	1,1-Dichloroethene	µg/L			0.22 J	
	cis-1,2-Dichloroethene	µg/L			2.7	
	Tetrachloroethene	µg/L			0.21 J	
	Trichloroethene	µg/L			220 D	
X701-142G	1,1,2-Trichloroethane	µg/L	15 DJ		15 DJ	
	1,1-Dichloroethene	µg/L	11 DJ		7.7 DJ	
	cis-1,2-Dichloroethene	µg/L	4100 D		3500 D	
	Methylene chloride	µg/L	13 U		19 DJ	
	trans-1,2-Dichloroethene	µg/L	45 D		37 DJ	
	Trichloroethene	µg/L	4500 D		5400 D	
	Vinyl chloride	µg/L	19 DJ		91 D	
X701-143G	1,1-Dichloroethene	µg/L	0.46 U		1.6 DJ	
	1,2-Dichloroethane	µg/L	0.26 U		1.1 DJ	
	cis-1,2-Dichloroethene	µg/L	260 D		890 D	
	Methylene chloride	µg/L	0.64 U		1.6 DJ	
	trans-1,2-Dichloroethene	µg/L	3.9 D		7 D	
	Trichloroethene	µg/L	69 D		29 D	
	Vinyl chloride	µg/L	2.5 D		260 D	
X701-144G	cis-1,2-Dichloroethene	µg/L	88 D			
	trans-1,2-Dichloroethene	µg/L	0.95 J			
	Trichloroethene	µg/L	0.28 J			
	Vinyl chloride	µg/L	42			

Table 4.10. VOCs detected at the X-701B Former Holding Pond – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X701-BW2G	1,1-Dichloroethene	µg/L			79 DJ	
	Chloroform	µg/L			240 D	
	cis-1,2-Dichloroethene	µg/L			480 D	
	Methylene chloride	µg/L			91 DJ	
	Tetrachloroethene	µg/L			47 DJ	
	Trichloroethene	µg/L			53000 D	
X701-BW3G	1,1-Dichloroethane	µg/L			0.34 J	
	1,1-Dichloroethene	µg/L			0.85 J	
	cis-1,2-Dichloroethene	µg/L			61 D	
	Tetrachloroethene	µg/L			0.2 J	
	trans-1,2-Dichloroethene	µg/L			0.28 J	
	Trichloroethene	µg/L			62 D	
	Vinyl chloride	µg/L			10	
X701-BW4G	cis-1,2-Dichloroethene	µg/L	5.6		7.9	
	trans-1,2-Dichloroethene	µg/L	0.41 J		0.45 J	
	Trichloroethene	µg/L	1.3		2.3	
	Vinyl chloride	µg/L	0.1 U		0.5 JQ	
X701-EW121G	1,1,2,2-Tetrachloroethane	µg/L	220 DJ		160 DJ	
	cis-1,2-Dichloroethene	µg/L	760 D		670 D	
	Methylene chloride	µg/L	160 DJ		260 DJ	
	Tetrachloroethene	µg/L	120 DJ		130 DJ	
	trans-1,2-Dichloroethene	µg/L	76 DJ		70 DJ	
	Trichloroethene	µg/L	81000 D		76000 D	
X701-EW122G	1,1,2,2-Tetrachloroethane	µg/L	110 D		78 DJ	
	1,1,2-Trichloroethane	µg/L	33 DJ		64 U	
	cis-1,2-Dichloroethene	µg/L	320 D		320 D	
	Methylene chloride	µg/L	47 DJ		130 DJ	
	Tetrachloroethene	µg/L	110 D		77 DJ	
	trans-1,2-Dichloroethene	µg/L	37 DJ		30 U	
	Trichloroethene	µg/L	27000 D		42000 D	
X701-IRMPZ03G	1,1,2-Trichloroethane	µg/L	2.3 DJ		1.6 U	
	1,1-Dichloroethene	µg/L	0.92 U		1.7 DJ	
	cis-1,2-Dichloroethene	µg/L	220 D		610 D	
	Methylene chloride	µg/L	1.3 U		2.3 DJ	
	trans-1,2-Dichloroethene	µg/L	4.4 D		6 D	
	Trichloroethene	µg/L	470 D		1100 D	
	Vinyl chloride	µg/L	0.4 U		1.9 DJ	
X701-IRMPZ05G	cis-1,2-Dichloroethene	µg/L	370 D			
	trans-1,2-Dichloroethene	µg/L	5.1 DJ			
	Trichloroethene	µg/L	1000 D			
	Vinyl chloride	µg/L	5.4 DJ			
X701-IRMPZ06G	1,1-Dichloroethene	µg/L			0.36 DJ	
	Benzene	µg/L			0.36 DJ	
	cis-1,2-Dichloroethene	µg/L			440 D	
	trans-1,2-Dichloroethene	µg/L			16 D	
	Trichloroethene	µg/L			14 D	
	Vinyl chloride	µg/L			30 D	
X701-IRMPZ07G	cis-1,2-Dichloroethene	µg/L	5400 D			
	Tetrachloroethene	µg/L	98 DJ			
	trans-1,2-Dichloroethene	µg/L	79 DJ			

Table 4.10. VOCs detected at the X-701B Former Holding Pond – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X701-IRMPZ07G	Trichloroethene	µg/L	56000 D			
	Vinyl chloride	µg/L	410 D			
X701-IRMPZ08G	cis-1,2-Dichloroethene	µg/L	23		37	
	trans-1,2-Dichloroethene	µg/L	0.28 J		0.43 J	
	Trichloroethene	µg/L	21		46	
X701-TC01G	1,1,1-Trichloroethane	µg/L	2.3 DJ		67 D	
	1,1,2,2-Tetrachloroethane	µg/L	1 DJ		19 DJ	
	1,1-Dichloroethane	µg/L	0.88 U		8.1 DJ	
	1,1-Dichloroethene	µg/L	0.92 U		26 DJ	
	Chloromethane	µg/L	1.2 U		41 DJ	
	cis-1,2-Dichloroethene	µg/L	90 DJ		5400 D	
	Tetrachloroethene	µg/L	2.9 DJ		26 DJ	
	trans-1,2-Dichloroethene	µg/L	3 DJ		190 D	
	Trichloroethene	µg/L	630 D		11000 D	
	Vinyl chloride	µg/L	2.1 DJ		83 D	
X701-TC03G	1,1,1-Trichloroethane	µg/L	120 DJ		86 DJ	
	1,1,2,2-Tetrachloroethane	µg/L	230 D		120 DJ	
	Chloromethane	µg/L	60 U		99 DJ	
	cis-1,2-Dichloroethene	µg/L	6700 D		6400 D	
	Tetrachloroethene	µg/L	89 DJ		56 DJ	
	trans-1,2-Dichloroethene	µg/L	710 D		610 D	
	Trichloroethene	µg/L	60000 D		29000 D	
	Vinyl chloride	µg/L	95 DJ		43 DJ	
X701-TC05G	1,1,1-Trichloroethane	µg/L	91 DJ		79 DJ	
	1,1,2,2-Tetrachloroethane	µg/L	180 D		130 D	
	Acetone	µg/L	190 U		200 DJ	
	Chloromethane	µg/L	65 DJ		98 DJ	
	cis-1,2-Dichloroethene	µg/L	2900 D		2200 D	
	Tetrachloroethene	µg/L	52 DJ		29 DJ	
	trans-1,2-Dichloroethene	µg/L	460 D		350 D	
	Trichloroethene	µg/L	24000 D		10000 D	
X701-TC10G	1,1,1-Trichloroethane	µg/L	20 DJ		12 DJ	
	1,1-Dichloroethene	µg/L	23 U		12 DJ	
	cis-1,2-Dichloroethene	µg/L	1500 D		1400 DJ	
	Tetrachloroethene	µg/L	25 DJ		20 DJ	
	trans-1,2-Dichloroethene	µg/L	79 DJ		47 D	
	Trichloroethene	µg/L	11000 D		9800 D	
	Vinyl chloride	µg/L	50 DJ		44 DJ	
X701-TC17G	1,1,1-Trichloroethane	µg/L	26 DJQ		14 DJ	
	1,1,2,2-Tetrachloroethane	µg/L	21 QU		18 DJQ	
	Acetone	µg/L	190 QU		600 D	
	Chloroform	µg/L	16 QU		13 DJ	
	Chloromethane	µg/L	96 DJQ		88 D	
	cis-1,2-Dichloroethene	µg/L	190 DQJ		73 D	
	Tetrachloroethene	µg/L	53 DJ		21 DJQ	
	trans-1,2-Dichloroethene	µg/L	15 QU		7.4 DJ	
	Trichloroethene	µg/L	14000 D		6100 D	
X701-TC22G	1,1,1-Trichloroethane	µg/L	29 DJ		64 U	
	1,1,2,2-Tetrachloroethane	µg/L	49 DJ		80 U	
	cis-1,2-Dichloroethene	µg/L	1300 D		830 D	

Table 4.10. VOCs detected at the X-701B Former Holding Pond – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X701-TC22G	Tetrachloroethene	µg/L	94 DJ		180 DJ	
	trans-1,2-Dichloroethene	µg/L	180 D		100 DJ	
	Trichloroethene	µg/L	33000 D		57000 D	
	Vinyl chloride	µg/L	40 DJ		40 U	
X701-TC28G	1,1,1-Trichloroethane	µg/L	180 DJ		160 U	
	1,1,2,2-Tetrachloroethane	µg/L	160 DJ		200 QU	
	cis-1,2-Dichloroethene	µg/L	530 D			
	Tetrachloroethene	µg/L	1100 D		800 DJQ	
	Trichloroethene	µg/L	170000 D		190000 DJ	
X701-TC48G	1,1,1-Trichloroethane	µg/L	4.8 DJ		2.6 DJ	
	1,1,2,2-Tetrachloroethane	µg/L	14 D		11 D	
	1,1,2-Trichloroethane	µg/L	17 D		14 D	
	2-Butanone	µg/L	100 D		69 D	
	Acetone	µg/L	720 D		750 D	
	Benzene	µg/L	2.9 DJ		2.5 DJ	
	Bromomethane	µg/L	5.2 DJ		3.3 DJ	
	Chloroform	µg/L	5.4 DJ		4.5 DJ	
	Chloromethane	µg/L	95 D		48 D	
	cis-1,2-Dichloroethene	µg/L	50 D		34 D	
	Tetrachloroethene	µg/L	22 DJ		8.9 DJQ	
	trans-1,2-Dichloroethene	µg/L	7.5 DJ		4.4 DJ	
	Trichloroethene	µg/L	2900 D		1200 D	
X701-TC54G	1,1,2,2-Tetrachloroethane	µg/L	890 D		770 DJ	
	1,1,2-Trichloroethane	µg/L	85 DJ		320 U	
	Acetone	µg/L	260 DJ		1900 U	
	Chloroform	µg/L	17 DJ		160 U	
	Chloromethane	µg/L	34 DJ		300 U	
	cis-1,2-Dichloroethene	µg/L	410 D		320 DJ	
	Methylene chloride	µg/L	49 DJ		320 U	
	Tetrachloroethene	µg/L	600 D		440 DJ	
	trans-1,2-Dichloroethene	µg/L	46 DJ		150 U	
	Trichloroethene	µg/L	340000 DJ		140000 D	
X701-TC61G	1,1,1-Trichloroethane	µg/L	120 D		160 U	
	1,1,2,2-Tetrachloroethane	µg/L	700 D		710 DJ	
	1,1,2-Trichloroethane	µg/L	87 DJ		320 U	
	Acetone	µg/L	320 DJ		1900 U	
	cis-1,2-Dichloroethene	µg/L	890 D		900 DJ	
	Methylene chloride	µg/L	44 DJ		320 U	
	Tetrachloroethene	µg/L	470 D		470 DJ	
	trans-1,2-Dichloroethene	µg/L	130 D		150 U	
	Trichloroethene	µg/L	160000 D		150000 D	
X701-TC67G	1,1,1-Trichloroethane	µg/L	11 DJ		16 U	
	1,1,2,2-Tetrachloroethane	µg/L	22 DJ		20 U	
	cis-1,2-Dichloroethene	µg/L	190 D		180 D	
	Methylene chloride	µg/L	23 DJ		32 U	
	Tetrachloroethene	µg/L	49 DJ		52 DJ	
	trans-1,2-Dichloroethene	µg/L	10 DJ		15 U	
	Trichloroethene	µg/L	15000 D		14000 D	
X744G-01G	Trichloroethene	µg/L	0.16 J		0.16 U	
X744G-02G	cis-1,2-Dichloroethene	µg/L	1.6		2	

Table 4.10. VOCs detected at the X-701B Former Holding Pond – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X744G-02G	Trichloroethene	µg/L	24		31	
	Trichlorofluoromethane	µg/L	4.1		5.4	
X744G-03G	cis-1,2-Dichloroethene	µg/L	0.62 J		0.66 J	
	Trichloroethene	µg/L	7		8.2	

Table 4.11. Results for radionuclides at the X-701B Former Holding Pond – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
LBC-PZ03G	Technetium-99	pCi/L	-0.764 U			
	Uranium	µg/L	0.0695 U			
	Uranium-233/234	pCi/L	0.045 UJ			
	Uranium-235/236	pCi/L	0.00559 U			
	Uranium-238	pCi/L	0.0225 U			
LBC-PZ06G	Technetium-99	pCi/L	0.61 U			
	Uranium	µg/L	0.225 UJ			
	Uranium-233/234	pCi/L	0.0897 UJ			
	Uranium-235/236	pCi/L	0.0062 U			
	Uranium-238	pCi/L	0.0747 UJ			
X230J7-01GA	Technetium-99	pCi/L	9.16			
	Uranium	µg/L	0.232 UJ			
	Uranium-233/234	pCi/L	0.059 UJ			
	Uranium-235/236	pCi/L	0.00564 U			
	Uranium-238	pCi/L	0.0771 UJ			
X230J7-02GA	Technetium-99	pCi/L	131			
	Uranium	µg/L	0.198 UJ			
	Uranium-233/234	pCi/L	0.0411 UJ			
	Uranium-235/236	pCi/L	0.0171 U			
	Uranium-238	pCi/L	0.064 UJ			
X230J7-03GA	Americium-241	pCi/L	0.0345 U			
	Neptunium-237	pCi/L	0.00432 U			
	Plutonium-238	pCi/L	0.0184 U			
	Plutonium-239/240	pCi/L	0.049 U			
	Technetium-99	pCi/L	90			
	Uranium	µg/L	0.4 J			
	Uranium-233/234	pCi/L	0.142 J			
	Uranium-235/236	pCi/L	0.0122 U			
	Uranium-238	pCi/L	0.132 J			
X230J7-04GA	Technetium-99	pCi/L			3.44 U	
	Uranium	µg/L			0.192 U	
	Uranium-233/234	pCi/L			0.0689 U	
	Uranium-235/236	pCi/L			0.00659 U	
	Uranium-238	pCi/L			0.0636 U	
X701-01G	Technetium-99	pCi/L	-1.96 U			
	Uranium	µg/L	2.84 J			
	Uranium-233/234	pCi/L	1.27			
	Uranium-235/236	pCi/L	0.0709 UJ			
	Uranium-238	pCi/L	0.945			
X701-02G	Technetium-99	pCi/L	-0.366 U			
	Uranium	µg/L	0.713 J			
	Uranium-233/234	pCi/L	0.648			
	Uranium-235/236	pCi/L	0.0167 U			
	Uranium-238	pCi/L	0.237 J			
X701-06G	Technetium-99	pCi/L	26.2			
	Uranium	µg/L	8.45			
	Uranium-233/234	pCi/L	5.79			
	Uranium-235/236	pCi/L	0.345			
	Uranium-238	pCi/L	2.79			
X701-15G	Technetium-99	pCi/L	0.943 U			

Table 4.11. Results for radionuclides at the X-701B Former Holding Pond – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X701-15G	Uranium	µg/L	0.088 U			
	Uranium-233/234	pCi/L	0.0371 UJ			
	Uranium-235/236	pCi/L	0.0115 U			
	Uranium-238	pCi/L	0.0278 U			
X701-16G	Technetium-99	pCi/L	1.29 U			
	Uranium	µg/L	0.182 UJ			
	Uranium-233/234	pCi/L	0.0464 UJ			
	Uranium-235/236	pCi/L	0.00577 U			
	Uranium-238	pCi/L	0.0603 UJ			
X701-18G	Technetium-99	pCi/L			3.22 U	
	Uranium	µg/L			0.0749 U	
	Uranium-233/234	pCi/L			0.0302 U	
	Uranium-235/236	pCi/L			0 U	
	Uranium-238	pCi/L			0.0252 U	
X701-19G	Technetium-99	pCi/L	3.56 U			
	Uranium	µg/L	0.0303 U			
	Uranium-233/234	pCi/L	0.0186 U			
	Uranium-235/236	pCi/L	0.00578 U			
	Uranium-238	pCi/L	0.0093 U			
X701-20G	Americium-241	pCi/L	0.0155 U		0.0157 U	
	Neptunium-237	pCi/L	0.00483 U		0.00951 U	
	Plutonium-238	pCi/L	0.0107 U		0 U	
	Plutonium-239/240	pCi/L	0.0107 U		0.0107 U	
	Technetium-99	pCi/L	228		244	
	Uranium	µg/L	0.34 J		0.377 J	
	Uranium-233/234	pCi/L	0.0759 UJ		0.189 J	
	Uranium-235/236	pCi/L	0.0189 UJ		0.00602 U	
	Uranium-238	pCi/L	0.111 J		0.126 J	
X701-21G	Technetium-99	pCi/L	431			
	Uranium	µg/L	0.225 UJ			
	Uranium-233/234	pCi/L	0.0462 UJ			
	Uranium-235/236	pCi/L	0.0115 UJ			
	Uranium-238	pCi/L	0.0739 U			
X701-23G	Technetium-99	pCi/L			22	
	Uranium	µg/L			0.0612 U	
	Uranium-233/234	pCi/L			0.00981 U	
	Uranium-235/236	pCi/L			0.0061 U	
	Uranium-238	pCi/L			0.0196 U	
X701-24G	Americium-241	pCi/L	0.00482 U			
	Neptunium-237	pCi/L	-0.00471 U			
	Plutonium-238	pCi/L	0.00546 U			
	Plutonium-239/240	pCi/L	0.0437 UJ			
	Technetium-99	pCi/L	5.52 UJ			
	Uranium	µg/L	0.398 J			
	Uranium-233/234	pCi/L	0.11 J			
	Uranium-235/236	pCi/L	0.0057 U			
	Uranium-238	pCi/L	0.133 J			
X701-25G	Technetium-99	pCi/L	0.85 U			
	Uranium	µg/L	0.0326 U			
	Uranium-233/234	pCi/L	0.00918 U			

Table 4.11. Results for radionuclides at the X-701B Former Holding Pond – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X701-25G	Uranium-235/236	pCi/L	0.0114 U			
	Uranium-238	pCi/L	0.00918 U			
X701-30G	Technetium-99	pCi/L	2.51 U			
	Uranium	µg/L	0.308 J			
	Uranium-233/234	pCi/L	0.124 J			
	Uranium-235/236	pCi/L	0.011 UJ			
	Uranium-238	pCi/L	0.102 J			
X701-31G	Technetium-99	pCi/L			0.264 U	
	Uranium	µg/L			0.14 JU	
	Uranium-233/234	pCi/L			0.08 JU	
	Uranium-235/236	pCi/L			0 U	
	Uranium-238	pCi/L			0.047 JU	
X701-38G	Technetium-99	pCi/L			-0.331 U	
	Uranium	µg/L			0.0157 U	
	Uranium-233/234	pCi/L			0.0133 U	
	Uranium-235/236	pCi/L			0.00551 U	
	Uranium-238	pCi/L			0.00443 U	
X701-42G	Technetium-99	pCi/L			422	
	Uranium	µg/L			0.126 U	
	Uranium-233/234	pCi/L			0.0519 JU	
	Uranium-235/236	pCi/L			0 U	
	Uranium-238	pCi/L			0.0425 JU	
X701-48G	Americium-241	pCi/L			0 U	
	Neptunium-237	pCi/L			-0.00506 U	
	Plutonium-238	pCi/L			0.00576 U	
	Plutonium-239/240	pCi/L			0.0173 U	
	Technetium-99	pCi/L			0.954 U	
	Uranium	µg/L			0.0959 U	
	Uranium-233/234	pCi/L			0.0143 U	
	Uranium-235/236	pCi/L			0.0237 U	
	Uranium-238	pCi/L			0.0286 U	
X701-58B	Technetium-99	pCi/L			3.18 U	
	Uranium	µg/L			0.155	
	Uranium-233/234	pCi/L			0.164	
	Uranium-235/236	pCi/L			0.024 U	
	Uranium-238	pCi/L			0.0483 U	
X701-61B	Technetium-99	pCi/L			2 U	
	Uranium	µg/L			0.2 U	
	Uranium-233/234	pCi/L			0.106	
	Uranium-235/236	pCi/L			0.0599 U	
	Uranium-238	pCi/L			0.0578	
X701-66G	Americium-241	pCi/L	0.0342 U		0.0319 U	
	Neptunium-237	pCi/L	0.00429 U		0 U	
	Plutonium-238	pCi/L	0 U		0 U	
	Plutonium-239/240	pCi/L	0.0434 U		-0.0121 U	
	Technetium-99	pCi/L	316		360	
	Uranium	µg/L	0.303 J		0.379	
	Uranium-233/234	pCi/L	0.0832 UJ		0.171	
	Uranium-235/236	pCi/L	0.0194 U		0.0125 U	
	Uranium-238	pCi/L	0.0988 J		0.125	

Table 4.11. Results for radionuclides at the X-701B Former Holding Pond – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X701-77G	Technetium-99	pCi/L			37.5	
	Uranium	µg/L			0.171 JU	
	Uranium-233/234	pCi/L			0.0926 J	
	Uranium-235/236	pCi/L			0.0115 U	
	Uranium-238	pCi/L			0.0555 JU	
X701-79G	Technetium-99	pCi/L			53.5	
	Uranium	µg/L			0.0527 U	
	Uranium-233/234	pCi/L			0.0198 U	
	Uranium-235/236	pCi/L			0.0185 U	
	Uranium-238	pCi/L			0.0148 U	
X701-127G	Americium-241	pCi/L	0.0103 U		0.00492 U	
	Neptunium-237	pCi/L	-0.00447 U		0 U	
	Plutonium-238	pCi/L	0.0171 U		-0.00601 U	
	Plutonium-239/240	pCi/L	0.0114 U		0.0542 U	
	Technetium-99	pCi/L	92.9		134	
	Uranium	µg/L	0.302 J		0.174 U	
	Uranium-233/234	pCi/L	0.0936 J		0.0496 U	
	Uranium-235/236	pCi/L	0.0184 UJ		-0.00618 U	
	Uranium-238	pCi/L	0.0985 J		0.0596 U	
X701-128G	Americium-241	pCi/L	-0.0155 U			
	Neptunium-237	pCi/L	0.0091 U			
	Plutonium-238	pCi/L	-0.00571 U			
	Plutonium-239/240	pCi/L	0.0114 U			
	Technetium-99	pCi/L	40.8			
	Uranium	µg/L	0.23 UJ			
	Uranium-233/234	pCi/L	0.101 J			
	Uranium-235/236	pCi/L	0.0164 UJ			
	Uranium-238	pCi/L	0.0748 U			
X701-130G	Technetium-99	pCi/L			1150	
	Uranium	µg/L			5.26	
	Uranium-233/234	pCi/L			8.24	
	Uranium-235/236	pCi/L			0.372	
	Uranium-238	pCi/L			1.71	
X701-BW1G	Technetium-99	pCi/L			6.69 UJ	
	Uranium	µg/L			0.0555 U	
	Uranium-233/234	pCi/L			0.0534 UJ	
	Uranium-235/236	pCi/L			0.00553 U	
	Uranium-238	pCi/L			0.0178 U	
X701-BW2G	Technetium-99	pCi/L			1260	
	Uranium	µg/L			0.156 JU	
	Uranium-233/234	pCi/L			0.0428 JU	
	Uranium-235/236	pCi/L			0 U	
	Uranium-238	pCi/L			0.0523 JU	
X701-BW3G	Technetium-99	pCi/L			108	
	Uranium	µg/L			0.0516 U	
	Uranium-233/234	pCi/L			0.0194 U	
	Uranium-235/236	pCi/L			0.0181 U	
	Uranium-238	pCi/L			0.0145 U	
X701-BW4G	Technetium-99	pCi/L	81.6			
	Uranium	µg/L	0.0333 U			

Table 4.11. Results for radionuclides at the X-701B Former Holding Pond – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X701-BW4G	Uranium-233/234	pCi/L	0.0217 U			
	Uranium-235/236	pCi/L	0.0162 UJ			
	Uranium-238	pCi/L	0.00867 U			
X701-EW121G	Technetium-99	pCi/L	174		160	
	Uranium	µg/L	0.291 UJ		0.155	
	Uranium-233/234	pCi/L	0.153 J		0.125	
	Uranium-235/236	pCi/L	0 U		0 U	
	Uranium-238	pCi/L	0.0978 UJ		0.0522	
X701-EW122G	Technetium-99	pCi/L	323		272	
	Uranium	µg/L	0.712 J		0.622	
	Uranium-233/234	pCi/L	0.208 J		0.171	
	Uranium-235/236	pCi/L	0.0123 UJ		0.0343 U	
	Uranium-238	pCi/L	0.237 J		0.204	
X701-TC01G	Americium-241	pCi/L	0.0442 U		0.00542 U	
	Neptunium-237	pCi/L	0.00906 U		0.0152 U	
	Plutonium-238	pCi/L	0.01 U		-0.0117 U	
	Plutonium-239/240	pCi/L	0.0301 U		0.0117 U	
	Technetium-99	pCi/L	41.5		280	
	Uranium	µg/L	20.1 J		8.3	
	Uranium-233/234	pCi/L	13.7		4.52	
	Uranium-235/236	pCi/L	0.811 J		0.237	
	Uranium-238	pCi/L	6.63		2.75	
X701-TC03G	Americium-241	pCi/L	0.0105 U		0.0207 U	
	Neptunium-237	pCi/L	0.00503 U		0 U	
	Plutonium-238	pCi/L	-0.016 U		0.0116 U	
	Plutonium-239/240	pCi/L	0.00534 U		0.0407 U	
	Technetium-99	pCi/L	887		634	
	Uranium	µg/L	4.87 J		5.07	
	Uranium-233/234	pCi/L	1.53		2.07	
	Uranium-235/236	pCi/L	0.0854 UJ		0.114	
	Uranium-238	pCi/L	1.62		1.68	
X701-TC05G	Americium-241	pCi/L	0.0157 U		0.0205 U	
	Neptunium-237	pCi/L	0 U		0.00968 U	
	Plutonium-238	pCi/L	0.0048 U		0.00557 U	
	Plutonium-239/240	pCi/L	0.0144 U		0.0223 U	
	Technetium-99	pCi/L	887		731	
	Uranium	µg/L	13.2 J		17.5	
	Uranium-233/234	pCi/L	5.5		6.68	
	Uranium-235/236	pCi/L	0.296 J		0.373	
	Uranium-238	pCi/L	4.4		5.83	
X701-TC10G	Americium-241	pCi/L	0.0305 U		0.0227 U	
	Neptunium-237	pCi/L	0 U		0.00535 U	
	Plutonium-238	pCi/L	-0.0106 U		-0.00627 U	
	Plutonium-239/240	pCi/L	0.0213 U		0.00627 U	
	Technetium-99	pCi/L	232		168	
	Uranium	µg/L	6.81 J		11.2	
	Uranium-233/234	pCi/L	2.51		4.12	
	Uranium-235/236	pCi/L	0.0895 UJ		0.244	
	Uranium-238	pCi/L	2.27		3.74	
X701-TC17G	Americium-241	pCi/L	0.0319 U		-0.0218 U	

Table 4.11. Results for radionuclides at the X-701B Former Holding Pond – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X701-TC17G	Neptunium-237	pCi/L	0.00449 U		-0.0156 U	
	Plutonium-238	pCi/L	0.0101 U		0.0117 U	
	Plutonium-239/240	pCi/L	0.0203 U		0.0234 U	
	Technetium-99	pCi/L	339		334	
	Uranium	µg/L	31.7 J		45.5	
	Uranium-233/234	pCi/L	11.9		17.9	
	Uranium-235/236	pCi/L	0.773 J		1.04	
	Uranium-238	pCi/L	10.5		15.1	
X701-TC22G	Americium-241	pCi/L	0.037 U		0.026 U	
	Neptunium-237	pCi/L	0.00447 U		-0.00485 U	
	Plutonium-238	pCi/L	-0.00481 U		-0.0122 U	
	Plutonium-239/240	pCi/L	0.0144 U		0.00612 U	
	Technetium-99	pCi/L	393		316	
	Uranium	µg/L	1.11 J		1.11	
	Uranium-233/234	pCi/L	0.328		0.381	
	Uranium-235/236	pCi/L	0.03 UJ		0.0241 U	
	Uranium-238	pCi/L	0.367		0.368	
X701-TC28G	Americium-241	pCi/L	-0.0105 U		0.0106 U	
	Neptunium-237	pCi/L	-0.00473 U		0 U	
	Plutonium-238	pCi/L	0.00509 U		0.00619 U	
	Plutonium-239/240	pCi/L	0.0255 U		0.0124 U	
	Technetium-99	pCi/L	364		339	
	Uranium	µg/L	17.2 J		20.6	
	Uranium-233/234	pCi/L	6.97		7.46	
	Uranium-235/236	pCi/L	0.316 J		0.394	
	Uranium-238	pCi/L	5.73		6.85	
X701-TC48G	Americium-241	pCi/L	0.0446 U		0.00495 U	
	Neptunium-237	pCi/L	0.00474 U		0.0135 U	
	Plutonium-238	pCi/L	0.00478 U		0.00559 U	
	Plutonium-239/240	pCi/L	0.0143 U		0.0168 U	
	Technetium-99	pCi/L	284		271	
	Uranium	µg/L	68.7 J		90.5	
	Uranium-233/234	pCi/L	24.7 J		31.7	
	Uranium-235/236	pCi/L	1.07 J		1.63	
	Uranium-238	pCi/L	22.9 J		30.1	
X701-TC54G	Americium-241	pCi/L	0.0147 U		0.027 U	
	Neptunium-237	pCi/L	-0.00447 U		-0.00496 U	
	Plutonium-238	pCi/L	-0.00989 U		0.0194 U	
	Plutonium-239/240	pCi/L	0.0099 U		0.0324 U	
	Technetium-99	pCi/L	466		435	
	Uranium	µg/L	2.04 J		2.64	
	Uranium-233/234	pCi/L	0.527		0.792	
	Uranium-235/236	pCi/L	0.0321 UJ		0.0242 U	
	Uranium-238	pCi/L	0.682		0.882	
X701-TC61G	Americium-241	pCi/L	0.0401 U		0 U	
	Neptunium-237	pCi/L	-0.00529 U		-0.00468 U	
	Plutonium-238	pCi/L	-0.0157 U		0 U	
	Plutonium-239/240	pCi/L	0.00524 U		0.0227 U	
	Technetium-99	pCi/L	523		458	
	Uranium	µg/L	2.11 J		1.58	

Table 4.11. Results for radionuclides at the X-701B Former Holding Pond – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X701-TC61G	Uranium-233/234	pCi/L	0.547		0.546	
	Uranium-235/236	pCi/L	0.0851 UJ		0.021 U	
	Uranium-238	pCi/L	0.694		0.529	
X701-TC67G	Americium-241	pCi/L	0.025 U		0.0103 U	
	Neptunium-237	pCi/L	0.00471 U		-0.0142 U	
	Plutonium-238	pCi/L	0.00511 U		-0.0114 U	
	Plutonium-239/240	pCi/L	0.00511 U		0.0342 U	
	Technetium-99	pCi/L	125		112	
	Uranium	µg/L	0.62 J		1.32	
	Uranium-233/234	pCi/L	0.143 J		0.323	
	Uranium-235/236	pCi/L	0.0237 UJ		0.0175 U	
	Uranium-238	pCi/L	0.205 J		0.44	

Table 4.12. Results for chromium at the X-633 Former Recirculating Cooling Water Complex – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X633-07G	Chromium	µg/L		1400 J		1300 J
X633-PZ04G	Chromium	µg/L		48		46

Table 4.13. VOCs detected at the X-616 Former Chromium Sludge Surface Impoundments – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X616-02G	1,1-Dichloroethene	µg/L	0.25 J			
	Trichloroethene	µg/L	0.35 J			
X616-09G	1,1,1-Trichloroethane	µg/L	2.7		4	
	1,1-Dichloroethane	µg/L	2.9		4	
	1,1-Dichloroethene	µg/L	25		40	
	cis-1,2-Dichloroethene	µg/L	3.3		2.9	
	Trichloroethene	µg/L	23		29	
	Trichlorofluoromethane	µg/L	0.3 J		0.84 J	
X616-13G	1,1,1-Trichloroethane	µg/L	3.4		3.8	
	1,1-Dichloroethane	µg/L	0.98 J		1.1	
	1,1-Dichloroethene	µg/L	25		28 J	
	cis-1,2-Dichloroethene	µg/L	0.52 J		0.59 J	
	Trichloroethene	µg/L	14		18 J	
	Trichlorofluoromethane	µg/L	8.3		8.6 J	
X616-14G	1,1,1-Trichloroethane	µg/L	1.4		1.7	
	1,1-Dichloroethane	µg/L	0.35 J		0.4 J	
	1,1-Dichloroethene	µg/L	8.5		11 J	
	Trichloroethene	µg/L	2.7		3.7 J	
	Trichlorofluoromethane	µg/L	0.93 J		1.3 J	
X616-16G	cis-1,2-Dichloroethene	µg/L	0.94 J			
	Trichloroethene	µg/L	0.69 J			
X616-20B	1,1,1-Trichloroethane	µg/L	0.35 JQ		0.3 J	
	1,1-Dichloroethane	µg/L	0.58 J		0.44 J	
	1,1-Dichloroethene	µg/L	5.3 QJ		4.6	
	cis-1,2-Dichloroethene	µg/L	0.55 J		0.44 J	
	Trichloroethene	µg/L	16		11	
X616-25G	1,1-Dichloroethane	µg/L	0.22 U		0.19 J	
	cis-1,2-Dichloroethene	µg/L	0.61 J		0.54 J	
	Trichloroethene	µg/L	2.9		1.3	
X616-28B	1,1,1-Trichloroethane	µg/L	0.79 JQ			
	1,1-Dichloroethene	µg/L	0.64 JQ			
	Trichloroethene	µg/L	0.48 J			

Table 4.14. Results for chromium at the X-616 Former Chromium Sludge Surface Impoundments – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X616-02G	Chromium	µg/L	0.51 J			
X616-05G	Chromium	µg/L	530 J			
X616-09G	Chromium	µg/L	6.3			
X616-10G	Chromium	µg/L	0.5 U			
X616-13G	Chromium	µg/L	0.5 U			
X616-14G	Chromium	µg/L	1.6 J			
X616-16G	Chromium	µg/L	0.5 U			
X616-17G	Chromium	µg/L	14 J			
X616-19B	Chromium	µg/L	17			
X616-20B	Chromium	µg/L	2.4			
X616-21G	Chromium	µg/L	1.4 J			
X616-22G	Chromium	µg/L	0.58 J			
X616-24B	Chromium	µg/L	5.3			
X616-25G	Chromium	µg/L	3.2			
X616-26G	Chromium	µg/L	7.7			
X616-28B	Chromium	µg/L	0.56 J			

Table 4.15. VOCs detected at the X-740 Former Waste Oil Handling Facility – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X740-02G	1,1,1-Trichloroethane	µg/L		1.7		
	1,1-Dichloroethane	µg/L		2		
	1,1-Dichloroethene	µg/L		3		
	Trichloroethene	µg/L		4.4		
X740-03G	1,1-Dichloroethane	µg/L		2.6 D		
	1,1-Dichloroethene	µg/L		52 D		
	1,2-Dichloroethane	µg/L		6.5 D		
	Chloroethane	µg/L		6.8 D		
	trans-1,2-Dichloroethene	µg/L		0.76 DJ		
	Trichloroethene	µg/L		4.8 D		
	Vinyl chloride	µg/L		9.1 D		
X740-04G	1,1-Dichloroethene	µg/L		0.25 J		
	Trichloroethene	µg/L		2.6		
X740-08G	1,1,1-Trichloroethane	µg/L		1.1		
	1,1-Dichloroethane	µg/L		13		
	1,1-Dichloroethene	µg/L		1.7		
	cis-1,2-Dichloroethene	µg/L		14		
	trans-1,2-Dichloroethene	µg/L		3.7		
	Trichloroethene	µg/L		7.4		
X740-09B	1,1,1-Trichloroethane	µg/L		7.6 D		
	1,1-Dichloroethane	µg/L		25 D		
	1,1-Dichloroethene	µg/L		240 D		
	1,2-Dichloroethane	µg/L		68 D		
	Chloroform	µg/L		1.3 DJ		
	cis-1,2-Dichloroethene	µg/L		1600 D		
	Methylene chloride	µg/L		2.2 DJ		
	Tetrachloroethene	µg/L		8.1 D		
	trans-1,2-Dichloroethene	µg/L		1.9 DJ		
	Trichloroethene	µg/L		490 D		
	Vinyl chloride	µg/L		4.3 DJ		
X740-10G	1,1,1-Trichloroethane	µg/L		0.29 J		
	1,1-Dichloroethane	µg/L		2		
	1,1-Dichloroethene	µg/L		9.3		
	1,2-Dichloroethane	µg/L		3.2		
	cis-1,2-Dichloroethene	µg/L		57		
	Tetrachloroethene	µg/L		0.77 J		
	Trichloroethene	µg/L		41		
X740-11G	1,1,1-Trichloroethane	µg/L		0.9 J		
	1,1-Dichloroethane	µg/L		0.49 J		
	1,1-Dichloroethene	µg/L		7.1 J		
	1,2-Dichloroethane	µg/L		2.1		
	Chloroform	µg/L		0.23 J		
	Trichloroethene	µg/L		28 J		
X740-13G	Acetone	µg/L		3.9 J		
X740-14B	Trichloroethene	µg/L		1.6		
X740-18G	1,1-Dichloroethene	µg/L		1.8		
	2-Butanone	µg/L		120		
	Acetone	µg/L		280 D		
	Chloroethane	µg/L		1.3 J		
	cis-1,2-Dichloroethene	µg/L		17		

Table 4.15. VOCs detected at the X-740 Former Waste Oil Handling Facility – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X740-18G	trans-1,2-Dichloroethene	µg/L		0.33 J		
	Trichloroethene	µg/L		0.23 J		
	Vinyl chloride	µg/L		4.9		
X740-19G	1,1-Dichloroethane	µg/L		0.29 J		
	1,1-Dichloroethene	µg/L		1.6		
	1,2-Dichloroethane	µg/L		0.66 J		
	cis-1,2-Dichloroethene	µg/L		11		
	Tetrachloroethene	µg/L		0.44 J		
	Trichloroethene	µg/L		7.6		
X740-20G	cis-1,2-Dichloroethene	µg/L		1.8		
	Trichloroethene	µg/L		2.3		
X740-21G	1,1-Dichloroethene	µg/L		0.24 J		
	cis-1,2-Dichloroethene	µg/L		0.79 J		
	Trichloroethene	µg/L		5		
X740-22G	1,1,1-Trichloroethane	µg/L		1		
	1,1-Dichloroethane	µg/L		0.89 J		
	1,1-Dichloroethene	µg/L		9.5		
	1,2-Dichloroethane	µg/L		3.1 Q		
	Chloroform	µg/L		0.19 J		
	cis-1,2-Dichloroethene	µg/L		11		
	Tetrachloroethene	µg/L		1.5		
	Trichloroethene	µg/L		77 DJ		
X740-PZ04M	Acetone	µg/L		1.9 J		
X740-PZ10G	1,1,1-Trichloroethane	µg/L		0.19 J		
	1,1-Dichloroethane	µg/L		0.17 J		
	1,1-Dichloroethene	µg/L		0.28 J		
	Tetrachloroethene	µg/L		0.22 J		
	Trichloroethene	µg/L		7.2		
X740-PZ12G	1,1,1-Trichloroethane	µg/L		1.3		
	1,1-Dichloroethane	µg/L		0.58 J		
	1,1-Dichloroethene	µg/L		4.1		
	1,2-Dichloroethane	µg/L		3 Q		
	Chloroform	µg/L		0.31 J		
	cis-1,2-Dichloroethene	µg/L		0.15 J		
	Tetrachloroethene	µg/L		0.73 J		
	Trichloroethene	µg/L		56		
X740-PZ14G	1,1,1-Trichloroethane	µg/L		1.2		
	1,1-Dichloroethane	µg/L		0.75 J		
	1,1-Dichloroethene	µg/L		11		
	1,2-Dichloroethane	µg/L		3.8		
	Chloroform	µg/L		0.36 J		
	cis-1,2-Dichloroethene	µg/L		0.98 J		
	Tetrachloroethene	µg/L		1.1		
	Trichloroethene	µg/L		82 DJ		
X740-PZ17G	1,1,1-Trichloroethane	µg/L		0.7 J		
	1,1-Dichloroethane	µg/L		0.27 J		
	1,1-Dichloroethene	µg/L		3.1		
	1,2-Dichloroethane	µg/L		1.7		
	Acetone	µg/L		2.4 J		
	Chloroform	µg/L		0.16 J		

Table 4.15. VOCs detected at the X-740 Former Waste Oil Handling Facility – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X740-PZ17G	Trichloroethene	µg/L		20		

Table 4.16. Results for beryllium and chromium at the X-611A Former Lime Sludge Lagoons – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
F-07G	Beryllium	µg/L	0.11 J		1.7	
	Chromium	µg/L	4.6		14	
F-08B	Beryllium	µg/L	0.08 U		0.08 U	
	Chromium	µg/L	0.5 U		0.5 U	
X611-01B	Beryllium	µg/L	0.08 U		0.08 U	
	Chromium	µg/L	0.5 U		1.9 J	
X611-02BA	Beryllium	µg/L	0.08 U		0.08 U	
	Chromium	µg/L	0.55 J		0.54 J	
X611-03G	Beryllium	µg/L	0.08 U		0.08 U	
	Chromium	µg/L	0.5 U		4.7	
X611-04BA	Beryllium	µg/L	0.23 J		0.75 J	
	Chromium	µg/L	0.5 U		0.5 U	

Table 4.17. VOCs detected at the X-735 Landfills – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X735-01GA	Methylene chloride	µg/L		0.49 J		
X735-02GA	1,1-Dichloroethane	µg/L		0.33 J		
X735-03G	Methylene chloride	µg/L		0.6 J		
	Trichloroethene	µg/L		0.28 J		
X735-03GA	Methylene chloride	µg/L		0.62 J		

Table 4.18. Results for radionuclides at the X-735 Landfills – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X735-01GA	Technetium-99	pCi/L		-2.31 U		
	Uranium	µg/L		0.0825 U		
	Uranium-233/234	pCi/L		0.0248 U		
	Uranium-235/236	pCi/L		0.0185 U		
	Uranium-238	pCi/L		0.0248 U		
X735-02GA	Technetium-99	pCi/L		-1.66 U		
	Uranium	µg/L		0.0366 U		
	Uranium-233/234	pCi/L		0.0177 U		
	Uranium-235/236	pCi/L		0.022 U		
	Uranium-238	pCi/L		0.00886 U		
X735-03G	Technetium-99	pCi/L		-1.21 U		
	Uranium	µg/L		0.426 J		
	Uranium-233/234	pCi/L		0.177 J		
	Uranium-235/236	pCi/L		0.011 U		
	Uranium-238	pCi/L		0.141 J		
X735-03GA	Technetium-99	pCi/L		-0.83 U		
	Uranium	µg/L		0.038 U		
	Uranium-233/234	pCi/L		0.0273 U		
	Uranium-235/236	pCi/L		-0.0057 U		
	Uranium-238	pCi/L		0.0137 U		
X735-04G	Technetium-99	pCi/L		-0.763 U		
	Uranium	µg/L		0.0326 U		
	Uranium-233/234	pCi/L		0.0183 U		
	Uranium-235/236	pCi/L		0.0114 U		
	Uranium-238	pCi/L		0.00917 U		
X735-04GA	Technetium-99	pCi/L		-0.344 U		
	Uranium	µg/L		0.131 UJ		
	Uranium-233/234	pCi/L		0.014 U		
	Uranium-235/236	pCi/L		0.0116 U		
	Uranium-238	pCi/L		0.0421 UJ		
X735-05G	Technetium-99	pCi/L		-2.64 U		
	Uranium	µg/L		0.325 J		
	Uranium-233/234	pCi/L		0.0982 J		
	Uranium-235/236	pCi/L		0.0116 U		
	Uranium-238	pCi/L		0.108 J		
X735-05GA	Technetium-99	pCi/L		-1.32 U		
	Uranium	µg/L		0.125 UJ		
	Uranium-233/234	pCi/L		0.0881 J		
	Uranium-235/236	pCi/L		0 U		
	Uranium-238	pCi/L		0.0419 UJ		
X735-06GAA	Technetium-99	pCi/L		-1.22 U		
	Uranium	µg/L		0.0304 U		
	Uranium-233/234	pCi/L		0.0186 U		
	Uranium-235/236	pCi/L		0.00579 U		
	Uranium-238	pCi/L		0.00932 U		
X735-12G	Technetium-99	pCi/L		-2.11 U		
	Uranium	µg/L		0.186 UJ		
	Uranium-233/234	pCi/L		0.0625 UJ		
	Uranium-235/236	pCi/L		0 U		
	Uranium-238	pCi/L		0.0625 UJ		

Table 4.18. Results for radionuclides at the X-735 Landfills – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X735-13GA	Technetium-99	pCi/L		-0.729 U		
	Uranium	µg/L		0.191 UJ		
	Uranium-233/234	pCi/L		0.0596 UJ		
	Uranium-235/236	pCi/L		0 U		
	Uranium-238	pCi/L		0.0642 UJ		
X735-16B	Technetium-99	pCi/L		-1.61 U		
	Uranium	µg/L		0.0631 U		
	Uranium-233/234	pCi/L		0.0145 U		
	Uranium-235/236	pCi/L		0.012 U		
	Uranium-238	pCi/L		0.0193 U		
X735-17B	Technetium-99	pCi/L		-2.85 U		
	Uranium	µg/L		0.0835 U		
	Uranium-233/234	pCi/L		0.0996 J		
	Uranium-235/236	pCi/L		0.00563 U		
	Uranium-238	pCi/L		0.0272 U		
X735-18B	Technetium-99	pCi/L		-0.829 U		
	Uranium	µg/L		2.1E-06 U		
	Uranium-233/234	pCi/L		0.0132 U		
	Uranium-235/236	pCi/L		0 U		
	Uranium-238	pCi/L		0 U		
X735-19G	Technetium-99	pCi/L		-1.14 U		
	Uranium	µg/L		0.102 U		
	Uranium-233/234	pCi/L		0.0333 U		
	Uranium-235/236	pCi/L		0.00591 U		
	Uranium-238	pCi/L		0.0333 U		
X735-20B	Technetium-99	pCi/L		0.705 U		
	Uranium	µg/L		0.011 U		
	Uranium-233/234	pCi/L		0.0239 U		
	Uranium-235/236	pCi/L		0.0238 U		
	Uranium-238	pCi/L		0 U		
X735-21G	Technetium-99	pCi/L		-1.39 U		
	Uranium	µg/L		0.531 J		
	Uranium-233/234	pCi/L		0.197 J		
	Uranium-235/236	pCi/L		0.0292 U		
	Uranium-238	pCi/L		0.174 J		
X737-05B	Technetium-99	pCi/L		-0.683 U		
	Uranium	µg/L		0.00776 U		
	Uranium-233/234	pCi/L		0.00899 U		
	Uranium-235/236	pCi/L		0.0168 U		
	Uranium-238	pCi/L		0 U		
X737-06G	Technetium-99	pCi/L		0.97 U		
	Uranium	µg/L		0.0276 U		
	Uranium-233/234	pCi/L		0.0278 U		
	Uranium-235/236	pCi/L		0 U		
	Uranium-238	pCi/L		0.00926 U		
X737-07B	Technetium-99	pCi/L		-2.02 U		
	Uranium	µg/L		-0.0026 U		
	Uranium-233/234	pCi/L		0.00451 U		
	Uranium-235/236	pCi/L		-0.0056 U		
	Uranium-238	pCi/L		0 U		

Table 4.18. Results for radionuclides at the X-735 Landfills – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X737-09G	Technetium-99	pCi/L		-0.997 U		
	Uranium	µg/L		0.0814 U		
	Uranium-233/234	pCi/L		0.0309 U		
	Uranium-235/236	pCi/L		0.00549 U		
	Uranium-238	pCi/L		0.0265 U		

Table 4.19. VOCs detected at the X-734 Landfills – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
RSY-02B	Methylene chloride	µg/L		0.32 U		0.36 J
X734-01G	Methylene chloride	µg/L		0.32 U		0.33 J
X734-02B	Methylene chloride	µg/L		0.32 U		0.35 J
X734-03G	Methylene chloride	µg/L		0.32 U		0.35 J
X734-04G	Methylene chloride	µg/L		0.32 U		0.32 J
X734-05B	1,2-Dimethylbenzene	µg/L		0.26 J		0.19 U
	Benzene	µg/L		0.66 J		1.8
	Ethylbenzene	µg/L		0.42 J		0.21 J
	Methylene chloride	µg/L		0.32 U		0.62 BJ
	Toluene	µg/L		0.35 J		0.69 J
X734-06G	Methylene chloride	µg/L		0.32 U		0.55 BJ
X734-10G	Methylene chloride	µg/L		0.32 U		0.66 BJ
X734-14G	Methylene chloride	µg/L		0.32 U		1 BJ
X734-15G	Methylene chloride	µg/L		0.32 U		0.83 BJ
X734-16G	Acetone	µg/L		5.7 JQ		18
X734-23G	cis-1,2-Dichloroethene	µg/L		7.1		5.5
	trans-1,2-Dichloroethene	µg/L		0.37 J		0.28 J
	Vinyl chloride	µg/L		1.9		1.5

Table 4.20. Results for radionuclides at the X-734 Landfills – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
RSY-02B	Americium-241	pCi/L		0.0255 U		
	Neptunium-237	pCi/L		0.0089 U		
	Plutonium-238	pCi/L		-0.005 U		
	Plutonium-239/240	pCi/L		0.0198 U		
	Technetium-99	pCi/L		-0.783 U		
	Uranium	µg/L		0.112 U		
	Uranium-233/234	pCi/L		0.0561 U		
	Uranium-235/236	pCi/L		0.0127 U		
	Uranium-238	pCi/L		0.0357 U		
X734-01G	Americium-241	pCi/L		0.0257 U		
	Neptunium-237	pCi/L		0.00462 U		
	Plutonium-238	pCi/L		-0.0052 U		
	Plutonium-239/240	pCi/L		0.0367 U		
	Technetium-99	pCi/L		1.1 U		
	Uranium	µg/L		0.211 U		
	Uranium-233/234	pCi/L		0.0681 U		
	Uranium-235/236	pCi/L		0.0181 U		
	Uranium-238	pCi/L		0.0681 U		
X734-02B	Americium-241	pCi/L		0.0195 U		
	Neptunium-237	pCi/L		-0.0142 U		
	Plutonium-238	pCi/L		0.01 U		
	Plutonium-239/240	pCi/L		0.0301 U		
	Technetium-99	pCi/L		-1.11 U		
	Uranium	µg/L		0.0164 U		
	Uranium-233/234	pCi/L		0.0324 U		
	Uranium-235/236	pCi/L		0.00575 U		
	Uranium-238	pCi/L		0.00463 U		
X734-03G	Americium-241	pCi/L		0.0334 U		
	Neptunium-237	pCi/L		0.0095 U		
	Plutonium-238	pCi/L		-0.0239 U		
	Plutonium-239/240	pCi/L		0.0299 U		
	Technetium-99	pCi/L		-1.18 U		
	Uranium	µg/L		2.85		
	Uranium-233/234	pCi/L		1.59		
	Uranium-235/236	pCi/L		0.11		
	Uranium-238	pCi/L		0.94		
X734-04G	Americium-241	pCi/L		0 U		
	Neptunium-237	pCi/L		0.00473 U		
	Plutonium-238	pCi/L		0.0227 U		
	Plutonium-239/240	pCi/L		0.034 U		
	Technetium-99	pCi/L		-2.06 U		
	Uranium	µg/L		1.96		
	Uranium-233/234	pCi/L		0.847		
	Uranium-235/236	pCi/L		0.037 U		
	Uranium-238	pCi/L		0.654		
X734-05B	Americium-241	pCi/L		0.0199 U		
	Neptunium-237	pCi/L		0.02 U		
	Plutonium-238	pCi/L		0.0128 U		
	Plutonium-239/240	pCi/L		0.0256 U		
	Technetium-99	pCi/L		-0.807 U		

Table 4.20. Results for radionuclides at the X-734 Landfills – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X734-05B	Uranium	µg/L		0.361		
	Uranium-233/234	pCi/L		0.308		
	Uranium-235/236	pCi/L		0.00599 U		
	Uranium-238	pCi/L		0.12		
X734-06G	Americium-241	pCi/L		0.0317 U		
	Neptunium-237	pCi/L		0 U		
	Plutonium-238	pCi/L		0.0055 U		
	Plutonium-239/240	pCi/L		0.0275 U		
	Technetium-99	pCi/L		-0.716 U		
	Uranium	µg/L		0.0114 U		
	Uranium-233/234	pCi/L		0.019 U		
	Uranium-235/236	pCi/L		-0.0059 U		
	Uranium-238	pCi/L		0.00475 U		
X734-10G	Americium-241	pCi/L		0 U		
	Neptunium-237	pCi/L		0.00498 U		
	Plutonium-238	pCi/L		-0.0125 U		
	Plutonium-239/240	pCi/L		0.0188 U		
	Technetium-99	pCi/L		-0.231 U		
	Uranium	µg/L		0.336		
	Uranium-233/234	pCi/L		0.105		
	Uranium-235/236	pCi/L		0.0179 U		
	Uranium-238	pCi/L		0.11		
X734-14G	Americium-241	pCi/L		0.0151 U		
	Neptunium-237	pCi/L		0.0149 U		
	Plutonium-238	pCi/L		0.0115 U		
	Plutonium-239/240	pCi/L		0.0287 U		
	Technetium-99	pCi/L		-1.95 U		
	Uranium	µg/L		0.987		
	Uranium-233/234	pCi/L		0.436		
	Uranium-235/236	pCi/L		0.0233 U		
	Uranium-238	pCi/L		0.328		
X734-15G	Americium-241	pCi/L		0.0432 U		
	Neptunium-237	pCi/L		0 U		
	Plutonium-238	pCi/L		-0.0053 U		
	Plutonium-239/240	pCi/L		0.016 U		
	Technetium-99	pCi/L		-1.9 U		
	Uranium	µg/L		0.101 U		
	Uranium-233/234	pCi/L		0.0339 U		
	Uranium-235/236	pCi/L		0 U		
	Uranium-238	pCi/L		0.0339 U		
X734-16G	Americium-241	pCi/L		-0.0127 U		
	Neptunium-237	pCi/L		0 U		
	Plutonium-238	pCi/L		-0.0118 U		
	Plutonium-239/240	pCi/L		0.00592 U		
	Technetium-99	pCi/L		-1.03 U		
	Uranium	µg/L		3.6		
	Uranium-233/234	pCi/L		1.89		
	Uranium-235/236	pCi/L		0.11 U		
	Uranium-238	pCi/L		1.19		
X734-18G	Americium-241	pCi/L		-0.0108 U		

Table 4.20. Results for radionuclides at the X-734 Landfills – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X734-18G	Neptunium-237	pCi/L		-0.01 U		
	Plutonium-238	pCi/L		-0.017 U		
	Plutonium-239/240	pCi/L		0.017 U		
	Technetium-99	pCi/L		-1.49 U		
	Uranium	µg/L		1.76		
	Uranium-233/234	pCi/L		1.06		
	Uranium-235/236	pCi/L		0.0293 U		
	Uranium-238	pCi/L		0.588		
X734-20G	Americium-241	pCi/L		0.0152 U		
	Neptunium-237	pCi/L		-0.014 U		
	Plutonium-238	pCi/L		0 U		
	Plutonium-239/240	pCi/L		0.0566 U		
	Technetium-99	pCi/L		-1.29 U		
	Uranium	µg/L		0.00275 U		
	Uranium-233/234	pCi/L		0.0477 U		
	Uranium-235/236	pCi/L		0.00593 U		
	Uranium-238	pCi/L		0 U		
X734-22G	Americium-241	pCi/L		0.0213 U		
	Neptunium-237	pCi/L		0.00475 U		
	Plutonium-238	pCi/L		-0.0059 U		
	Plutonium-239/240	pCi/L		0.00585 U		
	Technetium-99	pCi/L		-2.57 U		
	Uranium	µg/L		0.918		
	Uranium-233/234	pCi/L		0.493		
	Uranium-235/236	pCi/L		0.0184 U		
	Uranium-238	pCi/L		0.306		
X734-23G	Americium-241	pCi/L		0.0222 U		
	Neptunium-237	pCi/L		0.00968 U		
	Plutonium-238	pCi/L		-0.0066 U		
	Plutonium-239/240	pCi/L		0.0198 U		
	Technetium-99	pCi/L		-1.51 U		
	Uranium	µg/L		0.0258 U		
	Uranium-233/234	pCi/L		0.0164 U		
	Uranium-235/236	pCi/L		0.0205 U		
	Uranium-238	pCi/L		0.00548 U		

Table 4.21. Results for cadmium and nickel at the X-533 Former Switchyard Complex – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
F-03G	Cadmium	µg/L		47		60
	Nickel	µg/L		430		680
TCP-01G	Cadmium	µg/L		9.7		0.27 U
	Nickel	µg/L		130		0.67 J
X533-03G	Cadmium	µg/L		28		36
	Nickel	µg/L		360 J		490 J

Table 4.22. VOCs detected at the X-344C Former Hydrogen Fluoride Storage Building – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X344C-01G	cis-1,2-Dichloroethene	µg/L	1.9			
	trans-1,2-Dichloroethene	µg/L	0.27 J			
	Trichloroethene	µg/L	0.54 J			
	Vinyl chloride	µg/L	0.23 J			

Table 4.23. VOCs detected at surface water monitoring locations – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
BRC-SW01	Acetone	µg/L	100	4.3 J	2.8 J	33
	Bromodichloromethane	µg/L	0.17 U	0.9 J	0.79 J	0.45 J
	Chloroform	µg/L	0.16 U	1.5	0.93 J	0.52 J
	Dibromochloromethane	µg/L	0.17 U	0.64 J	0.59 J	0.51 J
	Methylene chloride	µg/L	0.4 J	0.32 U	0.32 U	0.32 U
BRC-SW05	Acetone	µg/L	7.9 J	1.9 U	1.9 U	1.9 U
EDD-SW01	Bromodichloromethane	µg/L	0.82 J	1	1	0.62 J
	Bromoform	µg/L	1	0.19 U	0.19 U	0.19 U
	Chloroform	µg/L	0.49 J	2.2	1.4	0.92 J
	cis-1,2-Dichloroethene	µg/L	0.47 J	0.49 J	0.31 J	1.1
	Dibromochloromethane	µg/L	1.2	0.5 J	0.85 J	0.56 J
	Toluene	µg/L	0.17 U	0.24 J	0.17 U	0.17 U
	Trichloroethene	µg/L	0.94 J	1	0.61 J	1.5
LBC-SW01	Bromodichloromethane	µg/L	0.38 J	0.17 U	0.17 U	0.17 U
	Chloroform	µg/L	0.21 J	0.16 U	0.16 U	0.16 U
	cis-1,2-Dichloroethene	µg/L	0.41 J	0.15 U	0.15 U	0.15 U
	Dibromochloromethane	µg/L	0.7 J	0.17 U	0.17 U	0.17 U
	Trichloroethene	µg/L	0.55 J	0.16 U	0.16 U	0.16 U
LBC-SW02	Bromodichloromethane	µg/L	0.22 J	0.26 J	0.17 J	0.17 U
	Chloroform	µg/L	0.16 U	0.49 J	0.28 J	0.22 J
	cis-1,2-Dichloroethene	µg/L	0.2 J	0.17 J	0.15 U	0.23 J
	Dibromochloromethane	µg/L	0.51 J	0.17 U	0.2 J	0.17 U
	Trichloroethene	µg/L	0.26 J	0.26 J	0.16 J	0.37 J
NHP-SW01	Chloroform	µg/L	0.16 U	0.28 J	0.16 U	0.16 U
UND-SW01	1,1-Dichloroethane	µg/L	0.22 U	0.16 U	0.17 J	0.16 U
	1,1-Dichloroethene	µg/L	0.26 J	0.18 J	0.29 J	0.14 U
	cis-1,2-Dichloroethene	µg/L	0.23 J	0.3 J	0.45 J	0.15 U
	Trichloroethene	µg/L	2.8	4.3	4.4 J	1
UND-SW02	Methylene chloride	µg/L	0.36 J	0.32 U	0.32 U	0.32 U
WDD-SW01	Bromoform	µg/L	0.19 U	0.19 U	0.87 J	0.19 U
	Chloroform	µg/L	0.16 U	0.16 U	0.16 U	0.25 J
	Dibromochloromethane	µg/L	0.17 U	0.17 U	0.43 J	0.17 U
WDD-SW03	Bromodichloromethane	µg/L	0.19 J	0.17 U	0.17 U	0.17 U
	Bromoform	µg/L	0.5 J	0.19 U	0.19 U	0.19 U
	Dibromochloromethane	µg/L	0.44 J	0.2 J	0.17 U	0.17 U

Table 4.24. Results for radionuclides at surface water monitoring locations – 2017

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
BRC-SW01	Americium-241	pCi/L		0 U		-0.00528 U
	Neptunium-237	pCi/L		-0.0235 U		0.00539 U
	Plutonium-238	pCi/L		-0.0109 U		0.00617 U
	Plutonium-239/240	pCi/L		0.0109 U		0.0247 U
	Technetium-99	pCi/L	2.62 U	0.488 U	1.65 U	2.91 U
	Uranium	µg/L	2.65 J	0.351 J	1.01	0.6 J
	Uranium-233/234	pCi/L	1.5	0.34	0.653	1.95
	Uranium-235/236	pCi/L	0.0726 UJ	0.0179 U	0.0235 U	0.117 J
	Uranium-238	pCi/L	0.88	0.115 J	0.336	0.183 J
BRC-SW02	Americium-241	pCi/L		0.0158 U		0.00955 U
	Neptunium-237	pCi/L		0 U		0.00975 U
	Plutonium-238	pCi/L		0.00516 U		0.00554 U
	Plutonium-239/240	pCi/L		0.00516 U		0.0111 U
	Technetium-99	pCi/L	3.16 U	0.488 U	4.59 U	3.71 U
	Uranium	µg/L	1.33 J	0.693 J	0.403	0.494 J
	Uranium-233/234	pCi/L	0.912	0.631	0.491	0.456
	Uranium-235/236	pCi/L	0.0491 UJ	0.042 U	0.0252 U	0.0296 U
	Uranium-238	pCi/L	0.438	0.226 J	0.132	0.162 J
BRC-SW05	Americium-241	pCi/L		0.021 U		0.0525 U
	Neptunium-237	pCi/L		0.00513 U		-0.00503 U
	Plutonium-238	pCi/L		-0.0053 U		0.00567 U
	Plutonium-239/240	pCi/L		0.0105 U		0.0227 U
	Technetium-99	pCi/L	0.716 U	-1.06 U	1.4 U	1 U
	Uranium	µg/L	1.62 J	1.18 J	0.607	0.571 J
	Uranium-233/234	pCi/L	1.15	0.841	0.61	0.54
	Uranium-235/236	pCi/L	0.0952 UJ	0.0902 UJ	0.037 U	0.0654 UJ
	Uranium-238	pCi/L	0.531	0.382	0.198	0.182 J
EDD-SW01	Americium-241	pCi/L		0.00998 U		0.0566 UJ
	Neptunium-237	pCi/L		0 U		-0.0049 U
	Plutonium-238	pCi/L		0.0239 U		-0.00634 U
	Plutonium-239/240	pCi/L		0.0179 U		0.00635 U
	Technetium-99	pCi/L	35.3	2.99 U	5.13 UJ	4.25 U
	Uranium	µg/L	1.44 J	0.686 J	1.21 J	0.51 J
	Uranium-233/234	pCi/L	2.89	1.42	1.84	0.886
	Uranium-235/236	pCi/L	0.153 J	0.0824 UJ	0.0925 JU	0.041 U
	Uranium-238	pCi/L	0.46	0.218 J	0.392	0.165 J
LBC-SW01	Americium-241	pCi/L		0.00484 U		0.00951 U
	Neptunium-237	pCi/L		0.0047 U		0 U
	Plutonium-238	pCi/L		0.00553 U		0 U
	Plutonium-239/240	pCi/L		0.0387 U		0.00572 U
	Technetium-99	pCi/L	21.9	-1.81 U	0.507 U	3.58 U
	Uranium	µg/L	0.817 J	0.0801 U	0.0882 U	0.188 UJ
	Uranium-233/234	pCi/L	1.91	0.0278 U	0.079 JU	0.0932 J
	Uranium-235/236	pCi/L	0.112 J	-0.0058 U	0 U	0.0174 U
	Uranium-238	pCi/L	0.257	0.0278 U	0.0296 U	0.0606 UJ
LBC-SW02	Americium-241	pCi/L		-0.0052 U		0 U
	Neptunium-237	pCi/L		0 U		0.0044 U
	Plutonium-238	pCi/L		0 U		-0.0179 U
	Plutonium-239/240	pCi/L		0.00605 U		0.0357 U
	Technetium-99	pCi/L	19.5	4.33 U	7.75	5.94 UJ

Table 4.24. Results for radionuclides at surface water monitoring locations – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
LBC-SW02	Uranium	µg/L	0.856 J	0.526 J	1.59 J	0.499 J
	Uranium-233/234	pCi/L	1.58	1.08	2.62	0.75
	Uranium-235/236	pCi/L	0.0644 UJ	0.0297 U	0.119 J	0.029 U
	Uranium-238	pCi/L	0.278	0.172 J	0.515	0.163 J
LBC-SW03	Americium-241	pCi/L		0.0488 UJ		0.00548 U
	Neptunium-237	pCi/L		0.0135 U		0 U
	Plutonium-238	pCi/L		0.00541 U		-0.00604 U
	Plutonium-239/240	pCi/L		0.0108 U		0.00604 U
	Technetium-99	pCi/L	18.6	2.54 U	8.27	5.65 UJ
	Uranium	µg/L	0.964 J	0.668 J	1.67 J	0.745 J
	Uranium-233/234	pCi/L	1.65	0.955	2.51	1.06
	Uranium-235/236	pCi/L	0.066 UJ	0.0582 UJ	0.133 J	0.0542 U
	Uranium-238	pCi/L	0.314	0.215 J	0.54	0.242
LBC-SW04	Americium-241	pCi/L		0.0292 U		0.0145 U
	Neptunium-237	pCi/L		0 U		0.00506 U
	Plutonium-238	pCi/L		0 U		0.023 U
	Plutonium-239/240	pCi/L		0.0358 U		0.0115 U
	Technetium-99	pCi/L	16.1	2.27 U	4.08 U	7.59
	Uranium	µg/L	1.32 J	1.08 J	1.94 J	1.12 J
	Uranium-233/234	pCi/L	1.69	1.49	2.29	1.56
	Uranium-235/236	pCi/L	0.113 J	0.0517 UJ	0.113 JU	0.087 UJ
	Uranium-238	pCi/L	0.425	0.356	0.634	0.364
NHP-SW01	Americium-241	pCi/L		0.0155 U		0.0152 U
	Neptunium-237	pCi/L		0.00464 U		0 U
	Plutonium-238	pCi/L		0.0169 U		0 U
	Plutonium-239/240	pCi/L		0 U		0.0115 U
	Technetium-99	pCi/L	-0.0993 U	0.62 U	0.509 U	2.9 U
	Uranium	µg/L	5.05 J	3.65 J	4.83 J	2.42
	Uranium-233/234	pCi/L	2.51	1.35	1.94	0.838
	Uranium-235/236	pCi/L	0.0988 UJ	0.0807 UJ	0.148 J	0.0291 U
	Uranium-238	pCi/L	1.68	1.21	1.6	0.81
UND-SW01	Americium-241	pCi/L		0.0251 U		0.00984 U
	Neptunium-237	pCi/L		0.019 U		0.00949 U
	Plutonium-238	pCi/L		0.0057 U		0 U
	Plutonium-239/240	pCi/L		0.0228 U		-0.00544 U
	Technetium-99	pCi/L	-0.143 U	0.243 U	-0.11 U	0.52 U
	Uranium	µg/L	2.49	2.25	1.93	1.34
	Uranium-233/234	pCi/L	1.07	0.809	0.941	0.585
	Uranium-235/236	pCi/L	0.0353 U	0.0394 U	0.023 U	0.0172 U
	Uranium-238	pCi/L	0.832	0.75	0.646	0.447
UND-SW02	Americium-241	pCi/L		0.0344 U		0.021 U
	Neptunium-237	pCi/L		0.00996 U		-0.00534 U
	Plutonium-238	pCi/L		0 U		0.00585 U
	Plutonium-239/240	pCi/L		0.023 U		0.0117 U
	Technetium-99	pCi/L	-0.895 U	-1.56 U	1.32 U	1.14 U
	Uranium	µg/L	1.98	1.54	1.25	1.26
	Uranium-233/234	pCi/L	0.876	0.643	0.492	0.488
	Uranium-235/236	pCi/L	0.0391 U	0.0118 U	0.042 U	0.0303 U
	Uranium-238	pCi/L	0.661	0.515	0.415	0.42
WDD-SW01	Americium-241	pCi/L		-0.005 U		0.0406 UJ

Table 4.24. Results for radionuclides at surface water monitoring locations – 2017 (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
WDD-SW01	Neptunium-237	pCi/L		0 U		0.0215 U
	Plutonium-238	pCi/L		0.011 U		-0.0218 U
	Plutonium-239/240	pCi/L		0.011 U		0.00546 U
	Technetium-99	pCi/L	1.75 U	-3.4 U	4.18 U	3.1 U
	Uranium	µg/L	2.77	1.42	2.37	2.18 J
	Uranium-233/234	pCi/L	1.68	0.823	0.916	0.895
	Uranium-235/236	pCi/L	0.0391 U	0.0463 U	0.0674 JU	0.0655 UJ
	Uranium-238	pCi/L	0.924	0.47	0.786	0.722
WDD-SW02	Americium-241	pCi/L		0.0165 U		0 U
	Neptunium-237	pCi/L		0 U		0.00471 U
	Plutonium-238	pCi/L		-0.0054 U		0 U
	Plutonium-239/240	pCi/L		0.00544 U		0.00657 U
	Technetium-99	pCi/L	1.03 U	-0.133 U	2.53 U	4.5 UJ
	Uranium	µg/L	3.07 J	2.97 J	2.01	1.33
	Uranium-233/234	pCi/L	1.96	2.05	1.05	1.16
	Uranium-235/236	pCi/L	0.139 J	0.0874 UJ	0.0407 U	0.0405 U
	Uranium-238	pCi/L	1.01	0.984	0.668	0.442
WDD-SW03	Americium-241	pCi/L		0.0205 U		0.021 U
	Neptunium-237	pCi/L		0 U		0 U
	Plutonium-238	pCi/L		-0.0103 U		-0.011 U
	Plutonium-239/240	pCi/L		0.00517 U		0.0219 U
	Technetium-99	pCi/L	-0.055 U	-0.954 U	4 U	1.4 U
	Uranium	µg/L	2.96 J	1.39 J	2.1	1.19
	Uranium-233/234	pCi/L	1.49	0.608	1.12	0.647
	Uranium-235/236	pCi/L	0.0686 UJ	0.0504 UJ	0.0282 U	0.0175 U
	Uranium-238	pCi/L	0.985	0.46	0.702	0.399

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5. REFERENCES

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